

**RECIRCULATED**

**DRAFT INITIAL STUDY FOR THE SDG COMMERCE 217  
DISTRIBUTION CENTER PROJECT**

**(PL20-0008)**

**Prepared for:**



Community Development Department  
4381 Broadway, Ste. 201  
American Canyon, CA 94503

**Prepared by:**

Grassetti Environmental Consulting  
7008 Bristol Drive  
Berkeley, CA 904705

**Date: April 2021**

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## Recirculated Initial Study for the SDG Commerce 217 Distribution Center Project

### ENVIRONMENTAL DETERMINATION

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics	X	Hazards and Hazardous Materials		Public Services
	Agriculture Resources	X	Hydrology/Water Quality		Recreation
	Air Quality		Land Use/Planning		Tribal Cultural Resources
X	Biological Resources		Mineral Resources	X	Transportation/ Traffic
X	Cultural Resources	X	Noise	X	Utilities/Service Systems
	Energy		Population/Housing		Wildfire Hazards
X	Geology/Soils			X	Mandatory Findings of Significance
	Greenhouse Gas Emissions		COVID-19		

**DETERMINATION:** On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.	
I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	<b>X</b>
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

DocuSigned by:

*Brent Cooper*

Brent Cooper, Community Development Director

3/30/2021

Date

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### ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADWF	average dry weather flow
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practice
CARB	California Air Resources Board
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO <sub>2</sub> E	carbon dioxide equivalent
CWA	Clean Water Act
District	American Canyon Fire Protection District
DPR	California Department of Parks and Recreation
ESA	Environmental Site Assessment
GHG	greenhouse gas
gpd	gallons of wastewater per day
LOS	level of service
MBTA	Migratory Bird Treaty Act
MDL	most likely descendant
mgd	million gallons per day
NAHC	Native American Heritage Commission
NCALUCP	Napa County Airport Land Use Compatibility Plan
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NSD	Napa Sanitation District
NWIC	Northwest Information Center
O <sub>3</sub>	ozone
PM <sub>10</sub>	particulate matter less than 10 microns
PM <sub>2.5</sub>	particulate matter less than 2.5 microns
RWQCB	Regional Water Quality Control Board
SCH	State Clearinghouse
SFBAAB	San Francisco Bay Area Air Basin
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SO <sub>x</sub>	sulfur dioxide
SR-29	State Route 29
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
UWMP	Urban Water Management Plan
VOC	volatile organic compound
WWTP	Wastewater Treatment Plant

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# Recirculated Initial Study for the SDG Commerce 217 Distribution Center Project

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## RECIRCULATED DRAFT INITIAL STUDY FOR THE SDG COMMERCE 217 DISTRIBUTION CENTER PROJECT (PL20-0008)

The City of American Canyon circulated a Draft Initial Study (Draft IS) for a 30-day public review period starting on December 16, 2020. Upon receipt of comments on the Draft IS, a Final IS was completed and adopted at the City's February 25, 2021 Planning Commission meeting. At that meeting, additional comments on the Final IS were received. The Planning Commission's project approval was appealed on March 5, 2021. The City has elected to recirculate the Draft IS including modifications in response to comments received both during the initial public comment period and at the Planning Commission hearing.

This Recirculated Initial Study (IS) has been prepared by the City of American Canyon, Community Development Department, 4381 Broadway, Ste. 201, American Canyon, CA 94503, pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000 *et seq.*), CEQA Guidelines (Title 14, Section 15000 *et seq.* of the California Code of Regulations).

The Recirculated Draft Initial Study is circulated on April 1 2021 for a 30-day review period closing on May 3, 2021. Comments received on this document will be addressed in the Final Recirculated IS.

### Organization of the Initial Study

This Initial Study is organized into the following sections:

**SECTION I – SUMMARY:** Provides summary background information about the project.

**SECTION II – PROJECT DESCRIPTION:** Includes project background and detailed description of the proposed project and required permits.

**SECTION III – ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:** Identifies which environmental factors were determined to have additional significant environmental effects.

**SECTION IV – INITIAL STUDY CHECKLIST AND DISCUSSION:** Reviews the proposed project for potentially significant environmental effects, and identifies mitigation measures to reduce potentially significant impacts to less-than-significant levels, where feasible.

**SECTION V – MANDATORY FINDINGS OF SIGNIFICANCE:** Determines whether environmental effects associated with development of the proposed project are significant, including cumulative impacts.

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**SECTION VI – REFERENCES CITED:** Identifies source materials that have been consulted in the preparation of the Initial Study.

**SECTION VII – REPORT PREPARERS:** Identifies persons preparing the study.

**APPENDICES** - Includes applicable technical studies, comments and responses on the Draft Initial Study, and Mitigation Monitoring and Reporting Program (MMRP).

## Recirculated Initial Study for the SDG Commerce 217 Distribution Center Project

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### I. SUMMARY

<b>Project Name and File Number:</b>	SDG Commerce 217 Distribution Center Project (Application PL20-0008)
<b>Project Location:</b>	Commerce Court in the City of American Canyon. APN 058-030-065 (partial)
<b>Project Applicant:</b>	SDG Commerce 217 LLC Brian Doswald, Project Manager 413 W. Yosemite Ave, Suite 105 Madera, CA 93637 (559) 674-0906 <a href="mailto:bdoswald@icc-stravinski.com">bdoswald@icc-stravinski.com</a>
<b>Project Planner:</b>	William He, Associate Planner; Brent Cooper, AICP, Community Development Director City of American Canyon 4381 Broadway, Ste. 201 American Canyon, CA 94503 (707) 647-4336
<b>Property Owner:</b>	SDG Commerce 330 LLC 413 W. Yosemite Ave, Suite 105 Madera, CA 93637 (559) 674-0906 (phone) (559) 908-6363 (fax)
<b>General Plan Designation:</b>	Commercial Recreation (CR)
<b>Zoning:</b>	Recreation (REC)
<b>Project Approvals:</b>	Conditional Use Permit for 217,294 sq. ft. wine distribution center on a 10.39-acre parcel
<b>Date Draft Recirculated Initial Study Completed:</b>	April 1, 2021

## **II. PROJECT DESCRIPTION**

### **Project Location**

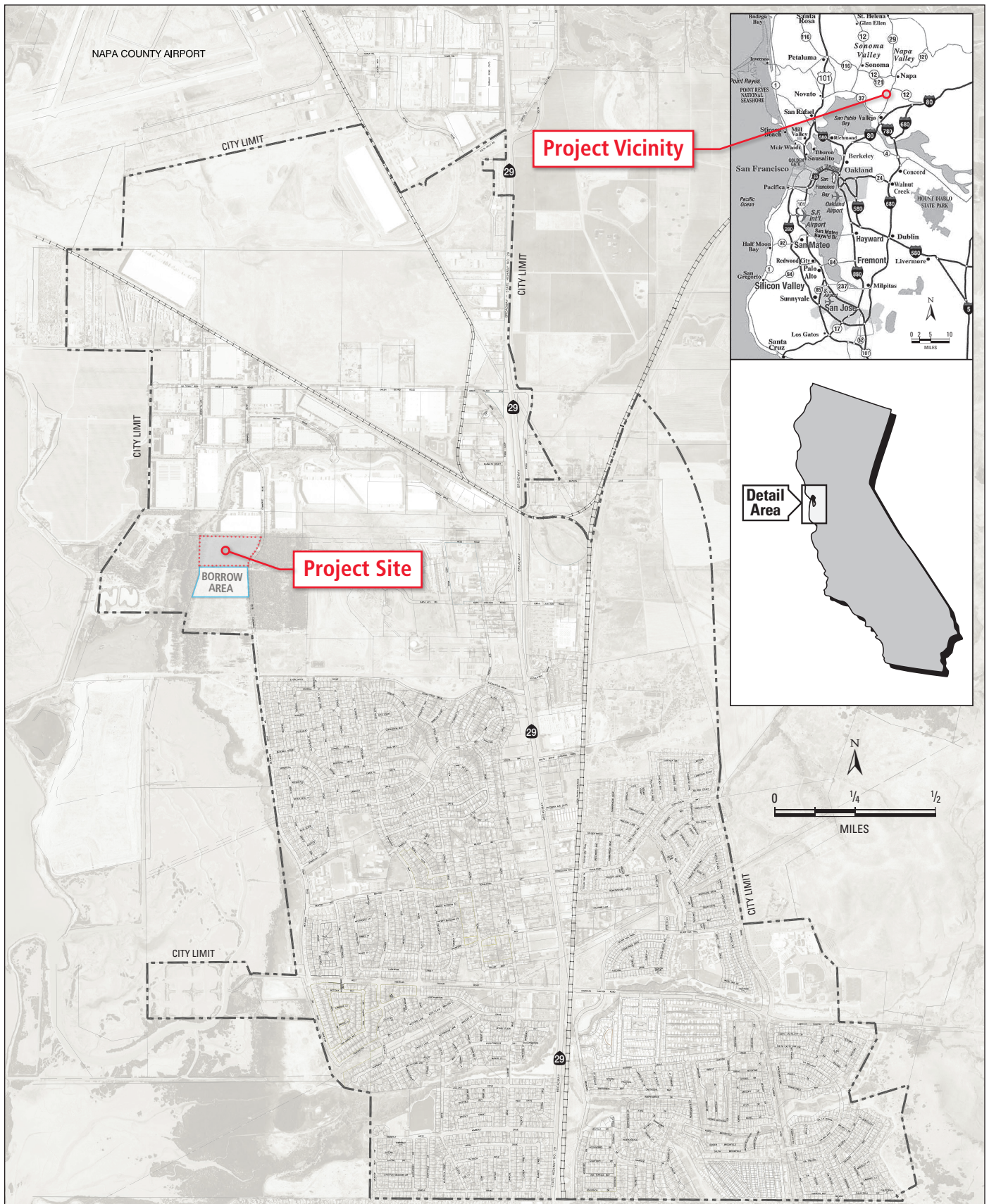
The project site is located at 1075 Commerce Court in the City of American Canyon, due north of the City of American Canyon Clarke Ranch open space/recreation area (see Figure 1, Project Location Map). It is on the west side of Commerce Court and just south of the City's Utility Access Easement No. 2002-31363 and 1155 Commerce Blvd. The property is generally trapezoidal in shape, approximately 10.39 acres, and is the north parcel of a recently approved tentative parcel map. Access to the project site is from SR-29 via Green Island Road to Commerce Court.

The project site was previously part of a 35.85-acre parcel (APN: 058-030-065). A tentative parcel map was adopted by the City of American Canyon on February 28, 2019, that split the 35.85-acre parcel into three parcels. The 15.24-acre south parcel was previously approved for an approximately 330,000 square-foot wine distribution center, which is nearing completion. Commerce Court was improved along the property frontage, with work completed October 13, 2020. The remaining middle parcel is approximately 10.17 acres in size; there are no current plans for development of that parcel.

### **Site Conditions**

Since 1937 the site was occupied by a planted crop of trees and at some time after that but before the late 1950's a eucalyptus grove was planted. Until 2001 the site remained relatively unchanged. Then in 2001 until around 2012 the northwest corner of the site was used as a paintball field (Sherwood Forest Paintball Area) with the eucalyptus trees remaining in place. In 2004 a warehouse was built directly to the north of the site which included Commerce Court cul-de-sac road Improvements on the northeast corner of the site. Also in 2004, the City of American Canyon installed underground utilities and a rock-paved access road through the middle of the eucalyptus grove adjacent to the east side of this site. This work also included installation of a sanitary sewer force main that bisects the northeast corner of the site. In 2012 the site was cleared and grubbed of the eucalyptus trees and shrubs, and is currently a gently sloping open site covered primarily with ruderal vegetation. A new Wine Distribution Center Project (SDG Commerce 330 Distribution Center) with bike path improvements along the eastern frontage is nearing completion on the southerly Commerce Court parcel (15.24 acres).





**Figure 1**  
Project Location

Source: City of American Canyon General Plan





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## **Surrounding Land Uses**

The project is bounded on the north by a row of eucalyptus trees and the City Access Road within its Utility Access Easement. To the west is an 11.23-acre parcel owned by the Couch Family, which remains unimproved with a eucalyptus tree grove and a wire fence; on the south is a 10.17-acre unimproved parcel of native grasses; to the east is Commerce Court with underground sewer, water, reclaimed water, sewer force lines, and PG&E underground power with vaults. On each side of Commerce Court is a 5-foot-wide Public Utility Easement; to the east of this easement is a 40-acre parcel owned by the Couch Family which has a mobile home, dirt/gravel roads, accessory structures and wire fences.

## **Current Zoning and General Plan Designations**

The General Plan designates the site as Commercial Recreation (CR) and the Zoning Map designates the site as Recreation (REC). The City's Municipal Code, Chapter 19.15.020 permits Wineries and non-winery uses with a conditional use permit in the Recreation Zoning District. A Conditional Use Permit is applied for in the attached Entitlement Application Form. It is anticipated that the distribution center would be used for "Winery" work in conjunction with viticulture related activities such as bottling, storage logistics, distribution, wine-packing, and wine related services.

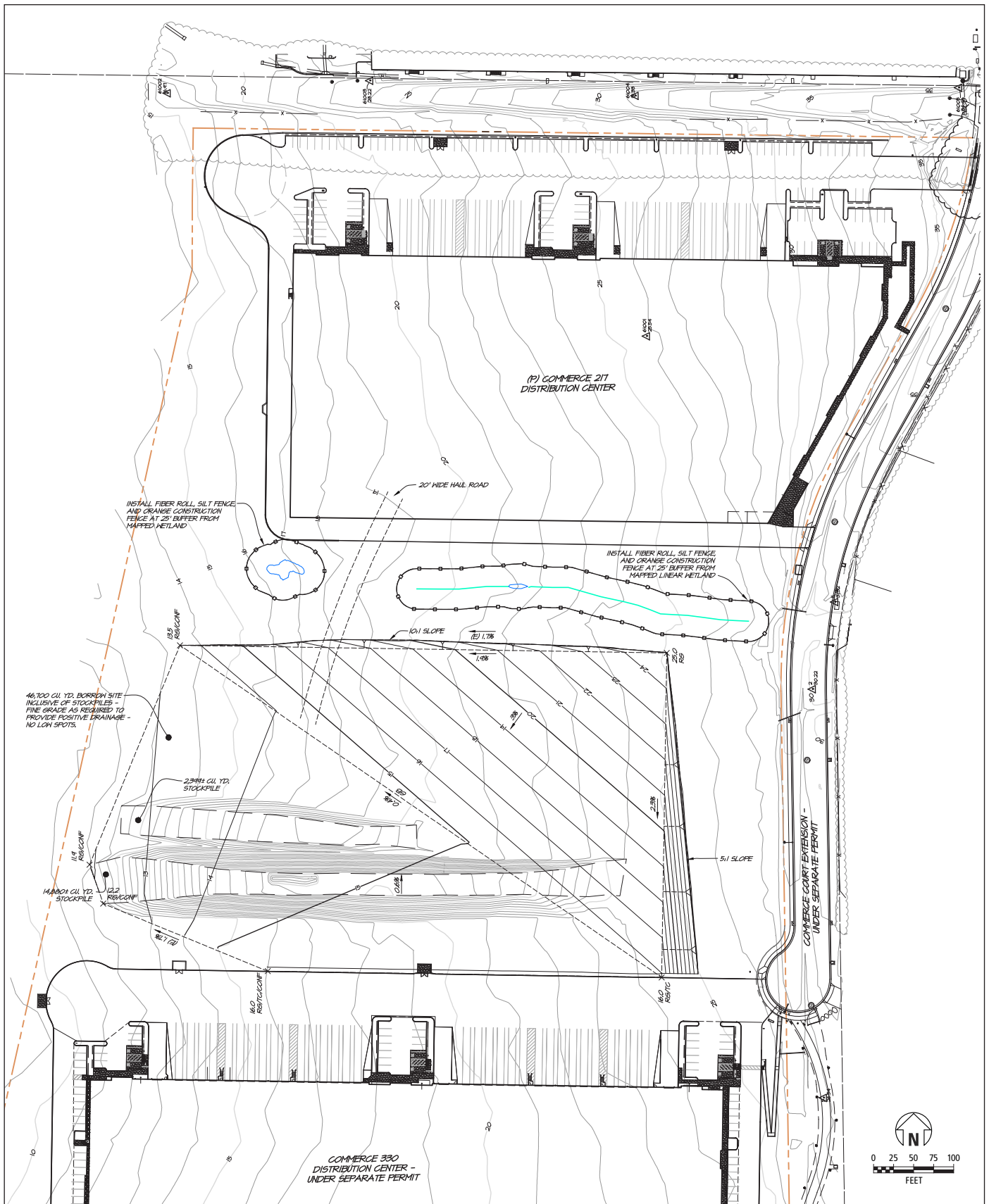
An Avigation and Hazard Easement Deed extending over the whole of the property was recorded by Napa County on July 26, 2019.

## **Proposed Development**

As discussed above, the project applicant proposes to develop a 217,294 sq. ft. wine distribution center on the northern 10.39-acre parcel, which represents a 48% building coverage (0.48 FAR). The assumed 4,350 square feet of office space is an estimate as exact office build-outs would be determined in the future and reviewed by the City during the tenant-improvement phase of the project. The proposed development is described below. The proposed site plan is shown in Figure 3.

### **Distribution Center Building**

The proposed building would be approximately 324 feet deep from north to south, and average 658 feet wide from east to west. It would have perimeter concrete tilt wall panels with varying parapet heights and accent spandrel glass/metal canopy features around offices and corners of the buildings



**Figure 3**  
Project Site and Borrow Area

Source: RSA<sup>+</sup> Consulting Civil Engineers

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to provide additional modulation. The average roof height of the building would be approximately 35 feet and exterior walls would have various heights (33-37 feet) to provide architectural relief. The building would have earth-tone colors and style matching the SDG Commerce 330 Distribution Center building to the south. Building elevations are shown on Figure 4.

The building has the potential of accommodating multiple tenants with provisions for up to three offices. It is anticipated that the distribution center would be used for wine storage and other wine-related storage, distribution, and warehousing activities (i.e. bottles, corks, barrels, etc.).

The building would have architecturally screened and covered trash enclosures for solid waste dumpsters for service by private waste haulers.

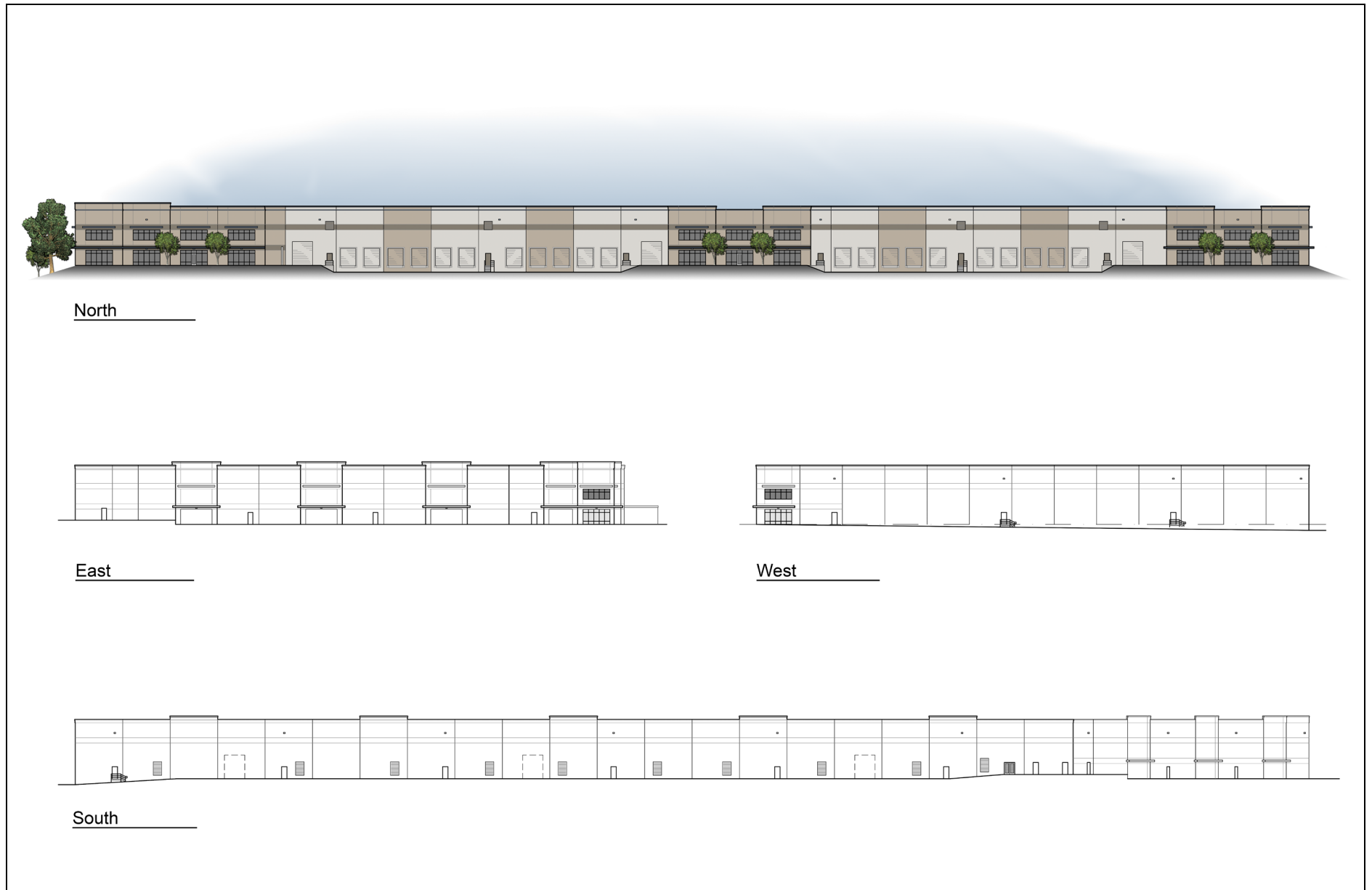
Because the building is proposed for warehousing and distribution of wine and/or other wine related products it would be heavily insulated and refrigerated, making it suitable for storage of wine and related products at approximately 58 degrees Fahrenheit. The microclimate of the area would allow cool night air to be brought in with intake louvers and fans, thereby reducing the amount of refrigeration necessary.

### Access, Parking, and Circulation

A total of 134 car and 21 truck dock parking spaces would be provided. Six of the parking stalls would be designated for handicap access with 2 stalls designated for van accessibility and 4 stalls for Clean Air Vehicle parking. The building would have 21 truck loading docks. The developer would construct ADA accessible walkways between the ADA accessible stalls and the entrances to the offices to allow for pedestrian access on-site. Emergency ingress and egress would be provided around the full perimeter of the building. Site circulation has been evaluated including fire truck movements and in-bound/out-bound turning movements at the Commerce Court entrance. This is discussed in the Transportation section of this Initial Study.

The proposed distribution center would be accessed from Commerce Court. Commerce Court was recently extended this same length as a two-lane road (44 feet wide) with concrete curb and gutter on the east and west sides. A steel fire access gate has been installed just south the new cul-de-sac at the north end of the new Class 1 bike path improvements. Commerce Court has a 5-foot wide sidewalk and landscaping on the west side, and streetlights (both sides) in accordance with City Standards. The east and west sides of Commerce Court have a Class 1 bike path.

The proposed Project includes TDM features that are likely to result in reduced VMT per employee once operational. The TDM features included as part of the project are commensurate with measures included in



**Figure 4**  
Building Elevations

Source: Ward Architects, Inc.

# Initial Study for the SDG Commerce 217 Distribution Center Project

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the California Air Pollution Control Officers Association (CAPCOA) publication *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA, 2010). Specifically, the Project includes measures consistent with the “TRT-1: Implement Commute Trip Reduction Program – Voluntary” mitigation measure category in the CAPCOA report. The Project is committed to the continued provision of:

- Carpooling encouragement;
- Ride-matching assistance;
- Preferential carpool parking;
- Designated transportation coordinator;
- Vanpool assistance; and,
- Bicycle end-trip facilities (including indoor storage).

## Bicycle Facilities

Each office within the building would have a bike rack to accommodate up to 4 bicycles, which totals 5 more than the required 7 bicycle stalls per the City’s Zoning Ordinance Chapter 19.14.090 (A), Bicycle Parking Requirements. Indoor storage for bicycles also would be included in the project.

## Lighting

The proposed project would include exterior lighting on the building and on the north side parking lot poles. Parking lot lighting would meet City of American Canyon standards. The dimmable LED 30-foot “shoebox” light fixtures will reduce glare to surrounding properties by directing light toward the ground. A photometric study has been prepared to analyze the light pole spacing to maximize light coverage and eliminate off-site light spillage and is available for review at the City Community Development Department (See Appendix A).

## Signage

One monument sign is proposed, (approximately 8-foot wide by 5 -foot tall) at the project entry from Commerce Court. The applicant would submit a separate Sign Permit application for City approval of the monument sign, as this proposed sign is not submitted with this application.

## Grading and Drainage

Grading of the property would consist of cuts of approximately five feet and fills of approximately nine feet. Approximately 38,000 cubic yards of fill would be placed on the site, with about 17,000 cubic yards from an existing soil stockpile on the abutting parcel to the south, and about 21,000 cubic yards to be excavated from a borrow area on that adjacent parcel. The boundaries of this borrow area are shown on Figure 3. Grading on the adjacent parcel would avoid the mapped wetlands with a 25-foot buffer area from those wetlands.

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Retaining walls that range in height from about 2 to 7 feet to accommodate the grade differential will be constructed along the north, west and partial south sides of the site. These precast-concrete-block system engineered walls would meet the California Building Code requirements. Excavations and fills to protect adjoining property would comply with Chapter 33 of the California Building Code. The Applicant would ensure adequate erosion protection (see Hydrology discussion).

As part of the proposed project, storm drain pipes would direct storm water runoff into a newly created detention/bioretenention pond. The storm water detention/bioretenention pond is designed to treat the storm water in conformance with federal, state, and regional requirements. Roof drains will connect to the proposed detention/bioretenention pond. Down spouts on the exterior of the building would be painted to blend-in with the building façade.

### Landscaping

The project would have approximately 62,000 square feet (+/- 1.42 acres) of landscaping. Landscaping will be provided around the site perimeter building setbacks and in parking islands. Mechanical equipment will be placed on the east side of the building, behind a landscaped 6' high color slatted chain link fence. The irrigation system will use reclaimed water thus eliminating potable water for landscape purposes.

### Utilities

Major utility services (sewer, water, electricity, phone, etc.) are available from Commerce Court. The building would have a 6" domestic sewer service stubbed to each office and a sewer pump lift station near the middle office parking area that ties into the existing City sewer main line in Commerce Court.

Domestic water service, fire water service and reclaimed water service would be brought to the east side of the building from existing City mains in Commerce Court. Gas service can be tied into the existing gas stub in the Commerce Court to the north. Electric and telephone service are available along the project frontage on the Commerce Court. Electric and telephone service would be extended underground within the subject property to the southeast corner of the building.

### Building Energy Efficiency

The building will be installed with a night-air cooling system to capture the cold air from outside during the night, which reduces the demand to use the Refrigeration system. This greatly reduces the building's electricity demand.

Interior lighting would meet at minimum Title 24 standards; in addition, measures to increase efficiency and reduce excess energy usage inside the building would be promoted. Features such as motion-sensor



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lighting would be installed for areas within the building. This reduces heat generate inside, further reducing the energy demands to cool the building. The most current Marin Clean Energy incentives would be investigated and all attempts to incorporate them into the design would be made.

The Building's roof structure is designed to accommodate solar panels and the building electrical infrastructure is designed to accept solar generation, all in compliance with applicable codes. The building tenants would be responsible for paying for all of their electrical energy consumption have the option and may elect to install solar power facilities to offset their electrical usage.

### Construction Activities and Schedule

Construction of the proposed project would occur in one phase. This includes site grading and underground utilities stubbed to the building pad. The detention/bioretention pond, treatment swales and Storm Water Pollution Prevention Measures (SWPPP) for the site would be completed during initial construction phases. It is anticipated that approximately 9.5 months would occur from commencement of initial grading start on March 1, 2021 to building construction completion. The grading component would be about 9 weeks.

Project construction hours would occur from 7:00am to 6:00pm Monday through Friday except for the concrete building slab pour, wall panel and large concrete paving pours. These are required during nighttime hours starting no earlier than 12:00am. Pre-notification of these night pour dates and times will be provided to the City and nearby residents that expressed concerns during the SDG 330 nighttime concrete pours, as well as all property owners within 300 feet of the project site. The project is anticipated to have approximately 5 concrete night pours for the building slab, 4 for the large concrete paving, and 6 for the tilt-up walls. Pours would start between 12am - 2am and continue into daytime hours. Maximum noise levels at the nearest residential receptor would be less than 53 dBA (See section XIII, Noise, for a complete discussion of concrete pour noise impacts). Nighttime pours are not optional due to cooler ambient nighttime temperatures, volume of concrete poured, morning traffic congestion that can prevent concrete trucks from arriving at the site on time, and concrete vendor conflict with other customers needing concrete during the day.

Typical construction equipment used at the site include self-loading dirt scraper, bulldozer, motor grader, compactor, roller, water truck, backhoe, excavator, trencher, drilling auger, front end loader, paving machine, laser screed, concrete finishing trowels, tractor, crane, forklift, generator, man lift, scissor lift, welding machine, and light tower. During the construction phase, it is typical for 12 to 24 workers on-site but can equal up to 80 workers, and a minimum of one worker.

### Proposed Building Uses

It is anticipated that the building will operate 12-18 hours per day in up to 3 overlapping shifts during the peak

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season. During this time, up to 32 full-time employees and 18 part-time employees may work on-site at the same time. The employment estimates are approximations as there is no specific user identified with the application; however, they are substantiated with similar uses. The proposed uses for the building can be estimated that approximately 2 to 4 trips per day would be from clients or visitors to the site and will likely be during off-peak or normal working hour times.

The building is designed to accommodate three tenants. Office space within the building is incidental to the distribution center operation and usually occupies less than two percent of the building. Hours of operation are normally 6 AM to 6 PM Monday thru Friday and 6 AM to 12 PM Monday thru Friday during peak seasonal months, typically June through November.

### **Proposed Access Improvements**

The Project would be accessed from the recently completed Commerce Court off of Green Island Road. Commerce Court has landscaping on the west side and street lights (both sides) in accordance with City Standards. The east side of Commerce Court has a five-foot wide sidewalk to match Commerce Boulevard to the north, and a Class 2 bike path in the roadway. The east side frontage to the south of the *cul-de-sac* has a class 1 bike path on the west side, with the widened rock maintenance road.

### **Land Use Entitlements and other Agency Approvals**

#### City of American Canyon

The applicant is requesting a Conditional Use Permit and Design Permit approval from the City of American Canyon for the project.

#### Other Agency Approvals

The project would require the following approvals from other agencies:

- Regional Water Quality Control Board, San Francisco Bay Region, Stormwater Pollution Prevention Plan and Permit.

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### III. INITIAL STUDY CHECKLIST

The initial study checklist recommended by the CEQA Guidelines is used to describe the potential impacts of the proposed project on the physical environment.

#### I. Aesthetics

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

#### Background

The project site is undeveloped open land covered with sparse, weedy vegetation (see Figures 5 and 6). The project is bounded on the north by the developed Green Island Industrial Park, containing large warehouses with parking lots aesthetically similar to the proposed building. To the west is an 11.23-acre parcel owned by the Couch Family, which remains unimproved with a eucalyptus grove. To the south is an open field and, beyond, the Commerce 330 Distribution Center (See Figure 5), which is a warehouse similar in general character to the buildings to the north. Further south is a row of mature eucalyptus trees and beyond that is the City-owned 24-acre parcel known as the Clarke Ranch West Open Space. To the east is a 40-acre parcel owned by the Couch Family including a mobile home and various accessory buildings, and a large commercial recreational paintball facility known as American Canyon Paintball Jungle.

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The site is visible from Commerce Court, the Bike Path improvement area, as well as from the Couch property and the Paintball Jungle facility. Distant views of the site may be accessed from the crest of the Oat Hill. There are no views of the site from nearby residential neighborhoods as the property is screened from views by a dense stand of eucalyptus trees Clarke Ranch northern property frontage, and is further screened by the Commerce 330 Building and the landscaped bicycle path to the east of the Commerce 330 Building.

**Figure 5- View of the Site Looking South towards Commerce 330 Building.**





Figure 6 – View from the Northeast Corner of the Site looking Southwest.



### Discussion

- a, c) The proposed project would replace the existing view of relatively level, undeveloped grassland with views of a new distribution center warehouse and parking area. The project constitutes a visual extension of the existing warehouses on Commerce Boulevard. Overall, the project would change the visual character of the site from one of a large, undeveloped field to a new landscaped warehouse with articulated walls, parapets and earth tone wall colors. While this change would be substantial, the number of viewers affected would be small. Views from the residential area from the south would be obstructed by the Commerce 330 building and intervening trees and vegetation. Therefore, the proposed project would not substantially degrade the visual character of the project site or its surroundings. Impacts to a scenic vista or existing visual character of the site would be ***less than significant***.

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- b) The project site is located in the City of American Canyon, west of SR-29. Highway SR-29 is designated as an Eligible State Scenic Highway by Caltrans. The City's General Plan specifies that the SR-29 corridor provides opportunities for enhancing the City's visual quality and includes a policy to preserve significant views from areas along major arterial roadways (City of American Canyon 1994, as amended through July 2020). The project site is about 5,000 feet west of the SR-29 highway and is fully shielded from any views by intervening hillside terrain.

Because the proposed project would not be visible in views from that highway, it would have ***no impact*** to vistas from a state scenic highway.

The project would not remove any existing trees, historic buildings or rock outcroppings that would be considered scenic resources. Because there are no city-designated scenic vistas or scenic resources on this site or nearby that the project could adversely affect, development of this site would result in ***no impact*** on these resources.

- d) The proposed project includes exterior lighting. Project lighting would include building lights and lights in the parking lot areas which would increase artificial light in the project area and potentially generate glare. On-site lighting would be shielded and designed to cast light downward, thereby reducing spillover light and glare on adjacent properties. The applicant has prepared a photometric plan showing that project lighting spillover beyond the project site would be minimal (Bosley Electric, 2020). The lighting would be required to adhere to the City of American Canyon's performance standards for street lighting and glare. In reviewing the Conditional Use Permit application for the proposed project, the City would consider the proposed outdoor lighting prior to approval. The building design would not introduce a source of glare associated with large expanses of glass. Therefore, impacts from light or glare would be ***less than significant***.

The project would include an approximately 5-foot by 8-foot entry sign. The applicant would be required to submit a sign program (indicating location of any lighted signs) to the City for review and approval. The project applicant would be required to implement the sign program, as approved by the City. Visual impact from signage would be ***less than significant***.

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## II. Agricultural and Forestry Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

### Discussion

- a-e) The project site is undeveloped and located adjacent to a developed area of the City of American Canyon. The site has been rough graded and stripped of trees. It is designated Recreation in the City's General Plan. Although portions of the site may have historically been used for small-scale agriculture, no such uses have occurred since at least the 1950s, when the site was planted with a eucalyptus grove. The project site contains no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or active agricultural operations. The most recent California Department of Conservation Important Farmland Maps for Napa County designates the site as Urban and Built

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Up Land (California Department of Conservation, California Important Farmland Finder, accessed July 23, 2020 <https://maps.conservation.ca.gov/DLRP/CIFF/>). In addition, this site is located within the municipal boundaries of the City of American Canyon. There are no Williamson Act lands on the site. The proposed project would not involve any changes that could result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use or loss of forest land.

There are no forest lands on the site, nor is the site designated or zoned for timberland resources. Therefore, implementation of the project would not involve the loss of any forest land.

Therefore, there would be ***no impact*** to agricultural or forestry resources.



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### III. Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

#### Background

An air quality analysis was performed using methodologies and assumptions recommended in the Bay Area Air Quality Management District's (BAAQMD) *CEQA Air Quality Guidelines* (May 2017). This section describes existing air quality, and air pollutant construction and operational impacts.

Air pollutants evaluated are carbon monoxide (CO), reactive organic compounds (ROG), nitrogen oxides (NO<sub>x</sub>), particulate matter equal to or less than 10 micrometers (coarse particulates or PM<sub>10</sub>), and particulate matter equal to or less than 2.5 micrometers (fine particulates or PM<sub>2.5</sub>). Greenhouse gas (GHG) emissions are addressed in GHG Emissions section of this Initial Study.

The project site is located in the San Francisco Bay Area Air Basin (Air Basin), which is under the jurisdiction of the BAAQMD. The BAAQMD is the agency responsible for the administration and enforcement of state and federal air quality regulations for the Air Basin. The Air Basin is designated "nonattainment" for state and national (1-hour and 8-hour) ozone standards, for the state PM<sub>10</sub> standards, and for state and national (annual average and 24-hour) PM<sub>2.5</sub> standards. The Air Basin is designated "attainment" or "unclassifiable"

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with respect to the other ambient air pollutant standards. Additional information regarding the existing air quality setting is found in Appendix B.

### Discussion

- a) The BAAQMD's Clean Air Plan (2017 CAP) is the regional air quality plan for the Air Basin. The 2017 CAP updates the 2010 CAP, pursuant to air quality planning requirements defined in the California Health and Safety Code. The 2017 CAP provides a comprehensive strategy to improve air quality, protect public health, and protect the climate, utilizing all the tools and resources available to the BAAQMD. The BAAQMD recommends that the agency approving a project where a CAP consistency determination is required analyze a project with respect to the following questions. If the first two questions are concluded in the affirmative and the third question concluded in the negative, the BAAQMD considers the project consistent with air quality plans prepared for the Air Basin. Thus, the following criteria are used for determining the proposed project's consistency with the 2017 CAP:

Criterion 1: Does the proposed project support the primary goals of the 2017 CAP?

The primary goals of the 2017 CAP are to:

- Protect air quality and health at the regional and local scale
- Protect the climate

As discussed in this section and the GHG Emissions section of this Initial Study, all air quality and GHG emissions impacts would be less than significant after implementation of MM AQ-1 through AQ-2. Therefore, the proposed project supports the primary goals of the 2017 CAP.

Criterion 2: Does the proposed project include applicable control measures from the 2017 CAP?

The 2017 CAP's control strategy includes 85 control measures designed to reduce ozone precursors in order to fulfill ozone planning requirements, protect public health by reducing emissions of ozone precursors, particulate matter and toxic air contaminants, and to serve as a regional climate protection strategy by reducing GHG emissions across a full range of economic sectors. The proposed project would include features that support applicable control measures such as water conservation, green buildings, and bicycle access/facilities. Therefore, the proposed project includes applicable control measures from the 2017 CAP.

Criterion 3: Does the proposed project disrupt or hinder implementation of any 2017 CAP control measures?

The BAAQMD provides examples of how a project may cause the disruption or delay of control measures. Examples include a project that precludes an extension of a transit line or bike path, or

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proposes excessive parking requirements. The proposed project would not cause a disruption or delay of the 2017 CAP's control measures.

The proposed project with mitigation measures would support the primary goals of the 2017 CAP and would be consistent with applicable 2017 CAP control measures, and would not disrupt or hinder implementation of any 2017 CAP control measures. Therefore, the proposed project would have a ***less than significant impact***.

- b) Construction activities were assumed to commence in the first quarter of 2021 with site preparation and grading. Paving, building construction, and architectural coating would follow and construction would be complete at the end of 2021. The proposed project would be constructed in a single phase estimated to require approximately 9.5 months.

Project construction would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions. The BAAQMD *CEQA Air Quality Guidelines* recommend quantification of construction-related exhaust emissions and comparison of those emissions to significance thresholds. The CalEEMod (California Emissions Estimator Model, Version 2016.3.2) was used to quantify construction-related pollutant emissions. Air quality calculation details and CalEEMod output worksheets are included in Appendix B.

Table AQ-1 provides the estimated short-term construction emissions that would be associated with the proposed project and compares those emissions to the BAAQMD's thresholds for construction exhaust emissions. As the construction phases (i.e., grading, paving, building construction, etc.) are sequential, the average daily construction period emissions (i.e., total construction period emissions divided by the number of construction days) were compared to the BAAQMD significance thresholds. All construction-related emissions would be below the BAAQMD significance thresholds. The air quality analysis includes use of paint compliant with BAAQMD Regulation 8, Rule 3 for architectural coatings. Regulation 8, Rule 3 limits the VOC content of the paint.

**Table AQ-1. Estimated Daily Construction Emissions (pounds/day)**

Construction Year	ROG	NO <sub>x</sub>	PM10 (exhaust only)	PM2.5 (exhaust only)	CO
<i>Proposed Project Unmitigated Emissions</i>					
2021	13.6	24.6	1.0	0.9	19.5
<i>BAAQMD Significance Threshold</i>	54	54	82	54	--
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	--

Source: CalEEMod Version 2016.3.2

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Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of PM10 and PM2.5. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local meteorological conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. Nearby receptors could be adversely affected by dust generated during construction activities.

The BAAQMD's *CEQA Air Quality Guidelines* consider these impacts to be less than significant if best management practices are employed to reduce these emissions. The BAAQMD requires the following best management practices (BMPs) to reduce emissions of dust and particulates:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- A publicly visible sign shall be posted with the telephone number and person to contact at the Site Superintendent regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number and Lead Agency contact information shall also be visible to ensure compliance with applicable regulations.

The following measures also are required by regulation:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

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The implementation of these BMPs would reduce fugitive dust and combustion exhaust emissions per BAAQMD's *CEQA Air Quality Guidelines*.

Project construction emissions are less than the significance thresholds (See Table AQ-1) and the proposed project would also include BMPs required per BAAQMD's *CEQA Air Quality Guidelines*. Therefore, project impacts from construction emissions would be ***less than significant***.

Following the completion of construction activities, the proposed project would generate air pollutant emissions from mobile and stationary sources, including on-road vehicles, and area sources (space heating, water heating, maintenance of the buildings and landscaping). Complete details of the emissions calculations are provided in Appendix B<sup>1</sup>.

Estimated maximum daily and annual operational emissions that would be associated with the proposed project are presented in Tables AQ-2 and AQ-3 and are compared to BAAQMD's thresholds of significance. As indicated, the estimated operational emissions that would be associated with the proposed project would be below the BAAQMD's significance thresholds and would be ***less than significant***.

Table AQ-2. Estimated Daily Operational Emissions (pounds/day)					
Condition	ROG	NO <sub>x</sub>	PM10	PM2.5	CO
<i>Proposed Project Emissions</i>					
Summer	6.0	3.6	2.3	0.6	7.7
Winter	5.9	3.8	2.3	0.6	7.9
<b>Maximum Proposed Project</b>	<b>5.9</b>	<b>3.8</b>	<b>2.3</b>	<b>0.6</b>	<b>7.9</b>
<i>BAAQMD Significance Threshold</i>	<i>54</i>	<i>54</i>	<i>82</i>	<i>54</i>	<i>--</i>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>--</b>

Source: CalEEMod Version 2016.3.2

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<sup>1</sup> Note, the Draft IS CalEEMod model calculated exhaust emissions for the project's electric forklifts which is incorrect, thus electric forklift emissions have been subtracted from the emissions estimates in the CalEEMod outputs (provided in Appendix B) for displaying estimated daily and annual operational emissions in Tables AQ-2 and AQ-3 in this Final IS/MND.

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Table AQ-3. Estimated Annual Operational Emissions (tons/year)					
	ROG	NO <sub>x</sub>	PM10	PM2.5	CO
<i>Proposed Project Emissions</i>					
Area	1.0	<0.1	<0.1	<0.1	<0.1
Mobile	0.1	0.5	0.3	0.1	1.0
Off-Road Equipment (Forklifts)	0	0	0	0	0
<b>Total Proposed Project</b>	<b>1.1</b>	<b>0.5</b>	<b>0.3</b>	<b>0.1</b>	<b>1.0</b>
<i>BAAQMD Significance Threshold</i>	<i>10</i>	<i>10</i>	<i>15</i>	<i>10</i>	<i>--</i>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>--</b>

Source: CalEEMod Version 2016.3.2

The BAAQMD has identified preliminary screening criteria for determining whether CO emissions would be exceeded. The screening criteria provide a conservative indication of whether the implementation of a project would result in CO emissions that are potentially significant. This methodology includes the following:

- Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Based on the size of the proposed project (367 trips per day) and the anticipated resultant traffic volumes, the additional traffic would be well below the screening criteria. Therefore, impacts that would be associated with long-term operational CO exhaust emissions would be ***less than significant***.

The BAAQMD *CEQA Air Quality Guidelines* recommend that cumulative air quality effects from criteria air pollutants also be addressed by comparison to the BAAQMD's mass daily and annual significance thresholds. As shown in Tables AQ-1 through AQ-3, proposed project-related emissions would be below the thresholds. Therefore, the proposed project would not be cumulatively considerable and cumulative impacts would be ***less than significant***.

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- c) The significance of impacts to sensitive receptors is dependent on the chance of contracting cancer from exposure to Toxic Air Contaminants (TACs) such as DPM or of having adverse health effects from exposure to non-carcinogenic TACs. A project is considered to be significant if the incremental cancer risk at a receptor exceeds 10 in a million. Health risk is evaluated for sensitive receptors within a 1,000-foot radius of a project site. There is one residence about 1,000 feet east of the site (on the Couch property) as well as other single-family residences approximately 2,300 feet from the project site boundary (to the southeast). In addition, a new elementary school is under construction, with its nearest edge about 1,500 feet southeast of the project site.

Construction activities would occur intermittently for approximately 9.5 months and the vast majority of construction activities would be well beyond 1,000 feet from the nearest residence and 1,500 feet from the school. Some construction activities during the approximately nine weeks of site preparation and grading for the project could be within 1,000 feet of the school property boundary, however, site preparation and grading activities are planned for March 2021 and the school is set to begin instruction in Fall 2021. Project construction activities would be limited to the project site (1,500 feet away) when school is in-session during Fall 2021 and would therefore not warrant a health risk evaluation and would be considered less-than-significant by the BAAQMD.

A Health Risk Assessment was prepared for the SDG 330 project in February 2019. The SDG 330 project is south of the proposed project and is much closer to existing residences and the future school. The SDG 330 project is also a larger project generating more vehicle trips than the proposed project. The Health Risk Assessment concluded that all construction and operational impacts from the SDG 330 project resulted in less-than-significant health impacts on residential and school receptors without mitigation.

The dominate wind direction in the project area is from the south/southwest. Wind direction plays a major role in the transport and dispersion of air pollutants. TAC emissions from the project would generally be dispersed in the dominant wind direction away from sensitive receptors and towards industrial land uses north/northwest of the project site. Therefore, health impacts associated with the proposed project would be *less than significant*.

- d) The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project<sup>2</sup>. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant

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<sup>2</sup> The confirmation process for odor complaints involves odor testing with a dynamic olfactometer. The BAAQMD considers if the odor is still detectable when diluted with 4 parts of odor-free air. "Minimal" odors are less than the 4 dilution/threshold (D/T) standard used in BAAQMD Rule 7-301 (General Limit on Odorous Substances)

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impact. With respect to the proposed project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect the residential neighborhood or the school under construction to the southeast of the site (scheduled to open in Fall 2021). Post-construction odors would be solely from truck exhausts, and would not be perceptible to nearby sensitive receptors. Therefore, odor impacts associated with construction and operation of the proposed project would be ***less than significant***.



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### IV. Biological Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

#### Background

A Biological Resource Analysis (BRA) was prepared by Monk & Associates (Monk & Associates 2020) that provides a description of existing biological resources on the project site and identifies potentially significant impacts that could occur to sensitive biological resources from the construction of the proposed project site.

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An addendum memo was prepared by Monk & Associates to address potential impacts to the adjacent parcel to the south from the proposed grading activities associated with the proposed soil borrow. The reports are included as Appendix C to this IS. Biologist Jake Schweitzer of Vollmar Natural Lands Consulting (VNLC) peer-reviewed the Monk & Associates reports and conducted a site visit on August 10, 2018 to confirm the biological conditions of the project site as described in the biological documentation prepared for the project.

The approximately 10-acre project site is approximately 1000 feet northwest of a large eucalyptus grove with a mobile home and accessory structures, as well as the "Paintball Jungle" recreation area. Further to the east is Oat Hill, a geographically prominent hill west of Highway 29. A mix of open space, large warehouses and distribution centers occurs north of the project site. The Couch Family owns an approximate 10-acre parcel with eucalyptus trees to the west. Further west, is the American Canyon Wastewater Treatment Plant and treatment ponds is located west of the project site. The Napa River and associated marshes occur greater than 300 feet west of the project site. A large distribution center, known as the SDG Commerce 330 Distribution Center, is nearing completion immediately to the south of the project site. Clark Ranch, Wetlands Edge Park, and salt marsh and mudflat habitats associated with the Napa River, are further to the south of the project site. The Napa Valley Unified School District is constructing the Napa Junction Elementary School to the southeast, along Eucalyptus Drive.

The 10.39-acre project site and the adjacent borrow pit area to the south are part of a larger 35.85-acre parcel that is comprised of a highly disturbed, ruderal (weedy) plant community, that was graded and leveled after removal of a grove of blue gum eucalyptus (*Eucalyptus globulus*) trees in 2012.

The project site and the borrow excavation area on the adjacent site to the south are dominated by ruderal vegetation including stinkwort (*Dittrichia graveolens*), Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), slender wild oat (*Avena barbata*), common vetch (*Vicia sativa*), red-stem filaree (*Erodium cicutarium*), bull thistle (*Cirsium vulgare*), Italian thistle (*Carduus pycnocephalus pycnocephalus*), bristly ox-tongue (*Helminthotheca echioides*), California burclover (*Medicago polymorpha*), and cut-leaf geranium (*Geranium dissectum*). Native coyote brush (*Baccharis pilularis*), a plant that responds to land disturbances, such as have occurred on the project site, is also common on the parcel.

Typically, ruderal communities provide habitat for those animal species adapted to humans. Examples of animals associated with these communities include wild turkey (*Meleagris gallopavo*), house finch (*Haemorhous mexicanus*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaidura macroura*), California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), California meadow vole (*Microtus californicus*), and Botta's pocket gopher (*Thomomys bottae*), among others, all of which have been observed on the project site. Redshouldered hawk (*Buteo lineatus*), tree swallows (*Tachycineta bicolor*), Nuttall's woodpecker (*Picoides nuttallii*), and northern flicker (*Colaptes auratus*), among others, likely nest in the eucalyptus trees that surround the project site to the west, north and south. Chestnut-backed chickadee (*Poecile rufescens*), brown creeper (*Certhia americana*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus*

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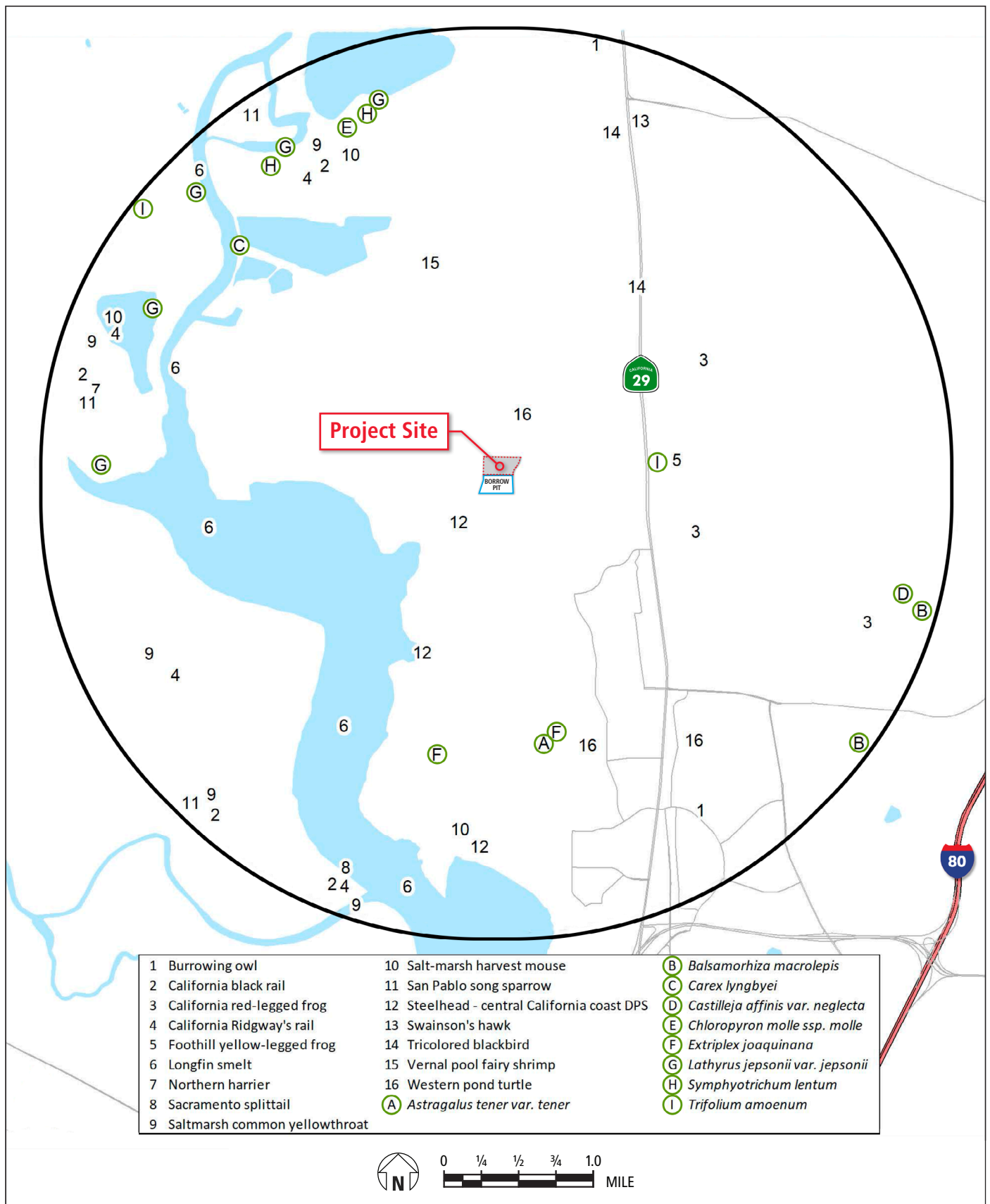
*polyglottos*), spotted towhee (*Pipilo maculatus*), California towhee (*Pipilo crissalis*), dark-eyed junco (*Junco hyemalis*), Bullock's oriole (*Icterus bullockii*) and western gray squirrel (*Sciurus griseus*) were also observed in the immediate project vicinity.

### Discussion

- a) Special-status plant species documented by the California Natural Diversity Database (CNDDDB 2018) within approximately 3 miles of the project site are shown in Figure 7. No special-status plants have been mapped on or adjacent to the project site. However, according to the CDFW's CNDDDB and CNPS' rare plant *Inventory*, a total of eight special-status plant species are known to occur in the region of the project site (Monk & Associates 2020). Most of these plants occur in specialized habitats such as marshes, foothill grasslands, and vernal pools, none of which occur onsite. In the recent past, blue gum eucalyptus trees covered the majority of the project site dating back for several decades; these trees emit allelopathic (growth inhibiting) chemicals from their leaves, acorns and bark that prevent other plants from growing under them. Bark and leaf debris collect on the ground beneath the trees, and very few plants will grow there. Based on the negative findings during the multiple surveys conducted on this site in 2006, 2011, 2012, 2017, 2018, and 2019, special-status plants are not likely to be found onsite (Monk & Associates 2020). Therefore, impacts to special-status plants would be ***less-than-significant***.

Special-status wildlife species documented by the California Natural Diversity Database (CNDDDB 2020) within approximately 3 miles of the project site are shown in Figure 7. No special-status wildlife records have been mapped on or adjacent to the project site. However, a total of 18 special-status wildlife species are known to occur in the region of the project site (Monk & Associates 2020). Due to the disturbed nature of the project site, and its past history as a eucalyptus grove, there is a very low likelihood of special-status wildlife species occurring onsite (Monk & Associates 2020). However, due to the sensitivity of four of the special-status wildlife species known to occur in the area and/or potential habitat on the site, these species are further discussed below. Additional information regarding these special-status species, as well as species known from the region but for which no suitable habitat occurs on or in areas to be impacted by the proposed project, is provided in Table 4 from the Biological Resource Analysis prepared for the project site by Monk & Associates (2020); (Appendix C).

**California red-legged frog** (*Rana draytonii*) is federally listed as threatened and is a state species of special concern. The project site is located outside USFWS designated critical habitat for the species, but designated critical habitat occurs approximately 1.7 miles to the east. In the American Canyon/Napa area, there are no records for the California red-legged frog west of State Route 29 where the project site is located.



**Figure 7**

CNDDDB Special Status Species within 3 miles of Project Site

Source: Monk & Associates

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The closest known California red-legged frog occurrence is 1.4 miles east of the project site (CNDDDB Occurrence No. 896). The California red-legged frog at this location was found in a dry cement tank adjacent to a large quarry pond that supported bullfrogs (*Lithobates catesbeiana*). State Route 29 is located between this closest California red-legged frog record and the project site and constitutes a geographic barrier to overland California red-legged frog movements to/from the known record location and other extant California red-legged frog populations to the project site (Monk & Associates 2020). There is no hydrologic connectivity over any undeveloped migration route between the known records for this species and the project site. Finally, the project site does not provide suitable habitat for the California red-legged frog. Based on all the available information, it can be concluded that the project site does not provide suitable habitat for the California red-legged frog. Similarly, the surrounding parcels with dense eucalyptus groves do not provide suitable habitat. The highly disturbed conditions on the project site (due to prior grading and tree removal activities) and the other factors discussed above, result in this species being unlikely to occur on the project site. Therefore, impacts to California red-legged frog would be ***less-than-significant***.

**The western pond turtle** (*Emys marmorata*) is a California “species of special concern.” In April of 2015, the USFWS issued a 90-day finding on a petition to list this species under FESA. In September 2016, M&A spoke with USFWS’ Sacramento Field Office and was told that they “hope to finish a 12-month finding in the fiscal year of 2021” (G. Tarr, USFWS, Sacramento Field Office, pers. comm. with S. Lynch of M&A, September 21, 2016). Until the western pond turtle is formally listed it is not afforded the protections of FESA.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that western pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog

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(*Lithobates catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

According to the CDFW's CNDDDB there is a 2002 record of this turtle in North Slough approximately 0.28-mile to 0.45-mile north of the project site. There is no aquatic habitat onsite and the upland habitat onsite appears to be most unsuitable for nesting turtles as it is a former eucalyptus forest that now, though devoid of trees, has undulating topography from past land disturbance including from eucalyptus tree removal that took place in 2012. While it appears to be a most unlikely area for turtles to haul out and nest, in an abundance of caution that there is a possibility of turtles nesting onsite, impacts to western pond turtle from the proposed project are considered **potentially significant**. Mitigation Measure BIO-5 would reduce this impact to a **less-than-significant** level.

**Western burrowing owl** (*Athene cunicularia*) is a California species of special concern. Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). The closest CNDDDB record was documented 2.6 miles southeast of the project site in an area that has since been developed (CNDDDB Occurrence No. 109). The project site was severely disturbed during the eucalyptus removal in 2012; ground squirrel burrows are few and of recent origin (Monk & Associates 2020). The mobility of the western burrowing owl enables the species to colonize the recent burrows. Monk & Associates (2020) did not observe western burrowing owls or any indirect evidence that burrowing owls are using or residing on the project site during any of the site surveys. However, the project site provides marginal nesting habitat for the western burrowing owl. Should burrowing owls occur on or near the project site, nesting activities and/or individual owls could be harmed by construction activities. Therefore, impacts to western burrowing owl could be **potentially significant**. Mitigation Measure BIO-1 would reduce this impact to a **less-than-significant** level.

**Swainson's hawk** (*Buteo swainsoni*) is a state listed threatened species afforded protection pursuant to the California Endangered Species Act (CESA). While it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800). The closest known record for nesting Swainson's hawk is 2.6 miles north of the project site (CNDDDB Occurrence No. 2744). No Swainson's hawk nests have been observed on the site or offsite in the vicinity of the project site during M&A's project site surveys. However, the nesting population appears to be increasing throughout its nesting range in northern California (recent CNDDDB records and G. Monk general observations) and the eucalyptus trees growing adjacent to the project site provide suitable nesting habitat. Therefore, there is the possibility that Swainson's hawks could nest near the project site in future years and that nesting could be disturbed by construction activities.

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If Swainson's hawks are found to be nesting adjacent to the project site, implementation of the proposed project could be viewed by CDFW as a project that could impact nesting Swainson's hawks. Nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by CDFW as a violation of the Section 2080 of the Fish and Game Code.

Typically, CDFW requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found adjacent to the project site within an area of influence (which is generally considered to be within 1,000 feet of the project site) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur, a Fish and Game Section 2081 management authorization would be required. As such, in the absence of survey results, it must be concluded that impacts to Swainson's hawk from the proposed project would be ***potentially significant***. Implementation of Mitigation Measure BIO-2 (preconstruction surveys and buffers) would ensure that any potentially significant impacts are reduced to a ***less-than-significant*** level.

The loss of foraging habitat associated with the project is not considered substantial as the entire project site consisted of a eucalyptus grove until 2012, and thus did not historically provide potential foraging habitat; there are extensive foraging opportunities around the nesting location 2.6 miles north of the site and between this nesting location and the project site; and as the project site is essentially surrounded by eucalyptus forest, it is not a foraging destination which would likely attract foraging Swainson's hawks.

**Northern harrier** (*Circus cyaneus*) is a California species of special concern. This raptor is protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young and is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). The closest CNDDDB record was documented 2.8 miles west of the project site (CNDDDB Occurrence No. 29). The project site was severely disturbed during the eucalyptus removal in 2012. However, the project site provides marginal nesting habitat for the northern harrier (Monk & Associates 2020). Should northern harrier nest on or near the project site, nesting activities could be disrupted by construction activities. Therefore, impacts to northern harrier could be ***potentially significant***. The loss of foraging habitat associated with the project is not considered substantial as the entire project site consisted of a eucalyptus grove until 2012, and thus did not historically provide potential foraging habitat. Mitigation Measure BIO-3 would be implemented to reduce potential impacts to nesting northern harriers to a ***less-than-significant*** level.

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**White-tailed kite** (*Elanus leucurus*) is a state Fully Protected species. It inhabits grasslands, agriculture fields, oak woodlands, savanna and riparian habitats in rural and urban areas. The species typically nests in trees surrounded by open foraging habitat. The trees on and bordering the project site provide potential nesting habitat. Should white-tailed kite nest on or near the project site, nesting activities could be disrupted by construction activities. Therefore, impacts to white-tailed kite would be potentially significant. The loss of foraging habitat associated with the project is not considered substantial as the entire project site consisted of a eucalyptus grove until 2012, and thus did not historically provide potential foraging habitat. Mitigation Measure BIO-3 would be implemented to reduce potential impacts to nesting white-tailed kites to a ***less-than-significant*** level.

**Other Raptors and Passerine Birds.** In addition to the above special-status bird species, construction of the proposed project has the potential to affect species protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (§3503), such as tree or ground nesting raptors or nesting passerine birds. Specific surveys for nesting raptors have not been conducted. In the absence of survey results indicating otherwise, it is conservatively assumed that implementation of the proposed project could cause nest abandonment and death of eggs or young.

Passerine birds frequently change nesting locations from year to year and thus, past nesting histories are not necessarily indicative of future nesting activities. Similar to the raptors, construction activities could disturb or directly affect passerine birds, their eggs, and/or young. Therefore, impacts to nesting raptors and passerines are potentially significant, and Mitigation Measures BIO-3 and BIO-4 would reduce the impact to a ***less-than-significant*** level.

**Special-status bats.** Although there are several species of special-status bats in the project area, the project site contains no roosting or besting habitat because it has no trees, rock faces, structures, or cliffs. Therefore, there would ***no impact*** from the project to special-status bat species.

- b) There is no riparian habitat at the project site, and no Streambed Alteration Agreement from CDFW would be necessary. Additionally, there are no sensitive plant communities on the project site. The project site is separated from the Napa River and associated marsh habitats by greater than 300 feet and by a dense eucalyptus grove. Therefore, related impacts are ***less than significant***. Wetlands are discussed below under c).
- c) A formal wetland delineation for the larger 35-acre parcel of which the project site is the northern 10.39 acres was performed by Monk & Associates in 2016, and was verified by the Army Corps of Engineers (Corps) on May 16, 2018. Based on the verified wetland delineation, there are no wetland features under the jurisdiction of the Corps on the 10.39-acre project parcel. There are two wetland features on the parcel to the south that is proposed for soil borrow. However, the proposed grading for the borrow area would avoid these two features and incorporate a 25-foot buffer area from these wetlands. These buffers, along with sediment-control measures identified in the geology and



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hydrology sections of this IS/MND, would eliminate the potential for the project to affect these wetlands. Therefore, the project would have ***no impacts*** to wetlands or waters of the US.

- d) Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated. All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

The proposed project would not substantially interfere with the movement of native wildlife. The project site has a history of disturbance associated with eucalyptus tree removal in 2012, and continued disturbance associated with the paint ball facility located immediately to the southeast and construction of the SDG Commerce 330 facility to the south. The eucalyptus grove and the marshes associated with the Napa River to the west of the project site provide a more valuable wildlife corridor for terrestrial wildlife, and these areas would not be impacted by the proposed project. Therefore, the proposed project would not substantially affect wildlife movement and related impacts would be ***less than significant***

- e) The City of American Canyon's Tree Ordinance (Ord. 18.40.110) specifies that:
- A. Existing trees shall be preserved on the site unless otherwise approved by the city council as a part of the site development plans.
  - B. Unless specifically approved by the city council, any tree removed shall be replaced on the site. Replacement trees shall be a minimum size of a twenty-four-inch box of the same species unless specifically approved by the city council. (Ord. 98-10 § 1 (part), 1998).

The mature eucalyptus trees along the northern and western project boundaries would not be removed by the project. The site itself does not support any trees. Therefore, the project would have ***no impacts*** to protected trees.

- f) There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other habitat conservation plans that include the proposed project site. Therefore, the project would have ***no impact*** to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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## Mitigation Measures

**Mitigation Measure BIO-1:** A qualified western burrowing owl biologist shall conduct surveys in accordance with the California Department of Fish and Game (now CDFW) 2012 Staff Report on Burrowing Owl Mitigation survey methodology (see <https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>). Surveys shall encompass the project area and a sufficient buffer zone of approximately 200 to 500 feet depending on the neighboring terrain and vegetation as necessary to detect owls nearby that may be impacted by the project. Time lapses between surveys or project activities shall trigger subsequent surveys including but not limited to a final survey within 24 hours prior to ground disturbance before construction equipment mobilizes to the project area. If no owls are found during these surveys, no further actions to protect burrowing owl would be necessary.

1) If burrowing owls are detected on or adjacent to the site, the following restricted activity dates and setback distances recommended per CDFW's Staff Report (2012) shall be implemented, unless reduced buffers are accepted by CDFW in writing based on site specific conditions:

- From April 1 through October 15, low disturbance and medium disturbance activities shall have a 200-meter buffer while high disturbance activities shall have a 500-meter buffer from occupied nests and wintering sites.
- From October 16 through March 31, low disturbance activities shall have a 50- meter buffer, medium disturbance activities shall have a 100-meter buffer, and high disturbance activities should have a 500-meter buffer from occupied nests and wintering sites.
- No earth-moving activities or other disturbance should occur within the aforementioned buffer zones of occupied burrows. These buffer zones shall be marked with high visibility fencing or flagging.

2) If burrowing owls are present outside of the nesting season, burrowing owls may be passively relocated from the project site and adjacent habitat using CDFW-accepted methods so that construction can proceed. Any required passive relocation of burrowing owls would require CDFW acceptance. If passive relocation of non-nesting burrowing owls is necessary, a qualified biologist shall prepare a Relocation Plan and submit it to CDFW.

3) If a nesting season survey determines that a burrow or refugia on the project site is occupied by nesting burrowing owls, then compensatory mitigation in the form of a permanently protected, deed restricted set aside on open space land owned or obtained by the applicant shall be provided if such a protected area makes sense for protection of nesting owls. This permanently protected area would be recorded within 90 days after commencement of project construction. If burrowing owls are observed during surveys, notification shall also be submitted to the CNDDB.

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**Mitigation Measure BIO-2:** If project activities must occur during the Swainson's hawk nesting season (i.e., typically March 1 through September 15), a qualified biologist (i.e., a biologist with at least two years' experience conducting surveys who has made Swainson's hawk detections) shall conduct pre-construction surveys for nesting Swainson's hawks within a half-mile radius around all project activities for at least two survey periods immediately prior to a project's initiation. The surveys shall be conducted in accordance with CDFW's "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" (CDFG 2000), which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements.

If Swainson's hawks are found to be nesting on the project site or within a 0.5-mile of the project site, the project proponent shall either, a) delay project activities until all Swainson's hawk nests within 0.5-mile of the Project site are no longer active, as determined by a qualified biologist, b) determine if the 0.5-mile buffer zone may be reduced in consultation with CDFW based on site specific conditions, or c) if take cannot be avoided, obtain a CESA Incidental Take Permit from CDFW prior to starting project activities.

**Mitigation Measure BIO-3:** To ensure that impacts to nesting raptors are avoided, the following mitigation measures shall be implemented:

1) In order to avoid impacts to nesting raptors, a preconstruction nesting survey shall be conducted by a qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for nesting raptors with detections) prior to commencing with earth-moving or construction work if this work would commence between February 1st and August 31st. The survey shall be conducted within 7 days prior to site disturbance. The raptor nesting surveys shall include examination of all trees and other suitable nesting structures/areas within 500 feet of the project site.

2) If nesting raptors are identified during the surveys, a qualified biologist shall determine appropriate, species-specific no-disturbance buffers around all active nests. No-disturbance buffers shall be demarcated in the field with orange construction fencing or similar. If the tree or other nest site is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. If nesting white-tailed kites are found during surveys, a suitable non-disturbance buffer shall be established by a qualified biologist (as defined above) but in no case shall the buffer be less than 200 feet. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site daily for a minimum of one week and then weekly during construction. If the qualified biologist observes any nesting raptor displaying distress, the qualified biologist shall require that all project activities cease. In this event, the qualified biologist shall ensure proper measures are taken so that no harm comes to the

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nest/nesting attempt and all activities causing distress shall cease until the nesting attempt is completed as determined by a qualified biologist.

3) If the preconstruction nesting survey identifies a large stick or other type of raptor nest that appears inactive at the time of the survey, but there are territorial raptors evident in the nest site vicinity, a protection buffer (as described above) shall be established around the potential nest site until the qualified biologist determines that the nest is not being used. In the absence of conclusive observations indicating the nest site is not being used, the buffer shall remain in place until a second follow-up nesting survey can be conducted to determine the status of the nest and eliminate the possibility that the nest is utilized by a late-spring nesting raptor (for example, Cooper's hawk). This second survey shall be conducted even if construction has commenced. If during the follow-up late season nesting survey a nesting raptor is identified utilizing the nest, the protection buffer shall remain until it is determined by a qualified biologist that the nest is no longer active. If the nest remains inactive, the protection buffer can be removed and construction and earth-moving activities can proceed unrestrained.

This mitigation measure would reduce impacts to nesting raptors to a less than significant level because it meets or exceeds all standard resource agency requirements for nesting raptors, and is consistent with professionally accepted approaches to mitigating impacts to nesting raptors.

**Mitigation Measure BIO-4:** To ensure that impacts to nesting passerine birds are avoided, a qualified biologist shall conduct a survey within 7 days prior to commencing construction/ grading or tree removal activities if this work would commence between February 1 and September 1. If common passerine birds or special-status passerine birds are identified nesting on or adjacent to the project site within 200 feet, a qualified biologist shall determine appropriate, species-specific no-disturbance buffers for all nests. The no-disturbance buffers shall be clearly demarcated in the field with orange construction fencing or similar, prior to the start of project activities. Disturbance within the buffer shall be postponed until a qualified biologist determines that the young have fledged and have attained sufficient flight skills to leave the area, and that the nesting cycle has otherwise completed. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site on a daily basis for a minimum of one week and then weekly during construction. If the qualified biologist observes any nesting bird displaying distress, the qualified biologist shall have the authority to require that all project activities cease until the nesting distress has been ameliorated. In this event, the qualified biologist shall ensure proper measures are taken so that no harm comes to the nest/nesting attempt until the nesting attempt is completed as determined by a qualified biologist. These measures may include increasing the no-disturbance buffer, postponing specific construction activities causing the distress until the nesting attempt is completed, or other appropriate protect measures as determined in the field.

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**Mitigation Measure BIO-5:** A qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for western pond turtle detections) has prepared a wildlife exclusion plan for this project and has attached an exhibit of that fencing plan herein (please see attached Exhibit A). This wildlife exclusion fencing will be constructed of manufactured ERTEC wildlife exclusion fencing. This exclusion fencing shall be installed along the western perimeter of the project site returning back 50 feet to the north and 50 feet to the south preventing species from traveling from North Slough onto the project site during construction (see Exhibit A). A qualified biologist shall survey the project site and adjacent habitat within 72 hours of the start of project activities to determine if western pond turtle or their nests are present and guide the installation of the exclusion fence. If western pond turtles are discovered, a qualified biologist with experience handling and relocating the species shall move the species to the nearest suitable habitat outside of the project area and exclusion fencing. If western pond turtle nests are found, CDFW shall be notified prior to starting project activities, and the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent North Slough. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Grading within the nest site's 50-foot buffer area shall be delayed until the young leave the nest as determined by a qualified biologist. If the CDFW allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of the CDFW.

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### V. Cultural Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historic resource as defined in Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

#### Background

A cultural resources investigation of the project area was undertaken by Solano Archaeological Services (SAS) which consisted of a record search conducted through the Northwest Information Center (NWIC) of the California Historical Resources Information System, a field survey, outreach to the Native American community, and study documentation (SAS, Cultural Resources Technical Memorandum, SDG Commerce 217 Distribution Center Project, September 1, 2020). The NWIC research indicates that sixteen previous cultural resources investigations were conducted within or in the vicinity of the project area between 1975, and 2009, and in 2018 as part of the Commerce 330 project. None of these studies or other research identified any prehistoric or historic-era sites, features, or artifacts within the project area. One site (CA-NAP-727H), a historic period ranch complex, was identified approximately 200 meters south of the project area. Additional archival research and a field survey conducted by SAS also did not identify the locations of any potential cultural or historical resources in the project area.

The field survey encountered an historic-era dispersed trash disposal area comprised mostly of glass fragments, on the northwest corner of the project site. This was evaluated by the SAS archaeologists and determined not to be eligible for the California Register of Historic Resources (SAS 2020).

The Native American Heritage Commission (NAHC) conducted a search of Sacred Lands File the results of which indicate that no Native American historical resources or other culturally sensitive properties are known to be present within or near the project area. Outreach to tribal organizations and individual representatives in August 2020 per a contacts list provided by the NAHC also did not result in the identification of properties or locations possessing cultural significance to the Native American community.

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Archival research, outreach to the Native American community, and a field survey did not identify the present of any historical resources within the project area. However, field surveys cannot always identify the presence of sub-surface cultural remains that could be significant per CEQA criteria. As a result, presently unidentified historical resources could be present within the project area.

### Discussion

- a) As described above, project grading and land disturbance could affect unknown cultural resources. This impact is ***potentially significant***. Mitigation Measure CUL-1, below, would reduce any impacts to presently unidentified historical resources to a ***less-than-significant*** level.
- b) As described in a), above, an NWIC record search, archival research, NAHC and Native American community input, and a field survey did not identify any prehistoric or historic-era cultural sites, features, artifacts, or culturally significant properties within the project area. However, there remains a possibility that project ground-disturbing activities could uncover evidence of Native American or early historic period use and/or occupation of the project area. Mitigation Measure CUL-1, below, would reduce any impacts to such resources to a ***less-than-significant*** level.
- c) Archival research, Native American community outreach, an NWIC record search, and a field survey did result in the documentation of any known human remains within the project area. However, the possibility exists that subsurface construction activities may encounter previously undiscovered human remains. Mitigation Measure CUL-2 would reduce this impact to a ***less-than-significant*** level.

### Mitigation Measures

***Mitigation Measure CUL-1:*** Archaeological deposits are defined as any historic-era resource (e.g., bottle dump, refuse scatter) or prehistoric resource that may be intact and/or retain qualities that satisfy criteria for eligibility for the California Register of Historical Resources. If potentially significant historic resources are encountered during subsurface excavation activities for the project area, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites.

If the resource is determined to be significant under CEQA (i.e., a “historical resource”) the City and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation

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in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.

**Mitigation Measure CUL-2:** If previously unknown human remains are encountered during construction activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:

In the event of an accidental discovery or recognition of any human remains, Public Resource Code Section 5097.98 must be followed. Once project-related ground disturbance begins and if there is accidental discovery of human remains, the following steps shall be taken:

- There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Napa County Coroner's Office is contacted to determine if the remains are Native American and if an investigation into cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.



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### VI. Energy

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

#### Background

SB 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety. The *2019 Integrated Energy Policy Report* (CEC, 2020) is the most recent update. The State's energy system includes energy extraction, transport, conversion (such as combusting natural gas in power plants to generate electricity or producing gasoline and diesel from crude oil in refineries), and consumption for services (such as electricity for lighting, natural gas use in homes and buildings for space and water heating, pumping water to communities and crops, and gasoline and diesel to fuel cars and trucks), as well as electricity from out-of-State plants serving California.

California's electricity generation capacity is composed of multiple fuel sources, including coal, hydroelectric, natural gas, nuclear, oil, petroleum coke, waste heat, biomass, geothermal, solar photovoltaic, solar thermal, and wind. In 2019, the State system generated 200,475 gigawatt hours (GWh) of electrical power. Renewable resources accounted for approximately 34 percent of the State's electricity used in 2018 (CEC, 2020). In 2018, the State consumed approximately 15.5 billion gallons of ethanol and gasoline and approximately 3.7 billion gallons of diesel.

The City of American Canyon adopted an *Energy Efficiency Climate Action Plan (EECAP)* in 2013 (City of American Canyon, 2013). The *EECAP* provides feasible strategies to cost-effectively reduce energy use

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and energy-related GHG emissions both in municipal operations and in the community. Successful implementation of the plan will reduce utility bills, reduce water usage, increase home and building values and support local jobs.

### Discussion

- a) Construction of the proposed project would require consumption of gasoline and diesel fuel by construction worker vehicles travelling to and from the site, by haul trucks delivering construction materials and supplies to the site, and by onsite construction equipment. Once the construction is completed and the proposed project is occupied, gasoline and diesel fuel would continue to be consumed by motor vehicles from employees, deliveries and visitors. Electricity would be consumed for lighting, space and water heating, and landscape maintenance (i.e., electricity to control irrigation equipment), as well as the operation of typical office and warehouse equipment such as computers and electric forklifts.

The air quality modeling (CalEEMod) described in detail in the air quality section of this Initial Study, utilized standard fuel consumption estimates to determine that project construction activities would require approximately 42,500 gallons of diesel fuel.<sup>3</sup> For the finishing phase of construction, some electricity may be used (e.g., for power tools and work lighting). While this electricity usage cannot be quantified at this time, it is anticipated to be relatively minor compared to normal building operations. When not in use, electric equipment would be powered off to avoid unnecessary energy consumption. Natural gas would not be used during construction.

During construction of the proposed project, the building contractor would be required by Mitigation Measure AQ-2 (see air quality section) to limit idling time of equipment and vehicles to 5 minutes or less and maintain construction equipment and vehicles in optimal working condition. These requirements would benefit air quality and would also prevent wasteful or inefficient consumption of fuel during project construction. The building contractor would also be required to comply with the 2019 California Green Building Standards Code (codified in Title 24 of the California Code of Regulations (CCR)) Section 5.408 Construction Waste Reduction, Disposal and Recycling, which requires the recycling or salvaging for reuse of a minimum of 65 percent of the nonhazardous construction and demolition waste. Compliance with the 2019 California Green Building Standards Code would reduce consumption of energy associated with transport, processing, and disposal of solid waste at landfills.

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<sup>3</sup>Fuel usage is estimated using the CalEEMod output for CO<sub>2</sub>, and a kgCO<sub>2</sub>/gallon conversion factor, as cited in the *U.S. Energy Information Administration Voluntary Reporting of Greenhouse Gases Program* [https://www.eia.gov/environment/pdfpages/0608s\(2009\)index.php](https://www.eia.gov/environment/pdfpages/0608s(2009)index.php).

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The proposed project's electricity consumption was based upon actual electricity usage from two nearby and almost identical warehouse buildings and was estimated to be approximately 652,000 kilowatt-hours (kWh) of electricity per year (See Appendix B for details). The proposed project would not require the use of natural gas. The daily weekday vehicle trip rate of 1.69 weekday trips per 1,000 square feet was used to estimate mobile vehicle emissions (367 weekday vehicle trips). Based on air quality modeling (CalEEMod), the estimated annual vehicle miles traveled for the proposed project would be approximately 765,788 miles, requiring approximately 35,000 gallons of gasoline per year. Additional information regarding the energy calculation details are found in Appendix B.

The Project would not result in wasteful, inefficient, or unnecessary consumption of energy, because it would include several energy efficiency features. The building would be installed with a night-air cooling system to capture the cold air from outside during the night, which reduces the demand to use the Refrigeration system. This greatly reduces the building's electricity demand and is a unique trait of the Napa Valley climate to allow such a cooling process. The energy-saving climate feature is one of the reasons the project is located in the City of American Canyon.

Interior lighting would be designed to meet at minimum Title 24 standards; in addition, measures to increase efficiency and reduce excess energy usage inside the distribution center would be promoted. Features such as motion-sensor lighting would be installed for areas within the building. This reduces heat generated inside, further reducing the energy demands to cool the building. The most current PG&E incentives would be investigated and all attempts to incorporate them into the design would be made. Furthermore, the proposed project would be required to comply with the 2019 California Green Building Standards Code codified in Title 24. Therefore, this impact would be **less than significant**.

The proposed project would not conflict with or obstruct the City's EECAP. Therefore, the project would not conflict with a local plan for energy efficiency

- b) Because the CEC's *2019 Integrated Energy Policy Report* is intended to reduce GHG emissions by transitioning the State's energy portfolio to more renewable energy sources, it can also be viewed as a plan for renewable energy and energy efficiency on the Statewide level. As discussed in a) above, the proposed project would be required to comply with a variety of building and appliance energy efficiency standards, which would maximize its energy efficiency. Therefore, the project would not conflict with a State plan for energy efficiency. Therefore, this impact would be **less than significant**.

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### VII. Geology and Soils

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)				X
ii) Strong seismic ground shaking?		X		
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?		X		
c) Be located in a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		X		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?			X	

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## Background

A Geotechnical Investigation of the project site was prepared by Krazan and Associates, Inc. (Krazan 2019), included as Appendix D in this IS. Krazan's geologists performed a geotechnical reconnaissance of the site and explored the subsurface conditions by drilling 24 borings to depths ranging from about 10 to 50 feet, followed by laboratory testing. Results of the Krazan study are summarized in responses to specific checklist questions below. The full report is available for review at the City Community Development Department.

## Discussion

a.i, ii, iii, iv) The project site is located in a seismically active region associated with the San Andreas Fault System. It is in close proximity to several major faults including the West Napa, Green Valley, Hayward-Rogers Creek, Mount Diablo Thrust, Calaveras, and San Andreas Faults (see Table GEO-1). Data presented by the Working Group on California Earthquake Probabilities (2008) estimates the chance of one or more large earthquakes (Magnitude 6.7 or greater) in the San Francisco Bay region between 2007 and 2036 to be approximately 63 percent. Therefore, future seismic shaking should be anticipated at the site. It would be necessary to design and construct the proposed distribution center and parking lot in strict adherence with current standards for earthquake-resistant construction.

Although the site is in close proximity to several faults, it is not within the mapped California Earthquake Fault Zone or Alquist-Priolo Earthquake Fault Zone (Krazan 2019). It is approximately 3,200 feet west of the West Napa fault and 600 feet west of the California Earthquake Fault Zone for the West Napa Fault zone. Therefore, the risk of fault rupture at the site is low.

**Table GEO-1. Active Fault Proximity to the Project Site**

Fault	Direction from Site	Distance from Site (miles)
San Andreas	W	30
Hayward-Rogers Creek	W	11
Mt. Diablo Thrust	S	24
Green Valley	E	8
West Napa	W	0.6
Calaveras	NW	29

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For the West Napa Fault, the maximum credible earthquake on this fault is approximately 6.5 moment magnitude<sup>4</sup> based on empirical data and the length of the fault. The 2014 South Napa earthquake was located to the south of Napa and to the northwest of American Canyon on the West Napa Fault. It had a magnitude of 6.0 on the moment magnitude scale, and with a maximum Mercalli intensity of VIII (Severe); the event was the largest in the San Francisco Bay Area since the 1989 Loma Prieta earthquake.

Liquefaction is a 'liquefying' of the ground under strong seismic shaking. Liquefaction occurs in water-saturated, loose, granular soils (such as sandy soils). Because of active faults near the site and high acceleration the site may be subject to liquefaction hazards. Krazan evaluated the site's liquefaction potential and determined that soils above a depth of 9 feet below the ground surface have no liquefaction potential because of an absence of groundwater; soils below 9 feet below the ground surface were determined to have a slight to very low liquefaction potential due to predominantly dense/stiff top very dense/hard clayey soils. Total and differential seismic-induced ground settlement were calculated not to exceed 1 inch and 0.66-inch, respectively (Krazan 2019). This level of settlement would be addressed in the foundation design.

Lateral spreading (or lurching) is another type of ground failure that is generally caused by liquefaction. It involves movement of large surficial blocks of soil as a result of subsurface liquefaction. Lateral spreading can occur where continuous layers of liquefiable soil extend to a free face, such as a creek bank. There are no significant free faces in the vicinity of the site. Therefore, the potential for liquefaction-induced lateral spreading at the site is low.

Impacts associated with seismic shaking and associated ground failure issues can be reduced to a **less-than-significant** level by proper engineering and construction in accordance with the provisions of the Uniform Building Code and with other site stabilization, drainage, and, foundation design methods, as detailed in the Krazan report.

The project site is nearly flat, so landslide hazards would be minimal.

- b) The proposed project would require site stripping, grading and excavation/re-compaction of soils on the site and on the adjacent parcel to the south (for borrow pit construction and stockpile removal), therefore, construction of the proposed project could result in soil erosion or loss of topsoil. All construction practices would be in accordance with the State of California UBC Title 24, and measures to control soil erosion found in the general construction activities non-point source storm-water

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<sup>4</sup> "The **moment magnitude scale** (a successor to the Richter scale), is used by seismologists to compare the energy released by earthquakes. The constants in the equation are chosen so that estimates of moment magnitude roughly agree with estimates using other scales such as the Richter magnitude scale. One advantage of the moment magnitude scale is that, unlike other magnitude scales, it does not saturate at the upper end. For this reason, moment magnitude is now the most often used estimate of large earthquake magnitudes. The USGS does not use this scale for earthquakes with a magnitude of less than 3.5. (Wikipedia, 2015)

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permit (See Hydrology section of this IS). The RWQCB requires that Best Management Practices be incorporated into projects to reduce wind and water erosion (see Mitigation Measure GEO-2). This impact would be reduced to ***less than significant with mitigation***.

- c) See responses to items aii, iii, and iv, above.
- d) The upper soils on the site are alternating layers of silty clays, clayey sands, and sandy clays. The clayey soils have a moderate-to-high potential for expansion. Mitigation Measure GEO-3, below, would reduce hazards associated with potentially expansive soils to a level that is ***less than significant***.
- e) The project would not use septic tanks or other on-site land disposal systems. ***No impact*** would occur.
- f) A review of the University of California Museum of Paleontology (UCMP) on-line database indicates that very few paleontological specimens have been collected from Napa County. Only one specimen, an example of *Magnoliposida* (a flowering plant) was found in the general vicinity (City of Napa) approximately six miles north of the project area (UCMP 2018). In addition, according to the Geologic Map of the Cuttings Wharf 7.5' Quadrangle (Bezore et al. 2002), the project area is located solely within late Quaternary alluvial fan deposits. Quaternary alluvium is often devoid of fossil remains due to its high-energy depositional regime, and the subaerial nature of that deposition which generally precludes rapid burial. Organic remains are left exposed to the elements and degrade rapidly before they can be buried. Given the lack of previous paleontological discoveries in and near the project area and the low sensitivity of the landform, it is unlikely that significant paleontological remains or unique geological features would be encountered during project ground-disturbing activities. Therefore, this impact would be ***less than significant***.

### Mitigation Measures

***Mitigation Measure GEO-1:*** The applicant shall comply with all of the site preparation and foundation/building design recommendations in the Krazan & Associates Geotechnical Engineering Investigation for the site (Krazan 2019). The applicant's geotechnical consultant shall review and approve all geotechnical aspects of the project construction and grading plans (i.e., site preparation and grading, site drainage improvements, and design parameters for foundations, retaining walls, street pavement, and driveway) to ensure that their recommendations have been properly incorporated. The results of the plan review shall be summarized by the applicant's geotechnical engineer in a letter to be submitted to the City Engineer and Building Official for review and approval prior to the issuance of grading, encroachment, and building permits.

***Mitigation Measure GEO-2:*** Prior to issuance of building permits and site grading, the applicant/developer shall submit to the Public Works Department a Stormwater Pollution Prevention

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Plan using Best Management Practices to limit erosion and stormwater pollution during construction of the project. Because the project is constructed in phases, the project developer shall ensure that more permanent measures such as landscaping are used to prevent soil erosion. Measures would include but not be limited to:

- Hydroseeding and/or establishment of appropriate plant materials/landscaping
- Placement of straw wattles along slope contours and drainages
- Lining of drop inlets with filter fabric/geotextile
- Establishment of a single destination “wash-out” for construction subcontractors
- Use of siltation fences
- Use of sediment basins

***Mitigation Measure GEO-3:*** The applicant shall comply with all recommendations in the Krazan & Associates Geotechnical Engineering Investigation for the site (Krazan 2019). Krazan recommends that the upper 30 inches of soils within the slab-on-grade foundation site and adjacent flatwork areas consist of non-expansive engineered fill. As an alternative to the use of non-expansive soils, the upper 30 inches of soil supporting slab areas can consist of lime-treated clayey soils (Kazan 2019).



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### VIII. Greenhouse Gas Emissions

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

#### Background

The BAAQMD *CEQA Air Quality Guidelines* identify a project specific threshold of either 1,100 metric tons of carbon dioxide-equivalents<sup>5</sup> (CO<sub>2</sub>e) per year or 4.6 metric tons of CO<sub>2</sub>e per year per service population (i.e., the number of residents plus the number of employees associated with a new development) as resulting in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact. This analysis applies the 1,100 metric tons of CO<sub>2</sub>e per year significance criterion. Additional information regarding the existing GHG emissions setting is found in Appendix B.

#### Discussion

- a) GHG emissions are associated with proposed project construction activities, as well as long-term operations associated with energy usage, area sources (landscape maintenance), water/wastewater conveyance, solid waste collection, off-road mobile equipment (forklifts) and motor vehicles. GHG emissions calculation details are found in Appendix B.

The estimated construction GHG emissions are 431 metric tons of CO<sub>2</sub>e in 2021 (see Table GHG-1). The BAAQMD does not recommend a threshold for GHG emissions from construction, so this analysis (similar to many other analyses prepared in the Air Basin) amortizes the construction emissions over the lifetime of the proposed project (30 years) and adds amortized construction emissions to the

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<sup>5</sup> Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in “carbon dioxide-equivalents,” which present a weighted average based on each gas’s heat absorption (or “global warming”) potential.

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annual operational emissions. The 30-year amortized annual construction related GHG emissions would be approximately 14 metric tons of CO<sub>2</sub>e.

Table GHG-1 also provides the estimated operational GHG emissions that would be associated with the proposed project. The GHG emissions from construction (amortized) plus operational emissions would be approximately 590 metric tons of CO<sub>2</sub>e per year, which is below the BAAQMD threshold of 1,100 metric tons and thus, would be a ***less-than significant*** impact.

**Table GHG-1. Estimated Annual Construction Greenhouse Gas Emissions**

Emission Source	GHG CO <sub>2</sub> e Metric Tons Per Year
<b>Construction (30-year amortized)</b>	14
<b>Operations</b>	
Area	<1
Energy	87
Mobile	312
Off-Road Equipment (Forklifts)	176
Solid Waste	1
Water/Wastewater	<1
<b>Total Emissions (including Construction)</b>	<b>590</b>
<i>BAAQMD Significance Threshold</i>	1,100
<b>Potentially Significant?</b>	<b>No</b>

**Source:** CalEEMod Version 2016.3.2

- b) The City of American Canyon has not adopted a Climate Action Plan regarding the mandatory reduction of GHG emissions. The applicable plan, policy or regulation adopted for the purpose of reducing the GHG emissions is SB 32, which extends AB 32 and requires that GHG emissions are reduced 40% below the 1990 levels by 2030 (as written into Executive Order B-30-15), and other State regulations with post-2020 goals such as Executive Order S-3-05. The proposed project would result in a significant impact if it would be in conflict with the goals of these State regulations. The assumption is that SB 32 and associated regulations will be successful in reducing GHG emissions and reducing the cumulative GHG emissions Statewide to meet 2030 goals and post-2030 goals. The State has taken these measures, because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG emissions. The proposed project has been reviewed relative to SB 32 and the State's *Climate Change Scoping Plan* and it has been determined that the proposed project would not conflict with the goals of SB 32 and other State regulations. Therefore, the proposed project would result in a ***less-than-significant*** impact.

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### IX. Hazards and Hazardous Materials

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

#### Background

A Phase I environmental site assessment (ESA) was conducted by ATC in June 2018 (ATC 2018). That ESA

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summarized the previous ESA's on the property conducted by Environmental Science Associates (October 2004), Kleinfelder (July 2005; December 2009), and ICES (April 2010). Those previous reports focused on the larger 106-acre Couch Property, of which the proposed development site of about 10.39 acres. The 2018 ATC study also conducted additional site interviews, database reviews, and a new site reconnaissance. ATC subsequently prepared a Limited Phase II ESA to address potential impacts of underground storage tanks on the larger property (March 25, 2019). The results of the two ATC studies are summarized in responses to Item d), below.

### Discussion

- a, b) Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the project applicant would be required to implement a Stormwater Pollution Prevention Plan and a Spill Prevention Plan during construction activities minimize the hazard of contamination from construction materials. Therefore, ***no significant impacts*** would occur during construction activities.

The site was historically used for agricultural purposes and was occupied by a crop of planted Eucalyptus trees since sometime before circa late 1950's. Up until 2001 the site remained relatively unchanged. From 2001 until around 2012 the northwest corner of the site was used recreationally as a paintball field with the eucalyptus trees remaining in place. In 2012 the property was cleared and grubbed of the eucalyptus trees and shrubs.

The proposed project would not entail the large quantity storage or usage of hazardous materials on the site, other than cleaning supplies and materials that are typical of warehousing and distribution center land use. Small quantities of these hazardous materials would likely be used on site, including cleaning solvents (e.g., degreasers, paint thinners, and aerosol propellants), paints (both latex- and oil-based), acids and bases (which are included in many cleaners), disinfectants, chlorine (pool), and fertilizers. These substances would be containerized in small quantities within secure areas and would comply with all applicable storage, handling, usage, and disposal requirements. The potential risks posed by the use and storage of these hazardous materials are limited primarily to the immediate vicinity of the materials. With proper use they do not pose a health hazard to the people using them or occupants of the site. Any transport of these materials would be required to comply with various federal and state laws regarding hazardous materials transportation.

The City of American Canyon Fire Protection District and Napa County Sheriff would be the first responders in the event of a train derailment or spill. Fire and police are trained in how to address

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hazardous materials spills or fires and in emergency evacuation procedures in the event of a major emergency.

In summary, the proposed project would not create a significant hazard to the public or the environment from routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions. Impacts would be *less than significant*.

- c) The proposed project site is located approximately 0.8 miles from existing Napa Junction Elementary School. That school is proposed to be relocated to a new campus south of Commerce Court, approximately 0.34 miles southeast of the site. This new school is under construction and scheduled for occupancy in the fall of 2021<sup>6</sup>. Implementation of the proposed project would not result in emission of hazardous materials or wastes that would pose a serious health risk to school activities. There are no significant or extraordinary conditions associated with the project that would result in the release of hazardous or acutely hazardous materials, substances, or waste. The project would not result in emission of hazardous materials or wastes that would pose a serious health risk to activities at that new school. Therefore, the impact would be *less than significant*.
- d) Given the historical use of the property for agricultural purposes, it may have been subject to past use of pesticides, herbicides and fertilizers. If these materials were stored, used and applied according to industry standards, they should not have significantly impacted the property. Evidence of large-scale use or disposal of pesticides, herbicides or fertilizers, such as mixing tanks, chemical storage areas, sprayers, etc. was not observed on the property. Evidence for the overuse of these materials, such as stressed vegetation or soil discoloration was not observed. The property has not been used for agricultural purposes since sometime prior to 2012. Therefore, ATC concluded that the historical use of the property for agricultural purposes and any potential residual pesticides, herbicides and fertilizers in the property soil does not represent a recognized environmental condition to the property (ATC 2018).

The eastern portion of the overall Couch property, to the east of the project site, where some past contamination had been noted, is buffered from the project parcel by the paved extension of Commerce Court. and about 70 feet of utility easements. The ATC report noted that contaminant generating land uses operated in the past in the eucalyptus groves in the area of the Couch Property. These uses generate hazardous wastes including phosphine gas, solvent, benzene, chloroform and thionyl chloride. The ATC report did not note any stressed vegetation or soil staining at the 10-acre site of proposed development that would indicate a potential environmental condition from these chemicals of concern.

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<sup>6</sup> ([http://www.njes-nvusd-ca.schoolloop.com/cms/public\\_news?d=x&group\\_id=1295706633895&news\\_group\\_id=1295706633895&return\\_url=1302484043084](http://www.njes-nvusd-ca.schoolloop.com/cms/public_news?d=x&group_id=1295706633895&news_group_id=1295706633895&return_url=1302484043084))

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Hazardous gases (vapor) from subsurface sources, such as contaminated soil or groundwater can migrate into residential, commercial, and industrial buildings with any foundation type, including basements, crawlspaces, or slabs. ATC considered the nature and extent of on-site and nearby sources of potential subsurface vapor migration by evaluating the current and historical usage of the property, the construction type and history, the physical setting, and the potential sources of subsurface vapor migration through the review of regulatory agency database information. Based on the evaluation of the known or suspected releases of hazardous substances or petroleum products, distance from the property, potential pathways, and soil type, et al, no potential subsurface vapor migration sources were determined to represent a recognized environmental condition to the property.

The property is not listed within the Napa County Leaking Underground Storage Tank (LUST) database, and was not found in further database searches. However, a Site Assessment was performed by Napa County in 1990 and the presence of underground storage tanks (USTs) was recorded (ATC 2018). The USTs are on the Eastern 40-acre parcel owned by the Couch Family. The property was reported to have three USTs sitting on the top of the ground in 2004, in an assessment by Environmental Science Associates. A Phase II soil investigation was conducted by Kleinfelder in July 2005, but groundwater sampling was not administered. The soil investigation found no hazards in concentrations above 2005 environmental screening levels except chromium. The 130 milligrams per kilogram chromium concentration is within new standards set by February 2016 environmental screening levels and thus constitutes a historical recognized environmental concern (ATC 2018).

ATC subsequently conducted a limited phase II soil investigation (ATC March 25, 2019). Two borings were conducted and soils and groundwater were sampled for total petroleum hydrocarbons and volatile organic compounds, as well as a suite of heavy metals.

The results of the analysis of the soil samples indicated the following:

- Concentrations of TPH as gasoline, diesel, and motor oil were not detected above the laboratory method detection limits.
- Concentrations of VOCs were not detected above the laboratory method detection limits.
- Arsenic was detected at a maximum concentration of 11 milligrams per kilogram (mg/kg) which is above the ESL of 0.067 mg/kg. It should be noted that the maximum concentration of background levels of arsenic in California soils is 11 mg/kg as indicated in a study entitled Background Concentrations of Trace and Major Elements in California Soils by Bradford dated March 1996.
- The remaining metals were either detected at concentrations below the ESLs or below the laboratory method detection limits.

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The report concluded that in order for potential impacts from the Couch property to impact the subsurface of the subject property the following conditions would have to be satisfied:

1. The potential contaminants would have to be released and the release would have to migrate to the subsurface,
2. The impacts would then have to travel through the soil column to groundwater which is at a depth below 40 feet bgs,
3. The contaminants would then have to migrate in the groundwater in the direction of the subject property, and
4. The contaminants would have to arrive beneath the property in sufficient concentrations to be a concern.

Although a degree of uncertainty exists, ATC concluded that, based on these enumerated factors taken altogether, it is unlikely that contamination from the Couch property could impact the subject property. Therefore, this impact is considered *less than significant*.

- e) The Napa County Airport is located approximately 1.5 miles north of the project site. The Napa County Airport Land Use Commission establishes land use policies for areas located within the flight path surrounding Napa County airports. The Airport is a subdivision under the Public Works Department of Napa County. The Napa County Airport Land Use Compatibility Plan (Napa County 1991, revised 1999) identifies a series of zones with associated recommendations in relation to the proximity to aircraft over flight paths. This information is also included in the City of American Canyon General Plan. As indicated in the General Plan, most of the project site is located within Zone D of the Napa County Airport Land Use Compatibility Plan, with a small part of the southern end of the site potentially in Zone E. Zone D prohibits residential uses and requires overflight easements or deed notices for other uses. Most non-residential uses are normally acceptable in this zone, but large retail buildings, hotels/motels, restaurants, and assembly halls are normally not acceptable. The proposed wine distribution center would be an acceptable use with appropriate easement, which has been granted by the County. Zone E is less restrictive, and allows all of the uses allowed in Zone D, plus certain additional uses.

An Aviation and Hazard Easement Deed extending over the whole of the property was recorded by Napa County on July 26, 2019.

Therefore, the proposed project would not create aviation safety hazards for persons residing or working in the project vicinity, and impacts would be *less than significant*.

- f) The project is not located in the vicinity of a private airstrip. Therefore, there would *be no impact* associated with safety hazards from such airstrips.

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- g) The development of a wine distribution center on a 10.39-acre site on Commerce Court does not include any facilities or uses that would interfere with the City's emergency response or evacuation plans. The roadway extension has been developed per City standards. The project would be designed to facilitate emergency traffic through and around the site, in accordance with the City's Fire Protection District development standards. During construction, emergency routes would remain open and emergency response plans would not be affected. The impact would be ***less than significant***.
- h) The project site is surrounded by parcels containing industrial and warehouse development, and open spaces with ruderal (weedy) vegetation, with marshlands to the south and west. These areas are not subject to wildlands fires. Development of the proposed project would include the installation of fire suppression systems (e.g., fire hydrants, fire sprinklers, smoke detectors). These systems would be designed in accordance with the latest requirements of the California Fire Code and would be considered adequate to provide fire suppression to the project site.

There is a potential for the dry vegetation on this undeveloped site to catch fire during grading. Equipment could create sparks that would ignite vegetation. Standard construction practices, such as installation of spark arresters on equipment, would reduce the likelihood of fire to a ***less-than-significant*** level.

The American Canyon Fire Protection District would provide fire protection to the proposed project. The District indicated in an email that mitigation fees would cover needs for fire services or facilities to serve the proposed project (Weeks 2020). Therefore, the proposed project would not create or expose people or structures to significant wildland fire risks, and impacts would be ***less than significant***.



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### X. Hydrology and Water Quality

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?		X		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

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## Background

A Hydrology Report, and a Stormwater Control Plan were prepared for the proposed project by RSA+ (2019a; 2019b). The project site is relatively flat with gentle slopes draining toward the west. Runoff from the property flows over the surface of the site to the western property line, then continues westward, where is ultimately conveyed to the Napa River (RSA+ 2019a). Downstream, the Napa River discharges into the San Pablo Bay through the Napa- Sonoma Marsh.

## Discussion

a, c, e) Under Section 402 of the Clean Water Act, the U.S. EPA has established regulations through the National Pollution Discharge Elimination System (NPDES) Stormwater program to control Stormwater discharges, including those associated with construction activities. Authority for NPDES permitting has been delegated by the federal government to the California State Water Resources Control Board (SWRCB), which has nine regional boards; the San Francisco Bay Regional Water Quality Control Board (RWQCB) regulates water quality in the project area, which is in Napa County. The NPDES Stormwater permitting program regulates Stormwater quality from construction sites. The State Construction General Permit (CGP) requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and the use of appropriate best management practices (BMPs) for erosion control and spill prevention during construction. Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the CGP for Discharges of Stormwater Associated with Construction Activity (CGP Order 2009-0009DWQ).

Development of the proposed project would require clearing ruderal vegetation and grading of the approximately 10.39-acre proposed development site as well as clearing and excavation a major portion of the parcel to the south for soil stockpile transfer to the site, as well as for creation of a borrow pit to provide additional fills for the proposed project. In addition, a new distribution center building, and associated paved areas would be constructed; landscaping would be installed; and bioretention facilities would be created.

During construction activities there would be a potential for surface water to carry sediment from on-site erosion and small quantities of pollutants into the City's Stormwater system and local waterways. Soil erosion may occur on the project site and parcel to the south (soil stockpile and borrow pit areas) during construction. Small quantities of pollutants have the potential to be washed into the storm drainage system, ultimately entering the Napa River, thereby potentially degrading water quality.

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Construction of the proposed project also would require the use of gasoline- and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances would likely be utilized during construction. On-site portable toilets could leak or tip over and spill, releasing sanitary waste, bacteria, solids, nutrients, and pathogens. An accidental release of any of these substances could degrade the water quality of the surface water runoff and add additional sources of pollution into the drainage system.

The proposed project would exceed the NPDES one-acre threshold; therefore, the project proponents would be required to comply with the CGP. The project applicant would be required to develop and implement a SWPPP that identifies appropriate construction BMPs in order to minimize potential sedimentation or contamination of storm water runoff generated from the project site. The SWPPP would identify the risk level for erosion and sedimentation and how much monitoring of potential pollutants is required. Implementation of a SWPPP as required would ensure that the construction of the proposed project would not violate any water quality standards or waste discharge requirements and reduce potential impacts to a less-than-significant level, as described in Mitigation Measure HYD-1, below.

As required under State Water Resources Control Board Order No. 2013-001 DWQ, the City of American Canyon requires regulated projects, such as this one to prepare a Stormwater Management Program (NPDES Permit No. CAS 612007). As one element of the program, the City requires regulated projects to address post-construction stormwater quality. More specifically, the City of American Canyon requires regulated projects, such as this one, to prepare a Stormwater Control Plan (SWCP) in accordance with the Bay Area Stormwater Management Agencies Associated Post-Construction Manual. The SWPC must include post-construction stormwater treatment measures such as bio-retention facilities and source controlled BMPs. The SWMP must also address ongoing maintenance of those facilities.

The project site and adjacent soils stockpile and borrow area have no impervious surfaces. Development of the proposed project would increase impervious surface coverage on the project site through construction of the distribution center building, parking areas, internal roadways and driveways, and sidewalks. The increase in impervious surface coverage would create the potential for discharge of urban pollutants into downstream waterways. Leaks of fuel or lubricants, tire wear, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff

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transported to receiving waters. Runoff from the proposed landscaped areas may also contain residual pesticides and nutrients.

A Stormwater Control Plan has been prepared for the proposed project in accordance with the Bay Area Stormwater Management Agencies Association's (BAASMA) Post Construction Manual. The proposed project would incorporate low-impact development design strategies. An approximately 21,000 sq. ft. bioretention pond would be designed with biotreatment and constructed on the western side of project site (that would treat runoff from much of the project site as well as a small portion of Commerce Court). A pervious area would be installed along the east side of the proposed building, which would allow infiltration/treatment of additional runoff (RSA+ 2019b).

The proposed project's stormwater control and treatment system would result in a net decrease in peak stormwater (100-year, 24-hour storm event) runoff rates from the existing approximately 72.7 cubic feet per second (cfs) to approximately 58.6 cfs with the proposed project. Potential impacts related to compliance with post-construction runoff would be reduced to ***less-than-significant*** with implementation of Mitigation Measures HYD-2, HYD-3, HYD-4, and HYD-5, below, which assure proper design, construction, and long-term maintenance of the stormwater facilities.

The project proposes to use recycled water for landscape irrigation. Improper use or discharge of recycled water represents a threat to the quality of waters of the state and to human health and the environment. The City, as the purveyor of recycled water, is required to comply with the State Water Resources Control Board's (SWRCB) General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water. Coverage under the State's General Waste Discharge Requirements (WDRs) for Recycled Water Use (Water Quality Order 2009-006-DWQ) is limited to treated municipal wastewater for non-potable uses. The General Permit establishes requirements to manage recycled water for landscape irrigation uses in a manner that is protective of public health and the environment. The City is responsible for overseeing the recycled water system and compliance with specific BMPs set forth by the SWRCB which include implementation of operations and a management plan that provides for detection of leaks, and correction either within 72 hours of learning of a leak, or prior to the release of 1,000 gallons; proper design and operation of sprinkler heads; refraining from application during precipitation events; and management of any impoundment such that no discharge occurs unless the discharge is a result of a 25-year, 24-hour storm event or greater. In the event of an unauthorized discharge, the Executive Officer of the appropriate Regional Water Board shall be notified. In addition, as part of the site maintenance, the recycled water system is inspected monthly to verify there are no leaks

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or runoff from the landscaped area. The recycled water is managed by the City of American Canyon, and use of the recycled water by the proposed project would be a ***less-than-significant*** impact.

- b) The proposed project would be served with potable water supplied by the City of American Canyon, and no new groundwater wells or other groundwater supplies would be required. Therefore, the proposed project would not contribute to depletion of groundwater supplies. The project's on-site drainage systems would consist of a detention pond and a vegetated detention swale. These features of the development would contribute to replenishing the groundwater supply. Therefore, the development of the proposed project would not interfere with groundwater recharge. As such, impacts would be ***less than significant***.
- d) The Federal Emergency Management Agency's Flood Insurance Rate Map No. 06055C0617F, Panel 617 out of 650 indicates that the project site is not located within a 100-year flood hazard area and is in an area of minimal flood hazard. The project site is not located in a dam failure inundation zone, as depicted in the American Canyon General Plan (City of American Canyon 1994, as amended through January 2018). The project site is east of the Conn and Miliken Dams, Rector Reservoir, and Summit Reservoir inundation areas. The project site is not protected by any levees. These conditions preclude the possibility of the project site being inundated by floodwaters as a result of levee or dam failure. Seiches and tsunamis are seismically induced large waves of water. The project site is distant from any water bodies that could result in a seiche or tsunami. Similarly, mudflows are not a concern in this area of the City.

Therefore, the proposed project would have ***no impact*** to water quality from inundation by flooding, dam failure, seiche, tsunami or mudflow.

### Mitigation Measures

***Mitigation Measure HYD-1:*** Prior to the issuance of grading permits or building permits (whichever occurs first), the project applicant shall obtain coverage under the State Construction General Permit (NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Order 2009-0009 DWQ) by preparing a Stormwater Pollution Prevention Plan (SWPPP) and submitting it along with a notice of intent, to the San Francisco Bay RWQCB. The City of American Canyon shall confirm that the applicant has prepared a SWPPP and obtained coverage under the general permit prior to issuance of grading or building permits. The SWPPP shall identify a practical sequence for BMP implementation and maintenance, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP shall address both

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the project site and adjacent parcel where soils stockpiles would be removed and the borrow pit would be created to provide fill for the project site. The SWPPP shall include but not be limited to the following elements:

- Temporary erosion control measures shall be employed for disturbed areas.
- No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months. Cover disturbed areas with soil stabilizers, mulch, fiber rolls, or temporary vegetation.
- Sediment shall be retained on site by a system of sediment basins, traps, or other appropriate measures. Drop inlets shall be lined with filter fabric/geotextile.
- Discharge from the storm water system shall be diffused in such a way as to mimic existing overland flow conditions.
- The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains. This may include locating construction related equipment and processes that contain or generate pollutants in a secure area, away from storm drains and gutters, and wetlands; parking, fueling, and cleaning all vehicles and equipment in the secure area; designating concrete washout areas; and preventing or containing potential leakage or spilling from sanitary facilities.
- BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.
- In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.

**Mitigation Measure HYD-2:** Prior to the issuance of grading permits for the proposed project, the project applicant shall submit a Stormwater Control Plan to the City of American Canyon for review and approval. The Stormwater Control Plan shall identify pollution prevention measures and practices to prevent polluted runoff from leaving the project site and the soils stockpile and borrow pit areas on the parcel immediately south of the project site. The plan shall be implemented to the satisfaction of the City of American Canyon prior to building occupancy.

**Mitigation Measure HYD-3:** Prior to issuance of grading permits for the proposed project, the project applicant shall submit a final drainage plan as prepared by a qualified civil engineer to

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the City of American Canyon for review and approval. The approved plan shall be incorporated into the project design and constructed to the satisfaction of the City.

***Mitigation Measure HYD-4:*** The project sponsor (or successors-in-interest/owner) shall maintain in perpetuity the post-construction BMPs listed in the Stormwater Operations and Management Plan to be agreed upon with the City of American Canyon. The owner shall make changes or modifications to the BMPs to ensure peak performance. The owner shall be responsible for costs incurred in operating, maintaining, repairing, and replacing the BMPs. The owner shall conduct inspection and maintenance activities and complete annual reports.

***Mitigation Measure HYD-5:*** The proposed bio-retention basin shall be maintained on a regular basis by the project sponsor (or successors-in-interest). Inspections of the basin shall be conducted at least once a year between July 1st and September 1st. During the dry periods of the year when minor storm events are insufficient to fully transport sediment and debris, accumulations may occur in detention basins. Therefore, basin and storm water inlet maintenance shall be done prior to the rainy season and during other extended dry spells, which will reduce the concentration of sediment and debris that typically collects in the bottom of inlets during storms. An annual inspection and maintenance report shall be prepared by the property owner and submitted to the Public Works Director by October 15 of each year, at the property owner's expense.

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### XI. Land Use and Planning

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

#### Discussion

- a) The project site is undeveloped open land covered mostly with ruderal vegetation, with some small wetland areas. The project is bounded on the north by existing warehouse uses. To the west is an 11.23-acre parcel owned by the Couch Family, which remains unimproved with a eucalyptus grove; on the south is the under-construction Commerce 330 distribution Center building and, beyond that, the City-owned 24-acre Clarke Ranch West Open Space, which is partially covered eucalyptus trees, and includes horse-riding facilities operated by Spirit Horse Riding Center; to the east is a 64-foot wide City Public Access and Utility Easement; on each side of this 68-foot easement is a 5-foot-wide Public Utility Easement; to the east of these easements is a 40-acre parcel owned by the Couch Family including a mobile home and accessory structures, and a large commercial recreation facility (Paintball Jungle). Farther north on Commerce Blvd. are other warehouses similar to the proposed project. South of Eucalyptus Drive is a residential neighborhood. A public school is under construction just southeast of the site, to the south of the paintball center, at the northeast corner of Eucalyptus Drive and Wetlands Edge Road. The nearest established residential community is south of Commerce Court, which is not accessible by motor vehicle. Therefore, the project would have no potential to divide any such community and there would be *no impact*.
- b) The City's General Plan designates the site as Commercial Recreation (CR) and the Zoning Map indicates that the site as Recreation (REC). The General Plan describes typical permitted used in the



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CR land use category as: *Recreation vehicle parks, interpretative nature centers and conference facilities, and similar uses*. (General Plan Land Use Element, Land Use Schedule Table, p. 1-9). The City Attorney has reviewed the allowed uses in the Recreation zone (which includes the proposed Distribution Center use) and determined they are consistent with the Commercial Recreation Land Use in the General Plan (email from Jeff Ballantine, Contract Project Planner, City of American Canyon, to Richard Grassetti, GECO, August 8, 2018).

A Recreation Zoning District Code Amendment (Ordinance No. 2018-01) was adopted by the City Council on January 16, 2018. The Ordinance that was adopted was “to make winery uses more feasible”. The City’s Municipal Code, Chapter 19.15.020 identifies the Recreation District as an area for Wineries as a conditionally permitted use. The Zoning Ordinance defines “Winery” as including viticulture-related activities such as bottling, storage, logistics, distribution, wine packing, and wine-related services. Zoning Ordinance (No. 2018-01) was granted by the City Council on Dec. 19<sup>th</sup>, 2017, expanding the Zoning to “allow limited non-winery uses with a conditional use permit”. The project complies with the City’s Zoning Code standards, with approval of a minor variation to height standards to allow a 37-foot height.

The following City General Plan land use policies applicable to the project are noted below.

**Policy 1.2.2:** Establish as a priority the development of projects that are contiguous with and infill the existing pattern of development, avoiding leap-frog development, except for large scale master-planned projects that are linked to and planned to be extensions of existing development and for which infrastructure and services are in place or funded.

**Consistent:** The proposed project would be adjacent to, and become part of, the developed existing Green Island industrial/warehouse area. Therefore, the project would be generally consistent with this policy.

**Policy 1.3.4:** Limit the total additional new development that can be accommodated in the City and its Urban Limit Line to the following provided that the highway improvements stipulated by the Circulation Element are implemented. Industrial development within the City is limited to 1,560,195 sq. ft., and within the Urban Limit Line the limit would be 5,778,500 sq. ft.

**Policy 1.3.5** of the GP provides some flexibility in implementing Policy 1.3.4: Consider increases in development capacity when it can be demonstrated that additional transportation improvements have been implemented or are funded, or demands have been reduced (based on highway level of service and vehicle trips), and such increases are consistent with community needs and desires. (I 1.9 and I 1.10)

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**Consistent:** The project would contribute its fair share to traffic improvements that would assure that appropriate transportation improvements would be implemented. See Transportation/Traffic section of this IS for additional discussion.

**Policy 1.22.3:** 1.22.3 Permit development according to the following standards:

- a. Labor-intensive uses: a maximum floor area ratio of 0.5.
- b. Low labor uses (such as warehousing): a maximum floor area ratio of 0.7.

**Consistent:** The proposed project would have a floor area ratio of 0.48.

**Policy 1.22.4:** Require that development be designed to achieve a high level of quality and compatibility with existing uses including the consideration of the following:

1. architectural treatment of all building elevations;
2. use of extensive landscape along the primary street frontages and parking lots;  
and
3. enclosure of storage areas visible from principal highways (including Highway 29) and peripheral residential and commercial districts with decorative screening or other elements. (I 1.1, I 1.4-I 1.7, I 1.11, and I 1.14)

**Consistent:** The project includes architectural treatments consistent with nearby warehouse developments. It includes a landscape plan for the street frontage, site perimeter, and storage areas.

**Policy 1.27.1:** Require that development comply with the land use and development conditions stipulated in the Napa County Airport Land Use Plan (ALUP).

**Consistent:** The project site is located within ALUP Compatibility Zone D. The proposed project use (warehousing/distribution) would comply with the conditions of the ALUP. Therefore, the project would be consistent with this policy.

**Policy 1.27.2:** Review all applications for new development, expansion of existing uses, and re-use within Napa County Airport Compatibility Zones "A" through "E" for compliance with the appropriate use and development conditions.

**Consistent:** The proposed project site is mostly located within Zone D; a small part of the site may be in Zone E. Wine distribution uses are permitted in these zones. In addition, the applicant has obtained an Avigation Easement for the property. Therefore, the project would be consistent with this policy.

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**Policy 1.32.1:** Require adherence to the *Design and Development Principles* prescribed in the General Plan and the City's Design Review Guidelines, which shall be updated periodically.

**Consistent:** The project has been designed to adhere to the *Design and Development Principles* prescribed in the General Plan as well as the City's Design Review Guidelines. Therefore, the project would be consistent with this policy.

**Policy 1.32.2:** Require that development projects subject to discretionary review submit and implement a landscape plan.

**Consistent:** Landscaping would be provided throughout the parking lot areas and along project site boundaries. Therefore, the project would be consistent with this policy.

**Policy 1.32.4:** Require developers to incorporate mature and specimen trees and other significant vegetation, which may exist on a site into the design of a development project for that site.

**Consistent:** The project includes a landscaping plan, which includes trees and other plants. There are no mature or specimen trees on the project site that can be incorporated as part of the project.

**Policy 1.32.5:** Require the use of drought-tolerant species in landscape design in accordance with the provisions of the Water Conservation and Landscape Act.

**Consistent:** Vegetative species included in the project landscape plan are generally native to California and are drought-tolerant where appropriate. Therefore, the project would be consistent with this policy.

**Policy 1.32.6:** Require that commercial, industrial, and multi-family residential development incorporate adequate drought-conscious irrigation systems and maintain the health of the landscape.

**Consistent:** The proposed project would incorporate drought-conscious irrigation systems and maintain the health of the landscape consistent with Policy 1.32.6. Therefore, the project would be consistent with this policy.

**Policy 1.32.7:** Require that all commercial, industrial, multi-family, and common area landscape be adequately irrigated with automatic irrigation systems.

**Consistent:** The proposed project would include the use of automatic irrigation systems. Therefore, the project would be consistent with this policy.

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**Policy 1.32.8:** Promote the use of reclaimed water for the irrigation of public and private landscape, as available.

**Consistent:** The proposed project would include an on-site irrigation system that would use recycled irrigation water. Therefore, the project would be consistent with this policy.

**Policy 1.33.1:** Require that all structures be constructed in accordance with the requirements of the City's building and other pertinent codes and regulations; including new, adaptively reused, and renovated buildings.

**Consistent:** The proposed project would be constructed in accordance with the City's building and other pertinent codes. Therefore, implementation of the proposed project would be consistent with this policy.

**Policy 1.33.3:** Require that all development be designed to provide adequate space for access, parking, supporting functions, open space, and other pertinent elements.

**Consistent:** The project would provide sufficient space for access, parking, and open space consistent with Policy 1.33.1. Therefore, the project would be consistent with this policy.

**Policy 4.9.3:** Require that sufficient and secure bicycle parking be provided in all parking areas.

**Consistent:** Bicycle parking in excess of City requirements is provided as part of the project. Therefore, the project would be consistent with this policy.

**Policy 5.5:** In order to reduce light and glare, ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) is designed using City engineering standards and/or Best Management Practices to prevent artificial lighting from illuminating adjacent private property in residential neighborhoods and/or natural areas. If isolated areas are identified as having excessive spillover post construction, specific mitigations shall be implemented, e.g. installation of glare shields.

**Consistent:** The proposed project includes lights in the parking lot and on the building. The lighting has been designed to minimize spillover light, per City requirements. A lighting study has been prepared by the applicant's lighting engineers showing minimal spillover lighting.

**Policy 6.4.1:** Continue to implement an ordinance requiring built-in fire protection for most building types, including single- and multi-family residential, to:

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- minimize the potential for loss of life and property
- allow for the provision of a high level of fire protection services while reducing the needs for additional staff and equipment.

**Consistent:** The proposed project would be constructed to meet City and State fire code requirements. The proposed project would not require additional fire staff or equipment.

**Policy 6.9.2:** Require that landscaping in proximity to commercial, industrial, multi-family, and public structures be sited to allow for security surveillance.

**Consistent:** Landscaping would be planted in accordance with City standards to allow for security surveillance.

**Policy 11.2.9:** Require the utilization of site and architectural design features in conjunction with noise barriers to mitigate impacts on sensitive land uses. Design techniques capable of mitigating potential noise impacts include:

- Site Design
  - Using building setbacks and dedicating noise easements to increase the distance between the noise source and receiver;
  - Locating uses and orienting buildings that are compatible with higher noise levels adjacent to noise generators or in clusters to shield more noise-sensitive areas and uses;
  - Placing noise tolerant land uses, such as parking areas, between noise sources and receivers;
  - Using noise tolerant structures, such as garages or carports, to shield noise-sensitive areas;
  - Clustering office, commercial, or multiple family residential structures to reduce interior open space noise levels; and,
  - All truck docks and truck traffic noise on the north side facing away from south residential areas.

**Consistent:** The proposed project would incorporate design features to help mitigate noise impacts to nearby receptors (See Section XII, Noise).

### Napa County Airport

The Napa County Airport Land Use Commission regulates land use around the Napa County Airport by requiring compliance with the Napa County Airport Land Use Compatibility Plan (NCALUCP). The City of American Canyon's General Plan and Zoning Ordinance were found to be consistent with the

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NCALUCP. The project is consistent with the City's General Plan. The project site is located in Zones D and E of the Airport's land use compatibility map, which permit development of warehouse/distribution center uses. Please see a comprehensive discussion of this issue in response to Item VIII e), above.

The project has been designed consistent with all applicable City land use and planning documents adopted to avoid or mitigate an environmental effect, as discussed throughout this Initial Study. Therefore, the impact is *less than significant*.

- c) The project site is not located within the boundaries of a habitat conservation plan or a natural community conservation plan; therefore, the project would not conflict with any habitat plans and there would be *no impact*.

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### XII. Mineral Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

#### Discussion

- a, b) The project site is designated Commercial Recreation in the City's General Plan and consists of a vacant parcel. The site and adjacent borrow area site to the south are not identified in the City's General Plan as a site containing locally important mineral resources that would be of local, regional, or statewide importance; therefore, the project is not considered to have any impacts on mineral resources. The project does not propose to excavate the site for mineral resources; therefore, no impacts related to mineral resources would result from construction of the project. The project site does not contain any known mineral deposits or active mineral extraction operations. Therefore, there would be ***no impact*** to mineral resources.

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### XIII. Noise

Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project within the vicinity of a private airstrip, or within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

#### Background

##### *Existing Noise Levels and Sensitive Receptors*

Noise-sensitive receptors (land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise) include residential developments, schools, health care facilities, and libraries. Noise-sensitive receptors in the project vicinity include one residence about 1,000 feet east of the site (on the Couch property) as well as other single-family residences approximately 2,300 feet from the project site boundary (to the southeast). In addition, a new elementary school is under construction, with its nearest edge about 1,500 feet southeast of the project site.

To quantify existing ambient noise levels at the project site and surrounding area, one long-term (72-hour) and several short-term (10-minute) noise measurements were conducted at and near the project site. The long-term meter was placed on the row of eucalyptus trees at the northern project site boundary and measured existing 24-hour noise levels. The short-term measurements were conducted at several locations on the project site to measure traffic noise from Commerce Court and Highway 29, and noise from adjacent properties.

The main source of noise in the project vicinity is aircraft noise from Napa County Airport. Secondary noise sources included traffic on Commerce Court, construction noise and pedestrians flying drones in the project



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vicinity. The noise measurements are summarized in Table Noise-1, below. The Noise Appendix (Appendix E) includes noise measurement site locations, 24-hour noise plots and additional sound level data.

**Table Noise-1: Existing Noise Levels in the Project Area<sup>7</sup>**

Location	Time Period	Noise Levels (dB <sup>8</sup> )	Noise Sources
Site 1. North property line of the project site along Eucalyptus grove.	Tuesday August 4, 12:00 a.m. through Thursday August 6, 11:59 p.m., 2020  72-hour measurement	Hourly Leq <sup>9</sup> s ranged from: 44-54  Ldn <sup>10</sup> s: 53, 52, 52  Hourly Lmax <sup>11</sup> s ranged from: 44-76	Unattended noise measurements do not specifically identify noise sources
Site 1. North property line of the project site along Eucalyptus grove.	Monday August 3, 2020 11:47-11:57 a.m.	5-minute Leqs: 58, 45  5 minute Lmaxs: 75, 60	Jet overhead was 74 dB. Quieter noises included traffic, winds, & distant construction.
Site 2. North area of the project site.	Monday August 3, 2020 12:01-12:10 p.m.	5-minute Leqs: 43, 45  5 minute Lmaxs: 52, 60	Distant construction was 45 dB. Traffic on Commerce Blvd was 43 dB. Quieter noises included wind & birds.
Site 3. Northwest edge of the project site.	Monday August 3, 2020 12:14-12:24 p.m.	5-minute Leqs: 43, 42  5 minute Lmaxs: 54, 50	Drones flying in north area of the project site was 50 dB. Quieter noises included birds, wind & distant construction.
Site 4. Southeast edge of the project site.	Monday August 3, 2020 12:26-12:36 p.m.	5-minute Leqs: 41, 44  5 minute Lmaxs: 55, 57	Distant aircraft was 55 dB. Quieter noises birds, wind & distant construction.
Site 5. Western edge of the project site, 50 feet east of centerline of Commerce Court.	Monday August 3, 2020 11:21-11:31 a.m.	5-minute Leqs: 59, 52  5 minute Lmaxs: 75, 64	Large delivery trucks up to 65 dB. Quieter noises included distant construction & horns.

<sup>7</sup> Source: RCH Group, 2020

<sup>8</sup> A decibel (dB) is a unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level") measured in dB. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this report would be A-weighted unless noted otherwise.

<sup>9</sup> The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

<sup>10</sup> Ldn is the day-night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

<sup>11</sup> Lmax is the instantaneous maximum noise level for a specified period of time.

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### *Regulatory Framework*

The City of American Canyon addresses construction noise in Section 8.12.080 of the American Canyon Municipal Code. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties would not exceed those listed in Table Noise-2.

Policy 11.7.1 of the City's General Plan Noise Element limits construction activities adjacent to noise-sensitive uses to daylight hours between 6:30 a.m. and 8:00 p.m. The Noise Element also requires construction activities to employ practical techniques and practices that minimize the generation of adverse and/or excessive noise impacts on adjacent land uses (Policy 11.7.2). Policy 11.2.4 of The Noise Element requires new industrial, commercial and related land uses to demonstrate that they would not directly cause ambient noise levels to exceed an exterior Ldn of 65dB in areas containing housing, schools, health care facilities, or other noise-sensitive land uses.

**Table Noise-2: Noise Limits for Construction Activities (Lmax)**

Timeframe	Residential	Commercial	Industrial
Daily: 7 a.m. to 7 p.m.	75 dB	80 dB	85 dB
Daily: 7 p.m. to 7 a.m.	60 dB	65 dB	70 dB

Source: American Canyon Municipal Code, Chapter 8.12

### **Discussion**

- a) Construction and operational noise impacts are addressed below.

#### **Construction Noise**

The project could result in temporary, short-term increases in noise levels during project construction. Noise-sensitive receptors near the project site include single-family residences (to the southeast). Residents in those homes could experience short-term increases in noise levels during construction of the project.

The maximum noise levels for various types of construction equipment that would be required to build the project are provided in Table Noise-3, below. Maximum noise levels generated by construction equipment used for the project would range from 74 to 85 dB at a distance of 50 feet. Table Noise-4 shows the maximum estimated noise levels at the nearest residence that could occur during construction.

As shown in Table Noise-4, site preparation, grading and paving activities for the warehouse would take place approximately 1,000 feet from the nearest residence and would generate

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maximum noise levels of approximately 53 dB. Hauling of stockpile material and grading of the borrow area within the parcel to the south would take place approximately 500 feet from the nearest residence and would generate maximum noise levels of approximately 60 dB. The construction of the warehouse would take place approximately 1,100 feet from the nearest residence and would generate maximum noise levels of approximately 52 dB. Noise levels would be lower than these estimates most of the time, and maximum levels would only occur for a short duration when the construction equipment is at its closest point to the residence. Thus, noise levels resulting from project construction would be far below the 75 dB daytime noise limit for residential land uses contained in section 8.12.080 of the American Canyon Municipal Code.

**Table Noise-3: Typical Noise Levels from Construction Equipment (Lmax)**

Construction Equipment	Noise Level (dB, Lmax at 50 feet)
Auger Drill Rig	84
Backhoe	78
Bulldozer	82
Compactor (ground)	83
Crane	81
Excavator	81
Front End Loader	79
Generator	81
Grader	85
Man Lift	75
Paver	77
Roller	80
Scraper	84
Slurry Trenching Machine	80
Tractor	84
Welder/Torch	74

Source: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

**Table Noise-4: Estimated Maximum Construction Noise Level at Nearest Residence**

Construction Activity	Approximate Distance to Residence (feet)	Noise Level (dB, Lmax) at Residence
Site Preparation, grading, and paving	1,000	53
Material stockpile hauling and borrow area grading	500	60
Warehouse construction	1,100	52

Note: Noise levels were estimated using a reference noise level of 85 dB at 50 feet and attenuation rate of 7.5 dB per doubling of distance due to soft-site conditions at the project site.

Source: RCH Group 2020

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Project construction would require approximately 15 days of nighttime construction activities for pouring concrete for the building slab, wall panel, and additional large paving due to the scale of the pour requiring that the plant and trucks being dedicated to it for the pour duration. Previous nighttime concrete pours occurred for the construction of the SDG Commerce 330 Distribution Center building approximately 1,000 feet south of the project. The City received a few calls from the residents to the southeast (the neighborhood southeast of the Eucalyptus Drive/ Wetlands Edge Road intersection) inquiring about nighttime construction noise. Once the pre-notification of nighttime construction dates and times were submitted to the City, the residents to the southeast were notified and understood the nature and timing of nighttime construction and submitted no further noise inquiries (Doswald, 2020). The concrete pours would occur during nighttime hours starting no earlier than 12:00 a.m.

Concrete pouring activities would occur approximately 1,000 feet from the existing residence and 2,300 feet from the residential neighborhood. In addition, the existing SDG Commerce 330 Distribution Center building to the south would work as a noise barrier to the residences approximately 2,300 to the southeast. As shown in Table Noise-4, the maximum noise levels generated at 1,000 feet would be approximately 53 dB. This would be below the 60-dB nighttime noise limit for residential land uses contained in section 8.12.080 of the American Canyon Municipal Code. Similar to previous construction for the SDG Commerce 330 Distribution Center building, pre-notification of these night pour dates and times would be provided to the City of American Canyon and to residents that expressed concern with nighttime noise during the Commerce 330 Distribution Center construction.

A portion of the project construction activities could occur when the new elementary school that is currently under construction is in-session. Project construction activities would be limited to the project site (1,500 feet away) when school is in-session during Fall 2021 and would not exceed any noise standards.

The implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce potentially significant impacts from temporary construction noise to *less than significant*.

### Operational Noise

Operational noise from the project would include automobile and truck traffic travel to and from the site, loading dock activities, and parking lot activities. All truck and automobile activity would be on the north side of the building, so that the building would shield residential areas to the south from that noise. The warehouse building's cooling system would bring in cool night air with intake louvers and fans. Cooling equipment would be located greater than 1,000 feet from the nearest residence to

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the southeast and the noise from the operation of mechanical equipment would not be audible at the residence over ambient noise levels in the project vicinity.

Noise from parking lot activities would occur at the project site intermittently when warehouse employees arrive at the beginning of a shift and leave at the end of a shift. Representative parking activities such as employees conversing and doors slamming generate maximum noise levels of 60-70 dB at 50 feet (LSA Associates, 2012). The project includes parking spaces on the north side of the project. Parking spaces would be approximately 1,400 feet from the nearest residence to the east and, given this distance, parking lot noise would attenuate to a level below ambient noise levels before reaching the nearest residence.

The loudest noise generated from project operations would be traffic noise from trucks traveling to and from the warehouse as well as loading and unloading at the project site. Trucks would travel between the site and Highway 29 via Commerce Court and Green Island Road. The existing average traffic noise levels measured at Commerce Court (Site 5) were 52 to 59 dB Leq. Typically, traffic volumes need to double in order to result in a perceptible change in noise levels (i.e., 3-5 dB). The project is estimated to generate approximately 367 trips per day during weekdays with 35 AM peak-hour trips and 28 PM peak-hour trips, which would be less than one trip per minute during the peak hour traffic (GHD, 2020). Project traffic would not result in a doubling of traffic and would have a less than 3 dB increase and would have a minimal effect upon ambient noise levels in the project vicinity.

Loading dock activities would include heavy trucks stopping (infrequent air brakes), backing into the loading docks (back up alarms), and pulling out of the loading docks (revving engines). The trucks would be unloaded from the inside of the warehouse and most of the unloading noise would be contained within the building and truck trailer. Noise would occur periodically for several minutes at a time during each delivery/pickup at the warehouse.

The loading docks would be located on the north side of the warehouse building. At the nearest residence (to the southeast), noise levels from the project's loading dock and semi-truck movements would be far below ambient noise levels due to the large distance between source and receptor (approximately 1,400 feet) and additional shielding from the warehouse building and residential noise barrier. In addition, interior noise levels would be approximately 25 dB less inside the residence (Bollard, 2005; Bum, 1994).

Noise from project operation would not exceed the 65 dB Ldn exterior noise standard for residential land uses contained in the City of American Canyon General Plan at the nearest residence. Operational noise generated by the project would be ***less than significant***.

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- b) Construction operations have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. The ground vibration levels associated with various types of construction equipment are summarized in Table 4 of the Noise Appendix. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels.

At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. For most structures, a peak particle velocity (ppv) threshold of 0.5 inch per second or less is sufficient to avoid structural damage. The Federal Transit Administration recommends a threshold of 0.5 ppv for residential and commercial structures, 0.25 ppv for historic buildings and archaeological sites, and 0.2 ppv for non-engineered timber and masonry building (FTA 2006).

The project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration (i.e., pile drivers). Project construction would involve the use of a roller and a bulldozer, which could produce vibration levels of 0.210 and 0.089 ppv at 25 feet. Ground vibration generated by construction operations would be primarily associated with on-site trucks and excavation equipment and would result in vibration levels of less than 0.1 ppv at 25 feet. Construction activities would occur as close as approximately 1,000 feet from the nearest structure and the predicted vibration levels at the nearest structure would not exceed the 0.5 ppv threshold for residential and commercial structures. Therefore, vibrational impacts would be ***less than significant***.

- c) The project site is not located within the vicinity of a private airstrip. There are no private airstrips located in the City of American Canyon or near the city limits. The project site is located in Zone D of the Napa County Airport Land Use Compatibility Plan. Warehousing is listed in the American Canyon General Plan Noise Element as one of the uses that is normally acceptable in this zone. The project would not exceed the maximum density specified in the General Plan for Zone D and would be consistent with the land use designation in the Airport Land Use Plan and the General Plan's airport vicinity land use compatibility criteria. The project would not expose people working on the project site to excessive noise levels. This impact would be considered ***less than significant***.

### Mitigation Measures

***Mitigation Measure NOISE-1:*** Construction activities shall be limited to daylight hours between 7:00 a.m. and 7:00 p.m., except for required nighttime construction for concrete pours onsite that would comply with the City of American Canyon's Noise limits for construction activities. All

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property owners within 300 feet of the site and all residents who have expressed concern over nighttime construction noise during construction of the Commerce 330 project, or otherwise have requested notification regarding project construction, also shall be notified by the applicant. The City also shall be pre-notified of nighttime construction.

***Mitigation Measure NOISE-2:*** All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

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### XIV. Population and Housing

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X

#### Discussion

- a) The proposed warehouse development would not directly increase the population because there is no housing component, but it would introduce new businesses to the area. As part of the Commerce 330 project, infrastructure at the site was expanded. This infrastructure includes Commerce Court, which is an approximately 1100-foot-long paved roadway extension and widening of an existing rock-surfaced road, water and sewer main tie-ins, a sewer lift station, gas line extension, storm drainage facilities, and recycled water service. These improvements serve the proposed project, the Commerce 330 project, and, if developed in the future, the intervening parcel. The project could induce similar warehouse development on the remaining undeveloped parcel between it and the Commerce 330 development. However, the number of new employees at that facility would be similar to the project's employment (32 full-time employees and up to 18 part-time employees). Therefore, this impact would be considered *less than significant*.
- b, c) The project site is vacant and development of the proposed project would not displace existing housing or people. Therefore, there would be *no impact* associated with displacements.



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### XV. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?				X
e) Other public facilities?				X

#### Discussion

- a) As a light industrial/warehouse/distribution center development, the proposed project would not directly increase the residential population of the City of American Canyon. The General Plan for the City evaluated impacts related to increased industrial development (City of American Canyon. 1994, as amended through June 2020).

The American Canyon Fire Protection District (ACFPD) provides fire protection and emergency medical services for the project site. The ACFPD station is located at 911 Donaldson Way East, approximately 3 miles driving distance from the project site. The ACFPD's goal is to respond to 90 percent of their calls in five minutes or less. The response time from this fire station is around five minutes, but may be longer depending on traffic and other variables. In 2019, the ACFPD responded to 72 incidents in the Green Island Industrial area. In 30 percent of the incidents, response time of the first fire vehicle was within five minutes to this area. Therefore, the proposed development may exceed the District's target response time.

The City provides fire service and facilities through two different fees. The first fee, a Fire Mitigation Fee is a one-time assessment of new development, which is \$0.5474 per square foot for industrial properties. The second fee is the Fire Service Fee, which is an annual assessment for each parcel based on a formula which includes structure construction type, the fire flow area (square feet), proximity of other structures, the type of occupancy, and the presence of fire protection devices. The ACFPD may need additional resources to address increased call volume and fire flow needed for the proposed project in the form of additional facilities, apparatus, and staffing. With payment of the required Fire Service Fee, this impact would be reduced to a *less-than-significant* level (email from Chief Glen Weeks, July 23, 2020).

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- b) The City of American Canyon contracts with the Napa County Sheriff's Office for staffing the American Canyon Police Department to provide police services. The California Highway Patrol is responsible for traffic related enforcement. The police headquarters are located at 911 Donaldson Way East, which is the same location as the fire district, approximately 2.1 miles from the project site. The Police Department has a force of 24 full-time sworn officers, two police technicians, and an administrative clerk. Additionally, the Napa County Sheriff's Office investigations Bureau has a Lieutenant, a Sergeant, and 7 Detectives. These Detectives carry a significant ACPD case load for follow-up investigations. (City of American Canyon Police Department 2019 Annual Report).

Staff and equipment required to provide service to the proposed project would depend on the occupants of the building. The Police Department generally does not require additional police personnel for warehouse projects. Such businesses typically provide some self-monitoring, such as video cameras in parking lots, which reduces police calls. The applicant would be responsible for mitigation/impact fees for the police station in accordance with the City of American Canyon's Mitigation Impact Fee schedule. With payment of the Mitigation Fee, the project would result in a ***less-than-significant impact*** on the City's police services.

- c) The City of American Canyon is within the Napa Valley Unified School District (NVUSD). The proposed project would not affect schools, parks or other public facilities because this warehouse project would not directly increase the population. However, industrial developments in the City of American Canyon are required to pay school fees and a Civic Facilities Fee, in accordance with the City's Master Fee Schedule. With payment of the mitigation fees this potential impact would ***be less than significant***.
- d) The proposed industrial project would not result in an increase in residents and therefore, would not increase demand for any parks facilities. Pursuant to the City's General Plan Policy 7.1.1, the City has a minimum parkland standard of 5.0 acres per 1,000 residents. The project would not displace recreational facilities nor would construction of the project increase use of existing public recreation facilities. Therefore, the project would have ***no impacts*** to parks and recreation facilities.
- e) No other public facilities would be required by the proposed project. Therefore, the project would have ***no impacts*** to any such facilities.

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### XVI. Recreation

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

#### Discussion

- a, b) The proposed distribution center project would not result in demand for any parks facilities and does not include any such facilities. The project would not displace recreational facilities nor would construction of the project increase use of existing public recreation facilities. The project would be on land designated for recreation, but would not affect any such uses or facilities. Therefore the project would have ***no impact*** to recreational facilities.

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### XVII. Transportation/Traffic.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit roadways, pedestrian and bicycle facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?				X
c) Substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X

#### Background

A traffic impact analysis (TIA) was conducted for the project by GHD (May 8, 2020), included as Appendix F to this IS. This study builds on a recent trip generation comparison performed by GHD which evaluated traditional “warehouse” development and specialized wine warehouse sites within the same geographic area of American Canyon.<sup>12</sup> The TIA addressed the following transportation components:

- Quantification of updated daily and peak hour trip generation rates as well as trip distribution associated with proposed wine warehouse uses;
- Existing and future daily and peak hour roadway and intersection operations;
- Right-turn lane analysis for the northbound right-turn movement from Commerce Boulevard onto Green Island Road;
- Traffic signal warrant analysis for the Green Island Road/Commerce Boulevard intersection.

The following study intersection was identified and analyzed for this project:

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<sup>12</sup> GHD, Trip Generation Comparison Development Site Repurpose; Green Island Wine Warehouse, Design memorandum to Mr. Neil Thompson (Stravinski Development Group) from Mr. Kamesh Vedula (GHD), September 27, 2018.

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- Green Island Road/Commerce Boulevard—All-Way-Stop-Control

Consistent with previous transportation analyses conducted for the proposed project and City direction the following traffic scenarios were analyzed for this intersection:

- Existing Conditions
- Existing Plus Approved
- Existing Plus Approved Plus Project Conditions
- Cumulative (No Project) Conditions
- Cumulative Plus Project Conditions

Existing traffic volumes for this analysis are based on daily and peak hour traffic volume data collected during the first week of October 2018 at the Green Island Road/Commerce Boulevard intersection as well as on Green Island Road east and west of Commerce Boulevard and on Commerce Boulevard north south of Green Island Road.

The AM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume over four consecutive 15-minute count periods) counted between 7:00 am and 9:00 am on a typical weekday. The PM peak hour is defined as the one-hour of peak traffic flow counted between 4:00 pm and 6:00 pm on a typical weekday. The peak hours chosen within the study coincide with the peak commute hour at which time the roadways typically experience maximum traffic.

As part of the overall traffic data collection effort, the heavy vehicles (trucks) traffic was included in the field data collection. Given the industrial/light industrial nature of the area truck traffic can make between 20-30% of traffic volumes on Green Island Road or Commerce Boulevard depending on the time of day and delivery patterns.

The Green Island Road/Commerce Boulevard intersection is operating at acceptable LOS during both peak hours (LOS A and B in AM and PM Peak Hours, respectively).

An updated Vehicle Miles Traveled (VMT) analysis was conducted for the project by GHD (GHD March 2021, see Traffic Appendix). GHD reviewed available literature, guidance, and documentation from Napa Valley Transportation Authority, the City of American Canyon, and other relevant sources to identify any draft or advisory VMT baseline estimates and/or threshold recommendations. Absent adopted or guiding thresholds, GHD presumed a reduction of 15% from baseline work-based VMT, consistent with OPR guidance for work-based projects. Baseline VMT is established utilizing journey-to-work data and trip lengths from available data sources. The site is undeveloped so generates no VMT at the present time.

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### Discussion

- a) Although CEQA no longer considers traffic congestion, by itself, to be a potentially significant impact, the City of American Canyon established the following guidelines for intersection operation. Specifically, a project-related or cumulative traffic impact is considered to be significant if the proposed project:

*“Causes the existing baseline level of service to degrade to worse than LOS D (LOS E at American Canyon Road/SR 29) at any intersection as stipulated in the City’s General Plan, Circulation Element.”*

### ***Trip Generation and Distribution***

Consistent with previous transportation analyses conducted for wine warehouse and storage facilities in the American Canyon area; daily and peak hour trip generation has been based on observed daily and peak-hour traffic volumes at six (6) different wine warehouse buildings in American Canyon located on Mezzetta Court, Airpark Road, Tower Road, Commerce Boulevard, Hanna Drive, and Lombard Drive.<sup>13</sup> From this trip generation analysis an average daily trip rate of 1.69 trips/1,000 square feet of wine warehouse was developed using multiple day 24-hour driveway count data at the six facilities.

The AM and PM peak hour trip generation recorded for the six warehouse-wine storage sites tends to correlate with the size of the facility. This trend is evidenced by the larger Commerce Boulevard and Hanna Drive facilities generating higher AM and PM peak hour trips than the remaining four sites that generate fewer peak hour trips (under 400 ksf). These peak hour trip characteristics of the warehouse-wine storage facilities are also consistent with previous transportation analyses that evaluated the daily trip generation of the sites (establishing a daily rate of 1.69 trips/ksf). In addition, the trip generation surveys of the six sites also found that the facilities tend to generate a greater number of vehicle/truck trips during the AM peak period. This is due primarily to the majority of employees arriving on-site during this morning period as well as a greater number of truck deliveries to/from the facilities. The PM peak period is more dispersed relative to site trip generation with many employees leaving at different times prior to and in between the 4:00-6:00 p.m. window and fewer truck deliveries occurring during this period based on field observations.

The average AM peak hour trip generation rates for the two-day counts were 0.14 trips/ksf and 0.18 trip/ksf, respectively. The resulting AM peak hour trip rate for wine warehouse/storage facilities is 0.16 trips/ksf. During the PM peak-hour the average rates for the two-day counts were 0.12 trips/ksf

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<sup>13</sup> Omni-Means, Ltd., Trip Generation Rates--Green Island Wine Warehouse, Memorandum to Mr. Jason Holley, P.E. (City of American Canyon) from Mr. Kamesh Vedula, P.E., Omni-Means (now GHD), June 1, 2016.

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and 0.13 trips/ksf resulting in an overall average PM peak-hour rate of 0.125 trips/ksf. Combined with the previously established daily trip rate of 1.69 trips/ksf the proposed project's daily trip generation would be 367 trips, with 35 AM peak-hour trips (21 in and 14 out) and 28 PM peak-hour trips (10 in and 18 out).

Overall project distribution has been based on existing peak hour traffic flow volumes at the Green Island Road/Commerce Boulevard intersection, vehicle and truck access to/from State Route 29, and local circulation patterns that access Green Island Road from the east and west. Additionally, northbound left traffic based on General Plan volumes do not appear to increase for the Northbound Left from Commerce Boulevard to Green Island Road. Based on these factors, it is estimated that 100% of the vehicle/truck traffic would be to/from the east on Green Island Road (to Commerce Boulevard).

### ***Existing Plus Approved Conditions***

The GHD report evaluated LOS for the intersection of Commerce Boulevard and Green Island Road for existing plus approved projects, including the Commerce 330 distribution center. That report projected a small increase in delay with no change in LOS in either the AM peak hour (LOS A) or PM peak hour (LOS B). The intersection would continue to operate acceptably.

### ***Existing Plus Approved Plus Project Conditions***

The GHD report evaluated LOS for the intersection of Commerce Boulevard and Green Island Road for existing plus approved projects plus the proposed project. That report projected a small increase in delay with a reduction in the AM peak hour from LOS A to LOS B. There was no change in the PM peak hour (LOS B). The intersection would continue to operate acceptably.

### ***Cumulative Conditions with Project***

The GHD report evaluated LOS for the intersection of Commerce and Green Island Road for cumulative projects plus the proposed project. That report projected a reduction in the AM peak hour to LOS C. The PM peak-hour LOS would decline from LOS B to LOS D. These would be the same with both cumulative baseline conditions and cumulative-plus-project conditions. The City's target LOS is D, so the intersection would continue to operate acceptably.

### ***Signal Warrant Analysis***

The signal warrants were evaluated for Existing Plus Approved Development Trips (Without Project) and Existing Plus Approved Development Plus Project Trips Conditions.

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Three warrants are based on vehicle volumes and none of the three are met for Existing Plus Approved Development or Existing Plus Approved Development Plus Project volumes. These include “8-hour volumes” (Warrant 1), “4-hour volumes” (Warrant 2), and “peak hour volumes” (Warrant 3). The multi-hour approach volumes at the Green Island Road/Commerce Boulevard intersection do not sustain the minimum volumes for signalization nor do the peak AM and PM periods.

The warrant for pedestrian crossing volumes (Warrant 4) was also applied to the study intersection. Although there is a pedestrian sidewalk on the north side of Green Island Road that extends from Commerce Boulevard west to Mezzetta Court and continues north on Green Island Road, there are no pedestrian crosswalks at this intersection. At the Green Island Road/Commerce Boulevard intersection during the AM and PM peak periods a maximum of two pedestrians were observed and only one pedestrian crossed north-south on Green Island Road. Therefore, no pedestrian warrants are met at this time.

The crash experience warrant (Warrant 7) was evaluated for the Green Island Road/Commerce Boulevard intersection. The crash history was obtained from the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) for the last three calendar years (2017-2019). The crash experience warrant requires at least five collisions within a twelve-month period at the intersection correctable by a traffic signal (or a combination of volume/pedestrian conditions). There was one recorded collision over the previous three-year period which occurred (in 2019). It was described as a head-on collision between an eastbound vehicle proceeding straight and a southbound left-turning vehicle, and consisted of property damage only. The lack of a significant crash history indicates that vehicle-to-vehicle conflicts are not an immediate cause for concern at this location. Additionally, the lack of significant pedestrian and bicyclist volumes at this location does not warrant signalization for safety reasons.

The forecast Cumulative No Project and Cumulative Plus Project peak hour volumes were applied to the peak-hour volume warrant for signalization (Warrant #3). The peak hour warrant consists of two parts (Part A and Part B); either one may be satisfied. Part A consists of three sub-parts which are based on vehicle delays in proportion to the intersection volumes. Part B is based solely on volume threshold levels. Part A of the peak hour warrant is met for both cumulative without project and cumulative with project conditions. Part B is not met for cumulative without project conditions nor cumulative plus project conditions.

Specifically, under cumulative without project conditions Part A of the peak hour warrant is met during the PM peak hour. The combination of PM peak hour delays and volumes is satisfied for all 3 parts of Part A. However, the AM peak hour is not met. Part B is not met for either the AM or PM peak hours, as the volumes are lower than the required threshold volumes.



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Under cumulative plus project conditions, the findings are the same as without project conditions. The Part A warrant is met for all three parts during the PM peak hour. (During the AM peak hour, two out of the three sub-parts of Part A are met, but the vehicle delay is less than the required threshold level.) The Part B warrant is not met for either AM or PM peak hours, as volumes with the project remain less than the required threshold levels.

### ***Right-Turn Lane Warrant Analysis***

The northbound Commerce Boulevard approach to the Green Island Road intersection has been evaluated to assess whether the number of right-turn movements warrant an exclusive right-turn lane. Based on the Existing AM and PM turning movement count data at the intersection, almost all turning movements from northbound Commerce Boulevard onto Green Island road are right-turn movements. For existing plus approved development conditions without the project, 49 out of 57 northbound approach volumes are right-turns during the AM peak hour and 195 out of 207 approach volumes are right-turns during the PM peak hour. With proposed project traffic added, these movements are calculated to increase to 63 AM right-turns and 213 PM right-turns (see Appendices, Right-Turn Lane Warrants).

Based on the Transportation Research Board (TRB) Report 279 and AASHTO turn-lane requirements, a northbound right-turn lane is warranted at the intersection during the PM peak hour for existing plus approved conditions without the project and with the added project trips. Mitigation TRA-1, which recommends installation of a separate right-turn lane on northbound Commerce Boulevard at Green Island Road; overall intersection LOS would improve under Existing Plus Project and Cumulative Plus Project conditions during the PM peak hour (worst case). Therefore all intersection impacts would be reduced to a ***less-than-significant level with mitigation***.

- b) As noted above, an updated VMT analysis was completed for the project to determine consistency with CEQA Guidelines Section 15064.3, subdivision (b), which requires a 15% reduction in VMT compared with current regional VMT generation for similar uses (GHD, February 11, 2021). This updated analysis is included as part of Appendix F in this IS. GHD reviewed its analytical basis for establishing average trip lengths in Napa County and for the Project Area, and in turn the basis for establishing a trip length baseline and threshold (15% below baseline) and the basis for establishing an average commute length for the proposed Project. Upon further review of data provided by the applicant, indicating a roughly 11-mile one-way commute length, GHD revisited the available sources and found compelling evidence for using an average of three data sources (Streetlight Data, Census Longitudinal Employer-Household Dynamics, and the California Statewide Travel Demand Model). This additional analysis and supporting evidence for using an average of the available data sources, is provided in GHD's updated memorandum (Section 3),

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which is included in the Traffic Appendices. Based on the refined analysis, the proposed Project's net VMT over the calculated threshold level was determined to be 729 daily VMT. The VMT analysis determined that completing the bike path from the current terminus at 330 Commerce Court, to connect with Eucalyptus Drive and Wetlands Edge Road, would achieve a reduction of 733 daily VMT, and thus reduce this impact to a ***less-than-significant level with mitigation***. The bike path extension is described in Mitigation Measure TRA-2, below.

As summarized in the Project Description, the project also would include TDM features that are likely to result in reduced VMT per employee once operational. These TDM features were not quantified as part of the VMT analysis, above, but would serve to further reduce the number of individual commute trips generated by the project site, and to encourage commute modes other than single-occupancy vehicle trips. The TDM features included as part of the project are commensurate with measures included in the California Air Pollution Control Officers Association (CAPCOA) publication *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA, 2010). Specifically, the Project includes measures consistent with the "TRT-1: Implement Commute Trip Reduction Program – Voluntary" mitigation measure category in the CAPCOA report. The project would provide:

- Carpooling encouragement;
- Ride-matching assistance;
- Preferential carpool parking;
- Designated transportation coordinator;
- Vanpool assistance; and,
- Bicycle end-trip facilities (including indoor storage).

The provision of these measures is documented to reduce employee VMT by an additional 1% to 6.2%.

- c) The Napa County Airport is located approximately one mile northwest of the project site. The Napa County Airport Land Use Commission establishes land use policies for areas located within the flight path surrounding Napa County airports. The Airport is a subdivision under the Public Works Department of Napa County. The Napa County Airport Land Use Compatibility Plan (ALUCP) (Napa County 1991, revised 1999) identifies a series of zones with associated recommendations in relation to the proximity to aircraft over-flight paths. This information is also included in the City of American Canyon General Plan. As indicated in the ALUCP, most of the project site is located within Zone D of the Napa County Airport Land Use Compatibility Plan. Zone D prohibits residential uses and requires overflight easements or deed notices for other uses. Most non-residential uses are normally acceptable in this zone, but large retail buildings, hotels/motels, restaurants, and assembly halls are

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normally not acceptable. The proposed wine warehouse would be an acceptable use with appropriate easements. A small portion of the site may be in Zone E, which is less restrictive than Zone D, and would allow the proposed project use.

An Avigation and Hazard Easement Deed extending over the whole of the property has been approved by the Napa County Board of Supervisors.

Therefore, the proposed project would not create aviation safety hazards for air traffic. Impacts would be *less than significant*.

- d, e) The project circulation plan complies with standard traffic design standards and would not present any traffic hazards. The project's location on Commerce Court assures that traffic into and out of the site would not conflict with any other traffic movements. Internal circulation within the proposed project's parking and loading dock areas would consist of two-way aisles. Parking is proposed along the drive aisles at 90-degree angles. This design allows for efficient two-way circulation on all aisles. A truck turn-around area is included in the internal circulation plan. The project design does not include any features that would create a hazardous condition. A sidewalk exists along the project site's Commerce Court frontage. Impacts of the proposed project would be *less than significant*.

The circulation plan has been designed to allow 40-foot fire trucks to access all sides of the building. The access point to the project site from Commerce Court would be a minimum of 30 feet wide, which would provide sufficient width for large emergency vehicles (e.g., fire engines).

A total of 134 car and 21 truck dock parking spaces will be provided for the building. Of these parking stalls, 6 will be designated for handicap access with 2 stalls designated for van accessibility and 4 stalls for Clean Air Vehicle parking. The building will have a total of 21 truck loading docks. The developer will construct ADA accessible walkways between the ADA accessible stalls and the entrances to their respective offices to allow for pedestrian access on-site. Emergency ingress and egress will be provided around the full perimeter of the building.

CSG Consultants, contractor to the City of American Canyon Fire Protection District, who conducts plan check and inspection has reviewed and approved the single access design. Semi-trucks would not be allowed on the east, west and south sides of the Building. Only cars and Fire trucks would be allowed. Signage and the truck turnaround at the west end of the truck docks would assure these limitations on truck access are implemented. The Public Works Engineering Division has also reviewed the single access design with the applicant and has no comments.

- f) The City of American Canyon and Napa County adopted a Bicycle Plan into its General Plan in 2020 (City of American Canyon and Napa County Transportation Authority, American Canyon Bicycle Plan, January 2020). That plan (p. 222) shows a proposed Class I Bicycle Route on Green

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Island Road connecting to other areas of the City to the east and wetland and open space areas to the west and south.

The proposed project has been designed to encourage and support public transit as well as bicycle and pedestrian access to the site. Each of the three office areas would have a bike rack to accommodate up to 4 bicycles, 5 more bicycles than the required 7 stalls per the City's Zoning Ordinance Chapter 19.14.090 (A), Bicycle Parking Requirements.

The site plan and nearby off-site improvements appear to be compatible with walking, bicycling, and transit use and do not appear to create additional conflicts with intersections, streets, and highways near the site. Therefore, the project would not conflict with any adopted plans, policies or programs that address alternative transportation and this impact would be ***less than significant***.

### Mitigation Measures

***Mitigation Measure TRA-1:*** As described above, Commerce Boulevard would meet the minimum PM peak hour volumes for installation of a separate right-turn lane with Existing Plus Project volumes (the proposed project would add to the existing warrant). Therefore, the applicant shall contribute its fair share to widening and/or re-striping northbound Commerce Boulevard at Green Island Road to include a separate right-turn lane and shared through/left-turn lane. Based on the proposed project's contribution to cumulative buildout volumes at the intersection, its "fair share" contribution towards this improvement would equal 2.7%.

***Mitigation Measure TRA-2:*** The applicant had previously proposed a 300-foot bicycle trail project to help reduce VMT in the project area by inducing existing and future employee commutes using bicycles instead of automobiles. The bicycle trail provides significant ancillary benefits outside the question of VMT reduction, including closing a significant gap in the regional bicycle network. Since preparing the 2020 Draft Initial Study, the City has been informed that a previously-assumed bike trail along the frontage of a new school, south of the proposed project, is no longer being constructed as part of the school project. Thus, the applicant has proposed to close the bicycle network gap by funding the construction of the bike trail along the school's frontage as well, extending the length of the proposed bike trail from about 300 to about 800 feet. This bike trail will close the gap between the Class II bikeways on Commerce Court and the existing bike trail along Wetlands Edge Road that currently terminates at Eucalyptus Drive.

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The project shall construct a Class I bike path to fill in the gap in bike infrastructure between the cul-de-sac at the terminus of Commerce Court and the northeast corner of Eucalyptus Drive and Wetlands Edge Road, resulting in a continuous route connecting the residential areas to the south and the industrial land uses to the north.

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### XVIII. Tribal Cultural Resources

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				X
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				X

a) I, ii. A Sacred Lands File search and SB-52 contact information request was forwarded to the Native American Heritage Commission (NAHC) on behalf of the City. The NAHC stated that there were no Tribal Cultural Resources (TCRs) or other potentially significant properties known to be present within or in the vicinity of the project area.

SAS emailed a letter and a map depicting the SDG Commerce 330 Warehouse Project area to the Native American Heritage Commission (NAHC) on July 29, 2020. On behalf of the City of

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American Canyon, the letter requested a Sacred Land File (SLF) search of the project area, and a list of Native American community representatives who should be contacted about the Project under AB-52. On July 30, 2020, Ms. Sarah Fonseca, Cultural Resources Analyst for the NAHC, replied in an emailed letter that the Sacred Lands File search was completed with positive results and specifically noted the Mishewal-Wappo Tribe of Alexander as the main point-of-contact regarding this finding. Ms. Fonseca also provided a list of local Native American contacts. On August 3, 2020, SAS mailed letters to the following Native American representatives identified by the NAHC (see Appendix G):

- Charlie Wright, Chair - Cortina Rancheria – Klestal Dehe Band of Wintun Indians
- Jose Simon III, Chair - Middletown Rancheria of Pomo Indians
- Merlene Sanchez, Chair - Guidiville Indian Rancheria
- Scott Gabaldon, Chair - Mishewal-Wappo Tribe of Alexander Valley
- Anthony Roberts, Chair - Yocha Dehe Wintun Nation

On August 17, 2020, SAS contacted each of the above-listed individuals by phone and/or email as provided by the NAHC. On August 17, Sally Peterson from Middletown Rancheria emailed SAS stating that the information request would be forwarded to the THPO department and provided updated contact information which SAS forwarded to the NAHC. On August 22, SAS received an email from Mr. Ryan Peterson, Admin and Projects Coordinator of Guideville Indian Rancheria, stating that the project area was outside the Rancheria's area of concern and suggested that SAS contact Mr. Scott Gabaldon of the Mishewal Wappo. SAS contacted Mr. Gabaldon as part of the August 17 emails and phone calls but no responses have been received as of this report. If any other substantive contacts are made with the Native American community regarding the proposed project, an addendum to this report may be developed.

Archival research, coordination with the NAHC, an archaeological field survey, and outreach to the Native American community did not result in the identification of any TCRs within or near the project area. Consequently, the project would have ***no impact*** on Tribal Cultural Resources

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### XIX. Utilities and Service Systems

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the waste water treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

#### Background

This analysis is based on the City of American Canyon Will Serve Water Application for the project dated April 17, 2020 (See Appendix H).



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### Discussion

a, b, c) *Wastewater:* The City of American Canyon would provide wastewater collection, treatment, and disposal services for the proposed project. Wastewater from the City's service area is treated at the American Canyon Wastewater Treatment Plant on Mezzetta Court. This secondary/tertiary treatment plant handles domestic and industrial wastewater flows, and employs a Membrane Bio Reactor and ultraviolet light disinfection to produce a very high- quality effluent exceeding the standards set by the discharge permit (City of American Canyon 2017, 2018c). The facility, which was commissioned in 2002, has the capacity to treat 2.5 mgd with a 5.0 mgd wet weather peak flow. American Canyon's current average dry and wet weather daily flows are estimated at 1.3 and 2.7 million gallons, respectively. These daily flow amounts represent 52 percent and 54 percent of the treatment plant's design capacities (Ambrose, email communication). Based on the calculations for the Commerce 330 Distribution Center project, the proposed project would have an estimated domestic sewer demand of about 0.35 AFY (270 gallons/day average), or peak sewer demand of about 9,000 gallons per day, which would be less than 0.7% of plant capacity. The domestic sewer demand exceeds potable water demand because a portion of the wastewater would be reclaimed water used for toilets and urinals.

To the south of the treatment plant, 20 acres of constructed wetlands hold effluent from the wastewater plant prior to discharge into the Napa River, which has been designated by the Regional Water Quality Control Board (RWQCB) as an impaired waterway. During the wet season from November 1 through April 30, effluent is discharged to North Slough, a tributary to the Napa River. Effluent can be discharged to constructed freshwater wetlands all year round, which eventually overflows to the North Slough. Year round, a portion of the effluent is available as recycled water for industrial, agricultural, landscaping, and other uses. Currently approximately 17% of total City inflow, (282 AFY) is recycled, and the rate of use of recycled water is increasing. There were no water quality violations from the reclaimed water system in 2019<sup>14</sup>. The Wastewater Treatment Plant complies with the California Department of Public Health requirements for tertiary recycled water.

A six-inch sanitary sewer line will connect the office locations within the distribution center to a sewer-pump lift-station located near the northeast corner of the building tying into the existing City sewer main line in Commerce Court.

The proposed project's domestic discharge (no industrial discharge is proposed) would not exceed wastewater treatment requirements of the Regional Water Quality Control Board and would not require the construction of new wastewater treatment facilities or expansion or upsizing of existing facilities. Therefore this impact would be *less than significant*.

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<sup>14</sup> City of American Canyon, Recycled Water Annual Report 2019, March 18, 2020

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*Stormwater:* Stormwater runoff from the project site would be directed into a bioretention pond that would be constructed as part of the proposed project. The proposed project's stormwater control and treatment system would result in a net decrease in peak stormwater (100-year, 24-hour storm event) runoff rates from the existing approximately 72.7 cubic feet per second (cfs) to approximately 58.6 cfs with the proposed project. New storm drainage facilities are described in the Hydrology and Water Quality section based on a Hydrology Report (RSA 2019a), and Stormwater Control Plan (RSA 2019b) prepared for the proposed project. With the project's proposed storm drainage/detention facilities and Mitigation Measures HYD-2, HYD-3, HYD-4, and HYD-5, the impact to storm water facilities would be reduced to a ***less-than-significant*** level.

Water supply infrastructure is adequate to serve project needs, as discussed in Item b, below.

b) The City of American Canyon would provide water service to the site. The City receives water from the following sources:

- State Water Project (SWP);
- Permit (raw) water from the City of Vallejo;
- Treated water from the City of Vallejo;
- Emergency (raw) water from the City of Vallejo, and
- Recycled water from the City of American Canyon's wastewater treatment plant and Napa Sanitation District (City of American Canyon 2016a).

The amount of water delivered to the City of American Canyon from each of these sources can vary from year to year. For instance, deliveries from the SWP have varied between five percent (in 2014) and 100 percent (last occurring in 2006) of the contracted amount (City of American Canyon 2016a).

The City of American Canyon has two water treatment plants: a conventional sedimentation and filtration plant that was commissioned in 1976 and a membrane filtration plant, which has pores small enough to filter out contaminants, such as microorganisms, and that has been in use since 2004 (City of American Canyon 2020). Together the two plants produce up to 5.5 million gallons of potable water per year. The proposed project's net water demand of less than 1.2 acre-feet of water per year (AFY) could be supplied by the existing water treatment plants.

California Water Code requires that water purveyors, such as the City of American Canyon, develop an Urban Water Management Plan (UWMP) and update it every five years. The City's 2015 UWMP estimated an available year 2020 water supply of 5287 AFY, and a demand of 4412 AFY (City of American Canyon 2015). The City's 2020 UWMP is not yet available.

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The Public Works Department of the City of American Canyon manages the City's water supply. As required by the City, the applicant has submitted a Will-Serve Water Application to the Public Works Department for the proposed project.<sup>15</sup> As part of that application, a Water Supply Report has been prepared for the proposed project in accordance with the City's Methodology for Determining Zero Water Footprint and Developing Water Supply Reports. The proposed project is estimated to have an average potable water daily demand of 142 gallons/day (gpd), and a peak daily demand of 560 gpd. This is less than three percent of the UWMP's projected use at the site, and represents approximately equivalent water demand to a one single-family house in American Canyon (274 gpd for single family dwelling and 242 gpd for the proposed warehouse use. In addition, it will use about 541 gpd of recycled water. (Stravinski Development Group 2020). Implementation of mitigation measures UTIL-1 through UTIL-5, below would reduce the project impacts to a *less-than-significant* level.

- d, e) During project construction and operation, the project would generate solid waste requiring disposal. Recology American Canyon provides solid waste and recycling collection services to the commercial and residential customers in American Canyon. Solid waste from American Canyon is delivered by Recology American Canyon to the Devlin Road Transfer Station located at 889 Devlin Road in American Canyon. The transfer station is permitted to receive 1,440 tons of waste per day. From the Devlin Road Transfer Station, solid waste is sent to Keller Canyon Landfill in Pittsburg, CA. Keller Canyon Landfill has a maximum daily throughput of 3,500 tons/day and remaining capacity of 63.4 million cubic yards, which is 84 percent of the landfill's maximum permitted capacity. The anticipated closure date for the landfill is 2030 (CalRecycle 2020<sup>16</sup>). Construction and demolition waste accepted at Keller Canyon Landfill is sorted for recyclable material, such as wood, plastics, and metal, which further helps to alleviate the amount of solid waste going to the landfill.

The warehouses project would produce small quantities solid waste, approximately equivalent to that produced by one or two houses. If significant amounts of recyclables, such as cardboard boxes, are generated, the tenant/operators would bale this waste and have it picked up separately from other solid wastes and removed by Recology American Canyon.

Green waste from landscape maintenance is minimal because there are no cultivated grass areas that would need to be mowed. Green wastes would be removed from the site. Natural areas would be left in their native state. If required for fire abatement purposes, high weeds would be cut and left to decompose on-site. Solid waste impacts would be *less than significant*.

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<sup>15</sup> Richard Kaufman, Public Works Director, City of American Canyon, letter to Peter Stravinski, SDG, April 17, 2020.

<sup>16</sup> <https://www2.calrecycle.ca.gov/swfacilities/Directory/07-AA-0032>

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## Mitigation Measures

**Mitigation Measure UTIL-1:** The project applicant shall demonstrate compliance with the City's Zero Water Footprint Policy by mitigating all new potable water demands with "wet-water" offsets by one or more of the following options to ensure the project results in a net zero increase in demand for potable water:

- Reducing existing potable water demands onsite
- Funding programs or constructing projects that would conserve an equivalent amount of water elsewhere within the water service area
- Funding of and/or constructing projects that would Increase an equivalent amount of recycled water use elsewhere within the water service area where potable water is currently used and/or
- Purchase new water supplies from other water providers

The Applicant's agreement with the City's April 17, 2020 Will-Serve letter would assure compliance with these requirements.

**Mitigation Measure UTIL-2:** The project shall be designed and constructed with purple irrigation pipe so that reclaimed water may be used for landscape irrigation purposes. The project shall connect to existing recycled water pipelines for irrigation, toilets, and urinals prior to occupancy.

**Mitigation Measure UTIL-3:** Prior to issuance of a building permit, the applicant shall pay water capacity fees in accordance with the City's Municipal Code to provide funding for the City to acquire water resources and develop its treatment and distribution system. This would allow for the City to exercise additional options for potable water capacity and would also provide for maintenance of the recycled water system.

**Mitigation Measure UTIL-4:** Should additional project water be required, the project shall comply with the City's Ordinances and regulations in effect at the time of authorization for additional water use. In addition, such changes in project use would trigger a new City Discretionary Review process, which, in turn, would trigger re-evaluation of the project's water supply impacts.

**Mitigation Measure UTIL-5:** Prior to issuance of building permits, the project applicant shall submit landscaping plans to the City of American Canyon for review and approval demonstrating that landscaping would comply with the requirements in the City's Model Water Efficient Landscape Ordinance (AB 1881). The landscaping plan shall identify outdoor irrigation water conservation measures such as, but not limited to:

- Drought-resistant vegetation
- Irrigation systems employing the following features:
  - Drip irrigation

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- Low-precipitation-rate sprinklers
  - Bubbler/soaker systems
  - Programmable irrigation controllers with automatic rain shutoff sensors and flow sensing capabilities (ET Smart Controller)
  - Matched precipitation rate nozzles that maximize the uniformity of the water distribution characteristics of the irrigation system
  - Conservative sprinkler spacings that minimize overspray onto paved surfaces
  - Hydrozones that keep plants with similar water needs in the same irrigation zone
- Minimally or gently sloped landscaped areas to minimize runoff and maximize infiltration
- Organic topdressing mulch in non-turf areas to decrease evaporation and increase water retention.

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### XX. Wildfire Hazards

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors,exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

#### Background

California PRC 4201 - 4204 and Govt. Code 51175-89 direct the California Department of Forestry and Fire Protection (CAL FIRE) to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), define the application of various mitigation strategies to reduce risk associated with wildland fires. CAL FIRE is remapping Fire Hazard Severity Zones (FHSZ) for State Responsibility Areas (SRA) and Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA) to provide updated map zones,

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based on new data, science, and technology. The Project site and surrounding area are classified Local Responsibility Areas and are mapped as in a “non-very high fire hazard zone<sup>17</sup>”.

The American Canyon Fire Protection District (ACFPD) provides fire protection and emergency medical services for the project site. The ACFPD station is located at 911 Donaldson Way East, approximately 3 miles driving distance from the project site. The Project would not require the provision of or need for new or physically altered facilities to continue to serve the Project site.

### Discussion

a, b, c) The Project would construct a large warehouse-style building and paved parking on the grassy site in a non-very-high-fire-hazard area. The building would be constructed in accordance with current fire codes. No expansion of fire response facilities is required. Therefore, the Project would have a **less-than-significant impact** with respect to wildfire hazards, associated hazards, and equipment/infrastructure needs.

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<sup>17</sup> [https://osfm.fire.ca.gov/media/6732/fhszl\\_map28.pdf](https://osfm.fire.ca.gov/media/6732/fhszl_map28.pdf)

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### XXI. COVID-19 Hazards

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially affect the spread of Covid-19			X	

#### Discussion

On March 4, 2020, Governor Gavin Newsom proclaimed a State of Emergency to exist in California as a result of the threat of the COVID-19. Governor Newsom and other state and local agencies have issued various orders, directives, and policies to address the COVID-19 pandemic and the health, safety and welfare of California residents, including a stay at home mandate and provisions intended to provide for the continued delivery of necessary goods and services.

Executive Order N-33-20, which includes the stay at home mandate, provided that residents working in 13 critical infrastructure sectors identified by the federal government may continue working, because of the importance of these sectors to California's health and well-being. The State Public Health Officer has identified the following sectors as essential critical infrastructure with essential workers who should continue reporting to work as normal: communications and information technology; chemical; critical manufacturing; defense industrial base; emergency services; energy; financial services; food and agriculture; hazardous materials; healthcare/public health; community-based government operations and essential functions; transportation and logistics; and water and wastewater. These sectors have been identified as critical infrastructure to allow state, local, tribal, and industry partners to work to protect communities and ensure continuity of functions critical to public health and safety as well as economic and national security.

Under this Order, local governments, including the City of American Canyon and Napa County, have continued to provide critical functions and services to the public. Many critical workers are allowed to continue working under the Order. These functions and services include, among others, law enforcement, fire protection, public safety, emergency management, emergency medical technicians, public works, health care, and transportation. Additionally, local government agencies have emergency plans that provide appropriate procedures and actions to implement during emergency situations such as the COVID-19 pandemic. These plans address many of the concerns associated with the consequences of the pandemic, such as the continued provision of emergency and essential services.



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Private sector businesses also continue to provide critical infrastructure functions and services such as food and transportation among many others. Firms that enable logistics operations, including cooling storage, packaging and distributing products for wholesale or retail sale or use are identified as essential. Roadways are considered part of the essential transportation system sector.

The COVID-19 pandemic and the related orders and policies have resulted in certain social and economic impacts. Whether these social and economic impacts will result in any significant, adverse physical environmental impacts has not been documented and it would be speculative to make such determinations as there is no valid, reliable evidence available to the City at this time. A number of federal, state, and local programs (e.g., state unemployment, expansion of workers covered by the unemployment program, the federal supplement for unemployment benefits, the CARE Act, pandemic relief for migrant workers, and various locally-enacted residential and commercial rent relief) are available to assist individuals and businesses with funding to offset the economic impacts of the stay at home mandate.

Certain physical impacts resulting from the stay at home Order have been beneficial, including a substantial reduction in traffic and related impacts such as noise reduction and vehicle air quality and greenhouse gas emission reductions. Additionally, the continued provision of critical infrastructure functions and services, including emergency services, ensure that no significant adverse impacts would occur from the COVID-19 pandemic with respect to public services, safety, or utilities. The COVID-19 pandemic and stay at home Order would not adversely affect resources related to geology, hydrology, hazards, cultural resources, aesthetics, land use, biology, energy, and other topics, because the pandemic has not necessitated significant construction activities.

Since September, the state and local jurisdictions have been implementing phased reopening plans for certain employment and recreation sectors subject to implementation of appropriate protocols to reduce the potential for spreading the virus. It is expected that a COVID-19 vaccine will be available in the foreseeable future. Buildout of the Project and full occupancy of the site is not expected until after the current state of emergency has expired.

If construction is initiated prior to the availability of a COVID-19 vaccine, construction activities would be subject to various safety measures necessary to reduce the potential for the spread of the virus. These measures will be addressed in a project construction site safety plan and could include, among other measures, social distancing requirements, masks for all workers, daily worker screening for potential symptoms, disinfecting protocols for all shared surfaces, avoidance of tool sharing, and provision of sufficient hand sanitizer for all workers. The applicant has prepared a draft Covid-19 Exposure Control Plan, which is included as Appendix I to this Initial Study. With implementation of this plan, potential impacts would be less than significant.

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### XXII. MANDATORY FINDINGS OF SIGNIFICANCE

Environmental Issue	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			X	

#### Discussion

- a) The proposed project could affect special-status habitat or seasonal wetlands, as discussed above in Section IV. Biological Resources. Although the site does not contain any known historic resources or prehistoric resources, unknown resources could potentially be affected by project implementation, as discussed above in Section V. Cultural Resources. Compliance with the mitigation measures for the unearthing of any unknown cultural resources as well as mitigation required for biological resources would ensure all potential impacts associated with biological and cultural resources would be reduced to ***less than significant with mitigation***.

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- b) A number of cumulative projects are proposed or under construction in the project area (City of American Canyon, Active Planning Projects, July 2020<sup>18</sup>). The 330,000 sq. ft. Commerce 330 Distribution Center building is just south of the proposed project site. Copart Auto applied for a Conditional Use Permit to store vehicles at 1578 and 1660 Green Island Road. A new elementary school is under construction just southeast of the site at Commerce Blvd. and Eucalyptus Road. The only other large project planned is an approximately 200,000 sq. ft. logistics center at 300 Boone Drive, near the Napa Airport, about a mile north of the site. It is unlikely that impacts of those projects other than the school would overlap those of this project, with the exception of regional air quality (addressed in this IS) and traffic along SR 29, which is addressed in the City's General Plan. It is possible that construction impacts from the new school could overlap those of the proposed project, however they are likely to be accessed from opposite ends of Commerce Court, so overlap of noise and traffic would be minimal. Construction on the Commerce 330 Distribution Center has been completed, so construction impacts would not overlap with those of the 217 Commerce project. The cumulative effects of the proposed project would therefore be *less than significant*.

With respect to cumulative biological resources, over the past few decades the City of American Canyon has been transitioning from agricultural use to residential development. However, there are many open space preserves and parks that have become established to preserve and protect open space habitats within the City limits and in this region, as illustrated in Exhibit A of the Monk letter. The Jack & Bernice Newell Wilderness Preserve (Newell Preserve), the Lynch Canyon Preserve, Canyon Estates Preserve (proposed) and the CDFW California Red-Legged Frog Preserve represent over 2,000 acres of permanently protected contiguous open space east of the project site. The Wetlands Open Space, Napa River Bay Trail, Clark Ranch and the Napa Plant Site Restoration Project represent several hundred additional acres of preserved open space and valuable wildlife habitats that will be preserved in perpetuity.

Implementation of the proposed project would result in cumulative impacts to ruderal habitats and less than significant impacts to common plant and animal species. While the project-related impacts would be considered cumulative with other projects in the region, the mitigation measures prescribed in the Mitigated Negative Declaration would offset cumulative impacts to special-status species and plant communities/wildlife habitats to levels regarded as less than significant. Therefore, conversion of 10.39 acres of ruderal habitat on the project site to commercial development would have a less-than-significant (not cumulatively considerable) cumulative impact in this regional context.

It is possible that the remaining parcel between the project site and the Commerce 330 site would be developed with project similar to that proposed for the project site. Development of those sites could add to cumulative traffic, noise, biological resources, and air quality impacts of the proposed

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<sup>18</sup> <https://www.cityofamericancanyon.org/government/community-development/projects>

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project, as with the project impacts. No projects are currently proposed for that site, Therefore assessment of those impacts would be speculative at this time. Environmental review of that project would be required to also consider the proposed project, if approved.

- c) The proposed project would generate an increase in air pollutant emissions and greenhouse gasses associated with project construction and operation. These emissions would not be considered great enough to directly or indirectly have an adverse effect on residents living in the area. Hazards associated with any soil contamination would be mitigated on site. The project's hazards would be less than significant, as described in this IS. The impact is considered ***less than significant***.

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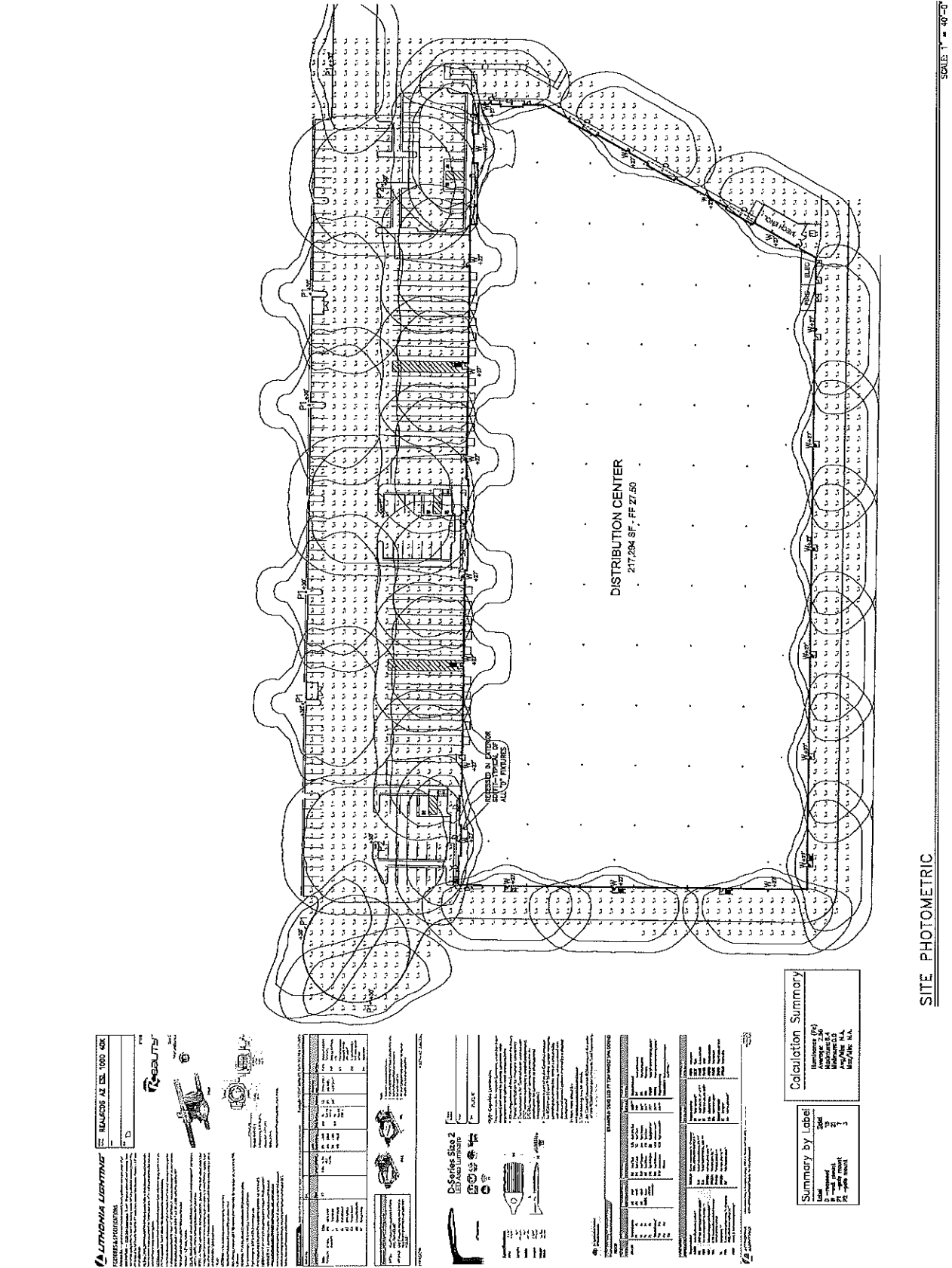
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**Appendix A**  
**Lighting Studies**



SITE PHOTOMETRIC

SCALE: 1" = 40'-0"

**Appendix B**

**Air Quality Model Output Data**

## **Appendix B**

### **Air Quality and GHG Emissions Data and Supporting Information**

B-1: Air Quality Setting

B-2: Air Quality Calculations

B-3: CalEEMod Output Files

B-4: Greenhouse Gas Setting

## Appendix B-1

### Air Quality Setting and Regulatory Context

The project site is located within the San Francisco Bay Area Air Basin (Air Basin), which encompasses Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa Counties, and the southern portions of Solano and Sonoma Counties. The Air Basin is characterized by complex terrain which distorts normal wind flow patterns, consisting of coastal mountain ranges, inland valleys, and bays.

#### Regional Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, stability, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and San Francisco Bay), determine the effect of air pollutant emissions on local air quality.

The climate of the greater San Francisco Bay Area, including Napa County, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system that is often present over the eastern Pacific Ocean off the west coast of North America. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, air emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone and secondary particulates, such as sulfates and nitrates.

The proposed project site lies in the Napa Valley climatological sub-region of the Bay Area. The Napa Valley is between the Mayacamas Mountains to the west and the Vaca Mountains to the east. These mountains, with an average ridge line height of about 2,000 feet, are effective barriers to the prevailing northwesterlies. The valley is 27 miles long with Napa and Calistoga defining its southern and northern ends, respectively.<sup>1</sup>

An upvalley wind frequently develops during warm summer afternoons drawing from air flowing through the San Pablo Bay. During the evening, especially in the winter, downvalley drainage flow can occur. The prevailing winds are upvalley, southwest through south southeasterly, and occur approximately 50 percent of the time. The second most common winds are down valley drainage winds, north northwesterly through northeasterly, which occur approximately 25 percent of the time. Wind speeds are low with almost 50 percent of the winds between calm and four miles per hour (mph) and an average speed of about five mph. Only five

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<sup>1</sup> BAAQMD. Climate, Physiography, And Air Pollution Potential – Bay Area and Its Subregions  
[http://hank.baaqmd.gov/dst/papers/bay\\_area\\_climate.pdf](http://hank.baaqmd.gov/dst/papers/bay_area_climate.pdf)

percent of the winds are between 16 and 18 mph which represent strong summer time up valley winds and winter storm winds. Summer average maximum temperatures at the southern end of the valley are in the low 80's with extremes in the high 80's, and at the northern end are in the low 90's with extremes in the high 90's. Winter high temperatures are in the high 50's and low 60's with low temperatures in the high to mid-30's. Sunshine is plentiful and annual average precipitation is 24 inches at Napa.

Summer and fall prevailing winds can transport non-local and locally generated ozone precursors northward where the valley narrows, effectively trapping and concentrating the pollutants under stable conditions. The local upslope and downslope flows setup by the surrounding mountains may also recirculate pollutants adding to the total burden. Also, the high frequency of light winds and associated stable conditions during the late fall and winter, contributes to the buildup of particulates and carbon monoxide (CO) from automobiles, agricultural burning, and fireplace burning.

### **Local Air Quality**

The Bay Area Air Quality Management District (BAAQMD) maintains a network of monitoring stations within the Air Basin that monitor air quality and compliance with applicable ambient standards. The monitoring station closest to and most representative of the project site is in Napa (Jefferson Street), approximately ten miles north of the proposed project site; where levels of ozone (O<sub>3</sub>), particulate matter less than 10 micrometers (coarse or PM<sub>10</sub>), particulate matter less than 2.5 micrometers (fine or PM<sub>2.5</sub>), CO, and nitrogen dioxide (NO<sub>2</sub>) are recorded. In April 2018, the Napa (Jefferson Street) monitoring station was discontinued and air monitoring began at Napa Valley College. Thus, 2018 data shown in **Table 1** is from the Napa Valley College monitoring station (and annual average data is not available for 2018).

**Table 1** summarizes the most recent three years of data (2016 through 2018) from the Napa (2016-2017) and Napa Valley College (2018) air monitoring stations. No State or federal standards were exceeded in 2016. The State ozone standard (24-hour) was exceeded once in 2017 and the federal ozone standard (8-hour) was exceeded twice in 2017. The federal PM<sub>2.5</sub> 24-hour standard was exceeded 13 times in 2017 and 12 times in 2018. The state annual average PM<sub>2.5</sub> standard was exceeded in 2017. No other State or federal air quality standards were exceeded during the three-year period.

The Bay Area is currently designated “nonattainment” for state and national (1-hour and 8-hour) ozone standards, for the state PM<sub>10</sub> standards, and for state and national (annual average and 24-hour) PM<sub>2.5</sub> standards. The Bay Area is designated “attainment” or “unclassifiable” with respect to the other ambient air quality standards.

**Table 1**  
**Air Quality Data Summary (2016 through 2018)**

Pollutant	Standard <sup>a</sup>	Monitoring Data by Year		
		2016	2017	2018
Ozone				
Highest 1 Hour Average (ppm) <sup>b</sup>	0.09	0.080	<b>0.098</b>	0.083
Days over State Standard		0	<b>1</b>	0
Highest 8 Hour Average (ppm) <sup>b</sup>	0.070	0.067	<b>0.084</b>	0.068
Days over National Standard		0	<b>2</b>	0
Nitrogen Dioxide (NO <sub>2</sub> )				
Highest 1 Hour Average (ppm) <sup>b</sup>	0.180	0.039	0.053	0.043
Days over State Standard		0	0	0
Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>	0.030/0.053	0.007	0.007	--
Carbon Monoxide (CO)				
Highest 1 Hour Average (ppm) <sup>b</sup>	9.0	2.2	5.6	1.4
Days over State Standard		0	0	0
Highest 8 Hour Average (ppm) <sup>b</sup>	20	1.5	4.7	1.1
Days over State Standard		0	0	0
Coarse Particulate Matter (PM <sub>10</sub> )				
Highest 24 Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>	50	33	--	26
Days over State Standard		0	0	0
State Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>	20	16.6	--	--
Fine Particulate Matter (PM <sub>2.5</sub> )				
Highest 24 Hour Average (µg/m <sup>3</sup> ) <sup>b</sup>	35	24.3	<b>199.1</b>	<b>117.9</b>
Days over National Standard		0	<b>13</b>	<b>12</b>
State Annual Average (µg/m <sup>3</sup> ) <sup>b</sup>	12	8.5	<b>13.7</b>	--
NOTES: Values in <b>bold</b> are in excess of at least one applicable standard.				
Generally, state standards and national standards are not to be exceeded more than once per year.				
ppm = parts per million; µg/m <sup>3</sup> = micrograms per cubic meter.				
PM <sub>10</sub> is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year. A “--” denotes no information available.				

Source: BAAQMD, Air Quality Summary Reports, May 24, 2019. <http://www.baaqmd.gov/about-air-quality/air-quality-summaries>

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor air toxics in the Bay Area. Based on findings of the latest report, diesel particulate matter (DPM) was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed four percent of the cancer risk-weighted emissions, and benzene contributed three percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for



CARB's diesel regulations. Overall, cancer risk from toxic air contaminants (TAC) dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.<sup>2</sup>

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and the maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo.
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward.
- San Jose.
- Eastern side of San Francisco.
- Concord.
- Vallejo.
- Pittsburgh and Antioch.

The proposed project is within the city of American Canyon, which is not part of the seven CARE program impacted communities in the Bay Area. The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, is approximately 160 cancer risk per million persons, while in American Canyon, the health impact is approximately 98 cancer risk per million persons.<sup>3</sup>

### **Nearby Sensitive Receptors**

BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be within 1,000 feet of a project site. The project site is generally bound by a warehouse to the north, a eucalyptus tree grove to the west, a vacant parcel and the Commerce 330 warehouse to the south, and a 68-foot wide City Public Access and Utility Easement to the east. There is one residence approximately 1,000 feet from the project site boundary (to the southeast) and a residential neighborhood approximately 2,000 feet from the project site boundary (to the southeast). There are no schools or daycare centers within 1,000 feet of the proposed project.

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<sup>2</sup> BAAQMD. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective & Path Forward (2004 – 2013). April 2014.  
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<sup>3</sup> BAAQMD. Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area. March 2014.  
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## Air Quality Significance Thresholds

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G, and the BAAQMD *CEQA Air Quality Guidelines*. Using Appendix G evaluation thresholds, the proposed project would be considered to have significant air quality impacts if it were to:

- A. Conflict with or obstruct implementation of the applicable air quality plan;
- B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- C. Expose sensitive receptors to substantial pollutant concentrations; or
- D. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The air quality analysis follows the methodology presented in the BAAQMD 2017 CEQA Guidelines. The thresholds of significance applied to assess project-level air quality impacts are:

- Average daily construction exhaust emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>;
- Average daily operation emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>; or result in maximum annual emissions of 10 tons per year of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 15 tons per year of PM<sub>10</sub>;
- Exposure of persons by siting a new source or a new sensitive receptor to substantial levels of TACs resulting in (a) a cancer risk level greater than 10 in one million, (b) a noncancerous risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average PM<sub>2.5</sub> of greater than 0.3 micrograms per cubic meter (µg/m<sup>3</sup>). For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers; or
- Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.

Assessment of a significant cumulative impact if it would result in:

- Exposure of persons, by siting a new source or a new sensitive receptor, to substantial levels of TACs during either construction or operation resulting in (a) a cancer risk level greater than 100 in a million, (b) a noncancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM<sub>2.5</sub> of greater than 0.8 µg/m<sup>3</sup>.

The BAAQMD air quality significance thresholds are found in **Table 2**.

The BAAQMD *CEQA Air Quality Guidelines* identify a project-specific threshold of either 1,100 metric tons of carbon dioxide equivalent (CO<sub>2e</sub>) per year or 4.6 metric tons of CO<sub>2e</sub> per year per service population (i.e., the number of residents plus the number of employees associated with a new development), which is also considered a cumulatively considerable contribution to the

global GHG burden and, therefore, a significant cumulative impact. This analysis applies the 1,100 metric tons of CO<sub>2e</sub> per year significance criterion to proposed project GHG emissions.

**Table 2**  
**BAAQMD Air Quality Significance Thresholds**

Pollutant	Construction Thresholds	Daily Operational Thresholds	Annual Operational Thresholds
Criteria Air Pollutants			
Reactive Organic Compounds (ROG)	54	54	10
Nitrogen Oxides (NOx)	54	54	10
Coarse Particulate matter (PM10)	82	82	15
Fine Particulate Matter (PM2.5)	54	54	10
Carbon Monoxide (CO)	NA	9.0 ppm (8-hour) and 20.0 ppm (1-hour)	
Fugitive Dust	Best Management Practices		NA
Project Health Risk and Hazards			
Excess Cancer Risk	10 per million	10 per million	
Chronic Hazard Index	1.0	1.0	
Acute Hazard Index	1.0	1.0	
Incremental Annual Average PM2.5	0.3 µg/m³	0.3 µg/m³	
Cumulative Health Risk and Hazards			
Excess Cancer Risk	100 per million	100 per million	
Chronic Hazard Index	10.0	10.0	
Acute Hazard Index	10.0	10.0	
Incremental Annual Average PM2.5	0.8 µg/m³	0.8 µg/m³	
Greenhouse Gas Emissions			
Annual Emissions	1,100 metric tons or 4.6 metric tons per capita		

SOURCE: BAAQMD 2017 CEQA Guidelines

## Appendix B-2

### Air Quality Calculations

#### Construction Activities

Construction activities are expected to commence in March 2021 with site preparation and grading occurring for approximately nine weeks. Paving, building construction and architectural coating would follow through the end of 2021. The proposed project would be constructed in a single phase estimated to require approximately nine and one half months. **Table 3** provides the estimated construction schedule for each phase:

**Table 3**  
**Estimated Construction Schedule**

Phase	Description	Start	End	Working Days
1	Site Preparation	03/01/2021	03/12/2021	10
2	Grading	03/13/2021	04/30/2021	35
3	Paving	05/01/2021	05/28/2021	20
4	Building Construction	05/28/2021	11/25/2021	130
5	Architectural Coating	11/26/2021	12/16/2021	15

SOURCE: CalEEMod Version 2016.3.2.

Project construction would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions. The BAAQMD *CEQA Air Quality Guidelines* recommend quantification of construction-related exhaust emissions and comparison of those emissions to significance thresholds. The CalEEMod (California Emissions Estimator Model, Version 2016.3.2) was used to quantify construction-related pollutant emissions. CalEEMod output worksheets are included in **Appendix B-3**.

The estimated construction equipment associated with the proposed project along with the number of pieces of equipment, daily hours of operation, horsepower (hp), and load factor (i.e., percent of full throttle) are shown in **Table 4**.

**Table 4**  
**Estimated Project Construction Equipment Usage**

Phase	Equipment	Amount	Daily Hours	HP	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	1	8	158	0.38
Grading	Graders	1	8	187	0.41
Grading	Rubber Tired Dozers	1	8	247	0.4
Grading	Tractors/Loaders/Backhoes	3	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
Building Construction	Forklifts	3	8	89	0.2
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
Building Construction	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
Paving	Paving Equipment	2	8	132	0.36
Paving	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

SOURCE: CalEEMod Version 2016.3.2.

Based on CalEEMod, a total of 4,750 haul truck one-way trips (based on a 16 cubic yard haul truck capacity) were estimated as a result of the 38,000 cubic yards of soil import required for grading/earthwork, however all soil import would come from the existing stockpile and grading of the parcel adjacent to the south of the project site (estimated trip length of 0.25 mile). Based on CalEEMod, a total of approximately 60 vendor truck one-way trips were estimated during building construction. During the construction, approximately 12 to 24 workers would be at the site, with a maximum near 80 workers. **Table 5** provides a list of the expected trips and trip lengths by construction phase of vendors and construction workers.

**Table 5**  
**Construction Trips and Trip Lengths**

Phase	Worker Trips	Vendor Trips	Haul Truck Trips	Worker Trip Length (mile)	Vendor Trip Length (mile)	Haul Trip Length (mile)
Site Preparation	18	0	0	10.8	7.3	20.0
Grading	15	0	4,750	10.8	7.3	0.25
Building Construction	155	60	0	10.8	7.3	20.0
Paving	15	0	0	10.8	7.3	20.0
Architectural Coating	31	0	0	10.8	7.3	20.0

SOURCE: CalEEMod Version 2013.2.2.

The emissions generated from these construction activities include:

- Dust (including PM10 and PM2.5) primarily from “fugitive” sources (i.e., emissions released through means other than through a stack or tailpipe) such as material handling and travel on unpaved surfaces;
- Combustion emissions of criteria air pollutants (ROG, NO<sub>x</sub>, CO, PM10, and PM2.5) primarily from operation of heavy off-road construction equipment and construction worker automobile trips (primarily gasoline-operated); and
- VOC emissions from coating.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM10 concentrations may be adversely affected on a temporary and intermittent basis during construction. In addition, the fugitive dust generated by construction would include not only PM10, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Erosion control measures and water programs are typically undertaken to minimize these fugitive dust and particulate emissions. A dust control efficiency of over 50 percent due to daily watering and other measures (e.g., limiting vehicle speed to 15 mph, management of stockpiles, screening process controls, etc.) was estimated. Based on CalEEMod, one water application per day reduces fugitive dust by 34 percent, two water applications per day reduces fugitive dust by 55 percent, and three water applications per day reduces fugitive dust by 61 percent.

## **Operations**

The proposed project would consist of a 217,294 square foot wine storage warehouse on the 10.39-acre project site. It is anticipated that the proposed project would have approximately 32 full-time employees and up to 18 part-time employees and operate 12 to 18 hours a day during the peak season. Approximately 2 to 4 vehicles trips per day would be from clients or visitors to the site.

A total of 134 car and 21 truck dock parking spaces would be provided for the building. Of these parking stalls, 4 stalls would be designated for Clean Air Vehicle parking. The project’s traffic demands would be 367 weekday daily project trips (1.69 trips per 1,000 SF).<sup>1</sup>

Because the building is proposed for warehousing and distribution of wine and/or other wine related products it would be heavily insulated and refrigerated. The proposed project would be installed with a night-air cooling system to capture the cold air from outside during the night, which reduces the demand to use the refrigeration system. This reduces the building’s electricity demand and is a unique trait of the Napa Valley climate to allow such a cooling process.

In many climates, night temperatures are cool even when daytime temperatures exceed economizer limits. Taking advantage of this resource, the air handler and economizer can flush the building with night air to cool down the building mass. The cool mass then acts as a heat sink the following day.

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<sup>1</sup> GHD. *Traffic Impact Analysis Memorandum*. May 8, 2020.

Setting controls for night precooling can save a significant amount of energy, depending on location. Studies indicate cost savings range from five percent in Phoenix, Arizona, to 18 percent in Denver, Colorado, for a typical office building. Night precooling also reduces peak demand. Simulation analyses show that precooling a 100,000 square foot three-story building in Sacramento, California, would reduce energy use by 12.6 percent and cause a peak demand reduction of 31.3 percent.<sup>2</sup>

Interior lighting for the proposed project would be designed to meet Title 24 standards; however, measures to increase efficiency and reduce excess energy usage inside the warehouse would be promoted. Features such as motion sensor lighting for areas within the warehouse would be installed. This is beneficial as it reduces energy bills and reduces heat generate inside, further reducing the energy demands to cool the warehouse. The most current Pacific Gas & Electric incentives would be investigated and all attempts to incorporate them into the design would be made.

The fork lifts (estimated at 10) used within the warehouse would be powered by electricity instead of the typical natural gas powered fork lifts. This reduces the GHG emitted by the fork lift and is more efficient and less impactful on the air within the building. The building would have bike racks to accommodate up to a total of 12 bicycles, five more than the required seven stalls.

CalEEMod default electrical usage was adjusted to be consistent with the SGE 258 Warehouse Project<sup>3</sup> but scaled down to 217,294 square feet. The SGE 258 Warehouse Project energy use of was estimated using actual electrical usage from two nearby and almost identical buildings. Both buildings are insulated and refrigerated to the same degree as the proposed project.

CalEEMod default natural gas usage was adjusted to zero, although available in the street the proposed project would not bring it on site as there is no need. The proposed project would, instead, use electric water heaters and heat pump for the offices.

GHG emissions rates associated with electricity consumption were adjusted to account for Pacific Gas & Electric's projected 2020 (year in which project becomes operational) CO<sub>2</sub> intensity rate. This intensity rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. CalEEMod uses a default rate of 641 pounds of CO<sub>2</sub> per megawatt of electricity produced. The Pacific Gas & Electric's projected 2020 CO<sub>2</sub> intensity rate is 290 pounds of CO<sub>2</sub> per megawatt of electricity produced.<sup>4</sup>

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<sup>2</sup> Energy Star Building Upgrade Manual, Chapter 9, Revised January 2008, <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/save-energy/comprehensive-approach/energy-star>

<sup>3</sup> City of American Canyon. Initial Study for the SDG Green Island 258 Warehouse Project (PL 15-0019). January 25, 2016.

<sup>4</sup> Greenhouse Gas Emission Factors: Guidance for PG&E Customers, November 2015.

## **Initial Study for the SDG Commerce 217 Distribution Center Project**

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### **Appendix C**

#### **Biological Resources Reports**



**Revised**  
**BIOLOGICAL RESOURCE ANALYSIS**  
**SDG COMMERCE 217 DISTRIBUTION CENTER**  
**CITY OF AMERICAN CANYON, CALIFORNIA**

**March 2, 2020**

**Prepared for**

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**Prepared by**

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Figure 2. SDG Commerce 217 Distribution Center Project Site Location Map.

Figure 3. SDG Commerce 217 Distribution Center Project Site Aerial Photograph.

Figure 4. Known Special-Status CNDDDB Records Within 3 Miles of the SDG Commerce 217 Distribution Center Project Site.

Figure 5. USFWS Critical Habitat in the Vicinity of the SDG 217 Commerce Distribution Center Project Site.

## **TABLES**

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Table 1. Plant Species Observed on the SDG Commerce 217 Distribution Center Project Site.

Table 2. Wildlife Species Observed on the SDG Commerce 217 Distribution Center Project Site.

Table 3. Special-Status Plant Species Known to Occur Within 3 Miles of the SDG Commerce 217 Distribution Center Project Site.

Table 4. Special-Status Wildlife Species Known to Occur Within 3 Miles of the SDG Commerce 217 Distribution Center Project Site.

## **ATTACHMENTS**

(At Back of Report)

Sheet A1. Preliminary Site Plan for the SDG Commerce 217 Distribution Center, prepared by WAI (Ward Architects, Inc.) dated January 15, 2020.

Sheet 2. Confirmed Reverification Aquatic Resources Delineation Map, dated May 22, 2017.

Sheet UP4. Utility Plan for the SDG Commerce 217 Distribution Center, prepared by RSA, dated January 2020.

Storm Drain Level Spreader Detail, prepared by RSA, dated January 7, 2020.

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## 1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for the proposed SDG Commerce 217 Distribution Center project site (herein referred to as the project site) located in the City of American Canyon, California (Figures 1 and 2). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from the construction of a distribution center and associated parking on the project site.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations, including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFW. Our analysis includes a formal delineation of “waters of the U.S.” that was confirmed in 2012 and reverified by the Corps in 2017.

This biological resources analysis also provides mitigation measures for “potentially significant” impacts that could occur to biological resources. Whenever possible, upon implementation, the prescribed mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code §§ 21000 et seq.; 14 Cal. Code Regs §§ 15000 et seq). Accordingly, this report is suitable for review and inclusion in any review being conducted by the City of American Canyon for the proposed project pursuant to the CEQA.

## 2. PROPERTY LOCATION AND SETTING

The approximately 10-acre project site is located at 1075 Commerce Court, American Canyon, Napa County, California (Figures 1 and 2). The project site is bordered to the southeast by Jungle Paintball, a 40-acre paintball park. To the east is located a large eucalyptus grove with scattered mobile homes. Further to the east is Oat Hill, a geographically prominent hill west of Highway 29. A mix of open space, large warehouses and distribution centers occurs north of the project site. The American Canyon Wastewater Treatment Plant and treatment ponds is located west of the project site. The Napa River and associated marshes occur greater than 300 feet west of the project site. A large distribution center, known as the SDG Commerce 330 Distribution Center, is currently under construction occurs immediately to the south of the project site. Clark Ranch, Wetlands Edge Park, and salt marsh and mudflat habitats associated with the Napa River, occur further to the south of the project site. The Napa Valley Unified School District is constructing the Napa Junction Elementary School to the southeast, along Eucalyptus Drive. Figure 3 provides an aerial photograph that shows the project site features and the surrounding land use.

The 10.39-acre project site is part of a larger 35.85-acre parcel (formerly known as Lot 3) that is comprised of a highly disturbed, ruderal (weedy) plant community, that was recently graded and leveled. This site formerly was occupied by a grove of blue gum eucalyptus (*Eucalyptus globulus*) trees that were removed in 2012.

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### **3. PROPOSED PROJECT**

The applicant proposes to construct a 217,294-square foot distribution center with associated parking areas and a detention/bioretention pond on the 10.39-acre project site. Access to the distribution center will be provided by the Commerce Court extension, as illustrated on the Preliminary Site Plan (see attached Sheet A1).

### **4. ANALYSIS METHODS**

Prior to preparing this biological resources analysis report, M&A researched the most recent version of CDFW's Natural Diversity Database, RareFind 5 application (CNDDDB 2018) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site. All special-status species records were compiled in tables. M&A examined all known record locations for special-status species to determine if special-status species could occur on the project site or within an area of affect.

M&A biologists have a long history of field surveys associated with the approximately 35-acre parcel. M&A biologists conducted site surveys on the parcel on March 1 and April 27, 2006, June 14, 2011, February 14, March 21, and June 12, 2012, May 18, 2017, and on March 30, 2018, December 19 and December 27, 2019. In 2006, and again in 2011, M&A conducted a wetland delineation on the entire parcel. This delineation of "waters of the U.S." was confirmed by the Corps in 2012 and reverified by this agency in 2017. The Corps Confirmed Reverification of Aquatic Resources Delineation Map is provided as Sheet 2.

During the site surveys and wetland delineations, M&A biologists recorded biological resources and assessed the likelihood of resource regulated areas on the project site. In addition to the wetland delineations, the survey involved searching all habitats on the site and recording all plant and wildlife species observed. M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species. The results of our literature research and field reconnaissance are provided in the sections below.

## **5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES**

### **5.1 Topography**

The project site is relatively flat with elevations ranging from 8 to 20 feet above sea level. The ground is undulating due to past land use disturbances including eucalyptus tree removal in 2012. The site slopes gently to the west towards North Slough and the Napa River.

### **5.2 Hydrology**

There are no drainages on the project site. There are no indicators of hydrology on the 10-acre project site (Sheet 2).

### 5.3 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (<http://ucjeps.berkeley.edu/interchange/index.html>). Table 2 is a list of wildlife species observed on the project site during multiple years of surveys at the project site. Nomenclature for wildlife follows CDFW's *Complete list of amphibian, reptile, bird, and mammal species in California* (CDFW 2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

#### 5.3.1 RUDERAL HERBACEOUS VEGETATION

A complete list of plant species observed within the project site is presented in Table 1. The project site is dominated by ruderal vegetation including stinkwort (*Dittrichia graveolens*), Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), slender wild oat (*Avena barbata*), common vetch (*Vicia sativa*), red-stem filaree (*Erodium cicutarium*), bull thistle (*Cirsium vulgare*), Italian thistle (*Carduus pycnocephalus pycnocephalus*), bristly ox-tongue (*Helminthotheca echinoides*), California burclover (*Medicago polymorpha*), and cut-leaf geranium (*Geranium dissectum*). Native, coyote brush (*Baccharis pilularis* subsp. *consanguinea*), a plant that responds to land disturbances, such as is found on the project site, is also common on this parcel.

Typically, ruderal communities provide habitat for those animal species adapted to humans. Examples of animals associated with these communities include wild turkey (*Meleagris gallopavo*), house finch (*Haemorhous mexicanus*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaidura macroura*), California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), California meadow vole (*Microtus californicus*), and Botta's pocket gopher (*Thomomys bottae*), among others, all of which have been observed on the project site. Red-shouldered hawk (*Buteo lineatus*), tree swallows (*Tachycineta bicolor*), Nuttall's woodpecker (*Picoides nuttallii*), and northern flicker (*Colaptes auratus*), among others, likely nest in the eucalyptus trees that surround the project site to the west, north and south. Chestnut-backed chickadee (*Poecile rufescens*), brown creeper (*Certhia americana*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), spotted towhee (*Pipilo maculatus*), California towhee (*Pipilo crissalis*), dark-eyed junco (*Junco hyemalis*), Bullock's oriole (*Icterus bullockii*) and western gray squirrel (*Sciurus griseus*) were also observed in the immediate project vicinity.

### 5.4 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible

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to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

The proposed project will not interfere with the movement of native wildlife. The project site has a history of disturbance associated with eucalyptus tree removal in 2012, and continued disturbance associated with the paintball facility located immediately to the southeast and construction of the SDG Commerce 330 Distribution Center distribution center to the south. The eucalyptus grove and the marshes associated with the Napa River to the west of the project site provide a more valuable wildlife corridor for terrestrial wildlife.

## 6. SPECIAL-STATUS SPECIES DEFINITION

### 6.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq.*; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);
- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);
- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;
- Plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of CNPS' electronic *Inventory* (CNPS 2017). The California Department of Fish and Wildlife (CDFW) recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001) (CNPS 2017). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information (more on CNPS Rank species below);
- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);



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- animals that are designated as "species of special concern" by CDFW (2018);
- Animal species that are “fully protected” in California (Fish and Game Codes 3511, 4700, 5050, and 5515).
- Bat Species that are designated on the Western Bat Working Group’s (WBWG) Regional Bat Species Priority Matrix as: “RED OR HIGH.” This priority is justified by the WBWG as follows: “Based on available information on distribution, status, ecology, and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment.”

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized “take” (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federal listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Game Code) is protected from unauthorized “take” (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to “take” a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFW prior to initiating the “take.”

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered “rare.” Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a “significant effect on the environment” (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an “Inventory” of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), CDFW requests the inclusion of Rank 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. The Rank 1 and 2 species are defined below:

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- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the Fish and Game Code, and are eligible for state listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern, and are reviewed by CDFW and maintained on “watch lists.”

Additionally, in 2006 CNPS updated their lists to include “threat code extensions” for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- .1 is considered “seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)”;
- .2 is “fairly endangered in California (20-80% of occurrences threatened)”;
- .3 is “not very endangered in California (less than 20% of occurrences threatened or no current threats known).”

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA’s definition of “rare” or “endangered.” Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be “taken” or possessed (i.e., kept in captivity) at any time.

## **6.2 Potential Special-Status Plants on the Project Site**

Figure 4 provides a graphical illustration of the known records for special-status species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status plants have been mapped on or adjacent to the project site. However, according to the CDFW’s CNDDB, a total of eight special-status plant species are known to occur in the region of the project site (Table 3). Most of these plants occur in specialized habitats such as marshes, foothill grasslands, and vernal pools, none of which occur onsite. In the recent past, blue gum eucalyptus trees covered the majority of the project site dating back for several decades; these trees emit allelopathic (growth inhibiting) chemicals from their leaves, acorns and bark that prevent other plants from growing under them. Once bark and leaf debris accumulate on the ground beneath the trees, nearly nothing will grow there. Based on the negative findings during the multiple surveys conducted on this site in 2006, 2011, 2012, 2017, 2018 and 2019, special-status plants are not likely to be found onsite and mitigation for special-status plants should not be warranted.

### 6.3 Potential Special-Status Animals in the Project Site

Figure 4 provides a graphical illustration of the known records for special-status species within three miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status animal records have ever been mapped on or adjacent to the project site. However, a total of 18 special-status animal species are known to occur in the region of the project site (Table 4). Due to the disturbed nature of the project site and its history as a eucalyptus grove, there is a very low likelihood of special-status species occurring onsite. Regardless, due to the sensitivity of four of the special-status wildlife species known to occur in the area, we further discuss these species below.

#### 6.3.1 CALIFORNIA RED-LEGGED FROG

The California red-legged frog (*Rana draytonii*) was federally-listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the Federal Endangered Species Act. On March 16, 2010 the USFWS issued the final designation for California red-legged frog Critical Habitat (USFWS 2010). *The project site does not fall within mapped critical habitat, although it is adjacent* (see Figure 5).

The California red-legged frog is also a state “species of special concern.” While the state designation “species of special concern” does not provide any legally mandated protection, species of special concern must be considered in any project undergoing a CEQA review.

The California red-legged frog is typically found in ponds, slow-flowing portions of perennial and intermittent streams that maintain water in the summer months. This frog is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Populations probably cannot be maintained if all surface water disappears (i.e., no available surface water for egg laying and larval development habitat). Larval California red-legged frogs require 11-20 weeks of permanent water to reach metamorphosis (i.e., to change from a tadpole into a frog), in water depths of 10 to 20 inches (USFWS 2002). Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red-legged frog habitats, though not necessary for this species to be present. Populations of California red-legged frog will be reduced in size or eliminated from ponds supporting non-native species such as bullfrog, Centrarchid fish species (such as sunfish, bluegill, or large-mouth bass), and signal and red swamp crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*, respectively), all of which are known California red-legged frog predators. However, the presence of these non-native species does not preclude the presence of the California red-legged frog.

California red-legged frogs also use upland habitats for migration and dispersal. The USFWS *Recovery Plan for the California Red-Legged Frog* states that frog overland excursions via uplands can vary between 0.25-mile up to 3 miles during the wet season, and that frogs “have been observed to make long-distance movements that are straight-line, point to point migrations rather than using corridors for moving in between habitats” (USFWS 2002). The information presented in the USFWS’ Recovery Plan was taken from a publication by Bulger et al. (2003) that recounts a study in coastal redwoods in Santa Cruz area. M&A believes that such overland straight-line migrations are primarily limited to periods of heavy rainfall or during periods when ambient conditions exhibit high moisture levels such as in fog belts along the coast. Working in

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Point Reyes National Seashore on the coast of California, Fellers and Kleeman (2007) found approximately 31 percent of California red-legged frogs moved more than 30 meters from their breeding sites and about 69 percent moved less than 30 meters from their breeding site during seasonal movement periods. Similarly, Bulger et al. (2003) found that 60 percent of their radio tagged frogs stayed within 30 meters of their breeding sites.

In locations that are characterized by hot and seasonally dry climates, the California red-legged frog is inclined to stay closer to its aquatic environments or will not migrate. Tatarian (2005) who studied an inland population of California red-legged frogs in eastern Contra Costa County where the climate is far drier than the coastal environment, found that all movements started after the first 0.5 cm of rain in the fall, with more terrestrial movements being made in the fall pre-breeding season (57%) than in the winter breeding season (32%) or spring post-breeding season (11%). Tatarian (op. cit.) also found that California red-legged frogs moved greater average distances aquatically (84.6 m) than terrestrially (27.7 m). Greater terrestrial distances were moved in the pre-breeding season (35.2 m) than in the breeding season (15.5 m) or post-breeding season (16.3 m) with the majority of movements occurring for only one of the 3-4 day survey periods. The majority of frogs (57%) were position faithful within a pool, indicating they did not migrate at all. These data suggest that long forays across the landscape found in coastal populations are less likely in dry inland locations.

The USFWS *Recovery Plan for the California Red-Legged Frog* states that populations are “most likely to persist where multiple breeding areas are embedded within a matrix of habitats used for dispersal.” “The primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat” (USFWS 2002).

In the American Canyon/Napa area, there are no records for the California red-legged frog west of State Route 29 where the project site is located. The closest known California red-legged frog occurrence is 1.4 miles east of the project site (CNDDDB Occurrence No. 896). The California red-legged frog at this location was found in a dry cement tank adjacent to a large quarry pond that supported bullfrogs (*Lithobates catesbeiana*). State Route 29 is located between this closest California red-legged frog record and the project site and constitutes an effective geographic barrier to overland California red-legged frog movements to/from the known record location and other extant California red-legged frog populations to the project site. There is no hydrologic connectivity over any undeveloped migration route between the known records for this species and the project site. Finally, the project site does not provide suitable habitat for the California red-legged frog. Based on all the available information, it can be concluded that the project site does not provide suitable habitat for the California red-legged frog. Similarly, the surrounding parcels with dense eucalyptus groves do not provide suitable habitat. Owing to the excessively disturbed conditions on the project site due to prior grading and tree removal activities, this species is not expected to occur on the project site. *Therefore, the proposed project will not impact the California red-legged frog and mitigation should not be warranted.*

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### 6.3.2 SWAINSON'S HAWK

The Swainson's hawk (*Buteo swainsoni*) is a state-listed threatened species, protected pursuant to the California Endangered Species Act (CESA), and Title 14 of the California Code of Regulations. While it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their active nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Kochert 1986). It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall (Schmutz et. al. 1984). Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads (Palmer 1988). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley of California, the majority of Swainson's hawk nests and territories are associated with riparian systems and nests are commonly found in cottonwoods and oaks (Schlorff et. al. 1984). They have also been documented nesting in eucalyptus (*Eucalyptus* spp.), black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), almond (*Prunus dulcis*), Osage orange (*Maclura pomifera*), Arizona cypress (*Cupressus arizonica*), and pine (*Pinus* spp.).

Foraging habitats include grasslands, alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded (CDFG 1994). The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole (*Microtus californicus*). Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations. In addition, agricultural practices (planting, maintenance, harvesting, disking) allow for access to prey, and very likely increase foraging success of Swainson's hawks by flushing prey (personal observations of G. Monk). During the nesting season Swainson's hawks usually forage within two miles of the nest. Swainson's hawk does not require habitats that contain many perches because it most often searches for prey aerially, therefore it can occupy habitats with few or no perches except the nest tree (James 1992).

Swainson's hawks are regular summer visitors and breeders throughout the western states. In the fall months, most Swainson's hawks migrate to Argentina before returning to the United States to breed in the late-spring (typically April). For decades, Argentina farmers were spraying insecticides over habitats that included gregarious night roosts of the Swainson's hawk, killing many thousands of these hawks. This practice was halted in the last 10 years and the Swainson's hawk population appears to be dramatically responding in California. While in the 1970s through 1990s there were only two relatively small populations of Swainson's hawks that remained resident in California year-round in the Davis area and in the Sacramento River Delta, resident and migrant populations of the Swainson's hawks are now dramatically expanding their nesting distribution in California since insecticide use over Argentinian wintering grounds was halted (G. Monk, personal observations). For example, Swainson's hawks were never recorded nesting in the Napa County area until relatively recently.

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The closest known record for nesting Swainson's hawk is 2.6 miles northeast of the project site (CNDDDB Occurrence No. 2744). No Swainson's hawk nests have been observed on the site or offsite in the vicinity of the project site during M&A's project site surveys. However, the nesting population appears to be increasing throughout its nesting range in northern California (recent CNDDDB records and G. Monk general observations) and the eucalyptus trees growing adjacent to the project site provide suitable nesting habitat. Therefore, there is the possibility that Swainson's hawks could nest near this project site in future years. *Hence, prior to earth-disturbance or construction, nesting surveys must be conducted that confirm or negate this species' presence as a nesting bird on or adjacent to the project site. Accordingly, impacts to Swainson's hawk are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

### 6.3.3 WESTERN BURROWING OWL

The western burrowing owl (*Athene cunicularia hypugaea*) is a California "species of special concern." Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Finally, based upon this species' rarity status, any unmitigated impacts to rare species would be considered a "significant effect on the environment" pursuant to §21068 of the CEQA Statutes and §15382 of the CEQA Guidelines. Thus, this owl species must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency. When these owls occur on project sites, typically, mitigation requirements are mandated in the conditions of project approval from the CEQA lead agency.

Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low-growing vegetation. Often, the burrowing owl utilizes rodent burrows, typically California ground squirrel (*Otospermophilus beecheyi*) burrows, for nesting and cover. They may also on occasion dig their own burrows or use man-made objects such as concrete culverts or rip-rap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of these owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the entrances of their burrows, grazed grasslands seem to be their preferred habitat because it allows them to view the world at 360 degrees without obstructions.

The closest CNDDDB record was documented 2.6 miles southeast of the project site in an area that has since been developed (CNDDDB Occurrence No. 109). The project site was severely disturbed during the eucalyptus removal in 2012; thus, ground squirrel burrows are few and of recent origin. The mobility of the western burrowing owl enables the species to colonize the recent burrows. M&A did not observe western burrowing owls or any indirect evidence that burrowing owls are using or residing on the project site during any of the site surveys.

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Regardless, the project site provides marginal nesting habitat for the western burrowing owl. *In order to confirm or negate the presence of western burrowing owls on site, surveys must be conducted prior to the commencement of earth-moving or construction. Accordingly, impacts to western burrowing owl are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

#### 6.3.4 NORTHERN HARRIER

The northern harrier (*Circus cyaneus*) is a California species of special concern. This raptor is protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young and is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Northern harriers build grass-lined nests on the ground within dense, low-lying vegetation in a variety of habitats, though they are typically found nesting in grassland or marsh habitats. They usually nest on level to near level ground. This species is particularly vulnerable to ground predators such as coyotes (*Canis latrans*), red fox (*Vulpes vulpes*), and various snake species. Ground nesting birds in general are also subject to disturbance by agricultural practices. Northern harriers may forage over the project site and may nest in the open ruderal habitats onsite that provide suitable nesting habitat for this species. Hence, the proposed project could result in impacts to nesting northern harriers.

The closest CNDDDB record was documented 2.8 miles west of the project site (CNDDDB Occurrence No. 29). The project site was severely disturbed during the eucalyptus removal in 2012. Regardless, the project site provides marginal nesting habitat for the northern harrier. *In order to confirm or negate the presence of northern harriers on site, surveys must be conducted prior to the commencement of earth-moving or construction. Accordingly, impacts to northern harrier are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

## 7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss their pertinence to the proposed development.

### 7.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

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Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain a incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the



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geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the “federal nexus agency,” for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the “action agency” – that is, the federal agency that is carrying out, funding, or approving a project - that the project “may affect” a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in “jeopardy” to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion, it will contain either a “jeopardy” or “non-jeopardy” decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federal listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a “non-jeopardy” Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an “incidental take” permit that allows applicants to “take” federally-listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, for the applicant to obtain an "incidental take permit," the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally-listed species, and the measures the applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

#### 7.1.1 RESPONSIBLE AGENCY

FESA gives regulatory authority to the USFWS for federally-listed terrestrial species and non-anadromous fish. The NMFS has regulatory authority over federally-listed marine mammals and anadromous fish.

#### 7.1.2 APPLICABILITY TO THE PROPOSED PROJECT

The closest known California red-legged frog occurrence is 1.4 miles east of the project site (CNDDDB Occurrence No. 896). The California red-legged frog was found in a dry cement tank

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adjacent to a large quarry pond that supported bullfrogs. State Route 29 is located between the closest California red-legged frog record and the project site and constitutes an effective geographic barrier to overland California red-legged frog movements to/from the known record location and other extant California red-legged frog populations to the project site. There is no hydrologic connectivity along any undeveloped migration route between the known records for this species and the project site. Finally, the project site does not provide suitable habitat for the California red-legged frog. Based on all the available information, it can be concluded that the project site does not provide suitable habitat for the California red-legged frog. Owing to the excessively disturbed conditions on the project site due to prior grading and tree removal activities, this species is not expected to occur on the project site. Therefore, the proposed project will not impact the California red-legged frog.

No other federally listed species are expected to occur on the project site. The project site does not provide fisheries habitat as it consists entirely of upland communities. *Therefore, it can be stated with confidence that the proposed project would not impact federally listed plant, animal, or fish species.*

## **7.2 Federal Migratory Bird Treaty Act**

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to “take” (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

### **7.2.1 APPLICABILITY TO THE PROPOSED PROJECT**

Western burrowing owl, northern harrier, Swainson’s hawk, red-shouldered hawk, and red-tailed hawk (*Buteo jamaicensis*), among other raptors (birds of prey) could nest in the eucalyptus grove in the immediate vicinity of the project site. These raptors would be protected by the Migratory Bird Treaty Act. Also, the common songbirds that could forage on the site would be protected pursuant to this Act. As long as there is no direct mortality of species protected pursuant to this Act caused by development of the site, there should be no constraints to development of the site. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while such birds were nesting. Upon completion of nesting, the project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites for potentially occurring species in the Impacts and Mitigations section below.

## **7.3 California Endangered Species Act**

### **7.3.1 SECTION 2081 OF THE CALIFORNIA ENDANGERED SPECIES ACT**

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for “harm” (see discussion of FESA, above),

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CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFW determines that a proposed project could impact a state-listed threatened or endangered species, CDFW will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFW and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a state-listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFW will issue an incidental take permit only if:

- 1) The authorized take is incidental to an otherwise lawful activity;
- 2) the impacts of the authorized take are minimized and fully mitigated;
- 3) measures required to minimize and fully mitigate the impacts of the authorized take:
  - a) are roughly proportional in extent to the impact of the taking on the species;
  - b) maintain the project applicant's objectives to the greatest extent possible; and,
  - c) capable of successful implementation; and,
- 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." See Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

Fish and Game Code §2080.1 allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal incidental take permit) pursuant to the FESA, to submit the federal opinion or permit to CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFW determines that the federal incidental take permit is consistent

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with state law, and that all state-listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are state-listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state CESA permit under Section 2081(b). Section 2081(b) is of no use if an affected species is state-listed, but not federally-listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

#### 7.3.2 APPLICABILITY TO THE PROPOSED PROJECT

No state-listed plant species would likely occur on the project site due to an absence of habitat. The project site does not support any trees and does not provide nesting habitat for the Swainson's hawk. Suitable nesting habitat for this hawk exists in the eucalyptus trees on the adjacent properties; thus, preconstruction nesting surveys will be necessary to ensure that earth-work or construction does not occur while this raptor is nesting nearby or that if it does, it does not disturb the nesting birds. If the proposed project follows the proposed mitigation measures as detailed in the Impacts and Mitigation section below, *an Incidental Take Permit (ITP) from the CDFW should not be necessary for this project.*

### 7.4 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the “take, possession, or destruction of birds, their nests or eggs.” Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered “take.” Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, “fully protected” birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). “Fully protected” birds may not be taken or possessed (that is, kept in captivity) at any time.

#### 7.4.1 APPLICABILITY TO THE PROPOSED PROJECT

Raptors that could be affected by the project include western burrowing owl, northern harrier, Swainson's hawk, red-shouldered hawk and red-tailed hawk. Preconstruction surveys would have to be conducted for these species to ensure that there is no direct take of these birds including their eggs, or young. Any active nests that were found during preconstruction surveys

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would have to be avoided by the project. Suitable non-disturbance buffers would have to be established around nest sites until the nesting cycle is complete. More specifics on the size of buffers are provided below in the Impacts and Mitigations section.

## 7.5 City of American Canyon General Plan

The City of American Canyon General Plan sets forth the following goals, objectives, and policies relevant to biological resources on the project site. Only those applicable to the proposed project are discussed herein:

### 7.5.1 GOAL 8, OBJECTIVE 8.1 AND POLICIES 8.1.1 AND 8.1.4

- **Goal 8:** Protect and preserve the significant habitats, plants and wildlife that exist in the City and its Planning Area.
- **Objective 8.1:** Maintain data and information regarding areas of significant biological value within the Planning Area to facilitate resource conservation and the appropriate management of development.
- **Policy 8.1.1:** Acquire and maintain the most current information available regarding the status and location of sensitive biological elements (species and natural communities) within the City and, as appropriate, within the Sphere of Influence and Urban Limit Line.
- **Policy 8.1.4:** Regularly monitor and review developments proposed within the City's Planning Area to assess their impacts on local biological resources and to recommend appropriate mitigation measures that the developer and/or government agency can implement.

### 7.5.2 APPLICABILITY TO THE PROPOSED PROJECT

Consistent with General Plan Policies 8.1.1 and 8.1.4, this report provides a detailed assessment of the biological resources present on the project site.

### 7.5.3 OBJECTIVE 8.2 AND POLICY 8.2.1

- **Objective 8.2:** Balance the preservation of natural habitat areas, including coastal saltmarsh, mixed hardwood forest, oak savannah, and wetland and riparian habitats, with new development in the City.
- **Policy 8.2.1:** Land use applications for developments located within sensitive habitats, including coastal saltmarsh, mixed hardwood forest, oak savannah, and riparian habitats (see Figure 8-1) [General Plan], or with areas potentially occupied by vernal pools (see Figure 8-2) [General Plan] shall be accompanied by sufficient technical background data to enable an adequate assessment of the potential for impacts on these resources, and possible measures to reduce any identifiable impacts. In addition to examining Figure 8-1 [General Plan] for information on these sensitive habitats, an on-site assessment shall be conducted by a City approved qualified biologist to determine if sensitive habitats exist on-site. In instances where the potential for significant impacts exists, the applicant must submit a Biological Assessment Report prepared by a qualified professional.

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#### 7.5.4 APPLICABILITY TO THE PROPOSED PROJECT

Consistent with General Plan Policy 8.2.1, the project site has been evaluated for the presence of sensitive biological resources. This report represents a Biological Assessment Report documenting findings from background research, and presents the current habitats and species present on the project site.

#### 7.5.5 OBJECTIVE 8.3 AND POLICY 8.3.1

- **Objective 8.3:** Protect natural drainages and riparian corridors within the American Canyon Planning Area.
- **Policy 8.3.1:** Review proposed developments in wetlands and riparian habitats to evaluate their conformance with the following policies and standards:
  - a. The development plan shall fully consider the nature of existing biological resources and all reasonable measures shall be taken to avoid significant impacts, including retention of sufficient natural open space and undeveloped buffer zones.

#### 7.5.6 APPLICABILITY TO THE PROPOSED PROJECT

No wetland, natural drainages or riparian habitats are proposed to be impacted, as there are none present on the 10-acre project site.

#### 7.5.7 POLICY 8.3.1 B

- **Policy 8.3.1 b:** Development shall be designed and sited to preserve watercourses, riparian habitat, vernal pools, and wetlands in their natural condition, unless these actions result in an unfeasible project, in which case habitat shall be replaced in accord with subsection "g" (below).

#### 7.5.8 APPLICABILITY TO THE PROPOSED PROJECT

Proposed development on the project site does not impact watercourses, riparian habitat, vernal pools or wetlands.

#### 7.5.9 POLICY 8.3.1 E

- **Policy 8.3.1 e:** Development shall incorporate fences, walls, vegetative cover, or other measures to adequately buffer habitat areas, linkages or corridors from built environment.

#### 7.5.10 APPLICABILITY TO THE PROPOSED PROJECT

Previous disturbance on the project site prohibits presence of land linkages, corridors, or habitat areas. Similarly, because creation of a mitigation site is not necessary for this site, there will be no habitat area or otherwise natural space in need of buffering.

#### 7.5.11 POLICY 8.3.1 F

- **Policy 8.3.1 f:** Roads and utilities shall be located and designed such that conflicts with biological resources, habitat areas, linkages or corridors are avoided where feasible.

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#### 7.5.12 APPLICABILITY TO THE PROPOSED PROJECT

Consistent with Policy 8.3.1.f, and Policy 8.3.1.g roads and utilities have been designed to avoid conflicts with biological resources on the project site.

#### 7.5.13 POLICY 8.3.1 G

- **Policy 8.3.1 g:** Future development shall utilize appropriate open space or conservation easements in order to protect sensitive species or their habitats.

#### 7.5.14 POLICIES 8.3.5 AND 8.3.6

- **Policy 8.3.5:** Establish a network of open spaces along the City's natural drainages and riparian corridors and link significant biological habitats. Any recreational use of these areas shall be designed to avoid damaging sensitive habitat areas.
- **Policy 8.3.6:** Preserve and integrate the City's natural drainages in new development, as opposed to their channelization or undergrounding, emphasizing opportunities for the development of pedestrian paths and greenbelts along their lengths throughout the City.

#### 7.5.15 APPLICABILITY TO THE PROPOSED PROJECT

There are no drainages on the project site or significant biological habitats onsite; hence, these policies do not apply to the proposed project.

## 8. CITY OF AMERICAN CANYON –ORDINANCES

### 8.1 Trees (Ord. 18.40.110)

- A. Existing trees shall be preserved on the site unless otherwise approved by the city council as a part of the site development plans.
- B. Unless specifically approved by the city council, any tree removed shall be replaced on the site. Replacement trees shall be a minimum size of a twenty-four-inch box of the same species unless specifically approved by the city council. (Ord. 98-10 § 1 (part), 1998).

#### 8.1.1 APPLICABILITY TO THE PROPOSED PROJECT

The project site does not support any trees.

## 9. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and CDFW to determine those areas within a project area that would be subject to their regulation.

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## 9.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting

### 9.1.1 SECTION 404 OF THE CLEAN WATER ACT

Congress enacted the Clean Water Act “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

In the Federal Register "waters of the United States" are defined as, “...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce...” (33 CFR Section 328.3).

Limits of Corps’ jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

- (1) Extends to the mean high tide line, or
- (2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

- (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
- (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
- (3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).



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Wetlands are defined as: “...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions” (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

#### 9.1.1.1 Significant Nexus of Tributaries

On December 2, 2008, the Corps and the Environmental Protection Agency (EPA) issued joint guidance on implementing the U.S. Supreme Court decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (herein referred to simply as “Rapanos”) which address the jurisdiction over waters of the United States under the Clean Water Act. In this joint guidance these agencies provide guidance on where they will assert jurisdiction over waters of the U.S.

The EPA and Corps will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (for example, typically three months).
- Wetlands that directly abut such tributaries.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

#### 9.1.1.2 Isolated Areas Excluded from Section 404 Jurisdiction

In addition to areas that may be exempt from Section 404 jurisdiction, some isolated wetlands and waters may also be considered outside of Corps jurisdiction as a result of the Supreme Court’s decision in *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* (531 U.S. 159 [2001]). Isolated wetlands and waters are those areas

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that do not have a surface or groundwater connection to, and are not adjacent to a navigable “Waters of the U.S.,” and do not otherwise exhibit an interstate commerce connection.

#### 9.1.1.3 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a “jurisdictional determination”) to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to “waters of the United States.”

Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of “waters of the United States” found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an “alternatives analysis” that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g. a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (i.e., must receive “verification” from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of “no net loss” of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (i.e., impacts would be mitigated). Typically, the Corps requires mitigation to be “in-kind” (i.e., if a

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stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction thereof recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required. Usually the 2:1 ratio is met by recreation or enhancement of an equivalent amount of wetland as is impacted, in addition to a requirement to preserve an equivalent amount of wetland as is impacted by the project. In some cases, the Corps allows “out-of-kind” mitigation if the compensation site has greater value than the impacted site. For example, if project designs call for filling an intermittent drainage, mitigation should include recreating the same approximate jurisdictional area (same drainage widths) at an offsite location or on a set-aside portion of the project area. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

#### 9.1.2 APPLICABILITY TO THE PROPOSED PROJECT

M&A originally prepared a preliminary wetland delineation map of the 35 acre parcel in 2006; however, this map was never submitted to the Corps. In 2011, a formal wetland delineation was conducted on July 14th and July 20th by M&A biologists Ms. Hope Kingma and Mr. Tim O'Donnell. The wetland delineation report and map were submitted to the Corps on August 22, 2011, requesting confirmation of the extent of Corps jurisdiction at the American Canyon Flat Lands site. In a letter dated January 31, 2012 the extent of Corps jurisdiction was confirmed, based on a field investigation on September 21, 2011. That jurisdictional determination expired five (5) years from the date of that letter.

M&A biologists Ms. Hope Kingma and Mr. Devin Jokerst conducted another wetland delineation of the entire 35.85-acre parcel (known as Lot 3), which includes this project site, on November 16, 2016 to re-verify the extent of jurisdictional areas on the site. M&A used the Corps' 1987 *Wetlands Delineation Manual* in conjunction with the *Regional Supplement for the Arid West Region*. The jurisdictional determination request and the Draft Aquatic Resources Delineation Map (Sheet 2) were submitted to the Corps in December 2016. Mr. Bryan Matsumoto of the Corps conducted a site verification visit on May 18, 2017. On May 16, 2018 the Corps issued the jurisdictional determination confirming their jurisdiction over 0.043-acre of waters of the U.S. on the 35.43-acre parcel. The confirmed Jurisdictional Delineation Map (Sheet 2) and letter are attached. None of the jurisdictional features on that map occur on the 10-acre project site that is the subject of this report. *As such there will be no impacts to the waters of the U.S. for this project.*

## 9.2 State Water Resources Control Board (SWRCB) / California Regional Water Quality Control Board (RWQCB)

### 9.2.1 SECTION 401 OF THE CLEAN WATER ACT

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is an NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific

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certification of water quality. Certification of NWP requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality.

#### 9.2.2 APPLICABILITY TO THE PROPOSED PROJECT

The Corps' Confirmed Reverification Aquatic Resources Delineation Map dated May 22, 2017 is provided as Sheet 2. The proposed project will not impact any waters of the State. *Therefore Section 401 of the Clean Water Act is not necessary for this project.*

### 9.3 California Department of Fish and Wildlife Protections

#### 9.3.1 SECTION 1602 OF CALIFORNIA FISH AND GAME CODE

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

- (1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
  - (A) A detailed description of the project's location and a map.
  - (B) The name, if any, of the river, stream, or lake affected.
  - (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
  - (D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
  - (E) A copy of any other applicable local, state, or federal permit or agreement already issued.
  - (F) Any other information required by CDFW" (Fish & Game Code 2014).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

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### 9.3.2 APPLICABILITY TO THE PROPOSED PROJECT

There are no streams or drainages on the project site that would be regulated by CDFW. *Hence, an SBAA with CDFW would not be necessary for this project.*

## 10. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORM WATER MANAGEMENT

### 10.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the State Water Resources Control Board (SWRCB) has elected to adopt only one statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.
2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.
3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs). It is also enforceable through citizens' suits and represents a dramatic shift in the State Water Board's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

#### Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

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Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:

- routine maintenance to maintain original line and grade,
- hydraulic capacity, or original purpose of the facility,
- nor does it include emergency construction activities required to protect public health and safety.

The Construction General Permit includes several “post-construction” requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This “runoff reduction” approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development (“LID”) design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA’s 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the CWA, the RWQCB regulates construction discharges under the National Pollutant Discharge Elimination System (NPDES). The project sponsor of construction or other activities that disturb more than 1 acre of land must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB<sup>1</sup>.

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<sup>1</sup> CGP Order 2009-0009-DWQ remains in effect, but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

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#### 10.1.1 APPLICABILITY TO THE PROPOSED PROJECT

To obtain coverage under the SWRCB administered Construction General Permit, the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, Stormwater Pollution Prevention Plan (SWPPP), Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects.) Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify Best Management Practices (BMPs) for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

### 10.2 RWQCB Municipal Storm Water Permitting Programs

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the U.S. Environmental Protection Agency (USEPA) promulgated rules establishing Phase 1 of the National Pollutant Discharge Elimination System (NPDES) stormwater program. The Phase 1 program for Municipal Separate Storm Sewer System (MS4s) requires operators that serve populations of 100,000 or greater to implement a stormwater management program to control polluted discharges from these MS4s. While Phase 1 of the municipal stormwater program has focused on large urban areas, Phase 2 of the municipal stormwater program was promulgated by the USEPA for smaller urban areas including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

MS4 permits require the discharger (or dischargers that are permitted by the MS4 permittees) to develop and implement a Storm Water Management Plan/Program (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify what best management practices (BMPs) will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

#### 10.2.1 NPDES C.3 REQUIREMENTS

The NPDES C.3 requirements went into effect for any project (public or private) that is "deemed complete" by the City or County (Lead Agency) on or after February 15, 2005, and which will result in the creation or replacement (other than normal maintenance) of at least 10,000 square feet of impervious surface area (roofs, streets, patios, parking lots, etc. Provision C.3 requires the onsite treatment of stormwater prior to its discharge into downstream receiving waters. Note that these requirements are in addition to the existing NPDES requirements for erosion and

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sedimentation controls during project construction that are typically addressed through acquisition of coverage under the SWRCB administered Construction General Permit. The C.3 requirements are typically required to be implemented by MS4 permittees (and their constituencies).

Projects subject to Provision C3 must include the capture and onsite treatment of all stormwater from the site prior to its discharge, including rainwater falling on building rooftops. Project applicants are required to implement appropriate source control and site design measures and to design and implement stormwater treatment measures in order to reduce the discharge of stormwater pollutants to the *maximum extent practicable*. While the Clean Water Act does not define “maximum extent practicable,” the Stormwater Quality Management Plans required as a condition of the municipal NPDES permits identify control measures (known as Best Management Plans, or BMPs) and, where applicable, performance standards, to establish the level of effort required to satisfy the maximum extent practicable criterion. It is ultimately up to the professional judgment of the reviewing municipal staff in the individual jurisdictions to determine whether a project’s proposed stormwater controls will satisfy the maximum extent practicable criterion. However, there are numeric criteria used to ensure that treatment BMPs have been adequately sized to accommodate and treat a site’s stormwater. The C3 requirements are quite extensive, and their complete explanation is not provided here. However, the following are minimums that should be understood and adhered to:

- The applicant must provide a detailed and realistic site design *and impervious surface area calculations*. This site design *and calculations* will be used by the Lead Agency (County or City) to determine/*verify* the amount of impervious surface area that is being created or replaced. It should include all proposed buildings, roads, walkways, parking lots, landscape areas, etc., that are being created or redeveloped. If large (greater than 10,000 square feet) lots are being created an effort will need to be made to determine the total impervious surface area that could be created on that parcel. For example, if only a portion of the lot is shown as a “building envelope” then the lead agency will need to consider that a driveway will have to be constructed to access the envelope and that the envelope will then be developed as shown. If the C.3 thresholds are met (creation/redevelopment of 10,000 square feet of impervious surface area), a Stormwater Control Plan (SWCP) (if required by the Lead Agency, or whatever steps for compliance with Provision C3 are required locally) must accompany the application.
- If a SWCP is required by the Lead Agency for the project it must be stamped by a Licensed Civil Engineer, Architect, or Landscape Architect.

#### 10.2.2 APPLICABILITY TO THE PROPOSED PROJECT

The Water Board issued county-wide municipal stormwater permits in the early 1990s to operators of MS4s. On November 19, 2015, the Water Board re-issued these county-wide municipal stormwater permits as one Municipal Regional Stormwater NPDES Permit to regulate stormwater discharges from municipalities and local agencies. Permittees in the San Francisco Bay area are included in a Municipal Regional Permit (MRP), issued to 76 cities, counties and



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flood control districts in 2009 and revised in 2015. Each of the Permittee's must file an Annual Report that is comprised of three parts: regional, countywide, and individual. Some requirements of the MRP are being implemented by the Bay Area Stormwater Management Agencies Association (BASMAA) on behalf of all the MRP Permittees. Other elements are being implemented collaboratively by the Permittees through their respective countywide programs. As such, BASMAA and the countywide programs have submitted Annual Report elements on the regional and countywide collaborative tasks, respectively, on behalf of the MRP Permittees and the individual MRP Permittees have also submitted Annual Report elements on the Permit Provisions they have implemented individually.

It is the applicant's responsibility to ensure that the project civil engineer prepares all required Storm Water Planning documents for submittal to the City of American Canyon to comply with its MS4 permit requirements. In addition, if the project includes a requirement to obtain a Clean Water Act Section 401 permit from the RWQCB, the Storm Water Management Plan (or equivalent plan) must be submitted to the RWQCB with the application package submitted for acquisition of a Section 401 permit (aka "water quality certification").

The applicant is proposing to treat all stormwater falling on impervious surfaces in the detention/bioretention basin located on the western edge of the project site (see Sheet UP4). Once treated, stormwater would be conveyed to "level spreader outfalls" that will be installed along the western project site boundary. The level spreader outfalls consist of perforated pipe set on contour that will discharge flows uniformly across a gradual slope covered by riprap, which will mimic sheet flow conditions similar to current project site runoff (see Storm Drain Level Spreader Detail). Accordingly, the project will not violate any water quality standards.

## **11. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS**

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus, the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact

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Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines “endangered” species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. “Rare” species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will “substantially affect a rare or endangered species of animal or plant or the habitat of the species.” The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

This report has been prepared as a Biology section that is suitable for incorporation into a Mitigated Negative Declaration. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA and can be incorporated by the CEQA lead agency (in this case City of American Canyon) into an initial study or higher levels of CEQA review including incorporation into the biology section of an Environmental Impact Report.

## **12. IMPACTS ANALYSIS**

Below the criteria used in assessing impacts to Biological Resources is presented.

### **12.1 Significance Criteria**

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies’ considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as “significant,” “potentially significant,” or “less than significant.” Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated “waters of the United States” and/or stream channels.

#### **12.1.1 THRESHOLDS OF SIGNIFICANCE**

##### **12.1.1.1 Plants, Wildlife, Waters**

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it would:

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- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected “wetlands” as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

#### 12.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes “other waters” (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

#### 12.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFW typically considers including riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

### **13. IMPACT ASSESSMENT AND PROPOSED MITIGATION**

In this section we discuss potential impacts to sensitive biological resources, including special-status wildlife species. We follow each impact with a mitigation prescription that when

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implemented would reduce impacts to the greatest extent possible. This impact analysis is based on the Preliminary Site Plan (Sheet A-1).

### **13.1 Impact BIO-1. Development of the Project Could Have a Potentially Significant Impact on Nesting Swainson's hawks (Potentially Significant)**

The Swainson's hawk is a state listed threatened species. While the Swainson's hawk has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

No Swainson's hawk nests have been observed on the site or offsite in the vicinity of the project site during M&A's multiple project site surveys; however, the nesting population appears to be increasing throughout its nesting range in northern California and thus, it could conceivably nest in trees near the project site in the future.

If Swainson's hawks are found to be nesting adjacent to the project site, implementation of the proposed project could be viewed by CDFW as a project that could impact nesting Swainson's hawks. Nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by CDFW as a violation of the Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (CDFG v. ACID, 8 CA App. 4, 41554) (CDFG 1994).

Typically, CDFW requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found adjacent to the project site within an area of influence (which is generally considered to be within 1,000 feet of the project site) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur, a Fish and Game Section 2081 management authorization would be required. As such, in the absence of survey results, it must be concluded that impacts to Swainson's hawk from the proposed project would be *potentially significant pursuant to CEQA*. This impact could be mitigated to a level considered less than significant pursuant to CEQA.

The closest known record for nesting Swainson's hawk is 2.6 miles north of the project site (CNDDDB Occurrence No. 2744). There are extensive foraging opportunities both around the closest nesting location and between this nesting location and the project site. Considering that the entire project site consisted of a eucalyptus grove until 2012, it did not historically provide potential foraging habitat. Also, as the project site is essentially surrounded by eucalyptus forest, it is not a foraging destination which would likely attract foraging Swainson's hawks. Furthermore, M&A has confirmed that the project site has a low rodent population, therefore development of the project site will not have a significant impact on Swainson's hawk foraging habitat. Therefore, no mitigation for the loss of foraging habitat is warranted for this project.

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### **13.2 Mitigation Measure BIO-1. Mitigation for Potential Impacts to Nesting Swainson's Hawk**

Preconstruction surveys shall be conducted for a quarter-mile radius around all project activities and shall be completed for at least two survey periods immediately prior to the project's initiation. The survey period timing and methodology shall be conducted in accordance with CDFW's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 1994), which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements.

If Swainson's hawks are found to be nesting on the project site or within a ¼-mile of the project site, consultation with CDFW will be required. The size of the nest protection buffer will be determined during consultation with CDFW but at a minimum there will be a 300-foot non-disturbance buffer around the nest site.

Implementation of this mitigation measure would reduce potential impacts to nesting Swainson's hawk to a level considered less than significant pursuant to CEQA.

### **13.3 Impact BIO-2. Development of the Project Could Have a Potentially Significant Impact on Western Burrowing Owl (Potentially Significant)**

The western burrowing owl is a California Species of Special Concern. This raptor (that is, bird of prey) is also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and its nest, eggs, and young are protected under California Fish and Game Code Sections 3503, 3503.5. While western burrowing owls have not been observed on the project site and their likelihood of presence on the project site is considered to be low, limited suitable nesting habitat occurs on the project site. Since the western burrowing owl is a mobile species that could move onto the project site prior to development, preconstruction surveys would be necessary to determine its presence. Thus, the project may result in impacts to the western burrowing owl; this would be a *potentially significant impact pursuant to CEQA*. This impact could be mitigated to a level considered less than significant pursuant to CEQA.

### **13.4 Mitigation Measure BIO-2. Mitigation for Potential Impacts to Western Burrowing Owl**

Based on the presence of this species in the project vicinity and the potential habitat found on the project site, a preconstruction survey for burrowing owls should be conducted 14 days prior or less to initiating ground disturbance. As burrowing owls may recolonize a site after only a few days, time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance to ensure absence. If no owls are found during these surveys, no further regard for the burrowing owl would be necessary.

a. Burrowing owl surveys should be conducted by walking the entire project site. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be 7 meters to 20 meters and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility.

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Poor weather may affect the surveyor's ability to detect burrowing owls thus, avoid conducting surveys when wind speed is greater than 20 kilometers per hour and there is precipitation or dense fog. To avoid impacts to owls from surveyors, owls and/or occupied burrows should be avoided by a minimum of 50 meters (approximately 160 ft.) wherever practical to avoid flushing occupied burrows. Disturbance to occupied burrows should be avoided during all seasons.

b. If burrowing owls are detected on the site, the following restricted activity dates and setback distances are recommended per CDFW's Staff Report (2012).

- From April 1 through October 15, low disturbance and medium disturbance activities should have a 200 meter buffer while high disturbance activities should have a 500 meter buffer from occupied nests.
- From October 16 through March 31, low disturbance activities should have a 50 meter buffer, medium disturbance activities should have a 100 meter buffer, and high disturbance activities should have a 500 meter buffer from occupied nests.
- No earth-moving activities or other disturbance should occur within the aforementioned buffer zones of occupied burrows. These buffer zones should be fenced as well. If burrowing owls were found in the project area, a qualified biologist would also need to delineate the extent of burrowing owl habitat on the site.

Implementation of these mitigation measures would reduce potential impacts to burrowing owls to a level considered less than significant pursuant to CEQA.

### **13.5 Impact BIO-3: Development of the Project Would Have a Potentially Significant Impact on Tree or Ground Nesting Raptors (Potentially Significant)**

Tree or ground nesting raptors that could be affected by the project include northern harrier, white-tailed kites, red-shouldered hawk and red-tailed hawk. Nesting raptors are protected by the federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-711 and 50 CFR 10.13). All nesting raptors, their eggs and young are protected pursuant to California Fish and Game Code §3503.5. Specific surveys for nesting raptors have not been conducted. In the absence of survey results indicating otherwise, it is conservatively assumed that implementation of the proposed project may impact nesting raptors which could result in nest abandonment and death of eggs or young. Therefore, impacts to nesting raptors are regarded as *potentially significant pursuant to CEQA*. This impact could be mitigated to a level considered less than significant pursuant to CEQA.

### **13.6 Mitigation Measure BIO-3: Mitigation for Potential Impacts to Tree or Ground Nesting Raptors**

To ensure that impacts to tree or ground nesting raptors are avoided or offset, the following mitigation measures will be implemented:

a. In order to avoid impacts to nesting raptors, a preconstruction nesting survey will be conducted by a qualified raptor biologist prior to commencing with earth-moving or construction work if this work would commence between February 1st and August 31st. The survey should be

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conducted within the 30 day period prior to site disturbance. The raptor nesting surveys will include examination of all trees and ruderal habitat within 200 feet of the project site.

b. If nesting raptors are identified during the surveys, the dripline of the nest tree or ground-nesting site must be fenced with orange construction fencing (provided the nest site is on the project site), and a 200-foot radius around the nest tree or nest site must be staked with orange construction fencing. If the tree or nest site is located off the project site, then the buffer should be demarcated per above where the buffer occurs on the project site. The size of the buffer may be altered if a qualified raptor biologist conducts behavioral observations and determines the nesting raptors are well acclimated to disturbance. If this occurs, the raptor biologist should prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors. No construction or earth-moving activity should occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1st. This date may be earlier or later, and would have to be determined by a qualified raptor biologist. If a qualified biologist is not hired to watch the nesting raptors then the buffers should be maintained in place through the month of August and work within the buffer can commence on September 1st.

c. If the preconstruction nesting survey identifies a large stick or other type of raptor nest that appears inactive at the time of the survey, but there are territorial raptors evident in the nest site vicinity, a protection buffer (as described above) should be established around the potential nesting tree until the qualified raptor biologist determines that the nest is not being used. In the absence of conclusive observations indicating the nest site is not being used, the buffer should remain in place until a second follow-up nesting survey can be conducted to determine the status of the nest and eliminate the possibility that the nest is utilized by a late-spring nesting raptor (for example, red-tailed hawk). This second survey should be conducted even if construction has commenced. If during the follow-up late season nesting survey a nesting raptor is identified utilizing the nest, the protection buffer should remain until it is determined by a qualified raptor biologist that the young have fledged and have attained sufficient flight skills to avoid project construction zones. If the nest remains inactive, the protection buffer can be removed and construction and earth-moving activities can proceed unrestrained.

Implementation of these mitigation measures would reduce potential impacts to nesting raptors to a level considered less than significant pursuant to CEQA.

### **13.7 Impact BIO-4: Development of the Project Would Have a Potentially Significant Impact on Nesting Passerine Birds. (Potentially Significant)**

Nesting passerine birds (i.e., perching birds) are protected by the federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-711 and 50 CFR 10.13) and by California Fish and Game Code §3503 and §3503.5 which protects nesting birds, their eggs and young. These birds frequently change nesting locations from year to year and thus, past nesting histories are not necessarily indicative of future nesting activities. Accordingly, impacts to nesting passerine birds, their eggs, and/or young resulting from the proposed project are considered potentially significant. *This impact could be mitigated to a level considered less than significant pursuant to CEQA.*

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### **13.8 Mitigation Measure BIO-4: Mitigation for Potential Impacts to Nesting Passerine Birds.**

To ensure that impacts to nesting passerine birds are avoided or offset, a nesting survey shall be conducted 15 days prior to commencing construction/ grading or tree removal activities if this work would commence between March 1 and September 1. If common passerine birds or special-status passerine birds are identified nesting on the project site, a non-disturbance buffer of 75 feet shall be established or as otherwise prescribed by a qualified ornithologist. The buffer shall be demarcated with orange construction fencing. Disturbance within the buffer shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed.

Typically, most passerine birds in the region of the project site are expected to complete nesting by August 1<sup>st</sup>. However, many species can complete nesting by the end of June or in early to mid-July. Regardless, nesting buffers shall be maintained until August 1<sup>st</sup> unless a qualified ornithologist determines that young have fledged and are independent of their nests at an earlier date. If buffers are removed prior to August 1<sup>st</sup>, the qualified biologist conducting the nesting surveys should prepare a report that provides details about the nesting outcome and the removal of buffers. This report shall be submitted to the City of American Canyon Planning Department prior to the time that nest protection buffers are removed if the date is before August 1st.

Implementation of this mitigation measure would reduce potential impacts nesting passerine birds to a level considered less than significant pursuant to CEQA.



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Monk & Associates  
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Figure 2. SDG 217 Commerce Distribution Center  
Project Site Location Map  
City of American Canyon, California

38.185626, -122.274079  
Section: 23, T4N R4W  
7.5-Minute Cuttings Wharf quadrangle  
HUC08 Watershed CA: San Pablo Bay  
Aerial Photograph Source: ESRI  
Map Preparation Date: December 3, 2019



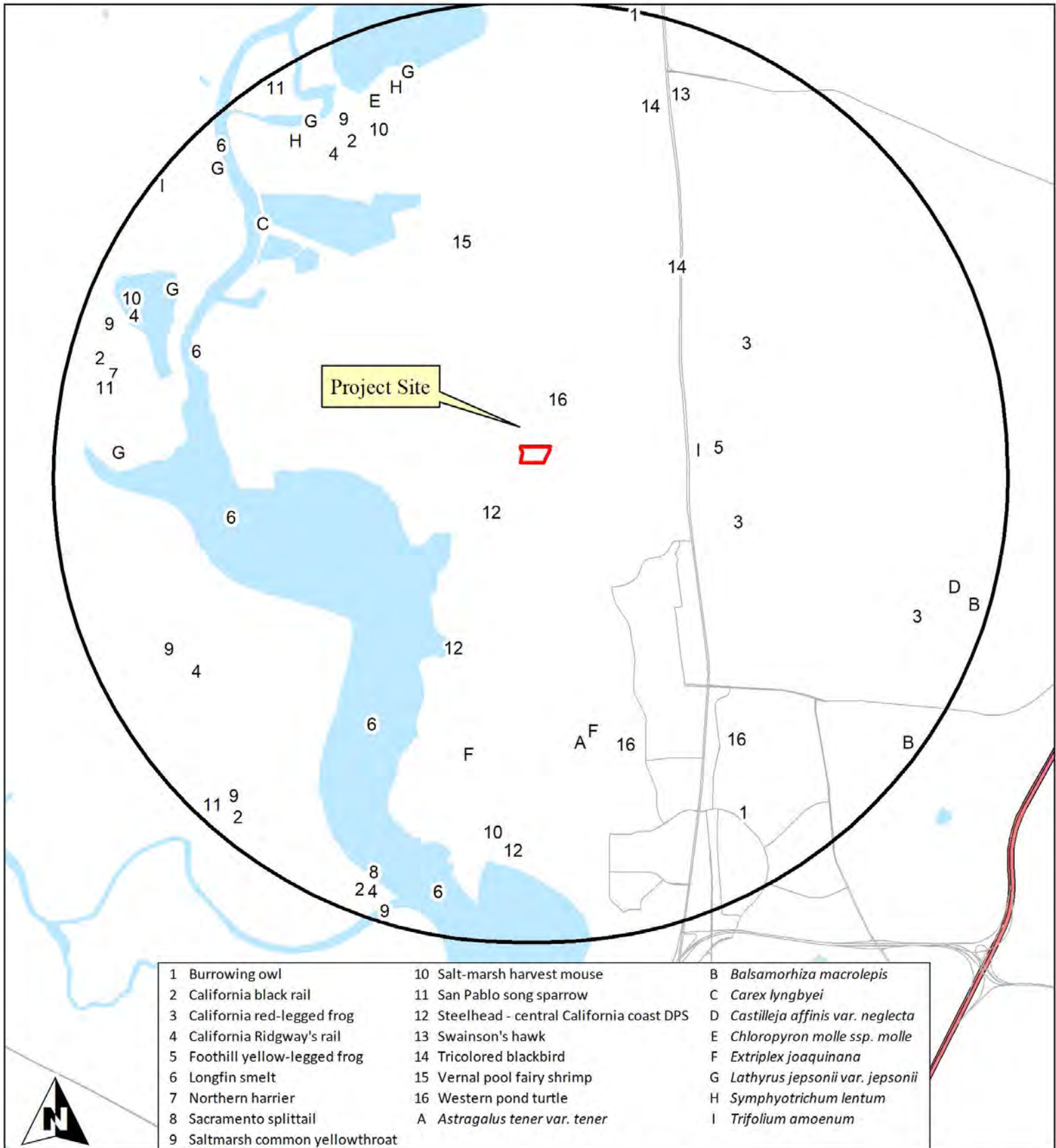


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Figure 3. SDG 217 Commerce Project Site  
Aerial Photograph  
City of American Canyon, California

Aerial Photograph Source: ESRI  
Map Preparation Date: December 3, 2019





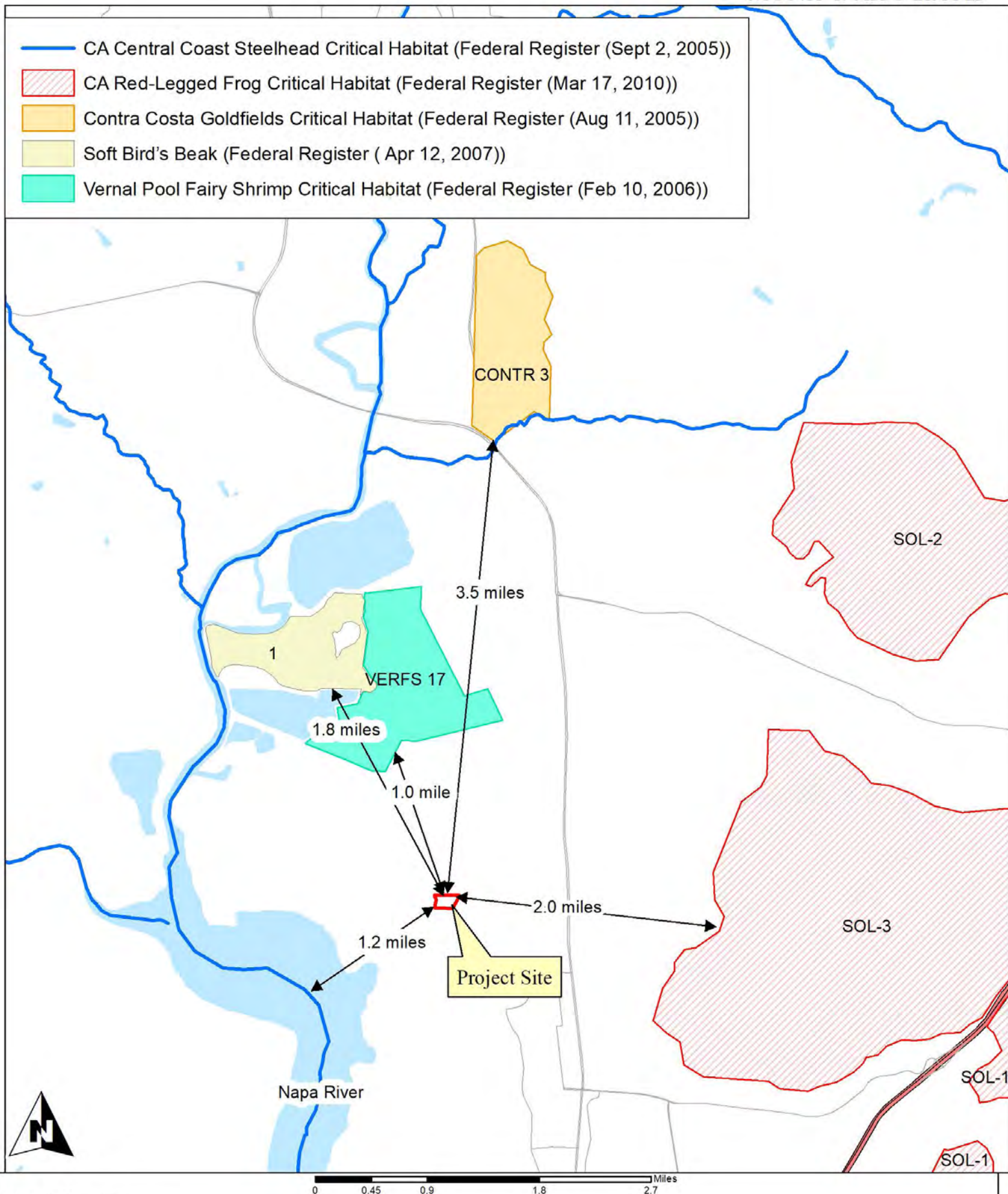


Table 1

## Plant Species Observed on the SDG 217 Commerce Distribution Center Project Site

## Angiosperms - Dicots

**Apiaceae**

<i>Torilis sp.</i>	sock destroyer
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**Asteraceae**

<i>Baccharis pilularis subsp. pilularis</i>	Baccharis
* <i>Carduus pycnocephalus subsp. pycnocephalus</i>	Italian thistle
* <i>Cirsium vulgare</i>	Bull thistle
* <i>Dittrichia graveolens</i>	Stinkwort
* <i>Hypochaeris radicata</i>	Rough cat's-ear
* <i>Sonchus asper subsp. asper</i>	Prickly sow-thistle

**Brassicaceae**

* <i>Hirschfeldia incana</i>	Short-podded mustard
* <i>Sinapis alba</i>	White mustard

**Caryophyllaceae**

* <i>Stellaria media</i>	Common chickweed
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**Convolvulaceae**

* <i>Convolvulus arvensis</i>	Bindweed
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**Fabaceae**

* <i>Medicago polymorpha</i>	California burclover
* <i>Trifolium repens</i>	White clover
* <i>Vicia sativa</i>	Common vetch

**Geraniaceae**

* <i>Erodium cicutarium</i>	Red-stem filaree
* <i>Geranium dissectum</i>	Cut-leaf geranium

**Montiaceae**

<i>Claytonia perfoliata</i>	Miner's lettuce
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**Myrsinaceae**

* <i>Lysimachia arvensis</i>	Scarlet pimpernel
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**Orobanchaceae**

* <i>Parentucellia viscosa</i>	Yellow glandweed
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**Papaveraceae**

* <i>Fumaria parviflora</i>	Fumaria
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**Plantaginaceae**

* <i>Plantago lanceolata</i>	English plantain
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**Polygonaceae**

* <i>Rumex crispus</i>	Curly dock
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**Ranunculaceae**

* <i>Ranunculus muricatus</i>	Spiny-fruit buttercup
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**Rubiaceae**

<i>Galium aparine</i>	Goose grass
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\* Indicates a non-native species



**Table 1****Plant Species Observed on the SDG 217 Commerce Distribution Center Project Site****Angiosperms -Monocots****Iridaceae***Sisyrinchium californicum*

Golden-eyed-grass

**Juncaceae***Juncus occidentalis*

Slender rush

**Poaceae***\*Avena barbata*

Slender wild oat

*\*Bromus diandrus*

Ripgut grass

*\*Bromus hordeaceus*

Soft chess

*Elymus triticoides*

Creeping wildrye

*\*Festuca perennis*

perennial ryegrass

*\*Hordeum murinum*

Wall barley

*Phalaris angusta*

Canary timothy grass

**Table 2**  
**Wildlife Observed on the ICC SDG 217 Commerce Distribution Center Project Site**

<b>Amphibians</b>	
Sierran treefrog	<i>Pseudacris sierra</i>
<b>Reptiles</b>	
Western fence lizard	<i>Sceloporus occidentalis</i>
<b>Birds</b>	
Northern flicker	<i>Colaptes auratus</i>
Great blue heron	<i>Ardea herodias</i>
Turkey vulture	<i>Cathartes aura</i>
Canada goose	<i>Branta canadensis</i>
Osprey	<i>Pandion haliaetus</i>
White-tailed kite	<i>Elanus leucurus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
American kestrel	<i>Falco sparverius</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Wild turkey	<i>Meleagris gallopavo</i>
California quail	<i>Callipepla californica</i>
Virginia rail	<i>Rallus limicola</i>
Eurasian collared-dove	<i>Streptopelia decaocto</i>
Mourning dove	<i>Zenaida macroura</i>
Barn owl	<i>Tyto alba</i>
Anna's hummingbird	<i>Calypte anna</i>
Belted kingfisher	<i>Megasceryle alcyon</i>
Nuttall's woodpecker	<i>Picoides nuttallii</i>
Black phoebe	<i>Sayornis nigricans</i>
Say's phoebe	<i>Sayornis saya</i>
California scrub jay	<i>Apelocoma californica</i>
American crow	<i>Corvus brachyrhynchos</i>
Common raven	<i>Corvus corax</i>
Tree swallow	<i>Tachycineta bicolor</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Barn swallow	<i>Hirundo rustica</i>
Chestnut-backed chickadee	<i>Poecile rufescens</i>
Bushtit	<i>Psaltirparus minimus</i>
Brown creeper	<i>Certhia americana</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Marsh wren	<i>Cistothorus palustris</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Western bluebird	<i>Sialia mexicana</i>
American robin	<i>Turdus migratorius</i>
Wrentit	<i>Chamaea fasciata</i>
Northern mockingbird	<i>Mimus polyglottos</i>
European starling	<i>Sturnus vulgaris</i>
Yellow-rumped warbler	<i>Setophaga coronata</i>
Spotted towhee	<i>Pipilo maculatus</i>

**Table 2****Wildlife Observed on the ICC SDG 217 Commerce Distribution Center Project Site**


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California towhee	<i>Pipilo crissalis</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Song sparrow	<i>Melospiza melodia</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bullock's oriole	<i>Icterus bullockii</i>
House finch	<i>Haemorhous mexicanus</i>
Lesser goldfinch	<i>Spinus psaltria</i>
House sparrow	<i>Passer domesticus</i>

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**Mammals**


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Western gray squirrel	<i>Sciurus griseus</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
California ground squirrel	<i>Otospermophilus beecheyi</i>
Columbian black-tailed deer	<i>Odocoileus hemionus ssp. columbianus</i>
Coyote	<i>Canis latrans</i>
Raccoon	<i>Procyon lotor</i>
Feral cat	<i>Felis catus</i>

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Table 3

## Special-Status Plant Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<b>Asteraceae</b>					
<i>Balsamorhiza macrolepis</i> Big-scale balsam-root	Fed: - State: - CNPS: Rank 1B.2	March-June	Cismontane woodland; chaparral; valley and foothill grassland; [sometimes serpentine]. 90 - 1555 meters	Closest record is from 2011 and is 3.0 miles east of the project site (Occurrence No. 7).	None. The project site is highly disturbed. No suitable habitat on the project site.
<i>Symphyotrichum lentum</i> Suisun Marsh aster	Fed: - State: - CNPS: Rank 1B.2	August-November	Marshes and swamps (brackish and fresh water)	Closest record is from 1993 and is 2.5 miles northwest of the project site (Occurrence No. 128).	None. The project site is highly disturbed. No suitable habitat on the project site.
<b>Chenopodiaceae</b>					
<i>Extriplex joaquinana</i> San Joaquin spearscale	Fed: - State: - CNPS: Rank 1B.2	April-October	Chenopod scrub; meadows; valley and foothill grassland; [alkaline].	Closest record is from and is 1.8 miles south of the project site (Occurrence No. 58).	None. The project site is highly disturbed. No suitable habitat on the project site.
<b>Cyperaceae</b>					
<i>Carex lyngbyei</i> Lyngbye's sedge	Fed: - State: - CNPS: Rank 2	May-August	Marshes or swamps (brackish or freshwater)	Closest record is from 2008 and is 2.3 miles northwest of the project site (Occurrence No. 28).	None. The project site is highly disturbed. No suitable habitat on the project site.
<b>Fabaceae</b>					
<i>Astragalus tener tener</i> Alkali milkvetch	Fed: - State: - CNPS: Rank 1B.2	March-June	Playas; mesic grasslands (adobe clay), vernal pools (alkaline).	Closest record is from 1993 and is 1.8 miles south of the project site (Occurrence No. 50).	None. The project site is highly disturbed. No suitable habitat on the project site.

**Table 3****Special-Status Plant Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site**

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<i>Lathyrus jepsonii jepsonii</i> Delta tule pea	Fed: - State: - CNPS: Rank 1B.2	May-September	Marshes and swamps (freshwater and brackish).	Closest record is from 1978 and is 2.6 miles northwest of the project site (Occurrence No. 13).	None. The project site is highly disturbed. No suitable habitat on the project site.
<i>Trifolium amoenum</i> Showy Indian clover	Fed: FE State: - CNPS: Rank 1B.1	April-June	Valley and foothill grassland (sometimes serpentinite)	Closest record is from 1952 and is 1.2 miles east of the project site (Occurrence No. 23).	None. The project site is highly disturbed. No suitable habitat on the project site.
<b>Orobanchaceae</b>					
<i>Castilleja affinis neglecta</i> Tiburon paintbrush	Fed: FE State: CT CNPS: Rank 1B.2	April-June	Valley and foothill grassland [serpentinite]	Closest record is from 2013 and is 3.0 miles east of the project site (Occurrence No. 5).	None. The project site is highly disturbed. No suitable habitat on the project site.
<i>Chloropyron molle molle</i> Soft bird's-beak	Fed: FE State: CR CNPS: Rank 1B.2	July-September	Marshes and swamps (coastal salt).	Closest record is from 2010 and is 2.3 miles north of the project site (Occurrence No. 3).	None. The project site is highly disturbed. No suitable habitat on the project site.

**Table 3****Special-Status Plant Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site**

Family					
Taxon					
Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

**\*Status****Federal:**

FE - Federal Endangered

FT - Federal Threatened

FPE - Federal Proposed Endangered

FPT - Federal Proposed Threatened

FC - Federal Candidate

**State:**

CE - California Endangered

CT - California Threatened

CR - California Rare

CC - California Candidate

CSC - California Species of Special Concern

**CNPS Continued:**

Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere

Rank 2A - Extirpated in California, common elsewhere

Rank 2B.1 - Seriously endangered in California, but more common elsewhere

Rank 2B.2 - Fairly endangered in California, but more common elsewhere

Rank 2B.3 - Not very endangered in California, but more common elsewhere

Rank 3 - Plants about which we need more information (Review List)

Rank 3.1 - Plants about which we need more information (Review List)

Rank 3.2 - Plants about which we need more information (Review List)

Rank 3.3 - Plants about which we need more information (Review List)

Rank 3.4 - Plants about which we need more information (Review List)

Rank 4 - Plants of limited distribution - a watch list

**CNPS:**

Rank 1A - Presumed extinct in California

Rank 1B - Plants rare, threatened, or endangered in California and elsewhere

Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/  
high degree and immediacy of threat)

Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)

Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no  
current threats known)

**Table 4**  
**Special-Status Wildlife Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site**

Species	*Status	Habitat	Closest Locations	Probability on Project Site
<b>Invertebrates</b>				
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression	Closest record is from 2003 and is 1.5 miles north of the project site (Occurrence No. 232).	None. No suitable habitat on the project site.
<b>Fish</b>				
Steelhead - Central California Coast DPS <i>Oncorhynchus mykiss irideus</i>	Fed: FT State: - Other:	From Russian River south to Soquel Creek, and to Pajaro River. Also found in San Francisco & San Pablo Bay Basins. Spawn in clear, cool, well oxygenated streams greater than 18 cm deep.	Closest record is from 2000 and is 0.39 miles southwest of the project site (Occurrence No. 4).	None. No suitable habitat on the project site.
Longfin smelt <i>Spirinichus thaleichthys</i>	Fed: -- State: CT Other:	Endemic to the Sacramento-San Joaquin River system. Inhabits open waters in the Delta and Suisun Bay. After spawning, larvae are carried downstream to brackish nursery areas.	Closest record is from 2012 and is 1.2 miles west of the project site (Occurrence No. 26).	None. No suitable habitat on the project site.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	Fed: State: CSC Other:	Endemic to the lakes and rivers of the Central Valley; now confined to the delta, Suisun Bay, and associated marshes. Inhabits slow moving river sections and dead-end sloughs. Needs flooded vegetation for spawning.	Closest record is from 2001 and is 2.9 miles southwest of the project site (Occurrence No. 12).	None. No suitable habitat on the project site.
<b>Amphibians</b>				
California red-legged frog <i>Rana draytonii</i>	Fed: FT State: CSC Other:	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Closest record is from 2006 and is 1.4 miles east of the project site (Occurrence No. 896).	None. No suitable habitat on the project site.

**Table 4****Special-Status Wildlife Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site**

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Foothill yellow-legged frog <i>Rana boylei</i>	Fed: -- State: CC Other:	Found in partially shaded, shallow streams with rocky substrates. Requires perennial pools or flowing water. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Closest record is from 193X and is 1.2 miles east of the project site (Occurrence No. 2341).	None. No suitable habitat on the project site.
<b>Reptiles</b>				
Western pond turtle ** <i>Emys marmorata</i>	Fed: - State: CSC Other:	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	Closest record is from 2002 and is 0.45 miles northeast of the project site (Occurrence No. 552).	None. No suitable habitat on or adjacent to the project site.
<b>Birds</b>				
Northern harrier <i>Circus cyaneus</i>	Fed: - State: CSC Other:	Nests on the ground or in shrubby vegetation typically in grasslands, fallow farm lands, near freshwater and salt water marshes.	Closest record is from 2004 and is 2.8 miles west of the project site (Occurrence No. 29).	Unlikely to nest onsite. Preconstruction surveys will be conducted.
Swainson's hawk <i>Buteo swainsoni</i>	Fed: - State: CT Other:	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Closest record is from 2013 and is 2.6 miles northeast of the project site (Occurrence No. 2744).	Unlikely to nest adjacent to project site. Preconstruction surveys will be conducted.
Ferruginous hawk <i>Buteo regalis</i>	Fed: -- State: WL Other:	Winter migrant to California where they prefer grasslands, cultivated fields and arid areas with an abundance of prey species, such as pocket gophers, black-tailed hares, and cottontails.	Closest record is from 1988 and is 3.0 miles north of the project site (Occurrence No. 28).	None. Does not nest in California.



**Table 4****Special-Status Wildlife Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site**

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Peregrine falcon <i>Falco peregrinus</i>	Fed: - State: - Other:	Nests on high cliffs near wetlands, lakes, rivers, or other water; also nests on human-made structures. Nest consists of a scrape on a depression or ledge in an open site. Was formerly state and federally listed but delisted due to species recovery.	Closest record is from 2015 and is 3.0 miles east of the project site (Occurrence No. 42).	None. No suitable nesting habitat on or near the project site.
California black rail <i>Laterallus jamaicensis coturniculus</i>	Fed: -- State: CT Other:	Inhabits salt marshes bordering larger bays. Prefers tidal salt marshes of pickleweed.	Closest record is from 2011 and is 2.5 miles northwest of the project site (Occurrence No. 31).	None. No suitable habitat on the project site.
California Ridgway's rail <i>Rallus obsoletus obsoletus</i>	Fed: FE State: CE Other:	Inhabits salt water and brackish marshes with tidal sloughs in San Francisco Bay. Prefers dense pickleweed for cover, but forages for invertebrates along mud-bottomed sloughs.	Closest record is from 1989 and is 2.4 miles northwest of the project site (Occurrence No. 16).	None. No suitable habitat on the project site.
Western burrowing owl <i>Athene cunicularia hypugaea</i>	Fed: -- State: CSC Other:	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Closest record is from 1989 and is 2.6 miles southeast of the project site (Occurrence No. 109).	Unlikely to nest on the project site. Preconstruction surveys will be conducted.
Salt marsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	Fed: - State: CSC Other:	Resident of freshwater and salt water marshes in the San Francisco Bay region. Requires thick, continuous cover for foraging and tall grasses, tules, or willows for nesting.	Closest record is from 2004 and is 2.5 miles northwest of the project site (Occurrence No. 37).	None. No suitable habitat on the project site.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	Fed: -- State: CSC Other:	More properly known as Samuels Song Sparrow. Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the California marshes; nests in grindelia bordering slough channels.	Closest record is from 2004 and is 2.8 miles west of the project site (Occurrence No. 17).	None. No suitable habitat on the project site.

**Table 4****Special-Status Wildlife Species Known Within 3 Miles of the SDG 217 Commerce Distribution Center Project Site**

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Tricolored blackbird <i>Agelaius tricolor</i>	Fed: - State: CC Other: CSC	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Closest record is from 2014 and is 1.6 miles northeast of the project site (Occurrence No. 243).	None. No suitable nesting habitat on the project site.

**Mammals**

Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	Fed: FE State: CE Other:	Inhabits saline marshes in the San Francisco Estuary. Prefers pickleweed marshes. Requires higher areas for escaping high water.	Closest record is from 1989 and is 2.4 miles south of the project site (Occurrence No. 150).	None. No suitable habitat on the project site.
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**\*Status**

Federal:	State:
FE - Federal Endangered	CE - California Endangered
FT - Federal Threatened	CT - California Threatened
FPE - Federal Proposed Endangered	CR - California Rare
FPT - Federal Proposed Threatened	CC - California Candidate
FC - Federal Candidate	CSC - California Species of Special Concern
FPD - Federally Proposed for delisting	FP - Fully Protected
	WL - Watch List. Not protected pursuant to CEQA

\*\*The USFWS hopes to finish a 12-month finding for western pond turtle in 2021 but until formally listed, it is not afforded the protections of FESA.





- Data Points
- Wetland (694 Sq. Ft., 0.016 Acre)
- Linear Wetlands (389 Lin. Ft., 1,167 Sq. Ft., 0.027 Acre)
- Isolated Wetlands (RWQCB Jurisdiction) (874 Sq. Ft., 0.020 Acre)
- Plastic Pipe
- RCP
- Control Points
- Delineation Area: Lot 3 (35.8 Acres)

Wetland #	Sq. Ft.	Acres	Linear Wetland #	Lin. Ft.	Sq. Ft.	Acres
W 1	601	0.014	LW 1	113	339	0.008
W 2	93	0.002	LW 2	276	828	0.019

Isolated Wetland #	Sq. Ft.	Acres
IW 1	874	0.020



U.S. Army  
Corps of Engineers  
San Francisco District  
Regulatory Division

Approved Jurisdictional Determination, pursuant to  
Section 404 Clean Water Act

American Canyon Flat Lands  
American Canyon, Napa County, California  
(APNs: 058-030-067 and 058-030-065)

Accurate as depicted in legend

Section 404 jurisdiction verified only within the designated Delineation Area.  
Construction-related and isolated wetlands are not subject to Section 404  
jurisdiction.

File ID: 2011-00322      Date: March 6, 2018      Sheet 2 of 2



September 3, 2020

Industrial and Commercial Contractors, LP  
403 W. Yosemite Avenue, Suite 105  
Madera, California 93637

Attention: Mr. Brian Doswald

**RE: Addendum Letter to CEQA Biology Report Discussing Proposed Borrow Site  
SDG Commerce 217 Distribution Center, Napa, California  
APN: 058-030-065-000**

Dear Mr. Doswald:

## 1. INTRODUCTION

Monk & Associates, Inc., (M&A) has prepared this Addendum to our March 2, 2020, *Revised Biological Resource Analysis* (biology report) for the SDG Commerce 217 Distribution Center located in the City of American Canyon, California (the “project site”). Since the time M&A prepared our biology report for the project site, it has been determined that it will be necessary to acquire soil from the adjacent parcel to the south (the “borrow area parcel”) and transport this soil for use as clean fill on the project site. M&A has prepared this Addendum to our biology report to address the transportation of soil from the offsite borrow area parcel onto the project site and to analyze any affects this activity could have on mapped jurisdictional waters of the United States/State that lie inbetween the project site and the adjacent borrow area parcel. Mapped waters of the United States are shown on the attached exhibits.

## 2. DESCRIPTION OF THE PROJECT SITE AND ADJACENT BORROW AREA PARCEL

The project site and the adjacent borrow area parcel were once part of a contiguous approximately 35-acre project site that M&A conducted surveys on over multiple years dating between 2006 and 2018. Both the project site and adjacent borrow area parcel are dominated by ruderal (weedy) vegetation including stinkwort (*Dittrichia graveolens*), Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), slender wild oat (*Avena barbata*), common vetch (*Vicia sativa*), red-stem filaree (*Erodium cicutarium*), bull thistle (*Cirsium vulgare*), Italian thistle (*Carduus pycnocephalus pycnocephalus*), bristly ox-tongue (*Helminthotheca echioides*), California burclover (*Medicago polymorpha*), and cut-leaf geranium (*Geranium dissectum*). These non-native, weedy species provide little habitat value to wildlife and they do not constitute a native plant community. Native, coyote brush (*Baccharis pilularis* subsp. *consanguinea*), a plant that responds to land disturbances, is also common on the 35 acres. Ruderal vegetation is the only vegetation community found on the project site. The adjacent borrow area parcel, however, in addition to supporting a ruderal herbaceous community also supports waters of the United States, as described below.

On May 16, 2018, the U.S. Army Corps of Engineers issued a jurisdictional determination confirming their jurisdiction over 0.043-acre of waters of the U.S. on the approximately 35-acre

Addendum Letter to CEQA Biology Report Discussing Proposed Borrow Site  
SDG Commerce 217 Distribution Center, Napa, California  
APN: 058-030-065-000

Page 2

parcel that comprises the project site, the adjacent borrow area parcel, and another property now known as 330 Commerce Center (see attached exhibits). The entire 0.043-acre of waters of the U.S. confirmed by the Corps is found on the adjacent borrow area parcel as shown on the attached exhibit "Borrow Site Rough Grading," Sheet 1 prepared by RSA on August 21, 2020. There are no waters of the United States or State on the project site.

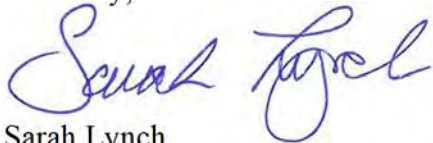
### **3. DISCUSSION OF PROPOSED ACTIVITIES AND AVOIDANCE OF IMPACTS TO MAPPED WATERS OF THE UNITED STATES**

The project applicant intends to rough grade the borrow area parcel and transport soil from that parcel onto the project site for use in development of the project site. In order to protect the waters of the United States/State that occur in between the project site and the borrow area parcel, a 25-foot buffer area around the outside edge of the wetlands will be staked and protected with fiber roll, silt fencing and high visibility orange construction fencing to prevent equipment from driving into the wetlands during hauling activities. See the attached exhibit.

With these protection measures in place, as shown on the attached Borrow Site Rough Grading exhibit, Sheet 1, attached, *there are no expected impacts to waters of the U.S./State from the transport of soil/materials from the borrow area parcel to the project site.*

This concludes our addendum to our biology report. If you have any questions or require additional information, please do not hesitate to contact me at (925) 323-4850 or [Sarah@monkassociates.com](mailto:Sarah@monkassociates.com). Thank you.

Sincerely,



Sarah Lynch  
Senior Associate Biologist

Attachments: U.S. Army Corps of Engineers Confirmed Aquatic Resources Delineation Map;  
Sheet 1, Borrow Site Rough Grading prepared by RSA, August 21, 2020









- Data Points
- Wetland (694 Sq. Ft., 0.016 Acre)
- Linear Wetlands (389 Lin. Ft., 1,167 Sq. Ft., 0.027 Acre)
- ▨ Isolated Wetlands (RWQCB Jurisdiction) (874 Sq. Ft., 0.020 Acre)
- Plastic Pipe
- RCP
- Control Points
- Delineation Area: Lot 3 (35.8 Acres)

Wetland #	Sq. Ft.	Acres	Linear Wetland #	Lin. Ft.	Sq. Ft.	Acres
W 1	601	0.014	LW 1	113	339	0.008
W 2	93	0.002	LW 2	276	828	0.019

Isolated Wetland #	Sq. Ft.	Acres
IW 1	874	0.020



U.S. Army  
Corps of Engineers  
San Francisco District  
Regulatory Division

Approved Jurisdictional Determination, pursuant to  
Section 404 Clean Water Act

American Canyon Flat Lands  
American Canyon, Napa County, California  
(APNs: 058-030-067 and 058-030-065)

Accurate as depicted in legend

Section 404 jurisdiction verified only within the designated Delineation Area.  
Construction-related and isolated wetlands are not subject to Section 404  
jurisdiction.

File ID: 2011-00322      Date: March 6, 2018      Sheet 2 of 2



**Appendix D**

**Geologic Report**





ICC, LP  
JAN 09 2020  
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**GEOTECHNICAL ENGINEERING INVESTIGATION  
PROPOSED SDG COMMERCE 217  
DISTRIBUTION CENTER  
1075 COMMERCE COURT  
AMERICAN CANYON, CALIFORNIA**

**PROJECT NO. 032-19032  
DECEMBER 9, 2019**

**Prepared for:**

**MR. BRIAN DOSWALD  
INDUSTRIAL AND COMMERCIAL CONTRACTORS, L.P.  
413 W. YOSEMITE AVENUE, SUITE 105  
MADERA, CALIFORNIA 93637**

**Prepared by:**

**KRAZAN & ASSOCIATES, INC.  
GEOTECHNICAL ENGINEERING DIVISION  
4320 ORANGE GROVE AVENUE, SUITE E-F  
SACRAMENTO, CALIFORNIA 95841  
(916) 564-2200**



**Krazan** & ASSOCIATES, INC.  
SITE DEVELOPMENT ENGINEERS

# **Krazan** & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING  
CONSTRUCTION TESTING & INSPECTION

December 9, 2019

KA No. 032-19032

Mr. Brian Doswald  
Industrial and Commercial Contractors, L.P.  
413 W. Yosemite Avenue, Suite 105  
Madera, California 93637

**RE: Geotechnical Engineering Investigation  
Proposed SDG Commerce 217 Distribution Center  
1075 Commerce Court  
American Canyon, California**


Dear Mr. Doswald:

In accordance with your request, we have completed a Geotechnical Engineering Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at or (916) 564-2200.



Respectfully submitted,  
**KRAZAN & ASSOCIATES, INC.**

  
David R. Jarosz, II  
Managing Engineer  
RGE No. 2698/RCE No. 60185

DRJ:ht

**With Offices Serving The Western United States**

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03219032 Report (SDG 217 Distribution Ctr).doc

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December 9, 2019

KA Project No. 032-19032

**GEOTECHNICAL ENGINEERING INVESTIGATION  
PROPOSED SDG COMMERCE 217 DISTRIBUTION CENTER  
1075 COMMERCE COURT  
AMERICAN CANYON, CALIFORNIA**

**INTRODUCTION**

This report presents the results of our Geotechnical Engineering Investigation for the proposed SDG Commerce 217 Distribution Center to be located at Commerce Court near Eucalyptus Drive in American Canyon, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls, pavement design and soil cement reactivity.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs, and the boring log legend are presented in Appendix A. Appendix A contains a description of the laboratory-testing phase of this study, along with the laboratory test results. Appendices B and C contain guides to earthwork and pavement specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

**PURPOSE AND SCOPE**

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements, and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services was outlined in our proposal dated October 14, 2019 (KA Proposal P641-19) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A field investigation consisting of drilling 24 borings to depths ranging from approximately 10 to 50 feet for evaluation of the subsurface conditions at the project site.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.
- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

### **PROPOSED CONSTRUCTION**

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are unavailable. On a preliminary basis, it is understood that development will include the construction of an approximately 217,000 square foot distribution center building. It is anticipated the building will be a single-story concrete tilt-up structure utilizing concrete slab-on-grade construction. Foundation loads are anticipated to be light to moderate. On-site paved areas and landscaping are also planned for the development of the project.

In the event, these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

### **SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION**

The site is rectangular in shape encompasses approximately 10.39 acres. The site is located approximately 0.4 miles north of Eucalyptus Drive, just west of Commerce Court Extension in American Canyon, California. The site has a street address of 1075 Commerce Court. The site is surrounded by agricultural land, groves of trees and industrial developments.

Site history was obtained by reviewing historical aerial photographs taken in 1948, 1982, 1993, 2002, 2005, 2012 and 2018. Review of the 1948 aerial photograph indicates that the project site was occupied by a grove of trees. Commerce Boulevard Extension trended north-south along the eastern edge of the site. The land to the north was vacant. Land to the south, east and west were occupied by groves of trees. A stream trending north-south was located west of the project site.

Review of the 1982 and 1993 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 1948 aerial photograph. The northwest portion of the site had been cleared of trees.

Review of the 2002 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1993 aerial photograph. A parking area and access road were located at the clearing in the northwest corner. Land further north of the site was developed with an industrial warehouse.

Review of the 2005 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 2002 aerial photograph. Land immediately north of the site was developed with an industrial warehouse. The section of Commerce Boulevard Extension bordering the project site was realigned to connect to new Commerce Boulevard, resulting in an enlarged project site.

Review of the 2012 and 2018 aerial photograph indicates that the project site and the land to the south had been cleared of the trees and were vacant.

Presently, the site predominately consists of vacant land. Some grading activities had been performed throughout the site. Several stockpiles of rocks are located in the northeast corner of the site. The surface soils have a loose consistency and contain a moderate amount of grass and weeds. Trees border the site to the north and west. Commerce Boulevard Extension is a gravel road and borders the site to the east. Buried utility lines may be located along Commerce Boulevard Extension along the eastern edge of the site. The site gently slopes from east to west with approximately 20 to 23 feet in grade change across the site.

### **GEOLOGIC SETTING**

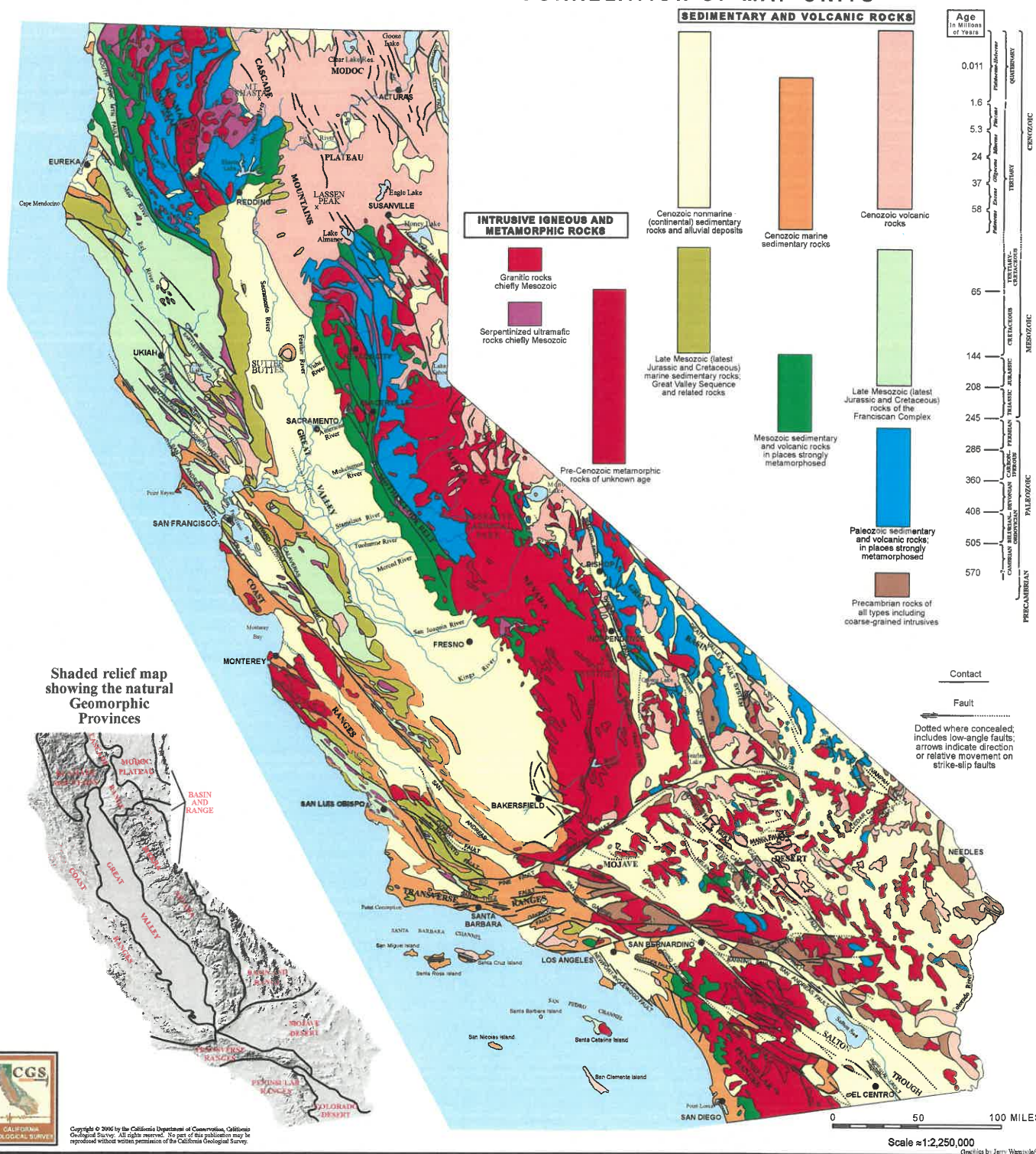
The subject site is located in the north-eastern portion of the San Francisco Bay Region, within the Coast Ranges Geomorphic Province of California. The Coast Range Geomorphic Province borders the Coast of California and generally consists, more or less, of a discontinuous series of northwesterly/southeasterly trending mountain ranges, ridges, and intervening valleys characterized by intense, complex folding and faulting. The ridges are most often comprised of granitic, metavolcanic, and metasedimentary rocks. Numerous northwest to southeast trending faults parallel the trend of the Coast Ranges.

The project site is located in a seismically active region, which is situated on a tectonic plate boundary marked by the San Andreas Fault System and several northwest trending active and potentially active faults. The site is in close proximity to several major faults, including the West Napa, Green Valley, Hayward-Rodgers Creek, Mount Diablo Thrust, Calaveras, and San Andreas faults located approximately 0.8 miles west, 8.0 miles east, 11 miles west, 24 miles south, 29 miles southeast, and 30 miles west of the site, respectively. Although the site is in close proximity to several faults, the site is not within a State of California Earthquake Fault Zone or Special Study Zone for faulting. The site is located approximately 3,200 feet west of the West Napa Fault and 600 feet from the California Earthquake fault zone for the West Napa Fault. The site is not located on a State of California Seismic Hazard Zone Map.

The probability of one or more earthquakes of magnitude 6.7 (Richter scale) or higher occurring in the San Francisco Bay Area within a 30-year period of time is evaluated by the U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities on a periodic basis. The result of the 2008 evaluation indicated a 63 percent likelihood that such an earthquake event will occur in the Bay Area between 2007 and 2036 (USGS 2008). The faults with the greater probability of a magnitude 6.7 or higher earthquake are the Hayward fault at 31 percent and the San Andreas fault at 21 percent.

Based on published geologic maps of the area the near-surface deposits in the vicinity of the subject site are indicated to be comprised of late Pleistocene to Holocene fan deposits of sand, gravel, silt and clay that are moderately to poorly sorted and moderately to poorly bedded. The site is located at an elevation of approximately 20 feet above sea level. Groundwater in the vicinity of the site is typically encountered at depths of approximately 11 to 25 feet.





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## **FIELD AND LABORATORY INVESTIGATIONS**

Subsurface soil conditions were explored by drilling 24 borings to depths ranging from approximately 10 to 50 feet below existing site grade, using a truck-mounted drill rig. In addition, 3 bulk subgrade samples were obtained from the site for laboratory R-value testing. The approximate boring and bulk sample locations are shown on the site plan. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, expansion potential, plasticity, R-value and moisture density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the soil-cement reactivity. Details of the laboratory test program and results of the laboratory test are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

## **SOIL PROFILE AND SUBSURFACE CONDITIONS**

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the upper soils consisted of approximately 6 to 12 inches of very loose clayey sand and sandy clay. These soils are disturbed, have low strength characteristics and are highly compressible when saturated.

Beneath the loose surface soils, approximately 7 to 13½ feet of loose to dense clayey sand or stiff to hard sandy clay and silty clay were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. The clayey soils had a moderate to high potential for expansion. Penetration resistance ranged from 16 blows per foot to greater than 50 blows per 6 inches. Dry densities ranged from 100 to 132 pcf. Representative soil samples swelled approximately 1 to 1½ percent under a 2 ksf load when saturated. Representative soil samples had angles of internal friction between 16 and 18 degrees. Representative samples of the clayey soil had expansion indices between 77 and 102.

Below 8 to 14½ feet, alternating layers of predominately stiff to hard silty clay or medium dense clayey sand, clayey sand/sandy clay, sandy silt, silty sand, and sandy silt were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 9 to 52 blows per foot. Dry densities ranged from 88 to 121 pcf. These soils had slightly stronger strength characteristics than the upper soils and extended to the termination depth of our borings.



For additional information about the soils encountered, please refer to the logs of borings in Appendix A.

## **GROUNDWATER**

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. The historic high groundwater depth for the region was determined to be 10 feet below existing site grade, based on the State of California Department of Water Resources data from 3 wells within 1.5 miles of the site. However, free groundwater was encountered between depths of 9 and 22 feet during our subsurface investigation.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions, as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

## **SOIL LIQUEFACTION**

Soil liquefaction is a state of soil particle suspension, caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in soils, such as sands, in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sands. Liquefaction usually occurs under vibratory conditions, such as those induced by seismic events.

To evaluate the liquefaction potential of the site, the following items were evaluated:

- 1) Soil type
- 2) Groundwater depth
- 3) Relative density
- 4) Initial confining pressure
- 5) Intensity and duration of groundshaking

The predominant soils within the project site consist of alternating layers of silty clays, clayey sands, clayey sand/sandy clay and sandy clays. Groundwater was encountered at depths as shallow as 9 feet below existing site grade during our exploratory drilling. Information obtained from the Department of Water Resources indicated that water wells had historic groundwater elevations as shallow as 10 feet below existing site grade within the project site vicinity.

The potential for soil liquefaction during a seismic event was evaluated using the LIQUEFYPRO computer program (version 5.8h) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 6.9 was used. A peak horizontal ground surface acceleration of 0.687g was considered conservative and appropriate for the liquefaction analysis. An estimated high groundwater

depth of 9 feet was used for our analysis. The computer analysis indicates that soils above a depth of 9 feet are non-liquefiable due to the absence of groundwater. The soils below a depth of 9 feet have a slight to very low potential for liquefaction under seismic shaking due to predominately medium dense/stiff to very dense/hard sandy and clayey soils. The analysis also indicates that the total and differential seismic induced settlement is not anticipated to exceed 1 and  $\frac{2}{3}$  inch, respectively. Accordingly, measures to mitigate liquefaction potential are not necessary.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

### **Administrative Summary**

In brief, the subject site and soil conditions, with the exception of the loose surface soils, expansive nature of the clayey soils, and previous development, appear to be conducive to the development of the project. The surface soils have a loose consistency. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated. Accordingly, it is recommended that the surface soils be recompacted. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

The site was previously utilized as agricultural land consisting of orchards. In addition, several dirt access roads trend throughout the site. Associated with these developments may be buried structures, such as utility lines and irrigation lines that extend into portions of the project site. Demolition activities should include proper removal of any buried structures. Any surface or buried structures, including utilities or loosely backfilled excavations, encountered during construction should be properly removed and the resulting excavations backfilled with Engineered Fill. It is suspected that demolition activities of the existing structures will disturb the upper soils. After demolition activities it is recommended that these disturbed soils be removed and/or recompacted. This compaction effort should stabilize the upper soils and locate any unsuitable or pliant areas not found during our field investigation.

It is recommended that following stripping and fill removal operations, the upper 12 inches of soil within the proposed building areas be excavated worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. In addition, in order to reduce the potential for differential settlement, it is recommended that the proposed structure foundations be supported by a minimum of 24 inches of Engineered Fill. Over-excavation should extend to a minimum of 5 feet beyond structural elements. The on-site, native soils and fill material will be suitable for reuse as Engineered Fill, provided they are cleansed of excessive organics, debris, and fragments larger than 4 inches in maximum dimension. Prior to backfilling, the bottom of the excavation should be proof rolled and observed by Krazan & Associates, Inc. to verify stability. This

compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation. Fill material should be compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

The upper soils within the site are predominately clayey sands and sandy clays. These soils appeared to have a moderate to high swell potential. The estimated swell pressures of the clayey soils may cause minor movement effecting slabs and possible stucco or similar brittle exterior finishes. To reduce potential soil movement, it is recommended the upper 30 inches of soil within slab-on-grade and adjacent exterior flatwork areas consist of 24 inches of non-expansive Engineered Fill overlain by 6 inches of Class 2 aggregate base. During construction, it is recommended that additional tests should be performed on the on-site soils to verify their physical and index properties.

As an alternative to the use of non-expansive soils, the upper 30 inches of soil supporting the slab areas can consist of lime-treated clayey soils. The lime-treated soils should be recompactd to a minimum of 90 percent of maximum density. Preliminary application rate of lime should be 5 percent by dry weight. The lime material should be calcium oxide, commonly known as quick-lime. The clayey soils should be above optimum moisture during the mixing operations.

Sidewalks not located adjacent to the buildings may be supported on 4 inches of Class 2 aggregate base compacted to a minimum of 95 percent of maximum density. Prior to placing the aggregate base, the subgrade soils should be excavated/scarified to a minimum depth of 12 inches, moisture-conditioned to a minimum of 3 percent above optimum moisture content and compacted to between 90 and 95 percent of maximum density based on ASTM Test Method D1557. As an alternative, the aggregate base can be placed over 12 inches of lime-treated subgrade. The Owner should be aware some movement of the sidewalks may occur which could result in cracking and vertical offsets.

Buried utility lines are located along Commerce Boulevard Extension on the east side of the site and may extend into the site. Demolition activities should include proper removal of any buried structures. Any buried structures encountered during construction should be properly removed and the resulting excavations cleaned to firm native ground and backfilled with Engineered Fill. Disturbed areas caused by demolition activities should be removed and/or recompactd.

Tree removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be cleaned to firm native ground and backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils.

A bioretention/detention pond is included in the project plans. The bioretention/detention pond should be located at least 50 feet from the structure. Alternatively, the pond can be lined.

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure footings may be designed utilizing an allowable bearing pressure of 3,000 psf for dead-plus-live loads. Footings should have a minimum embedment of 18 inches.

### **Groundwater Influence on Structures/Construction**

During our field investigations, groundwater was encountered at depths of 9 to 22 feet below site grade. Therefore dewatering and/or waterproofing may be required should structures or excavations extend below the groundwater table. If groundwater is encountered, our firm should be consulted prior to dewatering the site. Installation of a standpipe piezometer is suggested prior to construction should groundwater levels be a concern.

In addition to the groundwater level, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

### **Site Preparation**

General site clearing should include removal of vegetation; concrete and metal debris; existing utilities; structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for use as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

The site is surrounded by agricultural land, groves of trees and industrial developments. Associated with these developments are buried structures such, as utility lines that are located along the edges of the site and within the project site vicinity. Demolition activities should include proper removal of any buried structures. Any buried structures encountered during construction should be properly removed and/or relocated and the resulting excavations backfilled. Excavations, depressions, or soft and pliant areas extending below planned finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Concrete footings should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. The resulting excavations should be backfilled with Engineered Fill.

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The site was previously occupied by a eucalyptus grove. Tree root removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

It is recommended that following stripping, tree removal operations and fill removal operations, the upper 12 inches of native soils within the proposed building areas be excavated, worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and recompact to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. In addition, it is recommended that the proposed structure foundations be supported by a minimum of 24 inches of Engineered Fill. Over-excavation should extend to a minimum of 5 feet beyond structural elements. The on-site, native soil and fill material will be suitable for reuse as Engineered Fill, provided it is cleansed of excessive organics, debris, and fragments larger than 4 inches in maximum dimension. Prior to backfilling, the bottom of the excavation should be proof rolled and observed by Krazan & Associates, Inc. to verify stability. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation. Fill material should be compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Following stripping and fill removal operations, the exposed subgrade in exterior flatwork and pavement areas should be excavated/scarified to a minimum depth of 12 inches, worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and recompact to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of recompaction should extend 3 feet beyond structural elements. This compaction effort should stabilize the surface soils and located any unsuitable or pliant areas not found during our field investigation.

It is recommended that the upper 30 inches of soil within proposed slab-on-grade and adjacent exterior flatwork areas consist of non-expansive or lime-treated Engineered Fill. The intent is to support slab-on-grade and exterior flatwork areas with 24 inches of non-expansive or lime-treated fill, overlain by 6 inches of compacted Class 2 aggregate base. Alternatively, the upper 30 inches may consist of lime-treated Engineered Fill. The fill placement serves two functions: 1) it provides a uniform amount of soil, which will more evenly distribute the soil pressures and 2) it reduces moisture content fluctuation in the clayey material beneath the building area. The non-expansive fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive clayey soil below, which may result in soil swelling. Imported Fill should be approved by the Soils Engineer prior to placement. The fill should be placed as specified as Engineered Fill. In addition, it is recommended conventional foundations and slabs be nominally reinforced to reduce cracking and vertical offsets.

Sidewalks not located adjacent to the buildings may be supported on 4 inches of Class 2 aggregate base compacted to a minimum of 95 percent of maximum density. Prior to placing the aggregate base, the subgrade soils should be excavated/scarified to a minimum depth of 12 inches, moisture-conditioned to a minimum of 3 percent above optimum moisture content and compacted to between 90 and 95 percent

of maximum density based on ASTM Test Method D1557. As an alternative, the aggregate base can be placed over 12 inches of lime-treated subgrade. The Owner should be aware some movement of the sidewalks may occur which could result in cracking and vertical offsets.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A bioretention/detention pond is included in the project plans. The bioretention/detention pond should be located at least 50 feet from the structure. Alternatively, the pond can be lined.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

### **Engineered Fill**

The organic-free, on-site, upper native soils and fill material are predominately clayey sand, sandy clay, and silty clay. These clayey soils will not be suitable for re-use as non-expansive Engineered Fill. These clayey soils will be suitable for reuse for fill placement within the upper 30 inches of slab-on-grade and adjacent exterior flatwork areas, provided they are lime-treated. The preliminary application rate of lime should be 5 percent by dry weight. The lime material should be calcium oxide, commonly known as quick-lime. The clayey soils should be at or near optimum moisture-condition during mixing operations. Additional testing is recommended to determine the appropriate application rate of lime prior to placement. These clayey soils will be suitable for reuse as General Engineered Fill, provided they are cleansed of excessive organics, debris, and moisture-conditioned to at least 2 percent above optimum moisture. It is recommended that additional testing be performed on the on-site soils and fill material to evaluate the physical and index properties prior to reuse as Engineered Fill.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since he has complete control of the project site at that time.

Imported Fill material should be predominately non-expansive granular material with a plasticity index less than 10 and a UBC Expansion Index less than 15. Imported Fill should be free from rocks and lumps greater than 4 inches in diameter. All Imported Fill material should be submitted for approval to the Soils Engineer at least 48 hours prior to delivery to the site.

The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

### **Foundations**

The proposed structure may be supported on a shallow foundation system bearing on a minimum of 30 inches of Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

<b>Load</b>	<b>Allowable Loading</b>
Dead Load Only	2,250 psf
Dead-Plus-Live Load	3,000 psf
Total Load, Including Wind or Seismic Loads	4,000 psf

The footings should have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings should have a minimum width of 12 inches, regardless of load. Ultimate design of foundations and reinforcement should be performed by the project Structural Engineer. A modulus of subgrade reaction of 35 pci can be used for the on-site soils.

The total soil movement is not expected to exceed 1 inch. Differential movement measured across a horizontal distance of 40 feet should be less than 1 inch. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated.

The footing excavations should not be allowed to dry out any time prior to pouring concrete. It is recommended that footings be reinforced by at least one No. 4 reinforcing bar in both top and bottom.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.3 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 250 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A  $\frac{1}{3}$  increase in the above value may be used for short duration, wind, or seismic loads.

### **Floor Slabs and Exterior Flatwork**

In areas that will utilize moisture-sensitive floor coverings, concrete slab-on-grade floors should be underlain by a water vapor retarder. The water vapor retarder should be installed in accordance with accepted engineering practice. The water vapor retarder should consist of a vapor retarder sheeting underlain by a minimum of 3 inches of compacted, clean, gravel of  $\frac{3}{4}$ -inch maximum size. To aid in concrete curing an optional 2 to 4 inches of granular fill may be placed on top of the vapor retarder.

The granular fill should consist of damp clean sand with at least 10 to 30 percent of the sand passing the 100 sieve. The sand should be free of clay, silt, or organic material. Rock dust which is manufactured sand from rock crushing operations is typically suitable for the granular fill. This granular fill material should be compacted. Floor slabs subject to forklift traffic should be underlain by a minimum of 2 inches of Class 2 aggregate base compacted to a minimum of 95 percent of maximum density based on ASTM Test Method D1557. Slabs can be designed utilizing a modulus of subgrade reaction of 100 pci.

The floor slab should be a minimum of 6 inches thick and reinforced at a minimum with No. 4 reinforcement bars at 24 inches on-center each way within the middle one-third. Thicker floor slabs with increased concrete strength and reinforcement should be designed wherever large vehicular loads, heavy concentrated loads, heavy equipment, or machinery is anticipated.

The exterior floors should be poured separately in order to act independently of the walls and foundation system. All fills required to bring the building pads to grade should be Engineered Fills.

Moisture within the structure may be derived from water vapors, which were transformed from the moisture within the soils. This moisture vapor can travel through the vapor membrane and penetrate the slab-on-grade. This moisture vapor penetration can affect floor coverings and produce mold and mildew in the structure. To reduce moisture vapor intrusion, it is recommended that a vapor retarder be installed. It is recommended that the utility trenches within the structure be compacted, as specified in our report, to reduce the transmission of moisture through the utility trench backfill. Special attention to the immediate drainage and irrigation around the building is recommended. Positive drainage should be established away from the structure and should be maintained throughout the life of the structure. Ponding of water should not be allowed adjacent to the structure. Over-irrigation within landscaped areas adjacent to the structure should not be performed. In addition, ventilation of the structure (i.e. ventilation fans) is recommended to reduce the accumulation of interior moisture.

### **Lateral Earth Pressures and Retaining Walls**

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 50 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 70 pounds per square foot per foot per depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways. All of the above earth pressures are unfactored and are, therefore, not inclusive of factors of safety.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free-draining gravel or a prefabricated drainage system. The gravel zone should have a minimum width of 12 inches wide and should extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill should consist of native soils, concrete, asphaltic concrete or other suitable backfill to



of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

### **LIMITATIONS**

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

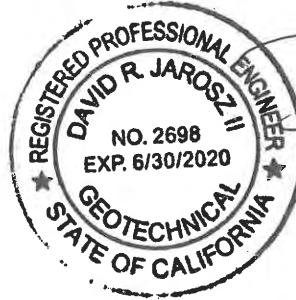
If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (916) 564-2200.



Respectfully submitted,  
**KRAZAN & ASSOCIATES, INC.**

A handwritten signature in black ink, appearing to read "Madison K. Weber".

Madison K. Weber  
Project Engineer  
RCE No. 81935

A large, stylized handwritten signature in black ink, appearing to read "David R. Jarosz, II".

David R. Jarosz, II  
Managing Engineer  
RGE No. 2698/RCE No. 60185

MKW/DRJ:ht





**Commerce 217 Distribution Center  
1075 Commerce Court  
American Canyon, California**

032-19032

1



**Appendix E**

**Noise Appendices**

**American Canyon SDG Commerce 217**  
**Wine Storage Project Noise Appendix**

Technical Information

Site 1 – 24-Hour Noise Plots (3 pages)

Noise Measurement Locations Figure



# NOISE APPENDIX

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## *Noise Descriptors*

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the “loudness” of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear’s reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A-weighted sound level over a given time period (Leq)<sup>1</sup>; day-night 24-hour average sound level (Ldn)<sup>2</sup> with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)<sup>3</sup>, also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

**Table 1** identifies decibel levels for common sounds heard in the environment.

## *Noise Attenuation*

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, which also depends on ground absorption (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, will increase the attenuation that occurs by distance alone.

## *Temporary Construction Noise*

The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. **Table 2** shows typical noise levels from construction equipment. **Table 3** shows noise levels from construction activities, which typically range from 81 to 88 dB Leq at 50 feet, depending on the construction phase.

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<sup>1</sup>The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

<sup>2</sup>Ldn is the day-night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

<sup>3</sup>CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10-decibel penalty in the night between 10:00 p.m. and 7:00 a.m.



**Table 1: Typical Noise Levels**

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80–90	Diesel truck at 50 feet	Loud television at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: modified from Caltrans, 1998a

### ***Groundborne Vibration***

Construction operations have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. The ground vibration levels associated with various types of construction equipment at a distance of 25 feet are summarized in **Table 4**. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels.

At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. For most structures, a peak particle velocity (PPV) threshold of 0.5 inches per second (in/sec) or less is sufficient to avoid structural damage. The Federal Transit Administration recommends a PPV threshold of 0.5 in/sec for residential and commercial structures, 0.25 in/sec for historic buildings and archaeological sites, and 0.2 in/sec for non-engineered timber and masonry buildings (FTA, 2006).

**Table 2: Typical Noise Levels from Construction Equipment**

<b>Construction Equipment</b>	<b>Noise Level (dB, Lmax at 50 feet)</b>
Air Compressor	78
Backhoe	78
Concrete Mixer Truck	79
Concrete Pump Truck	81
Crane	81
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Grader	85
Impact Pile Driver	101
Jackhammer	89
Loader	79
Paver	77
Pickup Truck	75
Roller	80

Source: FHWA, 2006

**Table 3: Typical Construction Activities Noise Levels**

<b>Construction Phase</b>	<b>Noise Level (dB, Leq at 50 feet)</b>
Ground Clearing	83
Excavation	88
Foundations	81
Erection	81
Finishing	88

Notes: Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

Leq = equivalent sound level

Source: U.S. Environmental Protection Agency, Legal Compilation, 1973



**Table 4: Representative Vibration Source Levels for Construction Equipment**

Equipment		Peak Particle Velocity at 25 Feet (in/sec)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (sonic)	upper range	0.734
	typical	0.170
Vibratory Roller		0.210
Large Bulldozer		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA, 2006

***State Guidelines***

State Land Use Compatibility standards for Community Noise (**Table 5**) are provided in the State of California General Plan Guidelines.

**TABLE 5:  
LAND USE COMPATIBILITY NOISE STANDARDS**

<b>Land Use Category</b>	<b>Community Noise Exposure Ldn or CNEL, dB</b>
Residential – Low Density Single Family, Duplex, Mobile Homes	50 to 60 = Normally acceptable 55 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 85 = Clearly unacceptable
Residential -- Multifamily	50 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 85 = Clearly unacceptable
Transient Lodging – Motels, Hotels	50 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 to 70 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Auditoriums, Concert Halls, Amphitheaters	50 to 75 = Conditionally acceptable 65 to 85 = Clearly unacceptable
Sports Arena, Outdoor Spectator Sports	50 to 70 = Conditionally acceptable 70 to 85 = Clearly unacceptable
Playgrounds, Neighborhood Parks	50 to 70 = Normally acceptable 67.5 to 75 = Normally unacceptable 72.5 to 85 = Clearly unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 to 75 = Normally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly Unacceptable
Office Buildings, Business, Commercial and Professional	50 to 70 = Normally acceptable 67.5 to 77.5 = Conditionally acceptable 75 to 85 = Normally acceptable
Industrial, Manufacturing, Utilities, Agriculture	50 to 75 = Normally acceptable 70 to 80 = Conditionally acceptable 75 to 85 = Normally acceptable

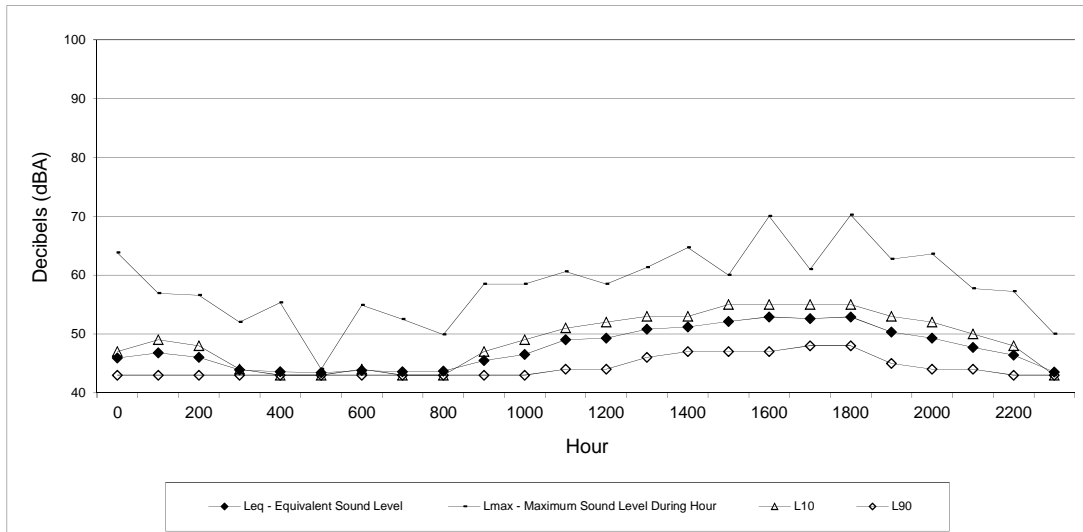
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

**Source: State of California General Plan Guidelines, Office of Planning and Research, 2017.**

# REFERENCES

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- California Department of Transportation (Caltrans), 1998a. *Technical Noise Supplement*.
- California Department of Transportation (Caltrans), 1998b. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, October 1998.
- Federal Highway Administration (FHWA), 2006. *Roadway Construction Noise Model User's Guide*.
- Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06).
- Governor's Office of Planning and Research (OPR), 2017. *State of California General Plan Guidelines*. Appendix D: Noise Element Guidelines.

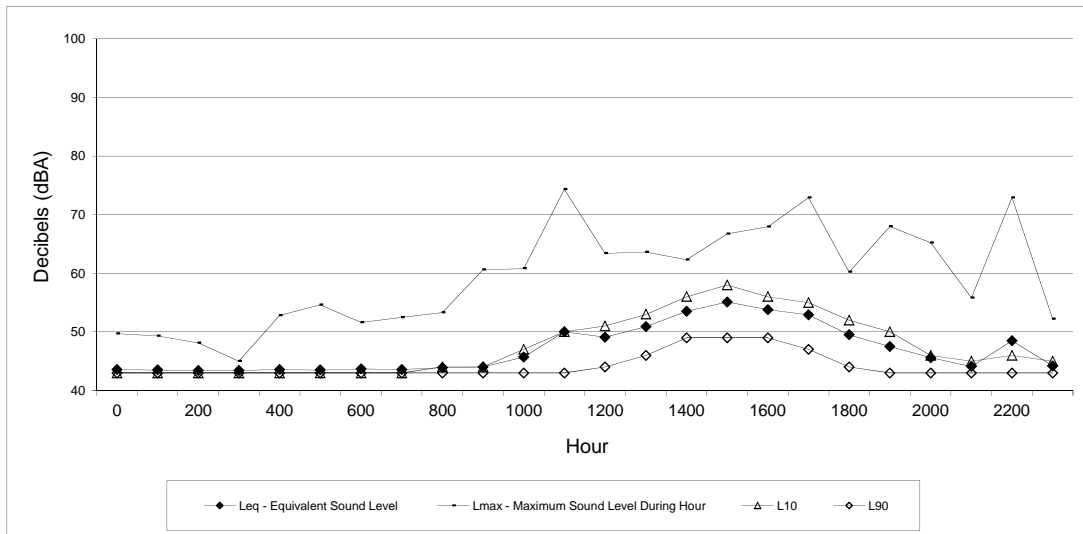


Site 1: Northern Boundary of Site on Eucalyptus Grove  
Tuesday August 4, 2020

Lmax - Maximum Sound Level During				
Hour	Leq - Equivalent Sound Level	Hour	L10	L90
0	46	64	47	43
100	47	57	49	43
200	46	57	48	43
300	44	52	44	43
400	44	55	43	43
500	43	44	43	43
600	44	55	44	43
700	44	53	43	43
800	44	50	43	43
900	46	59	47	43
1000	47	59	49	43
1100	49	61	51	44
1200	49	59	52	44
1300	51	61	53	46
1400	51	65	53	47
1500	52	60	55	47
1600	53	70	55	47
1700	53	61	55	48
1800	53	70	55	48
1900	50	63	53	45
2000	49	64	52	44
2100	48	58	50	44
2200	46	57	48	43
2300	44	50	43	43

CNEL 53

LDN 53

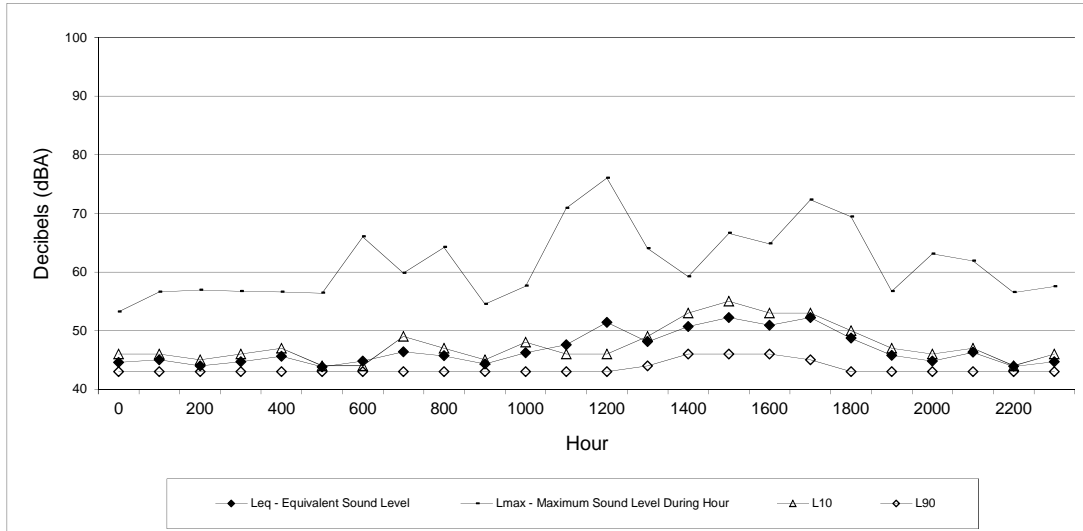


Site 1: Northern Boundary of Site on Eucalyptus Grove  
Wednesday August 5, 2020

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	44	50	43	43
100	44	49	43	43
200	43	48	43	43
300	43	45	43	43
400	44	53	43	43
500	44	55	43	43
600	44	52	43	43
700	44	53	43	43
800	44	53	44	43
900	44	61	44	43
1000	46	61	47	43
1100	50	74	50	43
1200	49	63	51	44
1300	51	64	53	46
1400	54	62	56	49
1500	55	67	58	49
1600	54	68	56	49
1700	53	73	55	47
1800	50	60	52	44
1900	48	68	50	43
2000	46	65	46	43
2100	44	56	45	43
2200	49	73	46	43
2300	44	52	45	43

CNEL: 53

LDN 52



Site 1: Northern Boundary of Site on Eucalyptus Grove  
Thursday August 6, 2020

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	45	53	46	43
100	45	57	46	43
200	44	57	45	43
300	45	57	46	43
400	46	57	47	43
500	44	56	44	43
600	45	66	44	43
700	46	60	49	43
800	46	64	47	43
900	44	55	45	43
1000	46	58	48	43
1100	48	71	46	43
1200	51	76	46	43
1300	48	64	49	44
1400	51	59	53	46
1500	52	67	55	46
1600	51	65	53	46
1700	52	72	53	45
1800	49	69	50	43
1900	46	57	47	43
2000	45	63	46	43
2100	46	62	47	43
2200	44	57	44	43
2300	45	58	46	43

CNEL: 52

LDN 52

## Noise Measurement Locations



## **Initial Study for the SDG Commerce 217 Distribution Center Project**

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### **Appendix F Traffic Memorandum**





**Subject:** Traffic Impact Analysis Memorandum

**GHD**  
943 Reserve Drive Roseville California 95678 USA  
**T** 916 782 8688 **F** 916 782 8689 **W** [www.ghd.com](http://www.ghd.com)



The following study intersection was identified and analyzed for this project:

- Green Island Road/Commerce Boulevard—All-Way-Stop-Control

The *Existing Conditions* analysis represents current operations of roadway and intersections based on collected traffic count data (October 2018);

The *Existing Plus Approved Conditions* represent the projects that have been approved by the City of American Canyon but have not been constructed and adding these trips to the existing traffic volumes.

The *Existing Plus Approved Plus Project Conditions* represent the net increase in project trips that are then added to existing plus approved traffic volumes to quantify potential impacts from proposed project uses;

The *Cumulative (No Project) Conditions* represent future traffic conditions based on the City of American Canyon General Plan to the Year 2030 but with the proposed project trips backed off as this project is assumed in the buildout of the General Plan.

The *Cumulative Plus Project Conditions* represent the net increase in project trips added to cumulative (no project) volumes to quantify impacts from proposed project uses. Care is given not to “double count” proposed project trips based on assumed land uses for the proposed project site used in City’s General Plan.

## **1.1 Existing Traffic Volumes**

Existing traffic volumes for this analysis are based on daily and peak hour traffic volume data collected during the first week of October 2018 at the Green Island Road/Commerce Boulevard intersection as well as on Green Island Road east and west of Commerce Boulevard and on Commerce Boulevard north south of Green Island Road (see Appendices for Supporting Data Information).<sup>2</sup>

The AM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume over four consecutive 15-minute count periods) counted between 7:00 am and 9:00 am on a typical weekday. The PM peak hour is defined as the one-hour of peak traffic flow counted between 4:00 pm and 6:00 pm on a typical weekday. The peak hours chosen within the study coincide with the peak commute hour at which time the roadways typically experience maximum traffic.

As part of the overall traffic data collection effort, the amount of heavy vehicles (truck traffic) was included in the field data collection. Given the industrial/light industrial nature of the area truck traffic can make between 20-30% of traffic volumes on Green Island Road or Commerce Boulevard depending on the time of day and delivery patterns.

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<sup>2</sup> National Data and Surveying Services (NDS), AM peak period (7:00-9:00), PM peak period (4:00-6:00) intersection count at the Green Island Road/Commerce Boulevard intersection, October 2, 2018. Average daily traffic (ADT) counts on Green Island Road (east and west of Commerce Boulevard) and Commerce Boulevard (north and south of Green Island Road, October 2, 3, 4, 2018.



## **1.2 Analysis Level of Service Methodologies/Policies**

### **1.2.1 City of American Canyon Traffic Study Thresholds of Significance**

The City of American Canyon establishes the following guidelines for intersection operation. Specifically, a project-related or cumulative traffic impact is considered to be significant if the proposed project:

*“Causes the existing baseline level of service to degrade to worse than LOS D (LOS E at American Canyon Road/SR 29) at any intersection as stipulated in the City’s General Plan, Circulation Element.”*

### **1.2.2 Project-Specific Significance and Mitigation Thresholds**

In accordance with the City of American Canyon guidelines, the following thresholds of significance are used to determine if an impact is significant and requires mitigation:

#### *Unsignalized Intersections:*

The project is considered to have a significant impact if it would:

- Result in an unsignalized intersection that will operate at an acceptable LOS in the *No Project* condition to deteriorate to an unacceptable LOS in the *Plus Project* condition; or,
- Increase the delay by more than 5 seconds at an unsignalized intersection that is already operating or will operate at an unacceptable LOS in the *No Project* condition.

## **2. Existing Intersection Operations**

### **2.1 Methodology**

Intersection operation is one of the primary factors in evaluating the carrying capacity of a roadway network. Traffic conditions are measured by Level of Service (LOS), which applies a letter ranking to successive levels of intersection performance. LOS ‘A’ represents optimum conditions with free-flow travel and no congestion. LOS ‘F’ represents severe congestion with long delays at the approaches. For intersections with minor street stop control, the LOS reflects the delays experienced by the minor street approach. For all-way-stop-control intersections it is the average delay for all approaches.

Intersection levels-of-service have been based on the most recent Highway Capacity Manual (*HCM 6*) operations methodology for unsignalized all-way-stop-control intersections using *Synchro* software (version 10). In addition, peak hour factors (PHF’s) for each intersection approach have been incorporated into all existing and future intersection LOS calculations. The PHF is a comparison of the peak 15 minute period within the peak hour compared to the peak hour. Based on field count data, these PHF’s ranged from .75 to .87 depending on the peak hour.

### **2.2 Intersection**

Table 1 presents a summary of the *Existing* peak hour intersection delay and level of service at the Green Island Road/Commerce Boulevard intersection using the most recent *Synchro* model.



**Table 1: Existing Conditions: Intersection LOS**

#	Intersection	Control Type <sup>1,2,3</sup>	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Green Island Rd./Commerce Blvd.	AWSC	D	9.5	A	10.6	B
Notes:							
1. AWSC = All Way Stop Control							
2. LOS = Delay based on average delay (in seconds) of all four stop-sign controlled approaches.							
3. Intersection was analyzed using HCM 6 Synchro-Simtraffic software (version 10) for unsignalized all-way-stop-controlled intersections. Allows for multiple approach delay LOS calculations.							

As presented in Table 1, the Green Island Road/Commerce Boulevard intersection is currently operating at acceptable LOS during both peak hours.

## 2.3 Project Description

The proposed 217 Commerce Boulevard Wine Storage Facility project would be located in the City of American Canyon south of the current terminus of Commerce Boulevard. Based on the latest correspondence and site plan from the project applicant the proposed project would consist of a 217,294 square foot wine storage warehouse. At this time, vehicle and truck access to/from the proposed facility would be to/from Commerce Boulevard via Green Island Road.

## 2.4 Project Trip Generation

Consistent with previous transportation analyses conducted for wine warehouse and storage facilities in the American Canyon area; daily and peak hour trip generation has been based on observed daily and peak hour traffic volumes at six (6) different wine warehouse buildings in American Canyon located on Mezzetta Court, Airpark Road, Tower Road, Commerce Boulevard, Hanna Drive, and Lombard Drive.<sup>3</sup> From this trip generation analysis an average daily trip rate of 1.69 trips/1,000 square feet of wine warehouse was developed using multiple day 24-hour driveway count data at the six facilities. Using the same methodology for the AM peak hour (between 7:00-9:00) and PM peak hour (between 4:00-6:00) peak hour trip generation has been compared in Tables 2 and 3.

<sup>3</sup> Omni-Means, Ltd., Trip Generation Rates---Green Island Wine Warehouse, Memorandum to Mr. Jason Holley, P.E. (City of American Canyon) from Mr. Kamesh Vedula, P.E., Omni-Means (now GHD), June 1, 2016.



**Table 2: AM and PM Peak Hour Trip Generation Comparison--Tuesday**

Tuesday Trip Rates				
Warehouse Location	Facility Size (ksf)	Date	Observed Peak Hour Trips	Trip Rate Based on Observed Traffic (Trips/KSF)
			AM/PM Trips	AM/PM Peak Hour Trip Rates
125 Mezzetta Court	396	10-May-16	61 / 42	0.15 / 0.11
787 Airpark Road	377		27 / 37	0.07 / 0.10
175 & 177 Tower Road	254		30 / 31	0.12 / 0.12
Commerce Boulevard	692	16-Feb-16	72 / 93	0.10 / 0.13
Hanna Drive	718		151 / 109	0.21 / 0.15
Lombard Drive	287		50 / 33	0.17 / 0.12
Six Site Combined Average Tuesday Trip Rate				0.14 / 0.12

**Table 3: AM and PM Peak Hour Trip Generation Comparison---Wednesday**

Wednesday Trip Rates				
Warehouse Location	Facility Size (ksf)	Date	Observed Peak Hour Trips	Trip Rate Based on Observed Traffic (Trips/KSF)
			AM/PM Trips	AM/PM Peak Hour Trip Rates
125 Mezzetta Court	396	11-May-16	57 / 34	0.14 / 0.09
787 Airpark Road	377		54 / 24	0.14 / 0.06
175 & 177 Tower Road	254		51 / 36	0.20 / 0.14
Commerce Boulevard	692	17-Feb-16	99 / 133	0.14 / 0.19
Hanna Drive	718		164 / 128	0.23 / 0.18
Lombard Drive	287		57 / 38	0.20 / 0.13
Six Site Combined Average Wednesday Trip Rate				0.18 / 0.13

The AM and PM peak hour trip generation recorded for the six warehouse-wine storage sites tends to correlate with the size of the facility. This trend is evidenced by the larger Commerce Boulevard and Hanna Drive facilities generating higher AM and PM peak hour trips than the remaining four sites that generate fewer peak hour trips (under 400 ksf). These peak hour trip characteristics of the warehouse-wine storage facilities are also consistent with previous transportation analyses that evaluated the daily trip generation of the sites (establishing a daily rate of 1.69 trips/ksf). In addition, the trip generation surveys of the six sites also found that the facilities tend to generate a greater number of vehicle/truck trips during the AM peak period. This is due primarily to the majority of employees arriving on-site during this morning period as well as a greater number of truck deliveries to/from the facilities. The PM peak period is more dispersed relative to site trip generation with many employees leaving at different times prior to and in between the 4:00-6:00 p.m. window and fewer truck deliveries occurring during this period based on field observations.



As presented in Tables 2 and 3, the average AM peak hour trip generation rates for the two-day counts were 0.14 trips/ksf and 0.18 trip/ksf , respectively. The resulting AM peak hour trip rate for wine warehouse/storage facilities is 0.16 trips/ksf. During the PM peak hour the average rates for the two-day counts were 0.12 trips/ksf and 0.13 trips/ksf resulting in an overall average PM peak hour rate of 0.125 trips/ksf. Combined with the previously established daily trip rate of 1.69 trips/ksf the proposed project's daily and peak hour trip generation has been presented in Table 4.

**Table 4: Project Trip Generation; Daily and Peak Hour**

Observed Daily and Peak Hour Trip Rates	Unit <sup>1</sup>	Daily Trip Rate/Unit	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Wine Warehouse/Storage	ksf	1.69	0.16	60%	40%	0.13	35%	65%
Project Name	Quantity (Units)	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
American Canyon Wine Warehouse	217	367	35	21	14	28	10	18
<b>Net New Project Trips</b>		<b>367</b>	<b>35</b>	<b>21</b>	<b>14</b>	<b>28</b>	<b>10</b>	<b>18</b>
<i>Notes:</i>								
1. 1 ksf = 1,000 square feet								
2. Trip rates based on daily traffic driveway counts at six (6) different wine warehouse/storage facilities in the American Canyon Area focusing on the 24-hour and AM and PM peak hours between (7:00-9:00 am and 4:00-6:00 pm).								

As calculated in Table 4, the proposed project would be expected to generate 367 daily trips with 35 AM peak hour trips and 28 PM peak hour trips.

## 2.5 Project Distribution

Overall project distribution has been based on existing peak hour traffic flow volumes at the Green Island Road/Commerce Boulevard intersection, vehicle and truck access to/from State Route 29, and local circulation patterns that access Green Island Road from the east and west. Additionally, northbound left traffic based on General Plan volumes do not appear to increase for the Northbound Left from Commerce Boulevard to Green Island Road. Based on these factors, it is estimated that 100% of the vehicle/truck traffic would be to/from the east on Green Island Road (to Commerce Boulevard).

## 3. Existing Plus Approved Traffic Conditions

*Existing Plus Approved* conditions were simulated by superimposing AM and PM peak hour traffic by adding approved project trip distribution patterns and volumes onto *Existing* intersection traffic volumes. The current list of approved projects consistent of only one project (330 Commerce Blvd Wine Storage Facility).

### Intersection Operation

Table 5 provides a summary of *Existing Plus Approved* peak hour intersection delay and level of service that were derived through use of the Synchro model.



**Table 5: Existing Plus Approved Conditions: Intersection LOS**

#	Intersection	Control Type <sup>1,2,3</sup>	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Green Island Rd./Commerce Blvd.	AWSC	D	10.0	A	12.4	B
Notes:							
1. AWSC = All Way Stop Control							
2. LOS = Delay based on average delay (in seconds) of all four stop-sign controlled approaches.							
3. Intersection was analyzed using HCM 6 Synchro-Simtraffic software (version 10) for unsignalized all-way-stop-controlled intersections. Allows for multiple approach delay LOS calculations.							

As presented in Table 5, the study intersection of Green Island Road/Commerce Boulevard would continue to operate acceptably during both the AM and PM peak hours with existing and approved project traffic.

#### 4. Existing Plus Approved Plus Project Traffic Conditions

*Existing Plus Approved Plus Project* conditions were simulated by superimposing AM and PM peak hour traffic by the proposed project onto *Existing Plus Approved* intersection traffic volumes.

##### Intersection Operation

Table 6 presents a summary of *Existing Plus Approved Plus Project* peak hour intersection delay and level of service that were derived through use of the Synchro model.

**Table 6: Existing Plus Approved Conditions: Intersection LOS**

#	Intersection	Control Type <sup>1,2,3</sup>	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Green Island Rd./Commerce Blvd.	AWSC	D	10.3	B	13.0	B
Notes:							
1. AWSC = All Way Stop Control							
2. LOS = Delay based on average delay (in seconds) of all four stop-sign controlled approaches.							
3. Intersection was analyzed using HCM 6 Synchro-Simtraffic software (version 10) for unsignalized all-way-stop-controlled intersections. Allows for multiple approach delay LOS calculations.							

As presented in Table 6, the study intersection of Green Island Road/Commerce Boulevard would continue to operate acceptably during both the AM and PM peak hours with existing and approved project traffic.

#### 5. Cumulative (No Project) Conditions

*Cumulative (No Project)* conditions were based on cumulative AM and PM peak hour volume projections found in the *Napa Logistics Park Phase 2 Project Draft EIR* subtracting out the proposed project trip estimates. Peak hour volume projections for Green Island Road west of Paoli Loop Road were used for this analysis and encompass all future vehicle trips originating from industrial and light industrial areas in the Mezzetta Court, Jim Oswalt Way, Hanna Drive, and Commerce Boulevard areas. As a conservative measure, the *No Shift Change Reduction* volumes were utilized.



## 5.1 Intersection Operation

Table 7 presents a summary of Cumulative (No Project) peak hour intersection delay and level of service that were derived through the use of a Synchro model.

**Table 7: Cumulative (No Project) Conditions: Intersection LOS**

#	Intersection	Control Type <sup>1,2,3</sup>	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Green Island Rd./Commerce Blvd.	AWSC	D	16.5	C	31.3	D
Notes:							
1. AWSC = All Way Stop Control							
2. LOS = Delay based on average delay (in seconds) of all four stop-sign controlled approaches.							
3. Intersection was analyzed using HCM 6 Synchro-Simtraffic software (version 10) for unsignalized all-way-stop-controlled intersections. Allows for multiple approach delay LOS calculations.							

As presented in Table 7, the Green Island Road/Commerce Boulevard intersection would operate at acceptable LOS during both peak hours.

## 6. Cumulative Plus Project Conditions

Cumulative Plus Project conditions were simulated by superimposing traffic generated by the proposed project onto Cumulative (No Project) intersection traffic volumes.

### 6.1 Intersection Operation

Table 8 presents a summary of Cumulative (No Project) peak hour intersection delay and level of service that were derived through the use of a Synchro model.

**Table 8 Cumulative Plus Project: Intersection LOS**

#	Intersection	Control Type <sup>1,2,3</sup>	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Green Island Rd./Commerce Blvd.	AWSC	D	17.9	C	35.0	D
Notes:							
1. AWSC = All Way Stop Control							
2. LOS = Delay based on average delay (in seconds) of all four stop-sign controlled approaches.							
3. Intersection was analyzed using HCM 6 Synchro-Simtraffic software (version 10) for unsignalized all-way-stop-controlled intersections. Allows for multiple approach delay LOS calculations.							

As presented in Table 8, the Green Island Road/Commerce Boulevard intersection would continue to operate at acceptable LOS with Cumulative Plus Project volumes during both peak hours.





## **7. Signal Warrants and Turn Lane Warrants Analyses**

### **7.1 Signal Warrants Analysis**

The Green Island Road/Commerce Boulevard intersection was evaluated for traffic signal control warrants. The CaMUTCD manual identifies up to nine warrants which can be used and states that "*An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location*".<sup>4</sup> Traffic signals can have several advantages which are outlined in the manual. These include: maintaining orderly movement of traffic; increasing capacity, reducing the frequency of certain accident types (right-angles), provide continuous movement of traffic at a definite speed, and permit minor street traffic/pedestrians to cross the major street.

However, the manual goes on to state that "*The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal, since the installation of traffic signals may increase certain types of collisions. Delay, congestion, approach conditions, driver confusion, future land use or other evidence of the need for right of way assignment beyond that which could be provided by stop signs must be demonstrated.*" The manual recommends that engineering judgment ultimately be used when deciding the appropriateness of signal controls.

Five of the nine warrants were evaluated (four warrants concerning school crossings, coordinated signal systems, roadway networks, and railroad crossing locations were not applicable). The signal warrant worksheets are attached in the Appendix.

#### **7.1.1 Existing Without Project and Existing Plus Project Signal Warrants**

The signal warrants were evaluated for Existing Plus Approved Development Trips (Without Project) and Existing Plus Approved Development Plus Project Trips Conditions.

Three warrants are based on vehicle volumes and none of the three are met for Existing Plus Approved Development or Existing Plus Approved Development Plus Project volumes. These include "8-hour volumes" (Warrant 1), "4-hour volumes" (Warrant 2), and "peak hour volumes" (Warrant 3). The multi-hour approach volumes at the Green Island Road/Commerce Boulevard intersection do not sustain the minimum volumes for signalization nor do the peak AM and PM periods.

The CAMUTCD warrant for pedestrian crossing volumes (Warrant 4) was also applied to the study intersection. Although there is a pedestrian sidewalk on the north side of Green Island Road that extends from Commerce Boulevard west to Mezzetta Court and continues north on Green Island Road, there are no pedestrian crosswalks at this intersection. Pedestrian volumes at the Green Island Road/Commerce Boulevard intersection are very low. During the AM and PM peak periods, a maximum of two (2) pedestrians were observed and only one pedestrian crossed north-south on Green Island Road. Therefore, no pedestrian warrants are met at this time.

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<sup>4</sup> California Manual on Uniform Traffic Control Devices (CAMUTCD), Chapter 4C, Traffic Control Signal Needs Studies, 2014 Edition, Revision 5 (March 27, 2020).



Finally, the crash experience warrant (Warrant 7) was evaluated for the Green Island Road/Commerce Boulevard intersection. The crash history was obtained from the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) for the last three calendar years (2017-2019). The crash experience warrant requires at least five collisions within a twelve month period at the intersection correctable by a traffic signal (or a combination of volume/pedestrian conditions). There was one recorded collision over the previous three year period which occurred (in 2019). It was described as a head-on collision between an eastbound vehicle proceeding straight and a southbound left-turning vehicle, and consisted of property damage only. The lack of a significant crash history indicates that vehicle-to-vehicle conflicts are not an immediate cause for concern at this location. Additionally, the lack of significant pedestrian and bicyclist volumes at this location indicates that the current conditions do not warrant signalization for safety reasons.

### **7.1.2 Cumulative (No Project) and Cumulative Plus Project Signal Warrants**

The forecast Cumulative No Project and Cumulative Plus Project peak hour volumes were applied to the peak hour volume warrant for signalization (Warrant #3). The peak hour warrant consists of two parts (Part A and Part B); either one may be satisfied. Part A consists of three sub-parts which are based on vehicle delays in proportion to the intersection volumes. Part B is based solely on volume threshold levels. Part A of the peak hour warrant is met for both cumulative without project and cumulative with project conditions. Part B is not met for cumulative without project conditions nor cumulative plus project conditions.

Specifically, under cumulative without project conditions Part A of the peak hour warrant is met during the PM peak hour. The combination of PM peak hour delays and volumes is satisfied for all 3 parts of Part A. However, the AM peak hour is not met. Part B is not met for either the AM or PM peak hours, as the volumes are lower than the required threshold volumes.

Under cumulative plus project conditions, the findings are the same as without project conditions. The Part A warrant is met for all three parts during the PM peak hour. (During the AM peak hour, two out of the three sub-parts of Part A are met, but the vehicle delay is less than the required threshold level.) The Part B warrant is not met for either AM or PM peak hours, as volumes with the project remain less than the required threshold levels.

## **7.2 Right-Turn Lane Warrant Analysis**

The northbound Commerce Boulevard approach to the Green Island Road intersection has been evaluated to assess whether the number of right-turn movements warrant an exclusive right-turn lane. Based on the Existing AM and PM turning movement count data at the intersection, almost all turning movements from northbound Commerce Boulevard onto Green Island road are right-turn movements. For existing plus approved development conditions without the project, 49 out of 57 northbound approach volumes are right-turns during the AM peak hour and 195 out of 207 approach volumes are right-turns during the PM peak hour. With proposed project traffic added, these movements are calculated to increase to 63 AM right-turns and 213 PM right-turns (see Appendices, Right-Turn Lane Warrants).



Based on the Transportation Research Board (TRB) Report 279 and AASHTO turn-lane requirements, a northbound right-turn lane is warranted at the intersection during the PM peak hour for existing plus approved conditions without the project and with the added project trips.<sup>5</sup>

## 8. Summary/Mitigation

The proposed 217 Commerce Boulevard Wine Storage Facility project would not significantly affect AM and PM peak hour traffic operations at the Green Island Road/Commerce Boulevard intersection. With *Existing Plus Approved Plus Project* and *Cumulative Plus Project* volumes, the intersection would continue to operate at acceptable levels during the AM and PM peak hours (LOS D or better).

Analyses of intersection signal warrant satisfaction at the Green Island Road/Commerce Boulevard location indicates that no signal warrant would be satisfied under *Existing Plus Approved Plus Project* volumes. With forecast cumulative volumes, the intersection would qualify for signalization under the Peak Hour Warrant (Part A only) during the PM peak hour for *Cumulative (No Project)* and *Cumulative Plus Project* conditions.

At the City's request, the northbound Commerce Boulevard approach was evaluated for right-turn lane warrants based on TRB and AASHTO guidelines for the installation of a right-turn lane. Commerce Boulevard during the PM peak hour would meet the peak hour volume thresholds for installation of a separate right-turn lane with *Existing Plus Approved* and *Existing Plus Approved Plus Project* volumes (the proposed project would add to the existing warrant). In response, the following measure is recommended:

- Widen and/or re-stripe northbound Commerce Boulevard at Green Island Road to include a separate right-turn lane and shared through/left-turn lane. Based on the proposed project's contribution to cumulative buildout volumes at the intersection, its "fair share" contribution towards this improvement would equal 2.7% (28 trips / 1,018 cumulative volumes—PM peak hour).

With recommended improvements for a separate right-turn lane on northbound Commerce Boulevard at Green Island Road; overall intersection LOS would improve under *Existing Plus Approved Plus Project* and *Cumulative Plus Project* conditions during the PM peak hour (worst case). Specifically, intersection LOS would improve from LOS B (13.0 seconds) to LOS B (11.7 seconds) with *Existing Plus Approved Plus Project* conditions. Under *Cumulative Plus Project* conditions, intersection LOS would improve from LOS D (35.0 seconds) to LOS D (29.6 seconds).

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<sup>5</sup> Transportation Research Board, Intersection Channelization Design Guide, Chapter 4, Guidelines for Design of Channelized Intersections, Figure 4-23, Traffic volume guidelines of right-turn lanes, 1995.



# Technical Memorandum

March 21, 2021

To: Brian Doswald  
Stravinski Development Group, LLC

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Project: Commerce 217 Distribution Center

From: Kamesh Vedula, PE  
Todd Tregenza, AICP  
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Ref/Job No.: 11213027

CC: File No.: 11213027-MEM004.DOCX

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**Subject:** Focused Traffic Impact Analysis for Vehicle Miles Traveled (VMT)

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## 1. Introduction

GHD has been contracted by Stravinski Development Group, LLC (SDG) to prepare a technical memorandum that summarizes the results of a qualitative vehicle miles traveled (VMT) analysis consistent with the guidance and methodologies under the California Environmental Quality Act (CEQA) and the California Governor's Office of Planning and Research (OPR), per Senate Bill 743, for the Commerce 217 Wine Storage Facility/Distribution Center. The Project is located in the northern portion of the City of American Canyon, on Commerce Boulevard, near several other similar land use types.

SB 743 was signed into law in 2013, with the intent to better align CEQA practices with statewide sustainability goals related to efficient land use, greater multimodal choices, and greenhouse gas reductions. The provisions of SB 743 became effective Statewide on July 1, 2020. Under SB 743, automobile delay, traditionally measured as level of service (LOS) is no longer considered an environmental impact under CEQA. Instead, Project impacts are determined by changes to VMT. VMT measures the number and length of vehicle trips made on a daily basis. VMT is a useful indicator of overall land use and transportation efficiency, where the most efficient system is one that minimizes VMT by encouraging shorter vehicle trip lengths, more walking and biking, or increased carpooling and transit.

As part of this study, GHD has reviewed available literature, guidance, and documentation from Napa Valley Transportation Authority (NVTA) and the City of American Canyon to identify any draft or advisory VMT baseline estimates and/or threshold recommendations. Absent adopted or guiding threshold values, GHD has presumed a reduction of 15% from regional baseline VMT per employee, consistent with the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) and CEQA Guidelines. GHD has estimated baseline and Project trip-based VMT per employee, using journey-to-work data from the US Census Bureau, data from the California Statewide Travel Demand Model (CSTDM), and data from StreetLight. The Project-level VMT per employee estimates are reviewed against the regional baseline.



## **1.1 Vehicle Miles Traveled (VMT)**

VMT is the amount and distance of automobile travel on a daily basis. VMT for land use projects is measured by multiplying average trip length by the trip generation for the project. VMT estimates for the project are reported based on analysis of average commute trip lengths and estimated project site trip generation for employees. Average trip length information was established from a variety of sources, including StreetLight Data, census housing and employment data, applicant-provided commute data, and the California Statewide Travel Demand Model. This analysis is summarized in this memorandum and discussed in detail in the Appendix. Ultimately, a blend of sources was used to establish baseline VMT for the Project and for the Countywide average (Napa County). Average trip length for the Project Area was multiplied by the Project commute trip generation to estimate Project work-based VMT.

## **1.2 Travel Demand Management (TDM)**

The proposed Project includes TDM features that are likely to result in reduced VMT per employee once operational. These TDM features were not quantified as part of the VMT analysis but will serve to reduce the number of individual commute trips generated by the project site, and to encourage commute modes other than single-occupancy vehicle trips. The TDM features included as part of the project are commensurate with measures included in the California Air Pollution Control Officers Association (CAPCOA) publication *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA, 2010). Specifically, the Project includes measures consistent with the "TRT-1: Implement Commute Trip Reduction Program – Voluntary" mitigation measure category in the CAPCOA report. The Project is committed to the continued provision of:

- Carpooling encouragement;
- Ride-matching assistance;
- Preferential carpool parking;
- Designated transportation coordinator;
- Vanpool assistance; and,
- Bicycle end-trip facilities (including indoor storage).

The provision of these measures is documented to reduce employee VMT by 1% to 6.2%.

## **1.3 CEQA Baseline Considerations & Significance Thresholds**

Under CEQA, the Project must be evaluated by comparing environmental conditions after Project implementation to conditions at a point in time referred to as the baseline. The CEQA Guidelines state that generally, the baseline is the environmental condition that exists at the time the notice of preparation is published or environmental analysis is commenced, from both a local and regional perspective. However, a lead agency may define the baseline by referencing historic conditions, as long as substantial evidence is provided that such a baseline is necessary to provide the most accurate picture practically possible given that existing conditions change or fluctuate over time.



GHD has reviewed available literature, guidance, and documentation from NVTa and the City of American Canyon to identify any draft or advisory VMT baseline estimates and/or threshold recommendations. Absent adopted or guiding thresholds, GHD presumed a reduction of 15% from baseline work-based VMT, consistent with OPR guidance for work-based projects. Baseline VMT is established utilizing journey-to-work data and trip lengths from StreetLight Data, US Census Longitudinal Employer-Household Dynamics (LEHD) database, and the California Statewide Travel Demand Model (CSTDm). The VMT impact has been assessed for the Project in terms of average daily VMT and the associated average trip length, and assessed against applying a Napa Countywide average trip length.

## **2. Reviewed Data Sources**

### **2.1 LEHD Data, CSTDm, and StreetLight Data**

Data from LEHD and the California Statewide Travel Demand Model were used to compare journey-to-work patterns, including trip length. The technical analysis processes used to verify and interpret the outputs from these data sources are provided in Appendix A. Ultimately, StreetLight Data was also acquired to address concerns regarding geography and sample size in the LEHD and CSTDm data. StreetLight Data provides empirically-based and directly comparable commute trip length (work-based VMT) information for the Project Area and Napa County. Lastly, commute data from the applicant was provided for similar uses in the project vicinity. Although a good source of information for employee commute lengths in the project area, the absence of comparable data for establishing a defensible baseline precluded its use in our analysis.

### **2.2 Data Review Summary**

Based on review of the available data sources, GHD has found pros and cons to each source. Although all the data sources reviewed support the general finding that the Project area employee commutes are longer than the Countywide average, the amount of difference between the Project area and Countywide average commute length varies. Table 2.1 presents a summary of the pro's, con's, and trip length findings from each data source. Appendix A provides a full accounting of each applied methodology.



**Table 2.1 Data Review Summary**

	LEHD	CSTDM	StreetLight Data	Applicant Data
Pros	<ul style="list-style-type: none"> <li>Relatively small geography (precise)</li> <li>Employment record-based</li> </ul>	<ul style="list-style-type: none"> <li>Accessible VMT metrics by TAZ</li> </ul>	<ul style="list-style-type: none"> <li>Custom precision for geography</li> </ul>	<ul style="list-style-type: none"> <li>Data based on employees of similar uses in Project area</li> </ul>
Cons	<ul style="list-style-type: none"> <li>Telecommute and remote office not considered</li> <li>Employer records outside realistic commute shed</li> </ul>	<ul style="list-style-type: none"> <li>TAZ geography (imprecise) masks localized variation</li> </ul>	<ul style="list-style-type: none"> <li>Sample-based methodology may not reflect reality</li> </ul>	<ul style="list-style-type: none"> <li>No comparable baseline data for County</li> </ul>
<b>Average Employee Commute Lengths</b>				
County	15.69 miles	11.16 miles	11.70 miles	N/A
Project Area	18.65 miles	12.89 miles	17.30 miles	11.00 miles

### 3. Analysis Results Summary

As shown in the prior Table 2.1, the various reviewed data sources share similarities. For example, the County average commute trip lengths from the CSTDM and Streetlight Data are similar, when compared to the LEHD data. However, the LEHD is similar to StreetLight Data for the Project Area, as compared to the CSTDM. The CSTDM VMT is similar, however, the Project-applicant submitted employee data. GHD recommends a blended approach using the LEHD, CSTDM, and StreetLight Data. Although the applicant provided data shares similarities for the local Project area with the CSTDM data, GHD did not include it in the assessment due to the lack of a comparable regional average.

Table 3.1 presents a summary of the VMT analysis results, showing average employee commute trip lengths for the Project Area and the County, establishing VMT baseline and threshold of a 15% reduction from baseline. As shown in Table 3.1, the County average baseline is estimated at 12.85 miles, resulting in a VMT impact threshold of 10.92 miles. The Project area estimate for commute length is 16.28 miles.

**Table 3.1 Commute Length Data Analysis Summary**

Trip Type	Commute Trip Length
Countywide Average	12.85 miles
Impact Threshold	10.92 miles
Project Area Average	16.28 miles





The commute trip length values shown in Table 3.1 are subsequently used to estimate Project VMT, and quantify potential VMT impacts against the threshold established using the Countywide average.

### 3.1 Project Only VMT

In order to evaluate the Project's impact on VMT, total VMT is calculated based on the Project's employee-based trip generation and the Project Area's average trip length (identified in Table 3.1 above). The Project's trip generation was estimated in GHD's Traffic Impact Study for the Project, dated May 2020. The Project is estimated to generate 367 new daily trips, this represents employee trips, visitor trips, delivery trips, and truck trips. Using the StreetLight Data, the percentage of employee trips vs non-employee trips (37%) was established and utilized to estimate the Project's employee-based VMT. Table 3.2 presents the calculation of the Project's estimated VMT, the VMT threshold based on the trip length that is 15% below the countywide average, and the resulting reduction in VMT necessary to reduce any VMT excess over that threshold.

**Table 3.2 Project VMT Calculation**

Project Daily Trip Generation	% Commute Trips	Employee Trips
367	37%	136
Area	Average Trip Length	Total Employee VMT
<b>Proposed Project</b>	<b>16.28 miles</b>	<b>2,214</b>
<i>Baseline Threshold</i>	<i>10.92 miles</i>	<i>1,485</i>
<b>VMT Reduction to meet Baseline Threshold</b>		<b>729</b>

Based on an average Project Area trip length of 16.28 miles, the total employee VMT generated by the Project is estimated to be 2,214 VMT. In the absence of applicable local thresholds for light industrial and warehouse uses, GHD recommends utilizing the Countywide average commute trip length as the baseline and a VMT threshold of 15% below that average. Based on 136 employee trips, the Project's VMT would need to be reduced by 729 VMT to fall below the proposed 1,485 VMT threshold.

## 4. Recommendations to Reduce VMT

The applicant has proposed to construct a Class I bike path running from the current terminus of Commerce Court (northern extent) to Eucalyptus Drive (southern extent) to help reduce the Project's VMT below the required threshold. As illustrated in Figure 4.1 below, a portion of the bike path has already been constructed adjacent to the Project site, extending south from the terminating cul-de-sac of Commerce Court (which was also recently extended to the Project site) to the southern property line of the Project site.

The bike path will fill an approximately 800-foot gap in regional bike infrastructure, resulting in a continuous route from the residential areas to the south with employment destinations to the north. The bike path will extend the alignment of the Class I bike path along Wetlands Edge Road (San Francisco Bay Trail).



**Figure 4.1 Extents of Bike Path and Recommended Improvement**



#### 4.1 Minimum and Maximum VMT Reduction Estimates

VMT reduction estimates for the proposed trail were prepared using two methodologies. The “Minimum” assessment estimates the induced bicycle commuting (or VMT reduction) from the 800-foot bike path only. This assessment therefore assumes the commuting potential of the balance of the Wetlands Edge bike path is already fully realized. This assessment assumes the closure of the bike trail gap would provide no indirect benefits to users of the surrounding bicycle network. However, continuing the bike path north from Wetlands Edge Road to Commerce Court fills a currently non-traversable gap between the residential areas of American Canyon and the employment centers north that precludes viable bicycle commuting choices.

The “Maximum” assessment estimates the induced bicycle commuting for the entire length of the existing bike path along Wetlands Edge and the proposed 800-foot gap closure. This assessment assumes that the existing Wetlands Edge bike trail has zero utilization for bicycle commutes. This assumption is supported by the fact that the existing Wetlands Edge bike trail is fully disconnected from commute destinations, since State Route 29 poses a significant barrier to bicycle commuting and the trail is, today, isolated from other bike infrastructure.



Acknowledging that neither the “Minimum” nor “Maximum” assessment are likely to portray the existing trail’s exact commuter use, GHD proposes to use an average of both assessment results to quantify the anticipated induced bicycle commute (or VMT reduction) provided by the 800-foot bike trail and gap closure.

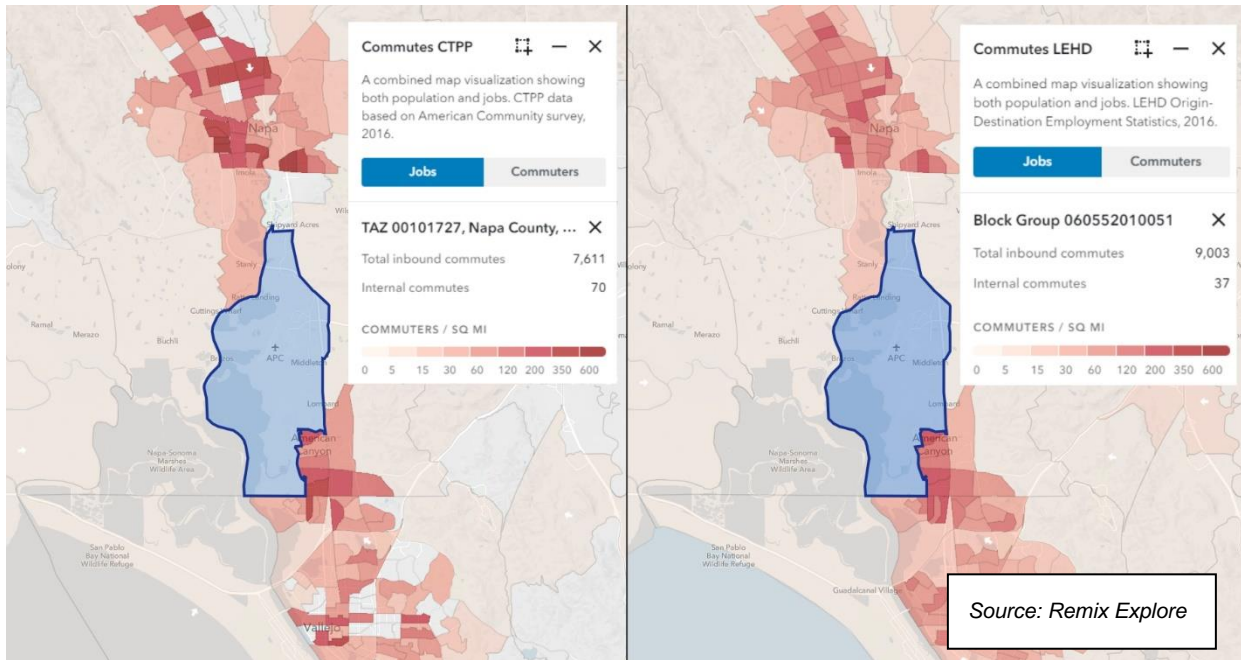
#### **4.2 Supporting and Additional Information**

The elementary school development, which is located on the northeast corner of Eucalyptus Drive and Wetlands Edge Road, is currently under construction and would also benefit from the construction of the adjacent bike path. Additionally, with the planned Class I bike path further north, connecting Green Island Road to Devlin Road, continuous bikeways will be provided to connect American Canyon to employment centers north of Green Island. Without closure of the 800-foot gap in bike facilities, the full benefit of the Devlin Road bike connection will not be realized.

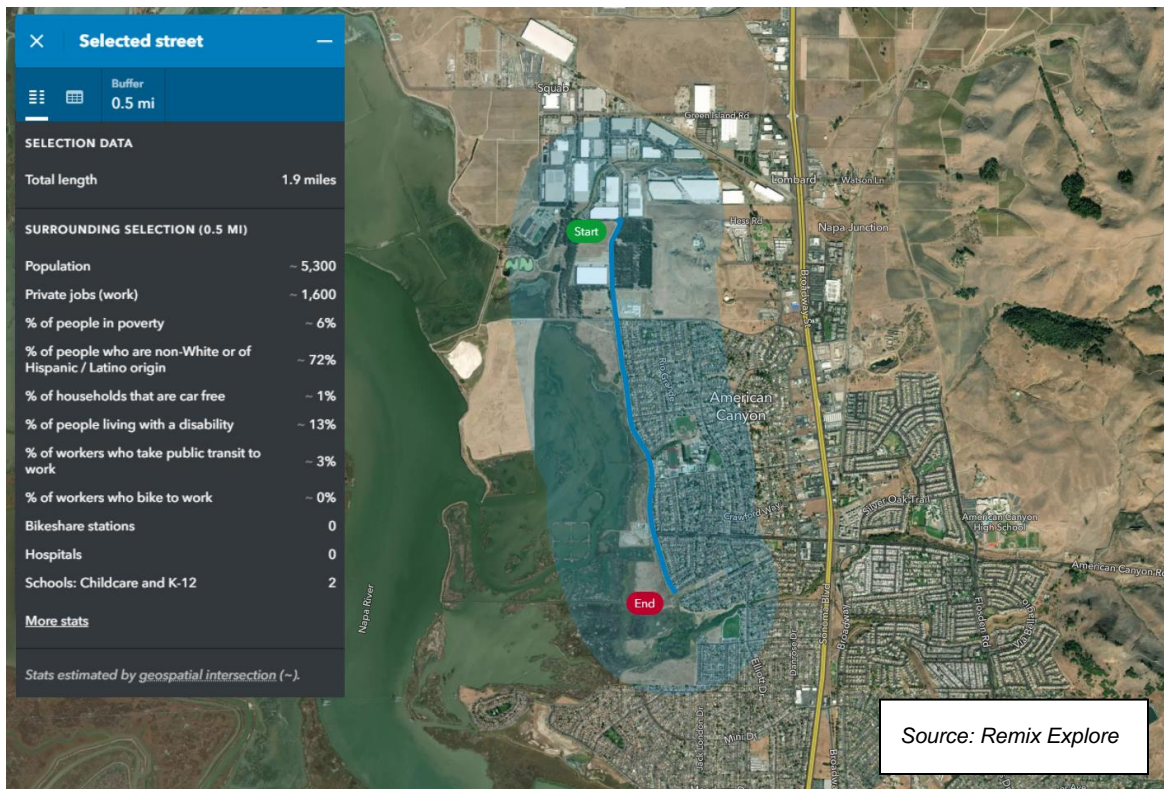
Evidence for the existence of viable bicycle commuters between the Project site and the areas utilized in the induced bicycle commute analysis is provided by US Census Transportation Planning Products (CTPP) and LEHD data, as shown below in Figure 4.2. The units of analysis available for this assessment are limited to Census Block Group geography. As shown in the figures, the proposed Project (outlined in blue) is served by hundreds of commuters within American Canyon, and particularly along Wetlands Edge Road.

Figures 4.3 below depicts a ½ mile buffer from the existing Wetlands Edge bike trail with the addition of the 800-foot gap closure and connection to Commerce Boulevard. The induced bicycle commute analysis includes several buffer distances, and as noted above, was performed on both a “Minimum” and “Maximum” basis. Figure 4.3 visualizes the residential population and employment destinations currently accessible within a half-mile of this corridor, demonstrating the number of potential users within close walking distance. The half-mile buffer distance is estimated to include 5,300 residents and up to 1,600 jobs.

**Figure 4.2 Existing Commute Patterns in Project Area**



**Figure 4.3 Half-Mile Demographic Buffer from Bicycle Corridor**







### 4.3 VMT Reduction Analysis Findings

The quantification of the VMT reduction from full construction of the bike path is detailed in Appendix B. The VMT reduction is based on the research cited in the National Cooperative Highway Research Program (NCHRP) Report 552, *Guidelines for Analysis of Investment in Bicycle Facilities*. An important input into this calculation is the assumed average bicycle commute trip distance. Unlike vehicular commute trip lengths and distances, bicycle commute trip lengths are not readily available at the local or County level. While data for average bicycle trip lengths are available at the State level and Federal level from household travel surveys, they are presented as aggregated bicycle trip lengths for all trip purposes. Since commuting is typically the longest length non-recreational trip purpose, these data do not represent typical commuting distances. Furthermore, the latest available California household travel survey oversampled rural areas, which may distort bicycle use characteristics, especially in the context of American Canyon, an urbanized area.

Bicycle commute trip length data were obtained from two sources. The first source is from a survey of bicycle commutes prepared by Oregon Transportation Research and Education Consortium (OTREC). The report, *Understanding and Measuring Bicycling Behavior: a Focus on Travel Time and Route Choice* (OTREC, 2008) distinguishes bicycle trip length and distance by trip purpose. This research found an average one-way bicycle commute trip distance of 5.2 miles. The second identified source of bicycle commute trip distances is from the American Association of State Highway and Transportation Officials (AASHTO) *Commuting in America 2013: The National Report on Commuting Patterns and Trends*. Specifically, AASHTO published *Report 14. Bicycling and Walk Commuting* (AASHTO, 2015). This report presents an average bicycle commute length and distance of 20.9 minutes and 3.8 miles, respectively.

Table 4.1 presents the reduction in VMT associated with new bicyclist commuters anticipated to increase as a result of the bicycle facility and the new connection north to Commerce Court. The total new commuters estimated from the analysis (detailed in Appendix B) is used to estimate the reduction in VMT by multiplying the number of new commuters by the number of daily trips and by the average trip distance for a bicyclist commuter. The results for both the AASHTO and OTREC bicycle commute trip distance are shown.

**Table 4.1 VMT Reduction with Induced Demand/Bicycle Mode Shift**

		Minimum (800 ft)	Maximum (1.85 mi)	Average
	Total New Commuters	38	155	96.5
	Daily Commute Trips (2 trips)	76	310	193
5.2 mile bicycle commute	Average One-way Trip Length <sup>1</sup>	5.2	5.2	5.2
	<b>Daily VMT Reduction</b>	<b>395</b>	<b>1,612</b>	<b>1,004</b>
	Annual VMT <sup>2</sup>	92,872	378,820	235,846
3.8 mile bicycle commute	Average One-way Trip Length <sup>3</sup>	3.8	3.8	3.8
	<b>Daily VMT Reduction</b>	<b>289</b>	<b>1,178</b>	<b>733</b>
	Annual VMT <sup>2</sup>	67,868	276,830	172,349

<sup>1</sup> "Understanding and Measuring Bicycling Behavior: a Focus on Travel Time and Route Choice", Oregon Transportation Research and Education Consortium, OTREC-RR-08-03, December 2008.

<sup>2</sup> Assumes 47 weeks per year, 5 days per week for average commute year

<sup>3</sup> "Commuting in America 2013; Report 14. Bicycle and Walk Commute", AASHTO, January 2015



As shown, the new shared-use path (Class I bicycle facility) is expected to result in mode shift from vehicle to bicycle for up to 155 commuters. According to the NCHRP calculation, this bike path is anticipated to reduce VMT by up to 1,178 to 1,612 vehicle trip miles, depending on the bicycle commute trip length used. If the Wetlands Edge trail today were fully utilized by commuters, and the proposed 800-foot bike trail were not closing a critical gap in network connectivity, the 800-foot bike trail project alone would be estimated to reduce 289 to 395 vehicle trip miles, depending on the bicycle commute trip length. Acknowledging that current commute use of the Wetlands Edge trail today is likely a non-zero figure, GHD recommends using a blended average of the "Minimum" and "Maximum" assessment, which would result in a reduction in VMT of 733 to 1,004 vehicle trip miles, which is sufficient to reduce the total Project VMT to a value less than the threshold established in this memorandum.



# Memorandum

## Appendices



## **Appendix A**

# **Technical Methodologies & Data**



## Appendix A Technical Methodologies & Data

The following section outlines the analysis methodologies and data sources that have been used in the VMT impact study to quantify VMT for the proposed Project. The regional travel demand model and VMT policy are currently under development. Therefore, various data sources were utilized to determine VMT characteristics.

### 1. Project Specific (Related) Information

SDG has provided site-specific information for home locations of existing employees at the existing building at 330 Commerce Boulevard, which is a similar use to the use anticipated at the proposed Project site. This information is presented in Table A.1 along with the calculated two-way commute distance, VMT, and the total VMT per employee rate (21.9). According to the application, the proposed Project is anticipated to employ 43 workers, whose residence locations are currently unknown. However, since the estimate in the below table is the existing data for a single similar use only, it does not provide substantial evidence to support a baseline VMT per employee commute distance estimation in the greater project area and cannot support a Countywide baseline finding.

**Table A.1 Employee Commute & VMT for 330 Commerce Blvd  
(3 buildings)**

Home Origin	Number of Employees	Two-Way Commute Distance (mi)	VMT Estimate
Vallejo	21	12.6	264.6
Napa	18	22.8	410.4
American Canyon	8	2.0	16.0
Fairfield	7	31.8	222.6
Vacaville	3	46.8	140.4
Benicia	1	29.5	29.5
Suisun City	1	32.6	32.6
Sonoma	1	36.8	36.8
Yountville	1	37.5	37.5
Pittsburg	1	65.3	65.3
Antioch	1	73.6	73.6
Winters	1	74.9	74.9
<b>TOTAL</b>	<b>64</b>		<b>1404.2</b>
Weighted average VMT per employee			21.9 trip miles
Weighted average commute distance		11.0 miles	





## 2. LODES Data

Journey-to-work data is available from the Longitudinal Employer-Household Dynamics (LEHD) program<sup>1</sup>. The primary source of data used in the LEHD program is the enhanced Quarterly Census of Employment and Wages (QCEW) microdata files obtained from each participating Local Employment Dynamics (LED) state. The employer-based QCEW data is merged with additional worker-based administrative data collected by the US Census Bureau to create integrated employer-worker data, available through two different databases, Quarterly Workforce Indicators (QWI) and LEHD Origin-Destination Employment Statistics (LODES).

Unlike sample-based surveys (such as the US Census's American Community Survey or CTPP), the LODES data provides a nearly complete enumeration of home-to-work flows covering over 90% of all workers and employers in the United States. The LODES data does not contain details on the work trips such as mode choice, route, or travel times. The LODES data does not include federal workers, self-employed or the military, and workplace location is assigned algorithmically for people who work for a business with multiple locations in a County. The LODES data provides many more origin-destination pairs than collected through sampled data, and provides sufficient data for home-to-work flows.

The LODES data was used to calculate average trip lengths and associated VMT for the Project Area in comparison against the region. The 2017 LODES data was downloaded statewide, on the US Census block level, and then filtered for Napa County. Based on the LODES data, approximately 52% of Napa County workers live outside the County, and approximately 48% of County employees live and work in Napa County. The employment number used for VMT per employee was determined by summing all the job destinations in the LODES dataset for Napa County.

Based on the methodology for estimating Baseline VMT as described herein, Table A.2 below presents a summary of the Baseline VMT estimates and Project VMT estimates utilizing LODES data and shortest-path analysis for trip lengths, within a 50-mile radius. The Project Area average trip length was found to be 18.6 miles, the Citywide average was found to be 16.4 miles, and the Countywide average was found to be 15.7 miles. The selected census blocks for the Project Area that present similar uses currently have VMT per employee rates that are, on average, higher than the Countywide average. The finding of above-average commute lengths in the project area was later corroborated in the StreetLight data findings.

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<sup>1</sup> Data Source: U.S. Census Bureau. 2020. Longitudinal-Employer Household Dynamics Program (LEHD) Origin-Destination Employment Statistics Data (2015-2017). Washington, DC. accessed on 05/12/2020 at <https://lehd.ces.census.gov/data/#lodes>. LODES 7.4



**Table A.2 LODES Analysis Results Summary**

Area	Total Employees	Total VMT	Average VMT per Employee	Average Commute Distance
Napa County	58,836	1,846,314	31.4	15.7
City of American Canyon	3,171	103,671	32.7	16.4
Project Area	682	25,366	37.2	18.6
Project Area % Difference from County			18.5%	
Project Area % Difference from City			13.8%	

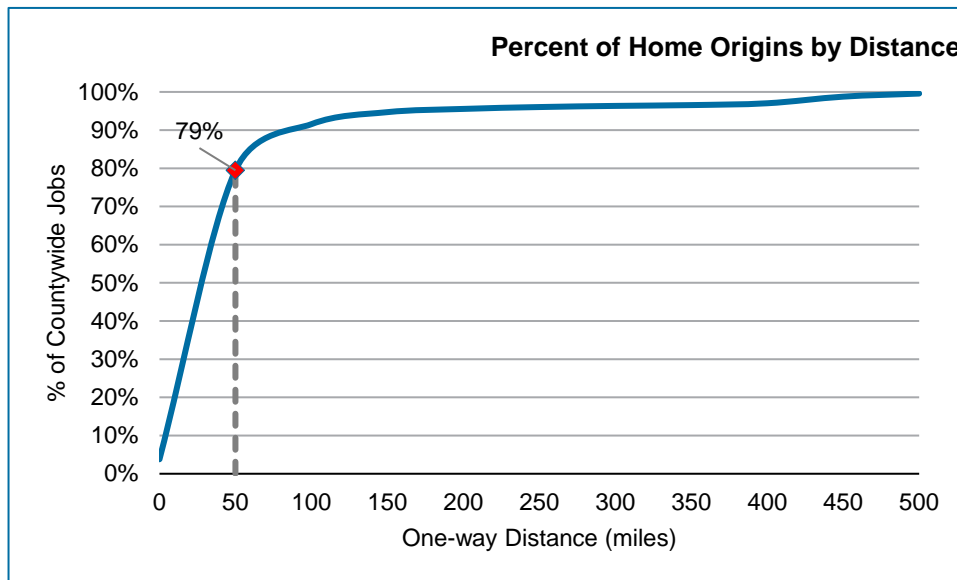
### Shortest Path GIS Analysis Methodology

Shortest path analysis was performed using the GIS-based Google Distance Matrix API. The API is a service that computes travel distance and journey duration between multiple origins and destinations using a given mode of travel. The geographic boundaries of the census blocks Statewide were downloaded from the US Census Bureau to be utilized within the analysis. The LODES data was queried to retrieve the census blocks statewide that had a work destination within Napa County, then joined to the reference block dataset to find their locations. There were over 67,300 origin-destination pairs with a work destination in Napa County. The geometric centroids of each of the filtered census blocks were then calculated and utilized to determine the coordinates of the origins or destinations for analysis within the GIS-based API. The API was then called iteratively for a process which calculated the distance and travel time between each origin and destination (block to block). Distances between each origin-destination pair account for the full trip length, outside of the County boundary. The results were then joined back to the original LODES data to preserve the job count information, and assure the calculated destinations corresponded with the correct origin-destination pairs. GHD reviewed some of the origin-destination pair's distances against Google maps directions for quality control and assurance.

The primary work location reported by the LODES data may not represent the actual physical location where workers work, i.e. large corporations or other companies may have a headquarters located in an unrealistic location for commuting to and from work on a daily basis. Figure A.1 shows the percent of home origins of the Countywide jobs by distance. The Figure shows that a 50-mile buffer captures 79% of work destination trips Countywide (travel time is approximately 1 hour). Based on the project-specific information provided by the Project applicant, the existing employees of the neighboring use commute within a 50-mile distance. Therefore, the VMT per employee was calculated utilizing only the trips within a 50 mile buffer, one-way, thus removing errant outliers in the data that incorrectly inflate the average VMT per employee.

Based on the LODES data and shortest-path analysis, the Countywide average VMT per employee was estimated to be 31.4, and the Citywide average VMT per employee was estimated to be 32.7.

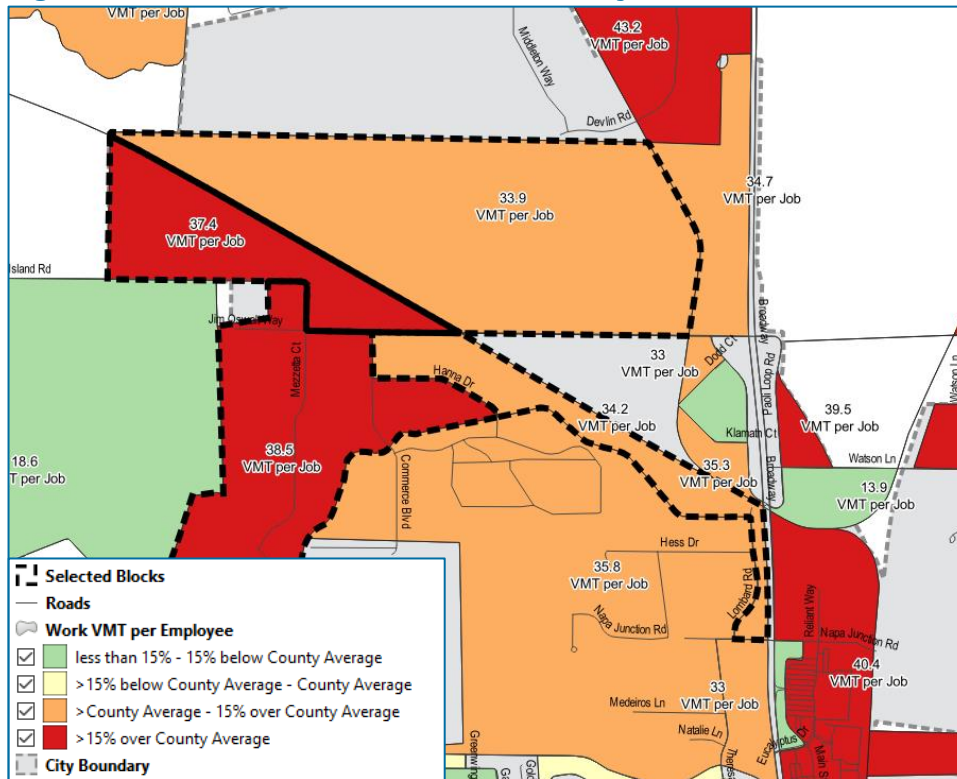
**Figure A.1 Percent of Home Origins of Countywide Jobs by Distance**



### VMT Estimations & Geography

The distances calculated from the shortest path GIS analysis combined with the LODES data was utilized to estimate VMT per employee. VMT for each origin-destination pair was estimated by multiplying the number of jobs (employees) by the distance between the origin, destination, and back to the origin (2x distance) to include the full daily trip length for each origin-destination pair. The number of jobs, total VMT estimation, and average VMT per employee results were then summarized by geography (County, City, Project Area) for baseline estimation, Project Area estimation, and comparison of VMT per employee rates. The average VMT per employee for the County and City of American Canyon were calculated by dividing the total VMT by the total number of jobs for the census blocks in those geographies. For the Project Area average, four census blocks were evaluated, as identified in Figure A.2 below, to estimate the VMT per employee of the Project, by estimating the VMT per employee of the surrounding similar land uses. The census block along Commerce Boulevard was not selected due to also containing an elementary school, City Hall, and other dissimilar uses. Figure A.2 also shows the VMT per employee for each of the selected census blocks, and is colorized based on the comparison to the Countywide average VMT per employee. As shown, the selected census blocks in the Project Area range from rates of 33.9 to 38.5 VMT per employee. The average VMT per employee for the Project Area is 37.2 (total of VMT for Project Area divided by the total of employees in Project Area).

**Figure A.2 Selected Census Blocks for Project Area**



### 3. StreetLight Data

GHD has implemented alternative resources and tools to facilitate data collection and accurately represent origin-destination data for home-based-work trips in the study area and Countywide. GHD utilized “big data” from StreetLight Data to assess journey-to-work characteristics including trip length and VMT during 2019. StreetLight Data uses Location Based Services (LBS) and provides VMT and trip length estimations based on an anonymized sample of traffic. Estimations include trips that are tracked from start to finish and provides a more granular estimation of VMT patterns when compared to most travel demand models.

StreetLight Data is updated monthly and provides information for all roadways identified on the “Open Streets Map”. The data available through this service allows for evaluation of historical and/or current travel conditions. The data was collected for all days throughout 2019 (pre-COVID-19), for two sets of geographies: Napa County and the “Project Area”. The Project Area is identified in Figure A.3 below. The data was provided for all days, weekdays, and weekends. However, the analysis evaluated data for weekdays only. The data was analyzed by trip type including commute-based and non-commute-based for origins and destinations from/to work, home, and other trip types.

**Figure A.3 Selected Project Area for StreetLight Data Analysis**



The employee commute data from StreetLight Data was used to calculate average trip length and VMT estimates for the Project Area and Countywide. The average trip length information was utilized to establish Project-level VMT and the VMT that would be 15% below the Countywide average baseline metric.

Table 3.1 presents a summary of the StreetLight Data analysis results, showing employee and visitor trips and the average trip lengths for the Project Area and the County. Additionally, the percent split of employee and visitor trips within the Project Area is presented, which will be utilized to estimate the employee portion of trips from the Project's trip generation. As presented, a 37% portion of Project Area trips were employee (commute) trips. The average trip lengths presented vary between 11.7 and 31.3 miles, when evaluating commute trips and visitor-based trips. The VMT estimation associated with the Project utilizes the average trip length associated with employee commute trips from the Project Area.

**Table A.3 StreetLight Data Analysis Results Summary**

Trip Type	Project Area Volumes	% of Trips	Project Area Trip Length (mi)	Countywide Volume	Countywide Trip Length (mi)
Commute Daily Volume	2,138	37%	17.3	704,468	11.7
Non-Commute Daily Volume	3,626	63%	23.8	287,068	31.3
Total / Average	5,764	100%	21.4	991,536	17.4

It should be noted that the average commute trip length for the project area (17.3 miles) significantly exceeds the applicant-provided information on worker home bases for similar uses in the area (11.1 miles). Thus, the



VMT estimate for the project area from StreetLight Data may be conservatively high. Notwithstanding this consideration, since the applicant-provided data cannot be directly compared to the Countywide information from StreetLight data, GHD has decided not to use it in this analysis.

#### **4. Caltrans Statewide Travel Demand Model**

Caltrans maintains the Statewide travel demand model (CSTDm) which contains VMT information on the traffic analysis zone (TAZ) level. Based on the CSTDm, the Countywide average VMT per employee is estimated to be 23.7, the Citywide average VMT per employee is estimated to be 38.7, and the TAZ where the Project is located has a VMT per employee rate of 38.1. However, the CSTDm only has two TAZ's that are located in the City of American Canyon. Based on the CSTDm, the Countywide average trip length is 11.2, and the average trip length for the Project area is 12.9.



## **Appendix B**

# **VMT Reduction for Class I Bikeway**





## **Appendix B**      VMT Reduction for Class I Bikeway

The proposed SDG Commerce 330 Distribution Center Project (herein referred to as the Project) includes a segment of Class I Shared-Use Path that will close a gap between two shared-use facilities to the north and south of the proposed project. Based on the research cited in the National Cooperative Highway Research Program (NCHRP) Report 552, *Guidelines for Analysis of Investment in Bicycle Facilities*, the new facility may result in mode shift from vehicle to bicycle for some users. The methodology describes an approach for estimating the induced demand associated with a given bicycle facility improvement, and translates the projected increase in demand to monetized benefits related to mobility, health, recreation, and decreased auto use.

To estimate the reduction in vehicle miles traveled (VMT) associated with the bicycle facility improvement proposed as part of the Project, this analysis utilizes only the decreased auto use benefit component of the NCHRP 552 methodology. The induced demand benefits associated with the Project's proposed bicycle facility improvement is translated to a VMT reduction estimate by using the projected increase in number of daily commuters estimated to be associated with the proposed bicycle facility, and the average bicycle commute trip length.

This memorandum describes our application of the NCHRP 552 methodology in additional detail, the results of the induced demand and reduced auto use benefit, and the estimated reduction in VMT associated with the Project.

### **Methodology**

The NCHRP 552 methodology is centered on several assumptions (NCHRP 552, Appendix A):

1. Existing bicyclists near a new facility will shift from the existing nearby facility to the new facility.
2. The new facility will result in induced number of cyclists as a function of the number of existing bicyclists, relative to the attractiveness of the proposed facility.
3. People are more likely to ride a bicycle if they live within 1.5 miles of a facility than if they live outside that distance.

The methodology suggests that existing bicycle commute mode share can be utilized to estimate the number of existing and future bicycle ridership based on low, moderate, and high likelihood multipliers and the population within 1.5 mile, 1.0 mile, and 0.5 mile buffers that surround a facility. The total rate of adult bicycling ranges from a low estimate, based on the Census commute share, to a high estimate, based on 0.6 percent plus three times the Census commute share (NCHRP 552, Appendix A). Moreover, the highest likelihood of a member of the population to use the facility exists if they live within a 0.5 mile buffer around the facility. Thus, demand is reported at low, medium, and high estimates for the populations at each buffer distance. Each buffer area—at 0.5, 1.0, and 1.5 mile was assessed for both a "Minimum" and "Maximum" bikeway benefit area.





The “Minimum” benefit area assumes only the direct induced demand of the 800-foot segment proposed by the project applicant. However, this assessment methodology undervalues the bike facility’s benefit as it assumes no additional benefit to the existing bike path along Wetlands Edge Road. The Wetlands Edge bike path is used recreationally, but has limited utility for commuter use, as it does not provide a connection between American Canyon residents west of SR 29 to employment destinations north of Eucalyptus.

In an effort to demonstrate this cumulative benefit, a “Maximum” benefit area was also calculated. The “Maximum” benefit area includes the entire length of the existing Wetlands Edge bike trail in addition to the proposed 800-foot gap closure segment. This assessment assumes zero commute benefit for the existing Wetlands Edge bike trail. Acknowledging that some commute benefit likely exists on the existing trail, and average of the “Minimum” and “Maximum” benefit is used in this study. However, this may still undervalue the benefit of the gap closure since the existing bike trail’s commuter use is likely closer to zero than it is to fully-actualized, since the only connection to employment destinations north of Eucalyptus today is along the shoulders of SR 29 – a route navigable the only the most experienced and fearless riders.

To project the future bicycling demand, the population was estimated based geospatial intersection of Census Block Group geography, using 2019 American Community Survey (ACS) five-year population estimates. Using the estimated population and the sketch planning method presented in Appendix A of the NCHRP 552 Report, the induced demand and decreased auto use benefits associated with the proposed bicycle facility were estimated for the “Minimum” and “Maximum” scenarios described above.

## Results

### *Induced Demand*

Table B.1 presents the calculations for estimating the induced demand associated with the proposed bicycle facility at the three buffer distances. As shown, the bicycle facility improvement is anticipated to induce 38 new bicyclist commuters (“Minimum”) and 155 new bicyclist commuters (“Maximum”), for an average 97 new bicyclist commuters.

**Table B.1: Induced Demand Calculations**

SDG Commerce 330 Distribution Center Project Induced Bicycle Demand	Minimum (800 ft)	Maximum (1.85 mi)
<b>Adult Population Percentage <sup>1</sup></b>	73.70%	73.70%
<b>Bicycle Commute Mode Share <sup>2</sup></b>	1.10%	1.10%
<b>Existing Population <sup>3</sup></b>		
Population near Facility, 2400m	9,600	27,400
Population near Facility, 1600m	3,700	16,500
Population near Facility, 800m	700	5,300
<b>Existing Bicycle Commuters <sup>4</sup></b>		
Bicyclist Commuters, 2400m	105.6	301
Bicyclist Commuters, 1600m	40.7	182
Bicyclist Commuters, 800m	7.7	58
<b>Existing Adult Population <sup>5</sup></b>		



**Table B.1: Induced Demand Calculations**

SDG Commerce 330 Distribution Center Project Induced Bicycle Demand	Minimum (800 ft)	Maximum (1.85 mi)
Adult Population near Facility, 2400m	7,075	20,194
Adult Population near Facility, 1600m	2,727	12,161
Adult Population near Facility, 800m	516	3,906
<b>Existing Adult Bicycling Rates (Non-Commuters) <sup>6</sup></b>		
Adult Bicycling Rate, High	3.90%	3.90%
Adult Bicycling Rate, Moderate	1.72%	1.72%
Adult Bicycling Rate, Low	1.10%	1.10%
<b>Existing Adult Bicyclists (Non-Commuters), High Estimates <sup>7</sup></b>		
Adult Bicyclists, High 2400m	276	788
Adult Bicyclists, High 1600m	106	474
Adult Bicyclists, High 800m	20	152
<b>Existing Adult Bicyclists (Non-Commuters), Moderate Estimates <sup>7</sup></b>		
Adult Bicyclists, Moderate 2400m	122	347
Adult Bicyclists, Moderate 1600m	47	209
Adult Bicyclists, Moderate 800m	9	67
<b>Existing Adult Bicyclists (Non-Commuters), Moderate Estimates <sup>7</sup></b>		
Adult Bicycling Rates, Low 2400m	78	222
Adult Bicycling Rates, Low 1600m	30	134
Adult Bicycling Rates, Low 800m	6	43
<b>Likelihood Multipliers By Each Buffer Distance <sup>8</sup></b>		
Likelihood Multiplier, 2400m	0.15	0.15
Likelihood Multiplier, 1600m	0.44	0.44
Likelihood Multiplier, 800m	0.51	0.51
<b>New Bicycle Commuters <sup>9</sup></b>		
Total New Commuters, 2400m	16	45
Total New Commuters, 1600m	18	80
Total New Commuters, 800m	4	30
<b>Total New Commuters</b>	<b>38</b>	<b>155</b>
<b>New Adult Bicyclists (Non-Commuters), High Estimates <sup>10</sup></b>		
New Adult Cyclists, High 2400m	41	118
New Adult Cyclists, High 1600m	47	209
New Adult Cyclists, High 800m	10	78
<b>New Adult Bicyclists (Non-Commuters), Medium Estimates <sup>10</sup></b>		
New Adult Cyclists, Moderate 2400m	18	52
New Adult Cyclists, Moderate 1600m	21	92
New Adult Cyclists, Moderate 800m	5	34
<b>New Adult Bicyclists (Non-Commuters), Low Estimates <sup>10</sup></b>		



**Table B.1: Induced Demand Calculations**

SDG Commerce 330 Distribution Center Project Induced Bicycle Demand	Minimum (800 ft)	Maximum (1.85 mi)
Total New Adult Cyclists, Low 2400m	12	33
Total New Adult Cyclists, Low 1600m	13	59
Total New Adult Cyclists, Low 800m	3	22
<b>Total New Adult Cyclist Estimates (Commuter and Non-Commuter) <sup>11</sup></b>		
Total New Cyclists, High	154	634
Total New Cyclists, Moderate	99	407
Total New Cyclists, Low	84	343

Table Notes:

<sup>1</sup> U.S. Census Bureau, American Community Survey ACS 2019 5-Year Estimates

<sup>2</sup> Napa County, CA Commuting Characteristics 2019 ACS 5-Year Estimates

<sup>3</sup> 2010 U.S. Decennial Census Population by Block; 2018 U.S. Census American Community Survey (ACS) 5-Year Estimates by Block Group

<sup>4</sup> Population near Facility x Bicycle Commute Mode Share

<sup>5</sup> Population near Facility x Adult Population Percentage

<sup>6</sup> High Estimate Rate = .06% + 3(Census Bicycle Commute Mode Share); Medium Estimate Rate = 0.4% + 1.2(Census Bicycle Commute Mode Share); Low Estimate Rate = Census Commute Mode Share

<sup>7</sup> Adult Population near Facility at Given Buffer Distance x Adult Bicycling Rate

<sup>8</sup> Established by NCHRP 552 research; see Appendix B

<sup>9</sup> Existing Bicycle Commuters x Likelihood Multiplier

<sup>10</sup> Existing Adult Bicyclist (Non-Commuter) x Likelihood Multiplier

<sup>11</sup> Sum of New Adult Bicyclists (Non-Commuter) and New Bicyclist Commuters at High, medium and Low Estimates

### Vehicle Miles Traveled (VMT) Reduction

Table B.2 presents the reduction in VMT associated with new bicyclist commuters anticipated to increase as a result of the proposed bicycle facility. The total of new commuters shown in Table B.1 is used to estimate the reduction in VMT by multiplying the number of new commuters by the number of daily trips and the average one-way trip length for a bicycle commute trip. As shown, the daily VMT reduction is estimated to be up to 1,612, at least 395, and an average of 1,004 vehicle miles travelled.

**Table B.2: VMT Reduction Associated with Induced Demand/Bicycle Mode Shift**

	Minimum (800 ft)	Maximum (1.85 mi)	Average
Total New Commuters	38	155	96.5
Daily Commute Trips (2 trips)	76	310	193
Average One-way Trip Length <sup>1</sup>	5.2	5.2	5.2
<b>Daily VMT Reduction</b>	<b>395</b>	<b>1,612</b>	<b>1,004</b>
Annual VMT <sup>2</sup>	92,872	378,820	235,846

<sup>1</sup> "Understanding and Measuring Bicycling Behavior: a Focus on Travel Time and Route Choice", Oregon Transportation Research and Education Consortium, OTREC-RR-08-03, December 2008.

<sup>2</sup> Assumes 47 weeks per year, 5 days per week for average commute year

## **Initial Study for the SDG Commerce 217 Distribution Center Project**

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### **Appendix G Tribal Outreach Letters**



July 29, 2020

Native American Heritage Commission  
1550 Harbor Blvd, Suite 100  
West Sacramento, CA 95691

To Whom It May Concern:

Grassetti Environmental Consulting has recently retained Solano Archaeological Services (SAS) to conduct a California Environmental Quality Act (CEQA)-level cultural resources inventory of an approximate 15.24-acre property located in the City of American Canyon (the City), Napa County, for the proposed SDG Commerce 330 Warehouse Project (Project). SDG Commerce 330, LLC, proposes to develop a 330,528 square-foot wine storage and distribution center on the 663,802 square-foot site. A total of 189 car and 32 truck dock parking spaces would be provided for the building and the overall project is consistent with the other industrial developments within the Green Island Industrial Park.

The project area is located in the City of American Canyon on the west side of the unimproved Commerce Blvd. extension north of Eucalyptus Drive and due north of the City of the American Canyon Clarke Ranch open space/recreation area. The property is at the south end of the expanded Green Island Industrial Area, and lies on the southern 15.24-acre portion of Assessor's Parcel Number 058-030-065. The project area is situated in the Township 4 North, Range 4 West, sections 14, and 23 as depicted on the attached *Cuttings Wharf, California* USGS topographic quadrangle.

The SAS study will include a pedestrian cultural resources survey of the project area. Before we commence fieldwork, however, we would like to facilitate AB 52 consultation on behalf of the City. To provide this assistance to the City, we would like to request a list of appropriate regional Native American community contacts and a search of the Sacred Lands File.

If you have any questions, feel free to contact me at your convenience by phone at 530-417-7007 or via email at [Brian@solanoarchaeology.com](mailto:Brian@solanoarchaeology.com). Thank you very much for your time and I look forward to hearing from you soon.

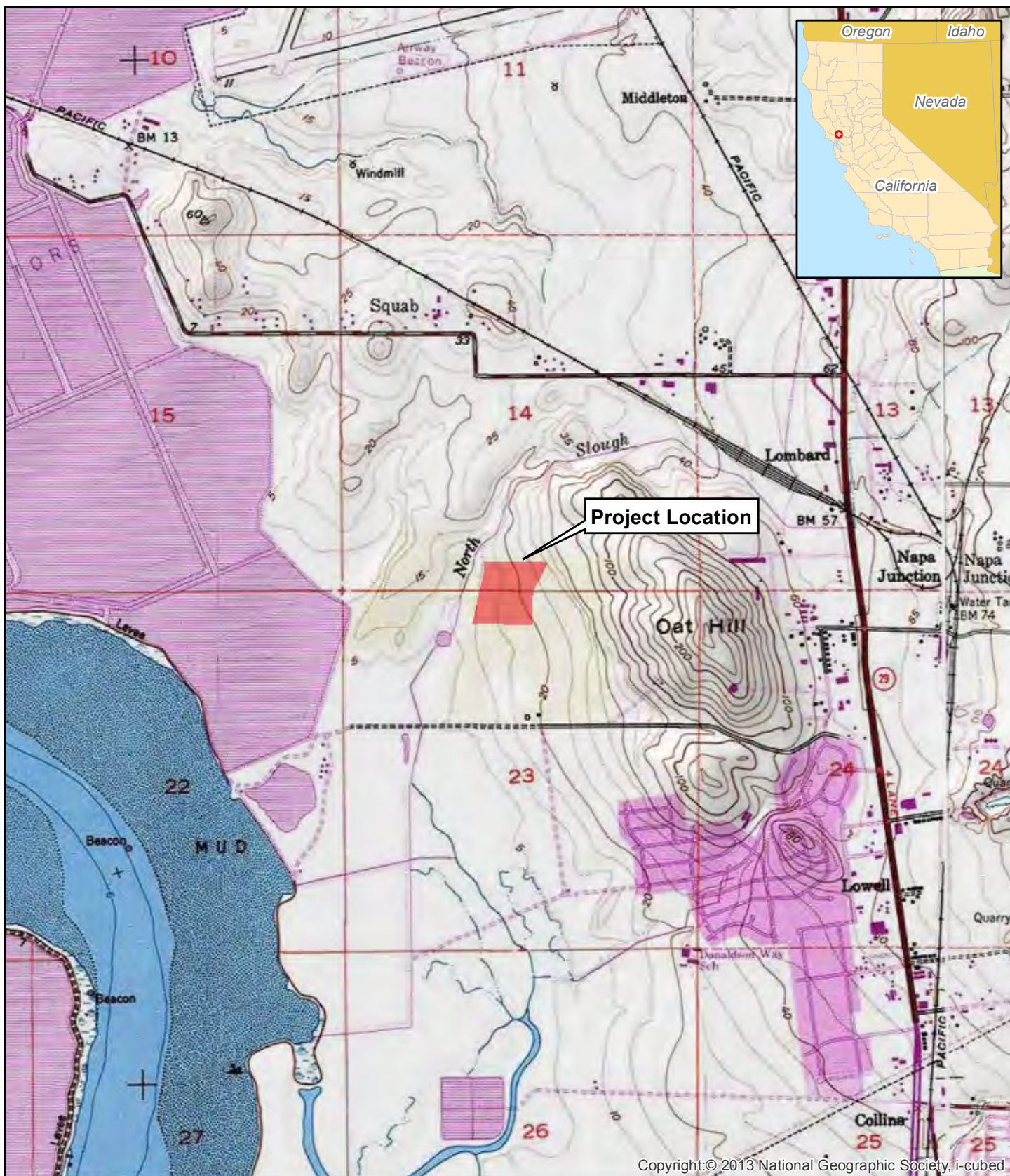
Regards,

A handwritten signature in blue ink, reading "Brian Ludwig". The signature is fluid and cursive, with the first name "Brian" and last name "Ludwig" clearly visible.

Brian Ludwig, Ph.D.  
Principal Investigator

Enc. Project location map





## Project Location Map.

1:24,000

■ Commerce 217 Project Area

0.5

Miles

T4N, R4W, Sections 14 and 23.  
Cuttings Wharf 7.5' Series Quadrangle, USGS, 1981.

1

Kilometers



**Native American Heritage Commission  
Tribal Consultation List  
Napa County  
7/30/2020**

***Cortina Rancheria - Kletsel  
Dehe Band of Wintun Indians***

Charlie Wright, Chairperson  
P.O. Box 1630 Wintun  
Williams, CA, 95987  
Phone: (530) 473 - 3274  
Fax: (530) 473-3301

***Guidiville Indian Rancheria***

Merlene Sanchez, Chairperson  
P.O. Box 339 Pomo  
Talmage, CA, 95481  
Phone: (707) 462 - 3682  
Fax: (707) 462-9183  
admin@guidiville.net

***Middletown Rancheria of Pomo  
Indians***

Jose Simon, Chairperson  
P.O. Box 1035 Lake Miwok  
Middletown, CA, 95461 Pomo  
Phone: (707) 987 - 3670  
Fax: (707) 987-9091  
sshope@middletownrancheria.com

***Mishewal-Wappo Tribe of  
Alexander Valley***

Scott Gabaldon, Chairperson  
2275 Silk Road Wappo  
Windsor, CA, 95492  
Phone: (707) 494 - 9159  
scottg@mishewalwappotribe.com

***Yocha Dehe Wintun Nation***

Anthony Roberts, Chairperson  
P.O. Box 18 Patwin  
Brooks, CA, 95606  
Phone: (530) 796 - 3400  
Fax: (530) 796-2143  
aroberts@yochadehe-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed SDG Commerce 330 Warehouse Project, Napa County.

**NATIVE AMERICAN HERITAGE COMMISSION**

July 30, 2020

CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

SECRETARY  
**Merri Lopez-Keifer**  
Luiseño

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

COMMISSIONER  
**Marshall McKay**  
Wintun

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Julie Tumamait-Stenslie**  
Chumash

COMMISSIONER  
[Vacant]

COMMISSIONER  
[Vacant]

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

Brian Ludwig, PhD, Principal Investigator  
Solano Archaeological Services

Via Email to: [brian@solanoarchology.com](mailto:brian@solanoarchology.com)  
Cc to: [scottg@mishewalwappotribe.com](mailto:scottg@mishewalwappotribe.com)

**Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, SDG Commerce 330 Warehouse Project, Napa County**

To Dr. Ludwig:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

*Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.*

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:



1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Mishewal-Wappo Tribe of Alexander Valley tribes on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: [Sarah.Fonseca@nahc.ac.gov](mailto:Sarah.Fonseca@nahc.ac.gov).

Sincerely,



Sarah Fonseca  
Cultural Resources Analyst

Attachment



August 3, 2020

Ms. Merlene Sanchez  
Guidiville Indian Rancheria  
P.O. Box 339  
Talmage, CA 95481

**RE: Cultural Resources Inventory for the SDG Commerce 330 Warehouse Project, Napa County, California – Facilitation of AB 52 Consultation**

Dear Ms. Sanchez:

Grassetti Environmental Consulting has recently retained Solano Archaeological Services (SAS) to conduct a California Environmental Quality Act (CEQA)-level cultural resources inventory of an approximate 15.24-acre property located in the City of American Canyon (the City), Napa County, for the proposed SDG Commerce 330 Warehouse Project (Project). SDG Commerce 330, LLC, proposes to develop a 330,528 square-foot wine storage and distribution center on the 663,802 square-foot site. A total of 189 car and 32 truck dock parking spaces would be provided for the building and the overall project is consistent with the other industrial developments within the Green Island Industrial Park.

The project area is located in the City of American Canyon on the west side of the unimproved Commerce Blvd. extension north of Eucalyptus Drive and due north of the City of the American Canyon Clarke Ranch open space/recreation area. The property is at the south end of the expanded Green Island Industrial Area, and lies on the southern 15.24-acre portion of Assessor's Parcel Number 058-030-065. The project area is situated in the Township 4 North, Range 4 West, sections 14, and 23 as depicted on the attached *Cuttings Wharf, California* USGS topographic quadrangle.

The review of the Native American Heritage Commission (NAHC) Sacred Lands File resulted in the identification of a Native American cultural property within or near the project area. The NAHC specifically stated that the Mishewal-Wappo Tribe of Alexander Valley be contacted regarding this property.

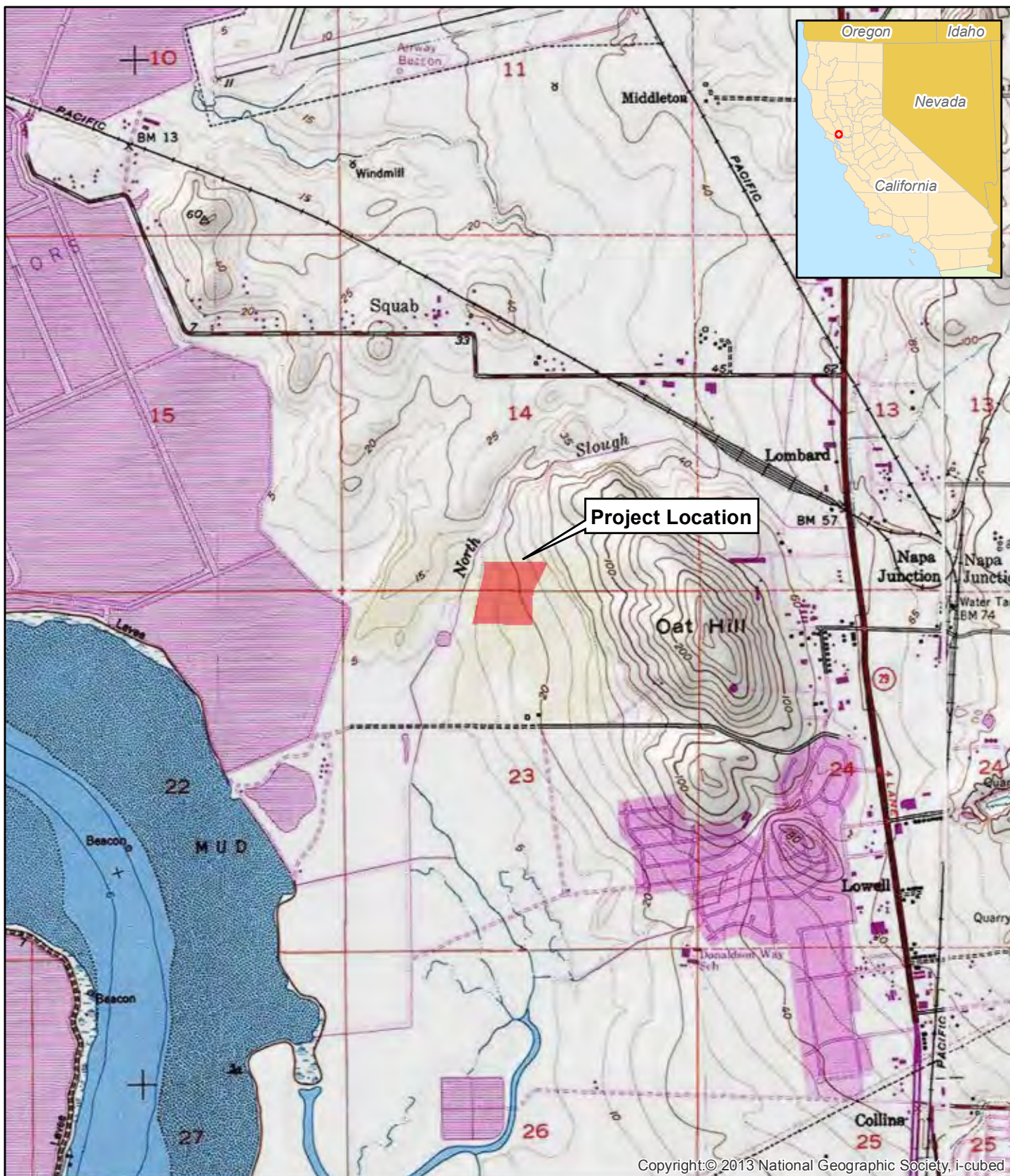
On behalf of the City of American Canyon, SAS is facilitating AB-52 consultation for the Project. We are writing to you to introduce the Project and inquire if you have any information on undocumented sites that may exist in the project area, or concerns you might have with the proposed Project.

Thank you very much for your time and I hope to hear from you soon. I can be reached via email at [Brian@solanoarchaeology.com](mailto:Brian@solanoarchaeology.com) or by phone at 530-417-7007.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brian Ludwig", is written over a horizontal line.

Brian Ludwig, Ph.D.  
Principal Investigator



# Project Location Map.

1:24,000

■ Commerce 217 Project Area

0.5

T4N, R4W, Sections 14 and 23.  
Cuttings Wharf 7.5' Series Quadrangle, USGS, 1981.

Miles

1

Kilometers







August 3, 2020

Mr. Scott Gabaldon  
Mishewal-Wappo Tribe of Alexander Valley  
2275 Silk Road  
Windsor, CA 95492

**RE: Cultural Resources Inventory for the SDG Commerce 330 Warehouse Project, Napa County, California – Facilitation of AB 52 Consultation**

Dear Mr. Gabaldon:

Grassetti Environmental Consulting has recently retained Solano Archaeological Services (SAS) to conduct a California Environmental Quality Act (CEQA)-level cultural resources inventory of an approximate 15.24-acre property located in the City of American Canyon (the City), Napa County, for the proposed SDG Commerce 330 Warehouse Project (Project). SDG Commerce 330, LLC, proposes to develop a 330,528 square-foot wine storage and distribution center on the 663,802 square-foot site. A total of 189 car and 32 truck dock parking spaces would be provided for the building and the overall project is consistent with the other industrial developments within the Green Island Industrial Park.

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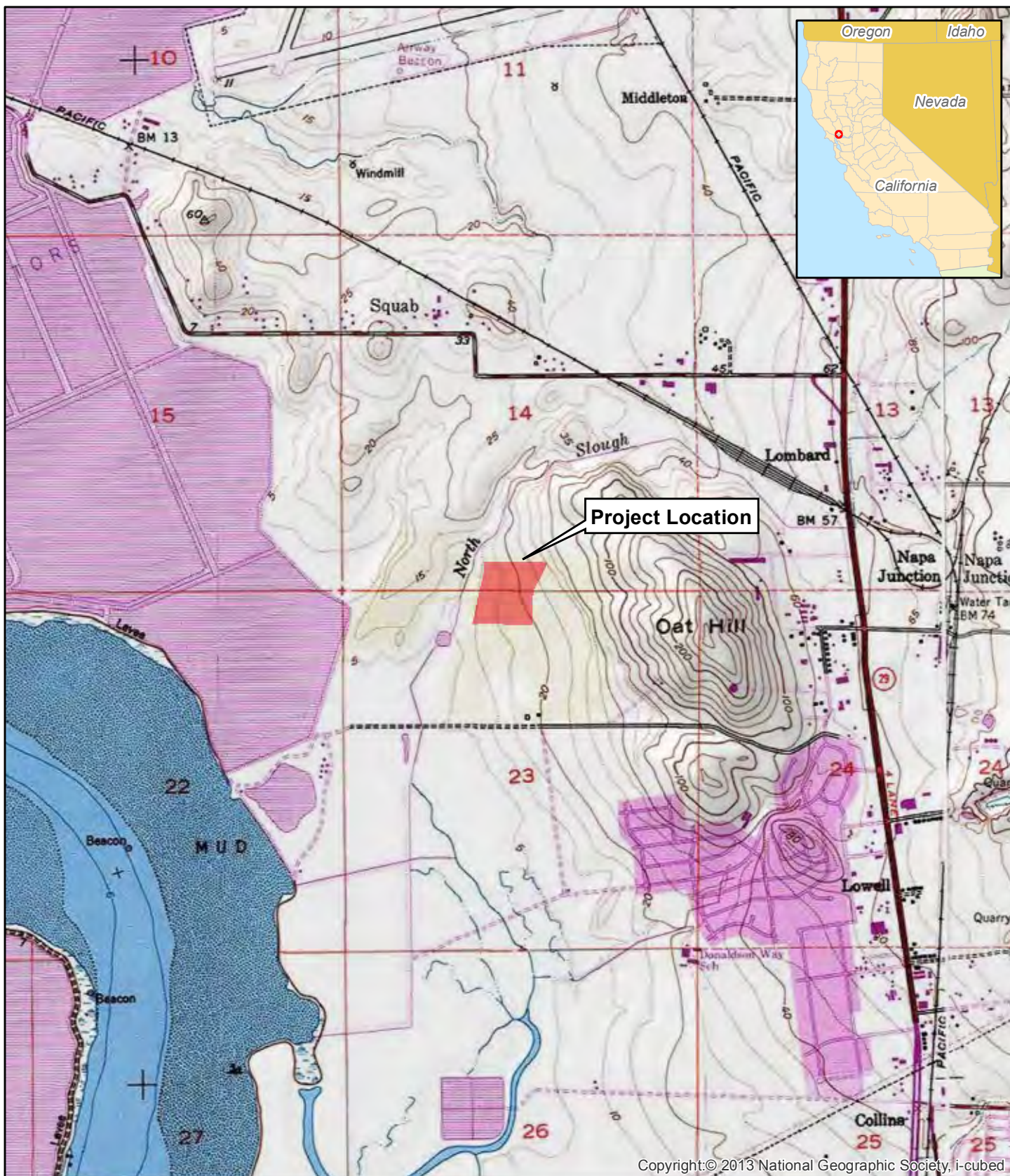
On behalf of the City of American Canyon, SAS is facilitating AB-52 consultation for the Project. We are writing to you to introduce the Project to you, and solicit any information on undocumented sites that may exist in the project area or concerns you might have with the proposed Project. In addition, if you can provide specific information on, or guidance pertaining to the cultural property noted by the NAHC, it would be greatly appreciated.

Thank you very much for your time and I hope to hear from you soon. I can be reached via email at [Brian@solanoarchaeology.com](mailto:Brian@solanoarchaeology.com) or by phone at 530-417-7007.

Sincerely,

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Brian Ludwig, Ph.D.  
Principal Investigator



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■ Commerce 217 Project Area

0.5

Miles

T4N, R4W, Sections 14 and 23.  
Cuttings Wharf 7.5' Series Quadrangle, USGS, 1981.

1

Kilometers







August 3, 2020

Mr. Jose Simon  
Middletown Rancheria of Pomo Indians  
P.O. Box 1035  
Middletown, CA 95461

**RE: Cultural Resources Inventory for the SDG Commerce 330 Warehouse Project, Napa County, California – Facilitation of AB 52 Consultation**

Dear Mr. Simon:

Grassetti Environmental Consulting has recently retained Solano Archaeological Services (SAS) to conduct a California Environmental Quality Act (CEQA)-level cultural resources inventory of an approximate 15.24-acre property located in the City of American Canyon (the City), Napa County, for the proposed SDG Commerce 330 Warehouse Project (Project). SDG Commerce 330, LLC, proposes to develop a 330,528 square-foot wine storage and distribution center on the 663,802 square-foot site. A total of 189 car and 32 truck dock parking spaces would be provided for the building and the overall project is consistent with the other industrial developments within the Green Island Industrial Park.

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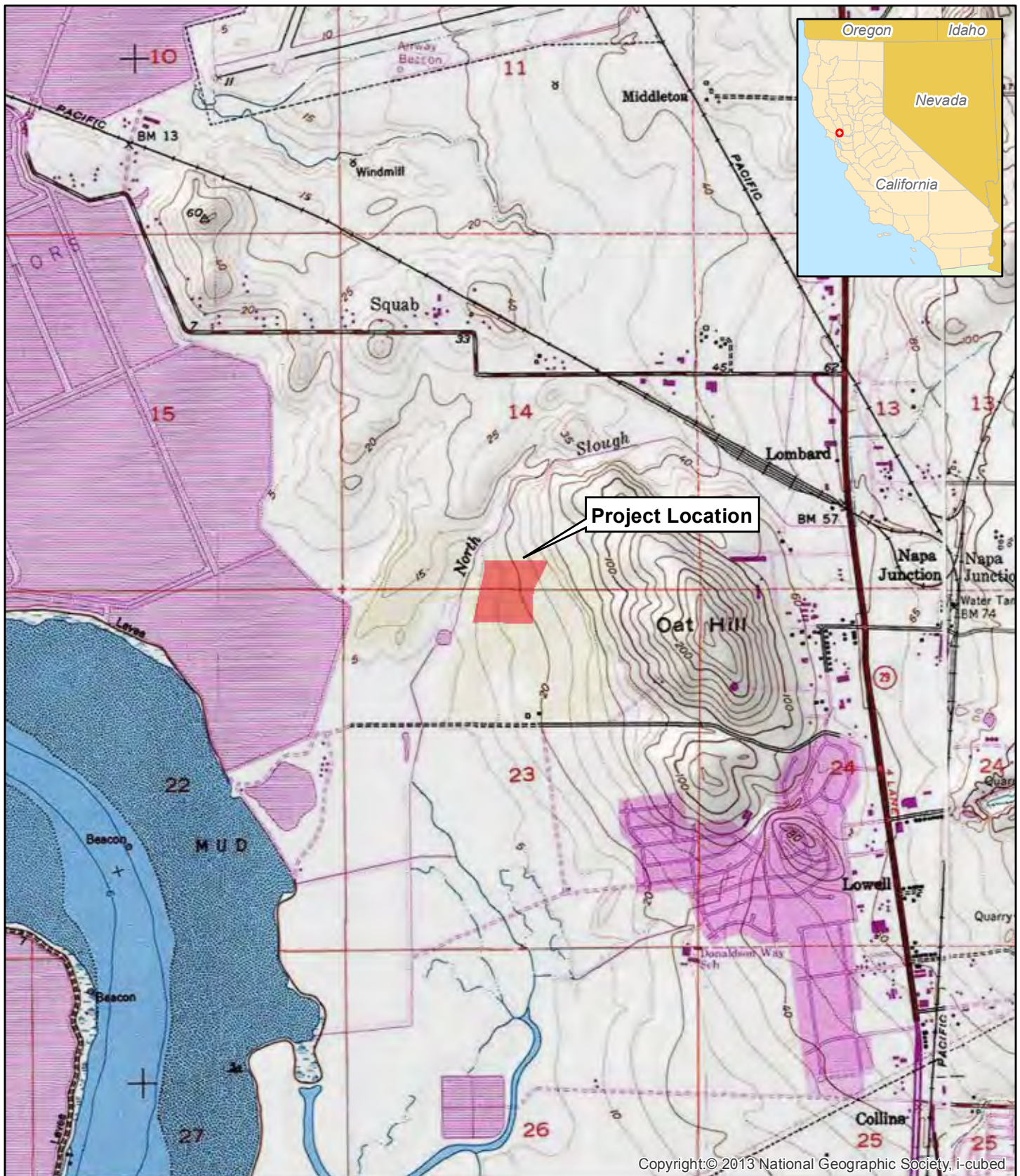
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Brian Ludwig, Ph.D.  
Principal Investigator



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■ Commerce 217 Project Area

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Miles

T4N, R4W, Sections 14 and 23.  
Cuttings Wharf 7.5' Series Quadrangle, USGS, 1981.

1

Kilometers







August 3, 2020

Mr. Charlie Wright  
Cortina Rancheria - Kletsel Dehe Band of Wintun Indians  
P.O. Box 1630  
Williams, CA 95987

**RE: Cultural Resources Inventory for the SDG Commerce 330 Warehouse Project, Napa County, California – Facilitation of AB 52 Consultation**

Dear Mr. Wright:

Grassetti Environmental Consulting has recently retained Solano Archaeological Services (SAS) to conduct a California Environmental Quality Act (CEQA)-level cultural resources inventory of an approximate 15.24-acre property located in the City of American Canyon (the City), Napa County, for the proposed SDG Commerce 330 Warehouse Project (Project). SDG Commerce 330, LLC, proposes to develop a 330,528 square-foot wine storage and distribution center on the 663,802 square-foot site. A total of 189 car and 32 truck dock parking spaces would be provided for the building and the overall project is consistent with the other industrial developments within the Green Island Industrial Park.

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On behalf of the City of American Canyon, SAS is facilitating AB-52 consultation for the Project. We are writing to you to introduce the Project and inquire if you have any information on undocumented sites that may exist in the project area, or concerns you might have with the proposed Project.

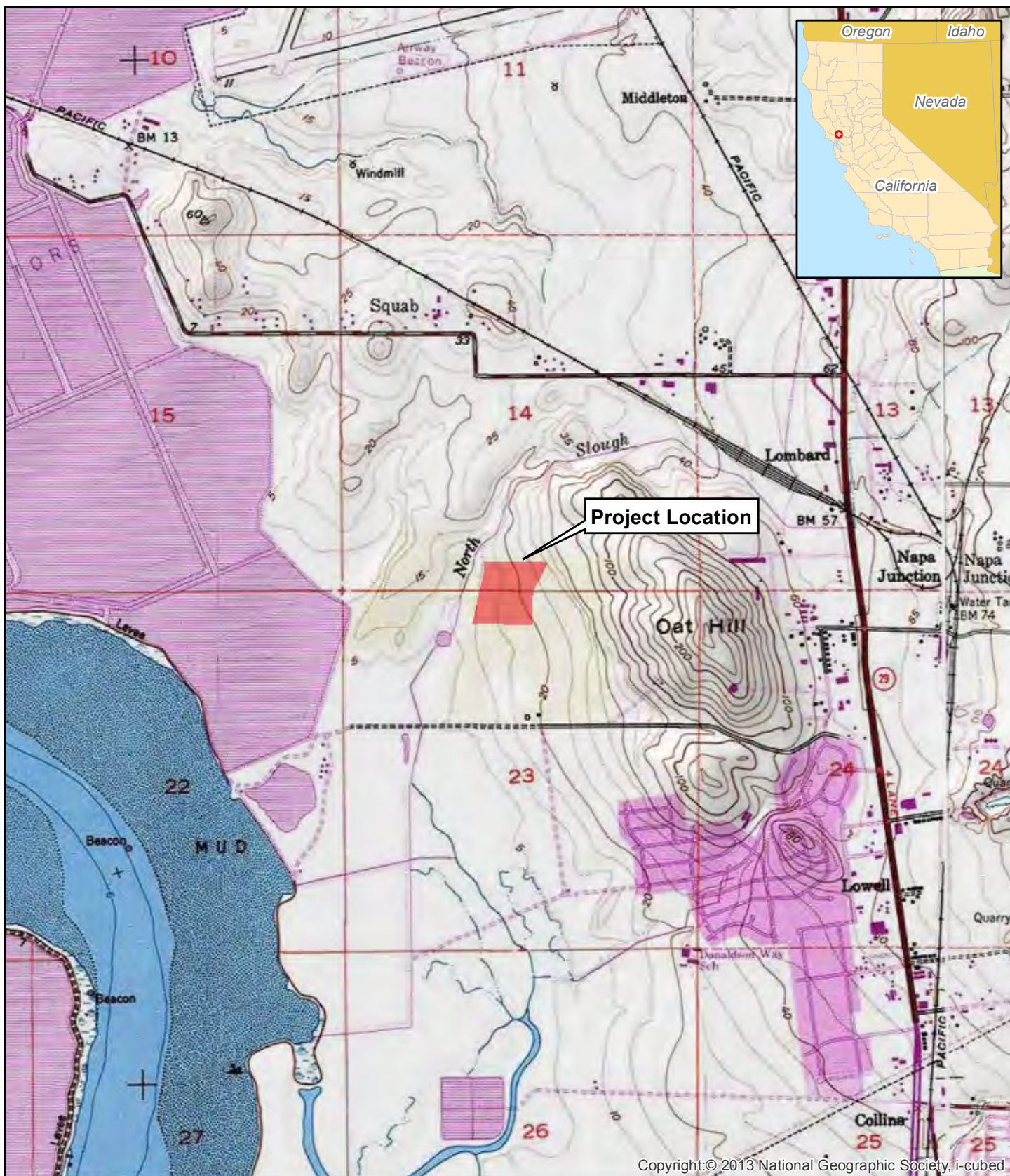
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Brian Ludwig, Ph.D.  
Principal Investigator





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■ Commerce 217 Project Area

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Miles

T4N, R4W, Sections 14 and 23.  
Cuttings Wharf 7.5' Series Quadrangle, USGS, 1981.

1

Kilometers





August 3, 2020

Mr. Anthony Roberts  
Yocha Dehe Wintun Nation  
P.O. Box 18  
Brooks, CA 95606

**RE: Cultural Resources Inventory for the SDG Commerce 330 Warehouse Project, Napa County, California – Facilitation of AB 52 Consultation**

Dear Mr. Roberts:

Grassetti Environmental Consulting has recently retained Solano Archaeological Services (SAS) to conduct a California Environmental Quality Act (CEQA)-level cultural resources inventory of an approximate 15.24-acre property located in the City of American Canyon (the City), Napa County, for the proposed SDG Commerce 330 Warehouse Project (Project). SDG Commerce 330, LLC, proposes to develop a 330,528 square-foot wine storage and distribution center on the 663,802 square-foot site. A total of 189 car and 32 truck dock parking spaces would be provided for the building and the overall project is consistent with the other industrial developments within the Green Island Industrial Park.

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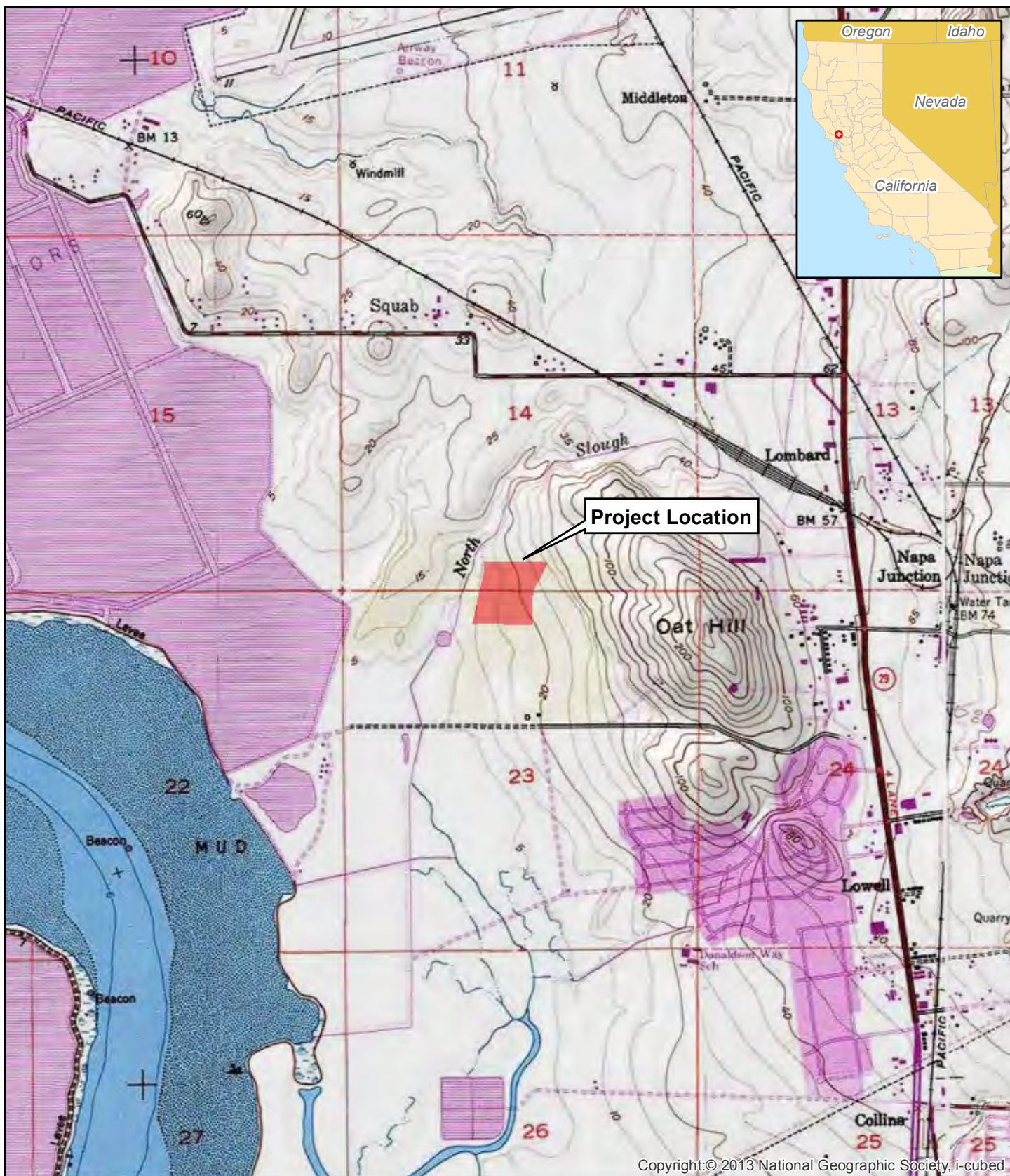
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Brian Ludwig, Ph.D.  
Principal Investigator





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■ Commerce 217 Project Area

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Miles

T4N, R4W, Sections 14 and 23.  
Cuttings Wharf 7.5' Series Quadrangle, USGS, 1981.

1

Kilometers



**NATIVE AMERICAN CONSULTATION LOG FOR  
THE SDG COMMERCE 217 PROJECT,  
NAPA COUNTY, CALIFORNIA**

SAS Contact: Brian Ludwig, Ph.D.

<b>Native American Consultant</b>	<b>Date of Correspondence</b>	<b>Responses</b>
Cortina Rancheria – Kletsel Dehe Band of Wintun Indians <b>Charlie Wright</b> - Chair	8-3-2020	Mailed project introduction letter and maps depicting the APE. The letter invited consultation and asked for any information on unrecorded resources in the vicinity.
	8-17-2020	Contacted by phone regarding the project and left message.
Guidiville Indian Rancheria - <b>Merlene Sanchez</b> - Chairperson	8-3-2020	Mailed project introduction letter and maps depicting the APE. The letter invited consultation and asked for any information on unrecorded resources in the vicinity.
	8-17-2020	Contacted by phone regarding the project and left message
	8-22-2020	Received email from Mr. Ryan Peterson (Admin & Projects Coordinator). Mr. Ryan stated the project area was outside the Guidiville Rancheria's ancestral area of concern and suggested SAS contact Mr. Gabaldon of the Mishewal Wappo.
Middletown Rancheria of Pomo Indians <b>Jose Simon,</b> Chairperson	8-3-2020	Mailed project introduction letter and maps depicting the APE. The letter invited consultation and asked for any information on unrecorded resources in the vicinity.
	8-17-2020	Contacted by email regarding the project
	8-17-2020	Sally Peterson emailed stating that SAS request would be forwarded to the THPO department. Also provided updated contact information for the tribe which SAS forwarded to NAHC.
Mishewal-Wappo Tribe of Alexander Valley <b>Scott Gabaldon,</b> Chairperson	8-3-2020	Mailed project introduction letter and maps depicting the APE. The letter invited consultation and asked for any information on unrecorded resources in the vicinity.
	8-17-2020	Emailed and left phone message regarding the project. No responses received
Yocha Dehe Wintun Nation <b>Anthony Roberts,</b> Chairperson	8-3-2020	Mailed project introduction letter and maps depicting the APE. The letter invited consultation and asked for any information on unrecorded resources in the vicinity.
	8-17-2020	Emailed and left phone message concerning project - no responses received.

**Appendix H**

**Will Serve Letters**



April 17, 2020

Mr. Peter Stravinski  
SDG Commerce 330, LLC  
413 W. Yosemite Ave., Suite 105  
Madera, CA 93637

SUBJECT: Request for Water Service "Will-Serve" Letter  
SDG Commerce 217, LLC  
1075 Commerce Court, American Canyon, CA 94503  
(APN's 058-030-065)

Dear Mr. Stravinski:

The City of American Canyon has received your request as Property Owner for a Will-Serve letter for water service to the property located at 1075 Commerce Court in American Canyon (Assessor's Parcel Number: 058-030-065); referred to herein as the "Property". The City is also processing a Conditional Use Permit (PL18-0010) received on March 18, 2020 for the development of a 217,294 square foot warehouse to be used for the storage and distribution of wine and wine industry goods. Additionally, the City has received an application for a Tentative Parcel Map (PL18-0011) on February 28, 2019 (Planning Commission Resolution 2019-02) to divide this parcel into three separate parcels. After the Parcel Map is recorded the warehouse will reside on a 10.39 acre parcel shown as Lot 1 in the parcel map, with additional development on the remaining two parcels.

It is the City's understanding that the Property is located within its city limits and that a Will-Serve Letter for water service to the Property is required prior to issuance of any building permits. In general, the City reviews the impacts of such requests for service taking into account the overall demand within its system and known supplies available to meet this demand.

The City's understanding of the current request is based on water demand estimates attached to the Will-Serve Application dated April 7, 2020. At present, the land comprising 35.85 acres, and the future 10.39 acre legal parcel is vacant with no historical water demand.

As Table 1 below shows, the requested Average Daily Demand (ADD) is 142 gal/day. Table 2 details the requested Maximum Daily Demand (MDD) of 560

gal/day for the Property. Table 3 shows the anticipated recycled water demands for the Property.

**Table 1 – Requested Average Day Demand**

Average Daily Water Demand (ADD) in gallons per day:

Domestic:	142 gpd
Irrigation:	0 gpd
Industrial:	0 gpd
Total:	142 gpd

**Table 2 – Requested Maximum Day Demand**

Maximum Daily Water Demand (MDD) in gallons per day:

Domestic:	560 gpd
Irrigation:	0 gpd
Industrial:	0 gpd
Total:	560 gpd

**Table 3 – Anticipated Recycled Water Demand**

ADD (gpd)	MDD (gpd)
541	2,736

The City's Zero Water Footprint (ZWF) Policy requires new development to offset all of its water demands in order to prevent reduction in the reliability of existing water supplies or increases in water rates to existing customers. In light of the information submitted in the Application the City has determined that the Property will not have a Zero Water Footprint because once complete, the Property's proposed ADD (142 gpd) will be greater than the established baseline ADD (0 gpd). Because the Owner is requesting service greater than the established baseline demand, the Property will potentially reduce the reliability of existing water supplies and increase costs to existing customers. In accordance with this Policy, because the Property has been determined to not have a Zero Water Footprint, a more detailed Water Supply Report has been prepared, and is attached hereto and made a part of this "Will-Serve" Letter. In order to comply with the ZWF Policy and offset the Property's demand, the applicant shall contribute to the City's ZWF Mitigation Fund whereby the City will continue to undertake water conservation efforts to



offset the requested ADD increase of 142 gpd. Such efforts will result in this Property achieving a net zero impact to the City's water system, therefore adhering to the ZWF Policy.

This Will-Serve Letter supersedes any other purported service commitments to the Property for any use. By way of this Will-Serve Letter, the City is offering to meet the water service demands shown in Tables 1 & 2. The City's offer is contingent upon the occurrence and/or satisfaction of the following conditions and the continued existence of the following described conditions:

1. Owner shall be subject to all City's rules and regulations, including all fees and charges.
2. At no cost to the City, the Owner shall construct all facilities necessary to serve the Property in accordance with all City standards.
3. As part of the application process, the owner/developer shall submit a Developer Deposit Project Setup Form and pay the required deposit of \$2,000. The deposit will be retained and the owner will receive a monthly statement of charges for the cost of processing the application, including writing water will serve and water supply report, plan review and inspections. At the close of the project, the last statement will be deducted from the deposit and remainder will be refunded to the owner.
4. The City has experienced potential reduction and/or curtailment of its primary sources of water supply during times of drought. When these reductions occur, the City's demands may exceed available supplies. In an effort to reduce this undesirable imbalance, the City is taking steps to reduce customer demands while also seeking to acquire additional supplies. The cost of these additional supplies is unknown at this time, and is not included in the current City water rates. The City is considering implementing potential changes to its rate structure which would be applied in a uniform manner in order to acquire such supplies. The Owner agrees to waive any protest to changes to current City water rates necessary to acquire additional water supplies during their formulation, implementation and review under the California Environmental Quality Act, Public Resources Code section 21000 et seq. ("CEQA") as long as such changes are initiated during the term of this Will Serve Water Supply Agreement or any extension thereof. Moreover, the Owner acknowledges that the City, during dry years, may be unable to meet the Property's water service demands and that its water service may be uniformly reduced and/or curtailed entirely. Owner further agrees to indemnify, defend and hold harmless the City, its elected officials, officers, attorneys, employees or agents for any and all damages or claims of damages stemming from such uniform reductions or curtailments that may occur as long as they are directly related to the City's provision for water to the Property.

5. As a result of Vineyard Area Citizens for Responsible Growth v. Rancho Cordova (2007) 40 Cal.4th 412, the City, as lead agency pursuant to CEQA, prior to approval the project must, at a minimum during its environmental review:
  - a. Presented sufficient facts to evaluate the pros and cons of supplying the water that the Project will need; and
  - b. Presented analysis that assumes that all phases of the Project will be built and will need water, and includes an analysis to the extent reasonably possible of the consequences of the impacts of providing water to the entire project; and
  - c. Where it is impossible to determine that anticipated future water sources will be available, some discussion of possible replacement sources or alternatives to use of anticipated water and of the environmental consequences of those impacts were presented.
6. The Owner agrees its financial obligation for water service is as follows:
  - a. Monthly water service charges will be billed at the current rate of \$6.59 per unit (1 unit = 748 gal). At present the estimated average monthly water service fee will be approximately \$37.53<sup>1</sup>, plus meter fees and any surcharges. Service charges will be billed at the rates in effect at the time of service and are subject to change.
  - b. The water capacity fee for the Property will be \$ 13,865.60<sup>2</sup> based on MDD of 560 gal.
  - c. The ZWF Mitigation (offset) cost for the Property is \$1,310.77<sup>3</sup> in order to achieve compliance with the ZWF Policy.
  - d. Capacity fees and mitigation funds are due and payable prior to issuance of a building permit.
7. The Property shall incorporate the following water conservation best management practices:
  - Ultra-low-flow toilets in restrooms
  - Ultra-low-flow fixtures and appliances
  - On demand (Instahot) hot water heaters or the plumbing of hot water return lines with an integral pump if using a centralized tank or tankless unit
  - Installation of ET Smart irrigation controllers

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<sup>1</sup> (142 gpd/748) \* 30 days \* \$6.59 = \$37.53/month

<sup>2</sup> Calculation: 560 gpd x \$24.76 = \$ 13,865.60. This fee based on rates effective December 17, 2019. Actual fee to be based on rates in effect at time of payment.

<sup>3</sup> Calculation: 142 gpd/65 gpd x \$600 = \$1,310.77

- Use of recycled water for irrigation
  - Education of employees regarding water conservation (offered both in English and in Spanish.
8. The City reserves the right to audit the site's water demand as deemed necessary in order to verify that the Owner's water use is in accordance with this Will-Serve letter.
9. Future changes to the Project with respect to the change in use or water demands shall require that a new Will-Serve Letter be issued.
10. Development of the remaining parcel(s) will require a separate Will-Serve Letter.

This Will-Serve Letter will remain valid until April 30, 2020. The City reserves the right to further condition and/or deny the extension of water service if the Project is different from that which presently proposed and authorized or if events out the City's control impact the City's ability to furnish water.

Except to the extent set forth, this letter does not create a liability or responsibility to the Owner or to any third party on behalf of the City. The City does not make a determination as to land use entitlements required for the proposed project, and the issuance of this Will Serve letter shall not be construed to be an expression of the City of a position regarding the use or intensity of use of the development Property or that the County has complied with applicable law in assessing the proposed project under CEQA.

This Will Serve letter becomes effective only upon the express acknowledgement and acceptance of the conditions set forth herein as demonstrated by the execution of the acceptance provision set forth below and the transmittal of the executed acceptance to the City.

Sincerely yours,

Richard Kaufman, P.E.  
Public Works Director/City Engineer

cc: Jason Holley, City Manager  
William Ross, City Attorney  
Susan Presto, Finance Manager  
Utility Billing

Mr. Peter Stravinski  
SDG Commerce 217, LLC  
April 17, 2020  
Page 6

**ACCEPTANCE  
of  
City's Conditional Offer of Water Service for**

**Mr. Peter Stravinski  
SDG Commerce 217, LLC**

**1075 Commerce Court, American Canyon, CA 94503  
Napa County Assessor's Parcel Numbers 058-030-065**

I, \_\_\_\_\_, \_\_\_\_\_,  
(Print Name) (Print Title)

accept the conditions set forth in this communication.

\_\_\_\_\_  
(Signature) Date: \_\_\_\_\_



PUBLIC WORKS DEPARTMENT

4381 BROADWAY, SUITE 201  
AMERICAN CANYON, CA 94503

## **WATER SUPPLY REPORT**

FOR

**Mr. Peter Stravinski**  
**SDG Commerce 217, LLC**

1075 Commerce Court, American Canyon, CA 94503  
Napa County Assessor's Parcel Number 058-030-065

Prepared by:

Edison Bisnar Jr.  
Development Services

**Approved by:**

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**Richard Kaufman, P.E.**  
**Public Works Director/City Engineer**

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**Date**

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## **PREFACE**

This Water Supply Report (WSR) is prepared in response to a request received by the City of American Canyon for a new water service(s) and/or an expansion of existing water service(s). The intent of the WSR is to help inform the discretionary approval process undertaken in conjunction with the request. Chief among its purpose is to:

- Determine if the request is consistent with City ordinances, policies, and practices;
- Determine whether the City's water supply is sufficient to grant the request when compared to existing and other planned future uses, including agricultural and manufacturing uses; and
- To establish a water allocation for the property.

On October 23, 2007, the American Canyon City Council adopted the following definition as the basis for its Zero Water Footprint (ZWF) Policy:

Zero Water Footprint – No loss of water service reliability or increase in water rates to the City of American Canyon's existing water service customers due to requested increase demand for water within the City's water service area.

The overarching intent of the ZWF Policy is to require all new development (residential or non-residential), or the expansion of existing commercial and industrial development, to mitigate all new water demands with "wet-water" offsets by one or more of the following options:

- Reducing existing potable water demands on-site
- Funding programs or constructing projects that would conserve an equivalent amount of water elsewhere within the water service area
- Funding of and/or constructing projects that would increase an equivalent amount of recycled water use elsewhere within the water service area where potable water is currently used.
- Purchase new water supplies from other water providers



## **SECTION 1.0 - REQUEST FOR SERVICE**

### **1.1 - Property Description**

The property at 1075 Commerce Court in American Canyon (Assessor's Parcel Number: 058-030-065) and is referred to herein as the "Property." The Property is zoned General Industrial (GI) and is located within the City's Corporate Boundary.

### **1.2 - Project Description**

The project is a new 217,294 square foot warehouse building to be used for storage and distribution of case-good wines and wine industry goods. A Will-Serve and a Conditional Use Permit (PL20-0008) is under review by the City.

The project will incorporate the following water conservation best management practices:

- Ultra-low flow toilets in restrooms
- Ultra-low flow fixtures and appliances
- On demand hot water heaters for all lavatories & breakrooms or the plumbing of hot water return lines with a timed recirculation pump
- Installation of an ET Smart irrigation controllers
- Use of recycled water for landscaping
- Education of employees regarding water conservation (offered in both English and Spanish).

### **1.3 - Status of Existing Services**

The property is currently vacant. The City has no record of historical potable water use at the property. No prior Will-Serve Letters have been issued by the City. The property can be served by City recycled water.

### **1.4 - Will Serve Application**

A Will-Serve Application was submitted by the Owner, Mr. Peter Stravinski on April 7, 2020. The application submitted details the anticipated and existing water demands for the project. Staff has reviewed the provided application and finds the estimate to be consistent with industry standards for similar uses.

### **1.5 - "Average-Day" Demand (ADD)**

As shown on Table 1, the anticipated "Average-Day" Demand (ADD) for the Property is 142 gpd.

Table 1 – Property ADD			
Domestic (gpd)	Industrial (gpd)	Irrigation (gpd)	Total (gpd)
142	0	0	142

## 1.6 - Maximum Day Demand (MDD)

As shown in Table 2, the anticipated Maximum Demand (MDD) for the Property is 560 gpd.

Table 2 – Property MDD			
Domestic (gpd)	Industrial (gpd)	Irrigation (gpd)	Total (gpd)
560	0	0	560

## SECTION 2.0 - PROJECT WATER FOOTPRINT

### 2.1 - Baseline Water Footprint

The Property's Baseline Water Footprint is determined as one of the following: a) the approved demand amount specific in a current, (unexpired) Will-Serve Letter, Water Supply Report and/or Water Service Agreement; b) the water demand calculated from an audit of three-years of water use; or c) absent other information, the water demand in 2007. As shown in Table 3 below, the Property's baseline water footprint is 0 gpd.

Table 3 – Baseline Water Footprint			
Approved Demand (gpd)	Audited Demand (gpd)	Historical Demand (gpd)	Baseline Water Footprint
N/A	N/A	0	0

### 2.2 - Zero Water Footprint Determination

Because the Property ADD (142 gpd) exceeds the Property's Baseline Water Footprint, the Property does not have a Zero Water Footprint (ZWF). Because the Property does not have a ZWF, the new demand(s) on the City's

water system could potentially result in a loss in water service reliability or increase in water rates to the City's existing customers.

### **2.3 - Demand Offset**

The City has established various programs intended offset new demand(s) on its water system. The Property has agreed to participate in one such program whereby old plumbing fixtures in existing residences (such as toilets, showers and faucets) are replaced with high-efficiency fixtures. On average the cost to replace the fixtures in a single family dwelling unit is \$600 and results in an on-going savings of 65 gpd. By facilitating the replacement of these fixtures city-wide, the Property's new demand is offset by water which is saved elsewhere. The Property has agreed to contribute \$1,310.77<sup>1</sup> to the City's Zero Water Footprint Mitigation Fund. Monies in the Fund are used to pay for replacement of plumbing fixtures. The amount paid will result in equivalent savings of 142 gpd, thereby offsetting the Property's new ADD.

### **2.4 - Project Impact on Reliability & Rates**

The City's water treatment, delivery and storage system is reliable to serve demands of existing development that existed at the time of ZWF Policy implementation in 2007. New or increased demands to the City's system after the implementation of the ZWF Policy are determined to potentially have a negative impact on the City's water system reliability which could result in an increase in water rates of existing customers. By facilitating the replacement of inefficient plumbing fixtures through the monetary contribution to the City's ZWF Mitigation Fund, the Property has offset its new demand and thus, it is reasonable to conclude that it will have no impact on reliability or rates.

### **2.5 - Short term mitigations**

The water impacts of the Property will be fully mitigated by the financial contribution it makes to the water capacity fee program in addition to the ZWF Mitigation fee it will make to mitigate 100% of the Property's new water demand.

### **2.6 - Long term mitigations**

The City's Water Shortage Emergency Plan authorizes the City Council to declare a water shortage emergency<sup>2</sup>. Emergencies are declared in four stages with specific reduction methods used for each stage. In the event the City experiences short term water shortages and determines it is necessary to purchase dry year water the Owner shall provide funds to the City of American Canyon to purchase dry-year water. Upon demand of the Public

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<sup>1</sup> Calculation: 142gpd/65 gpd x \$600 = \$1,310.77

<sup>2</sup> ACMC §13.14.070

Works Director, when a water shortage has been declared by the City Council, the project may have to contribute a reasonably determined and reasonably allocated non-refundable payment to the water operations fund to allow the City to acquire dry-year water, if reasonably necessary. The projects contribution shall be equal to the properties reasonably allocated annual demand (AFY) times the City's reasonable cost of a one-year transfer. The annual demand will be implemented uniformly to all City water uses, determined by a City water audit of all City water uses for the previous water year and the analysis in reasonable detail made available to the Owner for reasonable review and comment prior to implementation. The contribution shall be recalculated and made on an annual basis, as reasonably necessary.

## **SECTION 3.0 – CAPACITY FEES AND SERVICE CHARGES**

### **3.1 - Capacity Fee**

Based on the American Canyon Water Capacity Fee Ordinance<sup>3</sup>, the Property shall pay a Water Capacity Fee is \$13,865.60. This one-time fee is based on the rate of \$24.76 per gallon per day (MDD) based on rates in effect December 17, 2020 rates. The actual fee will be based on rates effective at the time of payment.

### **3.2 – Service Charge**

The Property is located within the City's Corporate Boundary and based on the American Canyon Water Rates and Connection Fee Ordinance<sup>4</sup>, the Property shall pay a monthly service charge in the amount of \$6.59/100 cubic feet, plus any rate surcharges and monthly meter fees. Based on the AADD, the estimated water service charge is approximately \$37.53<sup>5</sup> per month. All service charges shall be based on actual use and rate schedule that is in place at time of billing.

### **3.3 - Reimbursable Improvements**

The Property proposes no water or recycled system improvements that would be eligible for reimbursement by the City.

## **SECTION 4.0 - VINEYARDS ANALYSIS**

### **4.1 – Vineyards Decision**

The California Supreme Court decision "*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova and Sunrise Douglas Property Owners Association, et al.*" sets forth guidelines for evaluating the water

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<sup>3</sup> ACMC §13.06.090

<sup>4</sup> ACMC §13.06.040

<sup>5</sup> (142 gpd/748) \* 30 days \* \$6.59 = \$37.53/month

supply of a project under the California Environmental Quality Act (CEQA). It requires that water supplies not be illusory or intangible, that water supply over the entire length of the project be evaluated, and that environmental impacts of likely future water sources, as well as alternate sources, be summarized.

#### **4.2 - Facts With Respect to Existing Water Supply and Demand**

The City's 2015 Urban Water Management Plan (UWMP) analyzed existing demands and anticipated future demand growth. The 2015 UWMP also quantified the amounts and reliability of its water supplies in various planning horizon scenarios.

The City has entered into enforceable long-term contracts for its supply of potable water. The suppliers are the State Department of Water Resources (DWR) and City of Vallejo. The DWR supplies are provided by the State Water Project (SWP) and they vary each year up to a maximum of 5,200 acre-feet. The Vallejo supplies are 500 acre-feet of raw water as needed and up to 2,000 acre-feet of treated water may be purchased as a retail customer.

City customers consumed 2,460 acre-feet of SWP water in 2015. The 2015 UWMP determined adequate supplies exist for all planning horizons and supply scenarios, except for the "single-dry year scenarios". For single dry year scenarios only 2025 appears to have adequate supplies.

New water demand from the Project and reduced per capita consumption (facilitated by the City's Water Conservation Program) were anticipated as part of the assumed future demand growth in all planning horizons and supply scenarios in the 2015 UWMP. If the total AADD or MDD exceed the totals shown in this report, the applicant will be subject to penalties in-place at the time and has agreed to take the necessary measures to reduce demand to comply with this report.

#### **4.3 – Anticipated Water Supplies over the Life of the Project**

The City has developed a capacity fee capital program and water conservation program which, when implemented, will reasonably ensure an adequate supply of potable water and recycled water to meet demands under normal years, multiple-dry-years, and single-dry-years.

By fully complying with the City's ZWF Policy, the project will offset its new demand by paying an in-lieu fee that will be used by the City to implement its water conservation efforts to reduce potable water demands throughout its Water Service Area. Given the City's efforts to expand its water portfolio in terms of supply, storage, and conservation, and the fact that this project will not result in an increased demand on the existing system, it is reasonable to project there is sufficient water supply over the life of the project.

#### **4.4 – Environmental Impacts of Likely Future Water Sources**

According to the 2015 UWMP, adequate long-term supplies exist for all planning horizons and supply scenarios, except “under single-dry water year conditions, the supply is generally sufficient until sometime after 2030 when shortfalls begin to appear.” The Project will offset its new demand by paying a ZWF Mitigation fee that will be used by the City to further its water conservation efforts to reduce potable water demands throughout its Water Service Area. These efforts will have no significant impacts to the physical environment.

Moreover, it is unlikely that additional long-term supplies will need to be developed to meet the new demands attributable to the Project and it would be unnecessarily speculative to analyze the potential impact of such an unlikely activity.

Lastly, the City Council adopted a Mitigated Negative Declaration in November 2003 in conjunction with the adoption of the Recycled Water Facilities Plan. That plan identifies a series of projects which in conjunction with the water conservation program will reduce potable water demands throughout its Water Service Area. Impacts caused by the implementation of the Recycled Water Facilities Plan are less than significant because the new recycled water distribution pipelines were to be located in existing paved public rights of way.

## ACKNOWLEDGEMENT OF WATER SUPPLY ANALYSIS

**Mr. Peter Stravinski  
SDG Commerce 217, LLC**

**1075 Commerce Court, American Canyon, CA 94503  
Napa County Assessor's Parcel Number 058-030-065**

I, \_\_\_\_\_, acknowledge and accept  
the water supply analysis as set forth in this Water Supply Report  
dated\_\_\_\_\_2020.

\_\_\_\_\_  
(Print Name and Title)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature)

Date: \_\_\_\_\_



## **Initial Study for the SDG Commerce 217 Distribution Center Project**

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### **Appendix I**

#### **Draft COVID-19 Exposure Control Plan**

# **COVID – 19**

## **Exposure Control Plan (ECP)**

**DRAFT**  
**4.6.2020**

**Industrial & Commercial Contractors, LP**  
413 W. Yosemite Ave, Suite 105  
Madera, CA 93637  
(559) 674-0906  
License # 506265

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## **COVID-19 Exposure Control Plan for Construction**

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Industrial & Commercial Contractors, LP (ICC) takes the health and safety of our employees very seriously. With the spread of the coronavirus or “COVID-19,” a respiratory disease caused by the SARS-CoV-2 virus, we all must remain vigilant in mitigating the outbreak. This is particularly true for the construction industry, which has been deemed “essential” during this Declared National Emergency. In order to be safe and maintain operations, we have developed this COVID-19 Exposure Prevention, Preparedness, and Response Plan to be implemented throughout ICC / Subcontractor and at all our jobsites. We have also identified a team of employees to monitor available U.S. Center for Disease Control and Prevention (“CDC”) and Occupational Safety and Health Administration (“OSHA”) guidance on the virus.

This Plan is based on currently available information from the CDC and OSHA and is subject to change based on further information provided by the CDC, OSHA, and other public officials.

ICC may also amend this Plan based on operational needs.

### **1. Responsibilities of Managers and Supervisors**

All managers and supervisors must be familiar with this Plan and be ready to answer questions from employees. Managers and supervisors must always set a good example by following this Plan. This involves practicing good personal hygiene and jobsite safety practices to prevent the spread of the virus. Managers and supervisors must encourage this same behavior from all employees.

### **2. Responsibilities of Employees / Subcontractors**

We are asking every one of our employees and subcontractors to help with our prevention efforts while at work. In order to minimize the spread of COVID-19 at our jobsites, we all must play our part. As set forth below, ICC has instituted various housekeeping, social distancing, and other best practices at our jobsites. All employees / workers must follow these.

Everyone is a partner in insuring jobsite safety and if you observe a person or situation which is unsafe you should immediately notify your supervisor or safety personnel.

In addition, employees are expected to report to their managers or supervisors if they are experiencing signs or symptoms of COVID-19, as described below. If you have a specific question about this Plan or COVID-19, please ask your manager or supervisor. If they cannot answer the question, please contact ICC Safety Manager, Kevin Barnes at 559-674-0906.

OSHA and the CDC have provided the following control and preventative guidance to all workers, regardless of exposure risk:

- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Follow appropriate respiratory etiquette, which includes covering for coughs and sneezes.
- Avoid close contact with people who are sick.
- In addition, employees must familiarize themselves with the symptoms of COVID-19:
- Coughing, Fever; Shortness of breath, difficulty breathing; and early symptoms such as chills, body aches, sore throat, headache, diarrhea, nausea/vomiting, and runny nose.

If you develop a fever and symptoms of respiratory illness, such as cough or shortness of breath, DO NOT GO TO WORK and call your healthcare provider right away. Likewise, if you come into close contact with someone showing these symptoms, call your healthcare provider right away. If you do not go to work be sure to inform your direct supervisor in the usual manner.

### **3. Job Site Protective Measures**

ICC has instituted the following protective measures at all jobsites.

#### **A. General Safety Policies and Rules**

- Any employee/contractor/visitor showing symptoms of COVID-19 will be asked to leave the jobsite and return home.
- Safety meetings will be by telephone, if possible. If safety meetings are conducted in-person, attendance will be collected verbally, and the foreman/superintendent will sign-in each attendee. Attendance will not be tracked through passed-around sign-in sheets or mobile devices. During any in-person safety meetings, avoid gathering in groups of more than 10 people and participants must remain at least six (6) feet apart.
- Employees must avoid physical contact with others and direct employees/contractors/visitors to increase personal space to at least six (6) feet. Where work trailers are used, only necessary employees should enter the trailers and all employees should maintain social distancing while inside the trailers.
- All in-person meetings will be limited. To the extent possible, meetings will be conducted by

telephone.

- Employees will be encouraged to stagger breaks and lunches, if practicable, to reduce the size of any group at any one time to less than ten (10) people.
- ICC and Subcontractors understands that due to the nature of our work, access to running water for hand washing may be impracticable. In these situations, ICC / Subcontractor will provide, if available, alcohol-based hand sanitizers and/or wipes.
- Employees should limit the use of co-worker's tools and equipment. To the extent tools must be shared, Subcontractor will provide disinfectant to clean tools before and after use.
- Employees are encouraged to limit the need for N95 respirator use, by using engineering and work practice controls to minimize dust. Such controls include the use of water delivery and dust collection systems, as well as limiting exposure time.
- Employees shall avoid ride-share. While in vehicle, employees must ensure adequate ventilation.
- If practicable, employees should use/drive the same truck or piece of equipment every shift.
- In lieu of using a common source of drinking water, such as a cooler, employees should use individual water bottles.

***B. Workers entering Occupied Building***

- When employees perform construction and maintenance activities within occupied office buildings, and other establishments, these work locations present unique hazards with regards to COVID-19 exposures. All such workers should evaluate the specific hazards when determining best practices related to COVID-19.
- During this work, employees must sanitize the work areas upon arrival, throughout the workday, and immediately before departure. ICC / Subcontractor will provide alcohol-based wipes for this purpose.
- Employees should ask other occupants to keep a personal distance of six (6) feet at a minimum. Workers should wash or sanitize hands immediately before starting and after completing the work.

***C. Job Site Visitors***

- The number of visitors to the job site, including the trailer or office, will be limited to only those necessary for the work.
- All visitors will be screened in advance of arriving on the job site. If the visitor answers "yes" to

any of the following questions, he/she should not be permitted to access the jobsite:

- Have you been confirmed positive for COVID-19?
  - Are you currently experiencing, or recently experienced, any acute respiratory illness symptoms such as fever, cough, or shortness of breath?
  - Have you been in close contact with any persons who has been confirmed positive for COVID- 19?
  - Have you been in close contact with any persons who have traveled and are also exhibiting acute respiratory illness symptoms?
- Site deliveries will be permitted but should be properly coordinated in line with the employer's minimal contact and cleaning protocols. Delivery personnel should remain in their vehicles if possible.

***D. Personal Protective Equipment and Work Practice Controls***

- In addition to regular PPE for workers engaged in various tasks (fall protection, hard hats, hearing protection), employers will also provide:
- Gloves: Gloves should always be worn while on-site. The type of glove worn should be appropriate to the task. If gloves are not typically required for the task, then any type of glove is acceptable, including latex gloves. Employees should avoid sharing gloves.
- Eye protection: Eye protection should always be worn while on-site.
- **NOTE:** The CDC is currently not recommending that healthy people wear N95 respirators to prevent the spread of COVID-19. Employees should wear N95 respirators if required by the work and if available.
- Due to the current shortage of N95 respirators, the following Work Practice Controls should be followed:
  - Keep dust down by using engineering and work practice controls, specifically using water delivery and dust collection systems.
  - Limit exposure time to the extent practicable.
  - Isolate workers in dusty operations by using a containment structure or distance to limit dust exposure to those employees who are conducting the tasks, thereby protecting nonessential workers and bystanders.



- Institute a rigorous housekeeping program to reduce dust levels on the jobsite.

## 4. Job Site Cleaning and Sanitation

- ICC and Subcontractors shall institute regular housekeeping practices, which includes cleaning and disinfecting frequently used tools and equipment, and other elements of the work environment, where possible. Employees should regularly do the same in their assigned work areas.
- Jobsite trailers and break/lunchroom areas will be cleaned at least once per day. Employees performing cleaning will be issued proper personal protective equipment (“PPE”), such as nitrile, latex, or vinyl gloves and mask as recommended by the CDC.
- Any trash collected from the jobsite must be changed frequently by someone wearing nitrile, latex, or vinyl gloves.
- Any portable jobsite toilets should be cleaned by the leasing company at least twice per week and disinfected on the inside. ICC / Subcontractor will ensure that hand sanitizer dispensers, where available, are always filled. Frequently touched items (i.e. door pulls and toilet seats) will be disinfected frequently.
- Stock additional toilet paper as needed.
- A designated worker shall check the facilities each morning or before each shift to assure the cleaning was performed at least twice a week. Check date on cleaning tag.
- Vehicles and equipment/tools should be cleaned at least once per day and before change in operator or rider.
- If an employee has tested positive for COVID-19, OSHA has indicated that there is typically no need to perform special cleaning or decontamination of work environments, unless those environments are visibly contaminated with blood or other bodily fluids. Notwithstanding this, ICC / Subcontractor will clean those areas of the jobsite that a confirmed-positive individual may have meet before employees can access that workspace again.
- ICC and Subcontractors will ensure that any disinfection shall be conducted using one of the following:
  - Common EPA-registered household disinfectant; or
  - Diluted household bleach solutions (these can be used if appropriate for the surface).
- ICC / Subcontractor will maintain Safety Data Sheets of all disinfectants used on site.

## 5. Jobsite Exposure Response Situations

- **Employee Exhibiting COVID-19 Symptoms**

- ICC and Subcontractors will confirm with individual that they should not return to work until a doctor confirms it is safe. Currently, direction is at least 72 hours after the resolution of fever (below 100.4° F [37.8° C]), and respiratory symptoms, including cough, without employing fever-lowering medications or cough suppressants.
- Confirm individual is receiving care they need.
- Confirm areas and people the individual had contact with and during what time.
- Try and determine if the individual knows when they might have been exposed.
- Confirm that individual should not report to work and should self-quarantine to avoid contact with other people as much as possible to keep from spreading illness.
- For employees who have tested positive, communicate all available resources and benefits available to them including that this time off will be considered sick leave and short-term disability for those who become eligible.
- Subcontractor employees, should check with their employer to determine leave benefits.
- If an individual receives notification of a positive diagnosis of COVID-19 while at the project or office, please isolate them in a separate room and provide them a mask to wear. The comfort and the care we show is important to everyone's mindset.

- **Employee Tests Positive for COVID-19**

- An employee that tests positive for COVID-19 will be directed to self-quarantine away from work. Employees that test positive and are symptom free may return to work when at least seven (7) days have passed since the date of his or her first positive test and have not had a subsequent illness. Employees that test positive and are directed to care for themselves at home may return to work when: (1) at least 72 hours (3 full days) have passed since recovery;<sup>1</sup> and (2) at least seven (7) days have passed since symptoms first appeared. Employees that test positive and have been hospitalized may return to work when directed to do so by their medical care provider. ICC will require an employee to a Subcontractor's employee to provide documentation clearing their return to work.

<sup>1</sup> Recovery is defined as: (1) resolution of fever with the use of fever-reducing medications; and (2) improvement in respiratory symptoms (e.g., cough, shortness of breath).

## 6. OSHA Recordkeeping

If a confirmed case of COVID-19 is reported, ICC / Subcontractor will determine if it meets the criteria for recordability and reportability under OSHA's recordkeeping rule. OSHA requires construction employers to record work-related injuries and illnesses that meet certain severity criteria on the OSHA 300 Log, as well as complete the OSHA Form 301 (or equivalent) upon the occurrence of these injuries. For purposes of COVID-19, OSHA also requires employers to report to OSHA any work-related illness that (1) results in a fatality, or (2) results in the in-patient hospitalization of one or more employee. "In-patient" hospitalization is defined as a formal admission to the in-patient service of a hospital or clinic for care or treatment.

OSHA has decided that COVID-19 should *not* be excluded from coverage of the rule – like the common cold or the seasonal flu – and, thus, OSHA is considering it an "illness." However, OSHA has stated that only confirmed cases of COVID-19 should be considered an illness under the rule. Thus, if an employee simply comes to work with symptoms consistent with COVID-19 (but not a confirmed diagnosis), the recordability analysis would not necessarily be triggered at that time.

If an employee has a confirmed case of COVID-19, ICC and Subcontractor will assess any workplace exposures to determine if the case is work-related. Work-relatedness is presumed for illnesses that result from events or exposures in the work environment, unless it meets certain exceptions. One of those exceptions is that the illness involves signs or symptoms that surface at work but result solely from a non-work-related event or exposure that occurs *outside* of the work environment. Thus, if an employee develops COVID-19 *solely* from an exposure outside of the work environment, it would not be work-related, and thus not recordable.

The Company's assessment will consider the work environment itself, the type of work performed, risk of person-to-person transmission given the work environment, and other factors such as community spread. Further, if an employee has a confirmed case of COVID-19 that is considered work-related, ICC and Subcontractor will report the case to OSHA if it results in a fatality within 30 days or an in-patient hospitalization within 24-hours of the exposure incident occurring.

## 7. Essential Business

Several States and localities are issuing orders that prohibit work and travel, except for essential businesses. In general, construction work has been deemed essential and ICC is committed to continuing operations safely. If upon your travel to and from the worksite, you are stopped by State or local authorities, you will be provided a letter that you can show the authorities

indicating that you are employed in an “essential” industry and are commuting to and from work.

## **8. Confidentiality/Privacy**

Except for circumstances in which ICC is legally required to report workplace occurrences of communicable disease, the confidentiality of all medical conditions will be maintained in accordance with applicable law and to the extent practical under the circumstances. When it is required, the number of persons who will be informed of an employee’s condition will be kept at the minimum needed not only to comply with legally-required reporting, but also to assure proper care of the employee and to detect situations where the potential for transmission may increase. A sample notice to employees is attached to this Plan. ICC reserves the right to inform other employees that a co-worker (without disclosing the person’s name) has been diagnosed with COVID-19 if the other employees might have been exposed to the disease so the employees may take measures to protect their own health.

## **9. General Questions**

Given the fast-developing nature of the COVID-19 outbreak, ICC may modify this Plan on a case by case basis. If you have any questions concerning this Plan, please contact ICC Safety Manager, Kevin Barnes.

### **What is COVID-19?**

The novel coronavirus, COVID-19 is one of seven types of known human coronaviruses. COVID-19, like the MERS and SARS coronaviruses, likely evolved from a virus previously found in animals. The remaining known coronaviruses cause a significant percentage of colds in adults and children, and these are not a serious threat for otherwise healthy adults. Patients with confirmed COVID-19 infection have reportedly had mild to severe respiratory illness with symptoms such as fever, cough, and shortness of breath.

### **How is COVID-19 Spread?**

COVID-19, like other viruses, can spread between people. Infected people can spread COVID-19 through their respiratory secretions, especially when they cough or sneeze. According to the CDC, spread from person-to-person is most likely among close contacts (about 6 feet). Person-to-person spread is thought to occur mainly *via* respiratory droplets produced when an infected person coughs or sneezes, like how influenza and other respiratory pathogens spread. There is much more to learn about the transmissibility, severity, and other features associated with COVID-19, and investigations are ongoing.

### **COVID-19 Prevention and Work Practice Controls:**

## Worker Responsibilities

- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
- Avoid touching your eyes, nose, or mouth with unwashed hands. Avoid close contact with people who are sick.
- Notify your supervisor if you have symptoms (i.e., fever, cough, or shortness of breath) and stay home—DO NOT GO TO WORK.
- Avoid physical contact with others and direct employees/contractors/visitors to increase personal space to at least six (6) feet. Where work trailers are used, only necessary employees should enter the trailers and all employees should maintain social distancing while inside the trailers.
- Avoid ride-sharing. While in vehicle, ensure adequate ventilation.
- If practicable, use/drive the same truck or piece of equipment every shift.
- In lieu of using a common source of drinking water, such as a cooler, use individual water bottles.
  - Maintain at least (6) feet of personal space while waiting to enter or exit the project.

## General Job Site Practices

- Clean AND disinfect frequently touched objects and surfaces. Dirty surfaces can be cleaned with soap and water prior to disinfection.
- Avoid using other employees' phones, desks, offices, or other work tools and equipment, when possible. If necessary, clean and disinfect them before and after use.
  - Clean and disinfect frequently used tools and equipment on a regular basis.
  - Clean shared spaces such as trailers and break/lunchrooms at least once per day.
  - Disinfect shared surfaces (door handles, machinery controls, etc.) on a regular basis.
  - Avoid sharing tools with co-workers if it can be avoided. If not, disinfect before and after each use.
- Arrange for any portable job site toilets to be cleaned by the leasing company at least twice per week and disinfected on the inside.
- Any trash collected from the jobsite must be changed frequently by someone wearing gloves.
- In addition to regular PPE for workers engaged in various tasks (fall protection, hard hats, hearing protection), employers will also provide:
  - o Gloves: Gloves should always be worn while on-site. The type of glove worn should be appropriate to the task. If gloves are not typically required for the task, then any type of glove is acceptable, including latex gloves. Gloves should not be shared.
  - o Eye protection: Eye protection should always be worn while on-site.

# **Initial Study for the SDG Commerce 217 Distribution Center Project**

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## **Appendix J**

### **Mitigation Monitoring and Reporting Program**

SDG Commerce 217 Project  
Mitigation Monitoring and Reporting Program

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<b>BIOLOGICAL RESOURCES</b>				
<p><b>Mitigation Measure BIO-1:</b> A qualified western burrowing owl biologist shall conduct surveys in accordance with the California Department of Fish and Game (now CDFW) 2012 Staff Report on Burrowing Owl Mitigation survey methodology (see <a href="https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds">https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds</a>). Surveys shall encompass the project area and a sufficient buffer zone of approximately 200 to 500 feet depending on the neighboring terrain and vegetation as necessary to detect owls nearby that may be impacted by the project. Time lapses between surveys or project activities shall trigger subsequent surveys including but not limited to a final survey within 24 hours prior to ground disturbance before construction equipment mobilizes to the Project area. If no owls are found during these surveys, no further actions to protect burrowing owl would be necessary.</p> <p>1) If burrowing owls are detected on or adjacent to the site, the following restricted activity dates and setback distances recommended per CDFW's Staff Report (2012) shall be implemented, unless reduced buffers are accepted by CDFW in writing based on site specific conditions:</p> <ul style="list-style-type: none"> <li>• From April 1 through October 15, low disturbance and medium disturbance activities shall have a 200-meter buffer while high disturbance activities shall have a 500-meter buffer from occupied nests</li> </ul>	<ol style="list-style-type: none"> <li>1. A qualified biologist shall conduct a preconstruction burrowing owl survey per mitigation measure specifications and contact CDFG as necessary.</li> <li>2. If the site has burrowing owls, applicant shall follow restricted activity dates and setback distances from burrows as specified in the mitigation.</li> <li>3. Applicant shall submit copies of preconstruction surveys and outcomes of any consultation with CDFG. If burrowing owls are observed during surveys, notification shall also be submitted to the CNDDDB.</li> <li>4. If burrowing owls are found on the site during preconstruction surveys, passive relocation may occur as specified in the mitigation, upon CDFW</li> </ol>	<p>No more than 30 days prior to grading or land clearing operations</p> <p>No more than 14 days prior to grading or land clearing operations</p> <p>Prior to grading or land clearing operations</p> <p>Prior to grading or land clearing operations</p>	<p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department, CDFW</p> <p>Planning and Building Department, CDFW</p>	





Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
notification shall also be submitted to the CNDDDB.				
<p><b>Mitigation Measure BIO-2:</b> If project activities must occur during the Swainson's hawk nesting season (i.e., typically March 1 through September 15), a qualified biologist (i.e., a biologist with at least two years' experience conducting surveys who has made Swainson's hawk detections) shall conduct pre-construction surveys for nesting Swainson's hawks within a half-mile radius around all project activities for at least two survey periods immediately prior to a project's initiation. The surveys shall be conducted in accordance with CDFW's "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" (CDFG 2000), which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements.</p> <p>If Swainson's hawks are found to be nesting on the project site or within a 0.5-mile of the project site, the project proponent shall either, a) delay project activities until all Swainson's hawk nests within 0.5-mile of the Project site are no longer active, as determined by a qualified biologist, b) determine if the 0.5-mile buffer zone may be reduced in consultation with CDFW based on site specific conditions, or c) if take cannot be avoided, obtain a CESA Incidental Take Permit from CDFW prior to starting project activities.</p>	<ol style="list-style-type: none"> <li>1. A qualified biologist shall conduct preconstruction nesting Swainson's hawk surveys and contact CDFG as necessary.</li> <li>2. If Swainson's hawks are found to be nesting on the project site or within a 1/4-mile of the project site, buffers shall be established by the qualified biologist who conducted the surveys.</li> <li>3. Applicant shall submit copies of preconstruction surveys and outcomes of any consultation with CDFG. If Swainson's hawks are observed during surveys, notification shall also be submitted to the CNDDDB.</li> <li>4. City mitigation monitor or designee shall perform site inspections.</li> </ol>	<p>As specified in CDFW guidance document</p> <p>Between January 1<sup>st</sup> and August 1<sup>st</sup>, as specified in CDFW guidance document</p> <p>Prior to grading or land clearing operations</p> <p>Prior to grading or tree removal and ongoing during construction</p>	<p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department, CDFG</p> <p>Planning and Building Department</p>	
<b>Mitigation Measure BIO-3:</b> To ensure that impacts	1. A qualified biologist shall	No more than 14	Planning and	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>to nesting raptors are avoided, the following mitigation measures shall be implemented:</p> <p>1) In order to avoid impacts to nesting raptors, a preconstruction nesting survey shall be conducted by a qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for nesting raptors with detections) prior to commencing with earth-moving or construction work if this work would commence between February 1st and August 31st. The survey shall be conducted within 7 days prior to site disturbance. The raptor nesting surveys shall include examination of all trees and other suitable nesting structures/areas within 500 feet of the project site.</p> <p>2) If nesting raptors are identified during the surveys, a qualified biologist shall determine appropriate, species-specific no-disturbance buffers around all active nests. No-disturbance buffers shall be demarcated in the field with orange construction fencing or similar. If the tree or other nest site is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. If nesting white-tailed kites are found during surveys, a suitable non-disturbance buffer shall be established by a qualified biologist (as defined above) but in no case shall the buffer be less than 200 feet. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site daily for a minimum of one week and then weekly during construction. If the qualified biologist observes any nesting raptor displaying distress, the qualified</p>	<p>conduct a preconstruction nesting bird survey.</p> <p>2. If the site has trees with nesting birds a qualified biologist shall demarcate setback areas around the trees.</p> <p>3. City mitigation monitor or designee shall perform site inspections.</p>	<p>days prior to grading or land clearing operations</p> <p>Between February 1<sup>st</sup> and August 31<sup>st</sup></p> <p>Prior to grading or land clearing operations</p> <p>Prior to grading or tree removal and ongoing during construction</p>	<p>Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>biologist shall require that all project activities cease. In this event, the qualified biologist shall ensure proper measures are taken so that no harm comes to the nest/nesting attempt and all activities causing distress shall cease until the nesting attempt is completed as determined by a qualified biologist.</p> <p>3) If the preconstruction nesting survey identifies a large stick or other type of raptor nest that appears inactive at the time of the survey, but there are territorial raptors evident in the nest site vicinity, a protection buffer (as described above) shall be established around the potential nest site until the qualified biologist determines that the nest is not being used. In the absence of conclusive observations indicating the nest site is not being used, the buffer shall remain in place until a second follow-up nesting survey can be conducted to determine the status of the nest and eliminate the possibility that the nest is utilized by a late-spring nesting raptor (for example, Cooper's hawk). This second survey shall be conducted even if construction has commenced. If during the follow-up late season nesting survey a nesting raptor is identified utilizing the nest, the protection buffer shall remain until it is determined by a qualified biologist that the nest is no longer active. If the nest remains inactive, the protection buffer can be removed and construction and earth-moving activities can proceed unrestrained.</p>				
<p><b>Mitigation Measure BIO-4:</b> To ensure that impacts to nesting passerine birds are avoided, a qualified</p>	<p>1. A qualified biologist shall conduct a preconstruction</p>	<p>No more than 14 days prior to</p>	<p>Planning and Building</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>biologist shall conduct a survey within 7 days prior to commencing construction/ grading or tree removal activities if this work would commence between February 1 and September 1. If common passerine birds or special-status passerine birds are identified nesting on or adjacent to the project site within 200 feet, a qualified biologist shall determine appropriate, species-specific no-disturbance buffers for all nests. The no-disturbance buffers shall be clearly demarcated in the field with orange construction fencing or similar, prior to the start of project activities. Disturbance within the buffer shall be postponed until a qualified biologist determines that the young have fledged and have attained sufficient flight skills to leave the area, and that the nesting cycle has otherwise completed. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site on a daily basis for a minimum of one week and then weekly during construction. If the qualified biologist observes any nesting bird displaying distress, the qualified biologist shall have the authority to require that all project activities cease until the nesting distress has been ameliorated. In this event, the qualified biologist shall ensure proper measures are taken so that no harm comes to the nest/nesting attempt until the nesting attempt is completed as determined by a qualified biologist. These measures may include increasing the no-disturbance buffer, postponing specific construction activities causing the distress until the nesting attempt is completed, or other appropriate protect measures as determined in the field.</p>	<p>nesting bird survey.</p> <ol style="list-style-type: none"> <li>2. If the site has trees with nesting birds a qualified biologist shall demarcate setback areas around the trees.</li> <li>3. City mitigation monitor or designee shall perform site inspections.</li> </ol>	<p>grading or land clearing operations</p> <p>Between February 1 and September 1</p> <p>Prior to grading or land clearing operations</p> <p>Prior to grading or tree removal and ongoing during construction</p>	<p>Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department Planning and Building Department</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p><b>Mitigation Measure BIO-5:</b> A qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for western pond turtle detections) has prepared a wildlife exclusion plan for this project and has attached an exhibit of that fencing plan herein (please see attached Exhibit A). This wildlife exclusion fencing will be constructed of manufactured ERTEC wildlife exclusion fencing. This exclusion fencing shall be installed along the western perimeter of the project site returning back 50 feet to the north and 50 feet to the south preventing species from traveling from North Slough onto the project site during construction (see Exhibit A). A qualified biologist shall survey the project site and adjacent habitat within 72 hours of the start of project activities to determine if western pond turtle or their nests are present and guide the installation of the exclusion fence. If western pond turtles are discovered, a qualified biologist with experience handling and relocating the species shall move the species to the nearest suitable habitat outside of the project area and exclusion fencing. If western pond turtle nests are found, CDFW shall be notified prior to starting project activities, and the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent North Slough. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Grading within the nest site's 50-foot buffer area shall be</p>	<p>Preconstruction fencing plan to be prepared by qualified biologist and submitted to CDFW.</p> <p>Fencing to be installed by project contractor.</p>	<p>Fencing shall be installed prior to ground disturbance</p>	<p>Planning and Building Department, CDFW</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
delayed until the young leave the nest as determined by a qualified biologist. If the CDFW allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of the CDFW.				
<b>CULTURAL RESOURCES</b>				
<p><b>Mitigation Measure CUL-1:</b> Archaeological deposits are defined as any historic-era resource (e.g., bottle dump, refuse scatter) or prehistoric resource that may be intact and/or retain qualities that satisfy criteria for eligibility for the California Register of Historical Resources. If potentially significant historic resources are encountered during subsurface excavation activities for the project area, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites.</p> <p>If the resource is determined to be significant under CEQA (i.e., a “historical resource”) the City and a</p>	<ol style="list-style-type: none"> <li>1. Applicant shall incorporate cultural resources mitigation measures into site plan specifications and construction contract.</li> <li>2. A qualified cultural resources professional shall demarcate the no-construction area.</li> <li>3. The contractor or applicant shall provide written notification upon finding remains.</li> </ol>	<p>Prior to issuance of grading permit</p> <p>During construction</p> <p>During construction</p>	<p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department; County coroner; Native American Heritage Commission</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.</p> <p><b>Mitigation Measure CUL-2:</b> If previously unknown human remains are encountered during construction activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:</p> <p>In the event of an accidental discovery or recognition of any human remains, Public Resource Code Section 5097.98 must be followed. Once project-related ground disturbance begins and if there is accidental discovery of human remains, the following steps shall be taken:</p> <ul style="list-style-type: none"> <li>• There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Napa County Coroner's Office is contacted to determine if the remains are Native American and if an investigation into cause of death is required. If the coroner determines the remains are</li> </ul>				



Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.				
<b>GEOLOGY &amp; SOILS</b>				
<b>Mitigation Measure GEO-1:</b> The applicant shall comply with all of the site preparation and foundation/building design recommendations in the Krazan & Associates Geotechnical Engineering Investigation for the site (Krazan 2019). The applicant's geotechnical consultant shall review and approve all geotechnical aspects of the project construction and grading plans (i.e., site preparation and grading, site drainage improvements, and design parameters for foundations, retaining walls, street pavement, and driveway) to ensure that their recommendations have been properly incorporated. The results of the plan review shall be summarized by the applicant's geotechnical engineer in a letter to be submitted to the City Engineer and Building Official for review and approval prior to the issuance of grading, encroachment, and building permits.	<p>Applicant shall incorporate geotechnical recommendations into site plan specifications and construction contract.</p> <p>Applicant's geotechnical consultant shall review construction and grading plans and provide a written summary.</p>	<p>Prior to the issuance of grading, encroachment, and building permits</p> <p>Prior to the issuance of grading, encroachment, and building permits</p>	<p>Planning and Building Department</p> <p>Planning and Building Department</p>	
<b>Mitigation Measure GEO-2:</b> Prior to issuance of	Applicant shall submit erosion	Prior to issuance	Public Works	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>building permits and site grading, the applicant/ developer shall submit to the Public Works Department a Stormwater Pollution Prevention Plan using Best Management Practices to limit erosion and stormwater pollution during construction of the project. Because the project is constructed in phases, the project developer shall ensure that more permanent measures such as landscaping are used to prevent soil erosion. Measures would include but not be limited to:</p> <ul style="list-style-type: none"> <li>Hydroseeding and/or establishment of appropriate plant materials/landscaping</li> <li>Placement of straw wattles along slope contours and drainages</li> <li>Lining of drop inlets with filter fabric/geotextile</li> <li>Establishment of a single destination “wash-out” for construction subcontractors</li> <li>Use of siltation fences</li> <li>Use of sediment basins</li> </ul>	control plan to City Public Works department.	of building or grading permits	Department	
<p><b>Mitigation Measure GEO-3:</b> The applicant shall comply with all recommendations in the Krazan &amp; Associates Geotechnical Engineering Investigation for the site (Krazan 2019). Krazan recommends that the upper 30 inches of soils within the slab-on-grade foundation site and adjacent flatwork areas consist of non-expansive engineered fill. As an alternative to the use of non-expansive soils, the upper 30 inches of soil supporting slab areas can consist of lime-treated clayey soils (Kazan 2019).</p>	<p>Applicant shall incorporate geotechnical recommendations into site plan specifications and construction contract.</p> <p>Applicant’s geotechnical consultant shall review construction and grading plans and provide a written summary.</p>	<p>Prior to the issuance of grading, encroachment, and building permits</p> <p>Prior to the issuance of grading, encroachment, and building permits</p>	<p>Planning and Building Department</p> <p>Planning and Building Department</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<b>HYDROLOGY AND WATER QUALITY</b>				
<p><b>Mitigation Measure HYD-1:</b> Prior to the issuance of grading permits or building permits (whichever occurs first), the project applicant shall obtain coverage under the State Construction General Permit (NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Order 2009-0009 DWQ) by preparing a Stormwater Pollution Prevention Plan (SWPPP) and submitting it along with a notice of intent, to the San Francisco Bay RWQCB. The City of American Canyon shall confirm that the applicant has prepared a SWPPP and obtained coverage under the general permit prior to issuance of grading or building permits. The SWPPP shall identify a practical sequence for BMP implementation and maintenance, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP shall include but not be limited to the following elements:</p> <ul style="list-style-type: none"> <li>• Temporary erosion control measures shall be employed for disturbed areas.</li> <li>• No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months. Cover disturbed areas with soil stabilizers, mulch, fiber rolls, or temporary vegetation.</li> <li>• Sediment shall be retained on site by a system of sediment basins, traps, or other appropriate measures. Drop inlets shall be lined with filter fabric/geotextile.</li> </ul>	<ol style="list-style-type: none"> <li>1. Applicant shall provide copies of the NOP and SWPPP to the Public Works Department for review and approval.</li> <li>2. Applicant shall submit a storm drainage plan, which includes: <ul style="list-style-type: none"> <li>• calculations of storm-water peak flows and facilities to handle the flow;</li> <li>• water quality/erosion control mitigations;</li> <li>• detailed plans for construction and maintenance of the seasonal detention basin.</li> </ul> </li> <li>3. City mitigation monitor or designee shall perform site inspections to ensure that storm drainage plans are followed.</li> <li>4. Applicant (or successors-in-interest) shall maintain the detention and sediment basin(s) and traps, and provide a bond for this maintenance.</li> </ol>	<p>Prior to excavation or grading</p> <p>Prior to excavation or grading</p> <p>During construction of storm drainage facilities</p> <p>Prior to issuance of building permit for the first year; thereafter, annually for the life of the project</p>	<p>Public Works Department</p> <p>Public Works Department/City Engineer</p> <p>Public Works Department</p> <p>Public Works Department</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<ul style="list-style-type: none"> <li>• Discharge from the storm water system shall be diffused in such a way as to mimic existing overland flow conditions.</li> <li>• The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains. This may include locating construction-related equipment and processes that contain or generate pollutants in a secure area, away from storm drains and gutters, and wetlands; parking, fueling, and cleaning all vehicles and equipment in the secure area; designating concrete washout areas; and preventing or containing potential leakage or spilling from sanitary facilities.</li> <li>• BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.</li> <li>• In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim</li> </ul>				

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>erosion control measure throughout the wet season.</p> <p><b>Mitigation Measure HYD-2:</b> Prior to the issuance of grading permits for the proposed project, the project applicant shall submit a Stormwater Control Plan to the City of American Canyon for review and approval. The Stormwater Control Plan shall identify pollution prevention measures and practices to prevent polluted runoff from leaving the project site. The plan shall be implemented to the satisfaction of the City of American Canyon prior to building occupancy.</p> <p><b>Mitigation Measure HYD-3:</b> Prior to issuance of grading permits for the proposed project, the project applicant shall submit a final drainage plan as prepared by a qualified civil engineer to the City of American Canyon for review and approval. The approved plan shall be incorporated into the project design and constructed to the satisfaction of the City.</p> <p><b>Mitigation Measure HYD-4:</b> The project sponsor (or successors-in-interest/owner) shall maintain in perpetuity the post-construction BMPs listed in the Stormwater Operations and Management Plan to be agreed upon with the City of American Canyon. The owner shall make changes or modifications to the BMPs to ensure peak performance. The owner shall be responsible for costs incurred in operating, maintaining, repairing, and replacing the BMPs. The owner shall conduct inspection and maintenance activities and complete annual</p>				

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>reports.</p> <p><b>Mitigation Measure HYD-5:</b> The detention basin shall be maintained on a regular basis by the project sponsor (or successors-in-interest). Inspections of the basin shall be conducted at least once a year between July 1st and September 1st. During the dry periods of the year when minor storm events are insufficient to fully transport sediment and debris, accumulations may occur in detention basins. Therefore, basin and storm water inlet maintenance shall be done prior to the rainy season and during other extended dry spells, which will reduce the concentration of sediment and debris that typically collects in the bottom of inlets during storms. An annual inspection and maintenance report shall be prepared by the property owner and submitted to the Public Works Director by October 15 of each year, at the property owner's expense.</p>				
<b>NOISE</b>				
<p><b>Mitigation Measure NOISE-1:</b> Construction activities shall be limited to daylight hours between 7:00 a.m. and 7:00 p.m., except for required nighttime construction for concrete pours onsite that would comply with the City of American Canyon's Noise limits for construction activities. All property owners within 300 feet of the site and all residents who have expressed concern over nighttime construction noise during construction of the Commerce 330 project, or otherwise have requested notification regarding project construction, also shall be notified by the applicant.</p>	<p>The Subdivision Plan shall include all noise mitigation components and be reviewed and approved by City Planning and Building Department.</p>	<p>Prior to issuance of building permit</p>	<p>Planning and Building Department</p>	

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p>The City also shall be pre-notified of nighttime construction.</p> <p><b>Mitigation Measure NOISE-2:</b> All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.</p>	Construction contracts shall specify use of noise-reduction features in equipment.	Prior to construction	Planning and Building Department	
<b>TRANSPORTATION/TRAFFIC</b>				
<p><b>Mitigation Measure TRA-1:</b> Commerce Boulevard would meet the minimum PM peak hour volumes for installation of a separate right-turn lane with Existing Plus Project volumes (the proposed project would add to the existing warrant). Therefore, the applicant shall contribute its fair share to widening and/or re-striping northbound Commerce Boulevard at Green Island Road to include a separate right-turn lane and shared through/left-turn lane. Based on the proposed project's contribution to cumulative buildout volumes at the intersection, its "fair share" contribution towards this improvement would equal 2.7%.</p>	Applicant shall provide mitigation fee.	Prior to issuance of building permit	Planning and Building Department	
<p><b>Mitigation Measure TRA-2:</b> The project shall construct a Class I bike path to fill in the gap in bike infrastructure between the cul-de-sac at the terminus of Commerce Court and the northeast corner of Eucalyptus Drive and Wetlands Edge Road, resulting in a continuous route connecting the residential areas to the south and the industrial land uses to the north.</p>	Applicant shall construct the bikeway.	Prior to issuance of occupancy permit for building	Planning and Building Department	
<b>UTILITIES &amp; SERVICE SYSTEMS</b>				

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p><b>Mitigation Measure UTIL-1:</b> The project applicant shall demonstrate compliance with the City's Zero Water Footprint Policy by mitigating all new potable water demands with "wet-water" offsets by one or more of the following options to ensure the project results in a net zero increase in demand for potable water:</p> <ul style="list-style-type: none"> <li>• Reducing existing potable water demands onsite</li> <li>• Funding programs or constructing projects that would conserve an equivalent amount of water elsewhere within the water service area</li> <li>• Funding of and/or constructing projects that would increase an equivalent amount of recycled water use elsewhere within the water service area where potable water is currently used and/or</li> <li>• Purchase new water supplies from other water providers.</li> </ul> <p>The Applicant's agreement with the City's April 17, 2020 Will-Serve letter would assure compliance with these requirements.</p> <p><b>Mitigation Measure UTIL-2:</b> The project shall be designed and constructed with purple irrigation pipe so that reclaimed water may be used for landscape irrigation purposes. The project shall connect to existing recycled water pipelines for irrigation, toilets, and urinals prior to occupancy.</p>	<p>Applicant shall incorporate recycled water pipelines and hook-ups into construction plan specifications and make reference in construction contract.</p> <p>City mitigation monitor or designee shall verify that recycled water is provided to the site and that all storm-water is retained on-site.</p> <p>Applicant shall provide funding for the City's water conservation program.</p> <p>Applicant shall comply with City regulations regarding changes in project use.</p> <p>Applicant's landscaping plan shall be submitted to the City for review/approval prior to issuance of building permits.</p>	<p>Prior to building permits</p> <p>Prior to building permits</p> <p>Prior to occupancy</p> <p>Prior to obtaining Use Permit for new use</p> <p>Prior to issuance of Building Permit</p>	<p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department</p> <p>Planning and Building Department</p>	



Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<p><b>Mitigation Measure UTIL-3:</b> Prior to issuance of a building permit, the applicant shall pay water capacity fees in accordance with the City's Municipal Code to provide funding for the City to acquire water resources and develop its treatment and distribution system. This would allow for the City to exercise additional options for potable water capacity and would also provide for maintenance of the recycled water system.</p> <p><b>Mitigation Measure UTIL-4:</b> Should additional project water be required, the project shall comply with the City's Ordinances and regulations in effect at the time of authorization for additional water use. In addition, such changes in project use would trigger a new City Discretionary Review process, which, in turn, would trigger re-evaluation of the project's water supply impacts.</p> <p><b>Mitigation Measure UTIL-5:</b> Prior to issuance of building permits, the project applicant shall submit landscaping plans to the City of American Canyon for review and approval demonstrating that landscaping would comply with the requirements in the City's Model Water Efficient Landscape Ordinance (AB 1881). The landscaping plan shall identify outdoor irrigation water conservation measures such as, but not limited to:</p> <ul style="list-style-type: none"> <li>• Drought-resistant vegetation</li> <li>• Irrigation systems employing the following features: <ul style="list-style-type: none"> <li>○ Drip irrigation</li> </ul> </li> </ul>				

Mitigation Measure	Implementation Method	Timing	Monitoring/ Enforcement Responsibility	Compliance Verification (Initials & Date)
<ul style="list-style-type: none"> <li>○ Low-precipitation-rate sprinklers</li> <li>○ Bubbler/soaker systems</li> <li>○ Programmable irrigation controllers with automatic rain shutoff sensors and flow sensing capabilities (ET Smart Controller)</li> <li>○ Matched precipitation rate nozzles that maximize the uniformity of the water distribution characteristics of the irrigation system</li> <li>○ Conservative sprinkler spacings that minimize overspray onto paved surfaces</li> <li>○ Hydrozones that keep plants with similar water needs in the same irrigation zone</li> <li>● Minimally or gently sloped landscaped areas to minimize runoff and maximize infiltration</li> <li>● Organic topdressing mulch in non-turf areas to decrease evaporation and increase water retention.</li> </ul>				

## **Appendix K**

### **State Clearinghouse December 2020 Draft IS Circulation Documents**



## **30 DAY NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION And NOTICE OF PUBLIC HEARING**

**NOTICE IS HEREBY GIVEN** that the City of American Canyon has prepared an Initial Study Checklist and Mitigated Negative Declaration for the following described project in accordance with the California Environmental Quality Act (CEQA). The 30-day public comment period starts on December 18, 2020, and ends on January 18, 2021.

**NOTICE IS FURTHER HEREBY GIVEN** that the Planning Commission will hold a public hearing on **Thursday, January 28, 2021 at 6:30 p.m.**, at **4381 Broadway, Suite 201, American Canyon, CA 94503** (in the Council Chambers of the American Canyon City Hall), to consider the Initial Study Checklist and Mitigated Negative Declaration and the following applications:

**Project Title:** SDG Commerce 217 Distribution Center  
**Project Number:** PL20-0008  
**Project Applicant:** SDG Commerce 217, LLC  
**Project Location:** West side of the Commerce Boulevard extension north of Eucalyptus Drive.  
**Assessor Parcel(s):** 058-030-065  
**Project Description:** Conditional Use Permit for a new 217,294 square foot wine warehouse distribution center with parking and landscaping. The site is located in the Recreation (REC) zoning district.

The basis for proposing a Mitigated Negative Declaration (MND) is the finding that the proposed project will not have a significant effect on the environment because mitigation measures that reduce the impacts to less than significant are being approved as part of project conditions. The MND includes mitigation measures for Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Hazards and Hazardous Materials, Hydrology/Water Quality, Noise, Transportation/Traffic, and Utilities.

Copies of all documents that relate to the above-described project and proposed MND and Initial Study Checklist may be examined on the City's website at: <https://bit.ly/3gAjtEs>.

Comments on the MND, sent in writing, must be received by 5:00 p.m. on January 19, 2021, at the following address:

William He, AICP, Associate Planner  
City of American Canyon Community Development Department  
4381 Broadway, Suite 201  
American Canyon, CA 94503



Oral or written comments may be provided to the Planning Commissioners at their meeting. All interested persons are invited to attend the meeting and be heard on this matter.

Public meetings/events sponsored or conducted by the City of American Canyon are held in accessible sites. Requests for accommodations may be made by calling (707) 647-4577 (voice) or 711 for the California Relay Service or by e-mailing the ADA Coordinator, Cherri Walton, at [cwalton@cityofamericancanyon.org](mailto:cwalton@cityofamericancanyon.org) at least 72 hours in advance of the event. Copies of documents distributed at the meeting are available in alternative formats upon request.

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Cherri Walton, CMC, Interim City Clerk

**Mailed Date: December 18, 2020**

**Publication Date: December 17, 2020**



**Notice of Completion & Environmental Document Transmittal**

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613  
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

<b>SCH #</b>
--------------

**Project Title:** \_\_\_\_\_

Lead Agency: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ Zip: \_\_\_\_\_ County: \_\_\_\_\_

**Project Location:** County: \_\_\_\_\_ City/Nearest Community: \_\_\_\_\_

Cross Streets: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Longitude/Latitude (degrees, minutes and seconds): \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_" N / \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_" W Total Acres: \_\_\_\_\_

Assessor's Parcel No.: \_\_\_\_\_ Section: \_\_\_\_\_ Twp.: \_\_\_\_\_ Range: \_\_\_\_\_ Base: \_\_\_\_\_

Within 2 Miles: State Hwy #: \_\_\_\_\_ Waterways: \_\_\_\_\_

Airports: \_\_\_\_\_ Railways: \_\_\_\_\_ Schools: \_\_\_\_\_

**Document Type:**

CEQA: <input type="checkbox"/> NOP	<input type="checkbox"/> Draft EIR	NEPA: <input type="checkbox"/> NOI	Other: <input type="checkbox"/> Joint Document
<input type="checkbox"/> Early Cons	<input type="checkbox"/> Supplement/Subsequent EIR	<input type="checkbox"/> EA	<input type="checkbox"/> Final Document
<input type="checkbox"/> Neg Dec	(Prior SCH No.) _____	<input type="checkbox"/> Draft EIS	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Mit Neg Dec	Other: _____	<input type="checkbox"/> FONSI	

**Local Action Type:**

<input type="checkbox"/> General Plan Update	<input type="checkbox"/> Specific Plan	<input type="checkbox"/> Rezone	<input type="checkbox"/> Annexation
<input type="checkbox"/> General Plan Amendment	<input type="checkbox"/> Master Plan	<input type="checkbox"/> Prezone	<input type="checkbox"/> Redevelopment
<input type="checkbox"/> General Plan Element	<input type="checkbox"/> Planned Unit Development	<input type="checkbox"/> Use Permit	<input type="checkbox"/> Coastal Permit
<input type="checkbox"/> Community Plan	<input type="checkbox"/> Site Plan	<input type="checkbox"/> Land Division (Subdivision, etc.)	<input type="checkbox"/> Other: _____

**Development Type:**

<input type="checkbox"/> Residential: Units _____ Acres _____	<input type="checkbox"/> Transportation: Type _____
<input type="checkbox"/> Office: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Mining: Mineral _____
<input type="checkbox"/> Commercial: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Power: Type _____ MW _____
<input type="checkbox"/> Industrial: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Waste Treatment: Type _____ MGD _____
<input type="checkbox"/> Educational: _____	<input type="checkbox"/> Hazardous Waste: Type _____
<input type="checkbox"/> Recreational: _____	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Water Facilities: Type _____ MGD _____	

**Project Issues Discussed in Document:**

<input type="checkbox"/> Aesthetic/Visual	<input type="checkbox"/> Fiscal	<input type="checkbox"/> Recreation/Parks	<input type="checkbox"/> Vegetation
<input type="checkbox"/> Agricultural Land	<input type="checkbox"/> Flood Plain/Flooding	<input type="checkbox"/> Schools/Universities	<input type="checkbox"/> Water Quality
<input type="checkbox"/> Air Quality	<input type="checkbox"/> Forest Land/Fire Hazard	<input type="checkbox"/> Septic Systems	<input type="checkbox"/> Water Supply/Groundwater
<input type="checkbox"/> Archeological/Historical	<input type="checkbox"/> Geologic/Seismic	<input type="checkbox"/> Sewer Capacity	<input type="checkbox"/> Wetland/Riparian
<input type="checkbox"/> Biological Resources	<input type="checkbox"/> Minerals	<input type="checkbox"/> Soil Erosion/Compaction/Grading	<input type="checkbox"/> Growth Inducement
<input type="checkbox"/> Coastal Zone	<input type="checkbox"/> Noise	<input type="checkbox"/> Solid Waste	<input type="checkbox"/> Land Use
<input type="checkbox"/> Drainage/Absorption	<input type="checkbox"/> Population/Housing Balance	<input type="checkbox"/> Toxic/Hazardous	<input type="checkbox"/> Cumulative Effects
<input type="checkbox"/> Economic/Jobs	<input type="checkbox"/> Public Services/Facilities	<input type="checkbox"/> Traffic/Circulation	<input type="checkbox"/> Other: _____

**Present Land Use/Zoning/General Plan Designation:**

**Project Description:** (please use a separate page if necessary)

## Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X".  
If you have already sent your document to the agency please denote that with an "S".

<input type="checkbox"/> Air Resources Board	<input type="checkbox"/> Office of Historic Preservation
<input type="checkbox"/> Boating & Waterways, Department of	<input type="checkbox"/> Office of Public School Construction
<input type="checkbox"/> California Emergency Management Agency	<input type="checkbox"/> Parks & Recreation, Department of
<input type="checkbox"/> California Highway Patrol	<input type="checkbox"/> Pesticide Regulation, Department of
<input type="checkbox"/> Caltrans District # _____	<input type="checkbox"/> Public Utilities Commission
<input type="checkbox"/> Caltrans Division of Aeronautics	<input type="checkbox"/> Regional WQCB # _____
<input type="checkbox"/> Caltrans Planning	<input type="checkbox"/> Resources Agency
<input type="checkbox"/> Central Valley Flood Protection Board	<input type="checkbox"/> Resources Recycling and Recovery, Department of
<input type="checkbox"/> Coachella Valley Mtns. Conservancy	<input type="checkbox"/> S.F. Bay Conservation & Development Comm.
<input type="checkbox"/> Coastal Commission	<input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
<input type="checkbox"/> Colorado River Board	<input type="checkbox"/> San Joaquin River Conservancy
<input type="checkbox"/> Conservation, Department of	<input type="checkbox"/> Santa Monica Mtns. Conservancy
<input type="checkbox"/> Corrections, Department of	<input type="checkbox"/> State Lands Commission
<input type="checkbox"/> Delta Protection Commission	<input type="checkbox"/> SWRCB: Clean Water Grants
<input type="checkbox"/> Education, Department of	<input type="checkbox"/> SWRCB: Water Quality
<input type="checkbox"/> Energy Commission	<input type="checkbox"/> SWRCB: Water Rights
<input type="checkbox"/> Fish & Game Region # _____	<input type="checkbox"/> Tahoe Regional Planning Agency
<input type="checkbox"/> Food & Agriculture, Department of	<input type="checkbox"/> Toxic Substances Control, Department of
<input type="checkbox"/> Forestry and Fire Protection, Department of	<input type="checkbox"/> Water Resources, Department of
<input type="checkbox"/> General Services, Department of	
<input type="checkbox"/> Health Services, Department of	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Housing & Community Development	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Native American Heritage Commission	

### Local Public Review Period (to be filled in by lead agency)

Starting Date \_\_\_\_\_ Ending Date \_\_\_\_\_

### Lead Agency (Complete if applicable):

Consulting Firm: _____	Applicant: _____
Address: _____	Address: _____
City/State/Zip: _____	City/State/Zip: _____
Contact: _____	Phone: _____
Phone: _____	

Signature of Lead Agency Representative: \_\_\_\_\_  \_\_\_\_\_ Date: \_\_\_\_\_

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

## **Appendix L**

### **Comments Received on December 2020 Draft IS and Responses**





T 510.836.4200  
F 510.836.4205

1939 Harrison Street, Ste. 150  
Oakland, CA 94612

www.lozeaudrury.com  
michael@lozeaudrury.com

***Via Email***

January 19, 2021

William He, AICP, Associate Planner  
City of American Canyon Community  
Development Department  
4381 Broadway, Suite 201  
American Canyon, CA 94503  
whe@cityofamericancanyon.org

**Re: SDG Commerce 217 Distribution Center (PL20-0008) - Mitigated Negative Declaration**

Dear Mr. He:

I am writing on behalf of Laborers International Union of North America, Local 324 ("LIUNA") and its members living and working in and around the City of American Canyon regarding the Draft Initial Study and Mitigated Negative Declaration ("MND") prepared for the proposed SDG Commerce 217 Distribution Center Project (the "Project").

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

LIUNA submits herewith the expert comments of wildlife ecologist Dr. Shawn Smallwood. Dr. Smallwood's expert comments and resume are attached hereto as Exhibit A. LIUNA also submits herewith comments on the Project's air and greenhouse gas emissions from the environmental consulting firm Soil/Water/Air Protection Enterprise ("SWAPE"). SWAPE's comments and the resumes of their consultants are attached hereto as Exhibit B.

### **PROJECT DESCRIPTION**

The Project proposes to issue a conditional use permit to construct and operate a 217,294 square foot wine distribution center on a 10.39-acre parcel in close proximity to the Napa River and an area identified by the Audubon Society as an "Important Bird Area." In addition to the 10.39 acre building site, the Project also involves excavation and operation of a borrow area

covering most of the adjacent 10.17 acre parcel immediately to the south of the building site. The proposed building would be bordered by 134 parking stalls on the north edge of the building parcel and 21 truck docking bays on the north side of the proposed building. The building would be heavily insulated and refrigerated. Grading and filling will occur throughout the Project site as well as most of the adjacent borrow area parcel. During construction, about 17,000 cubic yards of stockpiled soil will be transported and another 21,000 cubic yards of soil will be excavated from the adjacent site. Construction of the project would be done in a single phase lasting approximately 9.5 months. Types of heavy diesel equipment to be used to construct the facility will include a self-loading dirt scraper, bulldozer, motor grader, compactor, roller, water truck, backhoe, excavator, trencher, drilling auger, front end loader, paving machine, laser screed, concrete finishing trowels, tractor, crane, forklift, generator, man lift, scissor lift, welding machine, and light tower. Operation of the Project is estimated to generate a total of 367 daily project trips and, prior to mitigation, increase the daily vehicle miles travelled ("VMT") in the area by 2,355 VMT. The closest residence is about 500 feet from the Project's borrow area.

### **LEGAL STANDARDS**

As the California Supreme Court held, "[i]f no EIR has been prepared for a nonexempt project, but substantial evidence in the record supports a fair argument that the project may result in significant adverse impacts, the proper remedy is to order preparation of an EIR." (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 319-320 ["*CBE v. SCAQMD*"], citing, *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 88; *Brentwood Assn. for No Drilling, Inc. v. City of Los Angeles* (1982) 134 Cal.App.3d 491, 504-505.) "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal.App.4th 98, 109 ["*CBE v. CRA*"].)

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

An EIR is required if "there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment." (Pub. Resources Code, § 21080(d); see also *Pocket Protectors*, 124 Cal.App.4th at 927.) In limited circumstances, an agency may avoid preparing an EIR by issuing a negative declaration, a written statement briefly indicating that a project will have no significant impact thus requiring no EIR (14 Cal. Code Regs., § 15371 ["CEQA Guidelines"]), only if there is not even a "fair

argument” that the project will have a significant environmental effect. (Pub. Resources Code, §§ 21100, 21064.) Since “[t]he adoption of a negative declaration . . . has a terminal effect on the environmental review process,” by allowing the agency “to dispense with the duty [to prepare an EIR],” negative declarations are allowed only in cases where “the proposed project will not affect the environment at all.” (*Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440.)

Where an initial study shows that the project may have a significant effect on the environment, a mitigated negative declaration may be appropriate. However, a mitigated negative declaration is proper *only* if the project revisions would avoid or mitigate the potentially significant effects identified in the initial study “to a point where clearly no significant effect on the environment would occur, and...there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.” (Public Resources Code §§ 21064.5 and 21080(c)(2); *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331.) In that context, “may” means a *reasonable possibility* of a significant effect on the environment. (Pub. Resources Code, §§ 21082.2(a), 21100, 21151(a); *Pocket Protectors*, 124 Cal.App.4th at 927; *League for Protection of Oakland's etc. Historic Resources v. City of Oakland* (1997) 52 Cal.App.4th 896, 904–905.)

Under the “fair argument” standard, an EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency’s decision. (CEQA Guidelines, § 15064(f)(1); *Pocket Protectors*, 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-15; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602.) The “fair argument” standard creates a “low threshold” favoring environmental review through an EIR rather than through issuance of negative declarations or notices of exemption from CEQA. (*Pocket Protectors*, *supra*, 124 Cal.App.4th at 928.)

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

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

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

original].)

As a matter of law, “substantial evidence includes . . . expert opinion.” (Pub. Resources Code, § 21080(e)(1); CEQA Guidelines, § 15064(f)(5).) CEQA Guidelines demand that where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the environmental effects to be significant and prepare an EIR. (CEQA Guidelines § 15064(f)(5); Pub. Res. Code § 21080(e)(1); *Pocket Protectors*, 124 Cal.App.4th at 935.) “Significant environmental effect” is defined very broadly as “a substantial or potentially substantial adverse change in the environment.” (Pub. Resources Code, § 21068; see also CEQA Guidelines, § 15382.) An effect on the environment need not be “momentous” to meet the CEQA test for significance; it is enough that the impacts are “not trivial.” (*No Oil, Inc.*, 13 Cal.3d at 83.) In *Pocket Protectors*, the court explained how expert opinion is considered. The Court limited agencies and courts to weighing the admissibility of the evidence. (*Pocket Protectors*, 124 Cal.App.4th at 935.) In the context of reviewing a negative declaration, “neither the lead agency nor a court may ‘weigh’ conflicting substantial evidence to determine whether an EIR must be prepared in the first instance.” (*Id.*) Where a disagreement arises regarding the validity of a negative declaration, the courts require an EIR. As the Court explained, “[i]t is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of a project.” (*Id.*)

CEQA requires that an environmental document include a description of the project’s environmental setting or “baseline.” (CEQA Guidelines, § 15063(d)(2).) The CEQA “baseline” is the set of environmental conditions against which to compare a project’s anticipated impacts. (*CBE v. SCAQMD*, 48 Cal.4th at 321.) CEQA Guidelines section 15125(a) states, in pertinent part, that a lead agency’s environmental review under CEQA:

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

(See, *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 [“*Save Our Peninsula*”].)

A threshold of significance may be useful to determine whether an environmental impact normally should be considered significant. (CEQA Guidelines, § 15064.7(a).) “A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.” (*CBE v. California Resources Agency*, 103 Cal.App.4th at 111.)

“A threshold of significance is not conclusive, however, and does not relieve a public agency of the duty to consider the evidence under the fair argument standard.” (*Mejia v. City of*

*Los Angeles* (2005) 130 Cal.App.4th 322, 342; see also *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108-1109; *CBE v. California Resources Agency*, 103 Cal.App.4th at 110-114; CEQA Guidelines, § 15064(b).) A public agency cannot, as the City does here, apply a threshold of significance or regulatory standard “in a way that forecloses the consideration of any other substantial evidence showing there may be a significant effect.” (*CBE v. California Resources Agency*, 103 Cal.App.4th at 114.)

## **ANALYSIS**

### **I. There is a Fair Argument That the Project May Have Significant Traffic and GHG Impacts Because the Purported Mitigation Measure for VMT is Not Supported by Substantial Evidence and Defies Common Sense.**

The MND’s analysis of the Project’s VMT impacts is not based on substantial evidence because it relies upon entirely unrealistic assumptions about the distance a bike commuter would ride to and from work. The MND would have one believe that by constructing a 300 feet long Tier 1 bike lane down the street from the Project, 32 commuters would no longer drive an average of 34.6 miles to and from work, but would instead **bike 34.6 miles** to and from work. (MND, Appendix, GHD Draft Technical Memorandum, p. 6 (Nov. 19, 2020) (“VMT Memo”).)

① The MND identifies a threshold of significance for assessing a Project’s VMT-related impacts of requiring a 15 percent reduction in VMT for the Project “compared with current regional VMT generation for similar uses.” (MND, p. 91.) Relying on an analysis conducted by GHD, the MND identifies that the “[c]ountywide average daily VMTs for employees and visitors are 11.7 and 31.3 miles, with an average of 17.4 daily VMT.” (*Id.*) Based on these numbers, the MND states that the “average daily project trip length has been calculated to be 17.3 miles, with a total daily 2,355 VMT.” (*Id.*) The MND identifies a baseline threshold of 1,354 VMT as the VMT level that is 15 percent less than the County’s average VMT. (VMT Memo, p. 4.). Thus, in order to be consistent with the 15 percent reduction from the average VMT threshold, the MND states that the Project must reduce its estimated VMT of 2,355 by 1,001 VMT. (*Id.*)

GHD then recommends a single measure purporting to achieve this dramatic reduction in the Project’s estimated VMT. GHD and the MND state that extending by a mere 300 feet the Class I bike path on Commerce Court, which currently runs past the existing SDG Commerce 330 warehouse, to connect to the northern driveway of the elementary school under construction would reduce the Project’s VMT by 1,119 VMT. (*Id.*, p. 6.) GHD’s rationale for this assertion is based, in part, on an estimate of the number of new bike commuters that would be added to the City’s bike network by the addition of the 300-foot connector lane. GHD estimates the new lane would entice 32 new bike commuters. (*Id.*, p. 18.) GHD then claims that these 32 new bike commuters would take the place of 32 car commuters who otherwise would each have driven 34.6 miles to and from work. (*Id.*)

Assuming GHD’s estimate of 32 new commuters biking to work as a result of constructing the 300-foot bike lane is correct, the car trip lengths that GHD claims those users’ bike trips would replace are preposterous. There is no evidence that the new bike commuters

who would be enticed onto their bikes by the new 300-feet of bike lane would include any car commuter who currently travels 17.3 miles to and from their work. The 17.3 mile figure applied by GHD has nothing to do with the average length of bike commuter trips. Instead, that number is the average trip length for commuters traveling by *automobile* calculated for the project area. (*Id.*, p. 4.)

The average length of a bike commuter trip is much lower than the average length of a commute by car. The California Air Resources Board (“CARB”) has published a quantification methodology to estimate VMT reductions associated with bike facilities. (CARB, Quantification Methodology (Nov. 1, 2019) (attached as Exhibit C).) Equation 22 of that guidance provides a formula for estimating “VMT Reductions for Bicycle Facility or Walkway.” (*Id.*, p. 18.) GHD completely ignores this guidance in its analysis. Putting that aside, CARB’s factors include its expert determination of the average bike trip length to be used in a VMT reduction calculation. CARB pins the “[a]verage length of auto trip replaced” at “1.5 miles for cycling.” (*Id.* See also ITS Report, p. 5. See *id.*, p. 7 (“The trip length factor, L, is based on the average length of bicycle trips taken for any purpose, using the default 1.5-mile average from most recent California Household Travel Survey data”) (attached as Exhibit D).)

Even assuming GHD’s overly simplistic equation is otherwise correct, applying CARB’s 1.5 mile average of auto trip replaced by a bike trip dramatically reduces the MND’s inflated VMT reduction claim. Based on a realistic trip length for bicycles that would use the 300-foot lane, and according to GHD’s truncated equation, the new 300-foot bike lane would only reduce VMT by 97.5 VMT (65 daily commute trips by new bike commuters x 1.5 bicycle trip length). Thus, GHD’s claim that the 300-foot length of bike lane would miraculously remove 1,119 VMTs from Commerce Court is entirely without basis in evidence or common sense. Instead, that modest bike facility would only remove about 97.5 VMT, leaving the Project over 900 VMT short of the 15 percent reduction from the County average necessary to eliminate the Project’s significant transportation impacts. As a result, the MND is inconsistent with the CEQA Guidelines, 14 Cal.Admin Code § 15064.3 which requires that “[a]ny assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.” Moreover, there is a fair argument that the Project may have significant transportation impacts requiring the preparation of a full EIR.

## **II. An EIR is Required because the Project will have Significant Impacts on Biological Resources.**

### **A. THE MND Fails to Adequately Analyze Impacts to Biological Resources Because It Relies Upon an Incomplete Baseline and the Project May Have Adverse Impacts on Numerous Sensitive Species Currently Using the Site or Adjacent Areas.**

On January 23, 2019 and January 5, 2021, Dr. Shawn Smallwood visited the site. (Smallwood Comments, p. 1.) His first-hand observations of wildlife at the site as well as his review of reliable bird sightings reported on eBird demonstrate that the MND relies upon a

truncated list of species present at the site and fails to address impacts on numerous sensitive species that currently use the site. Dr. Smallwood's observations and expert comments are substantial evidence that the Project may have significant biological impacts, including adverse impacts on bald eagles, northern harriers, peregrine falcons, Cooper's hawks, red-tailed hawks, great horned owls, Swainson's hawks, burrowing owls, Nuttall's woodpecker, and other bird species. (*Id.*, p. 2.)

During his brief visit on January 23, 2019, Dr. Smallwood observed a bald eagle flying over and hunting the site and identified a northern harrier and Cooper's hawk foraging on the project site. (Smallwood Comments, pp. 2, 5.) He also observed numerous other bird species. (*Id.*, pp. 2-9.) Many species were not just passing by the site but actively engaged in using the habitat available there. (*Id.*, p. 2.) For example, Dr. Smallwood observed many species spending considerable time at the site and displaying courtship or territorial behaviors indicative of breeding. (*Id.*) Such species included red-winged blackbirds, Say's phoebe, red-tailed hawks, and American kestrels. (*Id.*) He also observed a great-horned owl perched immediately adjacent to the site. (*Id.*)

Dr. Smallwood also has gathered information regarding numerous bird sightings in and around the site that are posted on a web-based service called eBird. (Smallwood Comments, pp. 13-16.) Dr. Smallwood's experience with this service indicates that it is reliable source of bird sighting information, being based on the observations of reputable birders. (*See id.*, p. 16.) He also points out the limitations of the MND only relying upon the California Natural Diversity Data Base ("CNDDDB") to document the potential presence of wildlife species at and around the Project site. (*Id.*, pp. 11, 16.) Numerous additional sensitive species are identified near the site that are not addressed in the biological report or the MND, including the endangered Willow flycatcher and species of concern including the Oak titmouse, Loggerhead shrike, tricolored blackbirds and many others. (*Id.*, pp. 13-15.)

As a result of the omission of numerous sensitive species using the site and evidence of even more additional species in the immediate vicinity of the site, the MND's evaluation of the project's biological impacts is not supported by substantial evidence. Dr. Smallwood's observations and expert comment is substantial evidence of a fair argument that the project may have an adverse impact on bald eagles, various hawks, and other species currently utilizing the site for courtship, foraging habitat and for movement.

The MND does mention a number of species, including Swainson's hawks and burrowing owls. However, the biological report fails to disclose information that these species have been observed much closer to the project site than is indicated in the MND or the biological report. (Smallwood Comments, p. 16.) For example, the MND indicates that Swainson's hawks and burrowing owls are, respectively, 2.5 and 2.6 miles away from the project site. However, Dr. Smallwood identifies sightings of these two species within 0.2 miles of the site. As he states, this indicates a high likelihood that these species are using this open foraging area as well.

The MND is particularly unreliable regarding its treatment of another species of special concern, the Northern harrier. As Dr. Smallwood explains:



Relying on CNDDDB records, Monk & Associates (2020) claim the nearest northern harrier location was 2.7 miles away. However, not only did I see a northern harrier fly over the project site, but multiple other observers reported northern harrier sightings nearby.

(Smallwood Comments, p. 16.)

Regarding impacts to burrowing owls, the MND improperly downplays potential impacts by claiming that, although the site contains many ground squirrel burrows that are frequently relied upon by burrowing owls, their significance is downplayed because Monk & Associates claims they are of “recent origin.” (Smallwood Comments, p. 12.) Dr. Smallwood, relying on his own studies of burrowing owls, refutes the relevance of the age of ground squirrel burrows to their likely use by burrowing owls. (*Id.*)

Likewise, the MND relies on a claim that because the site was cleared of eucalyptus trees in 2012, that somehow that activity over eight years ago continues to affect the site’s use by wildlife. The MND asserts that “[t]he loss of foraging habitat associated with the project is not considered substantial as the entire project site consisted of a eucalyptus grove until 2012, and thus did not historically provide potential foraging habitat.” (MND, p. 33.) Dr. Smallwood discusses the scientific problems with this assertion, concluding that “[t]he [MND] misleads where it claims that the removal of a eucalyptus grove years ago doomed the occurrence of wildlife species there today.” (Smallwood Comments, p. 12.)

②  
(cont.)

Dr. Smallwood notes the likely presence of bats utilizing the site for foraging and movement. (Smallwood Comments, p. 16.) The MND claims that the Project will not impact bats because the Project site “contains no roosting or nesting habitat because it has no trees, rock faces, structures, or cliffs.” (MND, p. 34.) However, as Dr. Smallwood points out, “Trees surround the site. Bats undoubtedly roost in those trees. The site supports those roosts by providing forage. Night roosts of pallid bat, in particular, are typically located close to forage on open ground.” (Smallwood Comments, p. 16.)

Dr. Smallwood notes that the MND and accompanying biological report fail to provide the information necessary to corroborate the level of effort and adequacy of the reconnaissance level survey done by the City’s consultant. As Dr. Smallwood explains:

Monk & Associates reported no details of their surveys, such as who exactly did the surveys, when they arrived, how long they stayed, and what methods they used. The reporting did not include the most basic information that a wildlife ecologist would need for assessing whether the survey truly met due diligence standards.

(Smallwood Comments, p. 10.) This exacerbates the absence of substantial evidence to justify the MND’s wildlife baseline.

Dr. Smallwood also debunks the MND’s effort to bolster the cursory biological



assessment with a so-called peer review. As Dr. Smallwood notes, no description of the peer-review nor any responses to review comments is provided in the MND and the date of the peer review appears inconsistent with the date of Monk & Associates site visit. (Smallwood Comments, p. 10.)

②  
(cont.)

The evidence of nearby sightings of numerous sensitive species and the flaws in the MND and accompanying biological report identified by Dr. Smallwood support a fair argument that the Project may have adverse impacts on their foraging and movement. For this reason and those discussed above, an EIR must be prepared to address impacts to these many sensitive bird and bat species.

### **B. The Project will have a Significant Impact on Wildlife Movement and Habitat Fragmentation.**

The MND fails to adequately analyze the Project's impact on wildlife movement. Instead, the MND improperly dismisses the Project's potential to impact wildlife movement by claiming there needs to be a "corridor" on the site to effect wildlife movement, that other nearby areas are better movement areas, or otherwise asserting without evidence that this particular large warehouse would not disrupt wildlife movement. As Dr. Smallwood states:

③

The project would obviously interfere with wildlife movement in the region. Having studied millions of GPS telemetry data from 35 golden eagles tracked since 2013, I noticed a strong avoidance of anthropogenic structures such as warehouses and residential neighborhoods. I assume bald eagles express a similar level of avoidance. If this assumption is true, then the bald eagle I saw fly over the site in 2019 might not do so again since the SDG Commerce 330 warehouse was built. Many other species would continue to fly over the project site despite the neighboring warehouse. I have recorded many observations of animals moving across fields next to warehouses, including red-tailed hawks, peregrine falcons, and many others.

(Smallwood Comments, p. 20.) Dr. Smallwood's direct observations and expert opinion are substantial evidence of a fair argument that the Project may have adverse impacts on wildlife movement at the site and in the vicinity.

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

④

The MND contains no analysis of the impacts of the Project's added road traffic on special-status species of wildlife, including species such as the California red-legged frog and California tiger salamanders. (Smallwood Comments, p. 20-21.) Regardless of whether these species live on site, these and other special status species must cross roadways that will experience increased traffic volume as a result of the Project. (*Id.*)

As Dr. Smallwood explains, "[i]ncreased use of existing roads will increase wildlife

fatalities....” (*Id.*, p. 20.)

④  
(cont.)

The traffic would effectively extend the project’s footprint well beyond the floor space, as trucks and cars traveling to and from the warehouse will drive over roads and highways that are also crossed by wildlife. On 23 January 2019 I saw two road-killed striped skunks on American Canyon Drive, and on 15 January 2021 I saw a road-killed striped skunk and an opossum killed on the same road—a road likely to be used by trucks and cars servicing the project. California red-legged frogs (*Rana draytonii*), which Monk & Associates (2020) concluded will suffer no impacts because CNDDB records are lacking west of Highway 29, will cross roads used by vehicles servicing the project. A shortfall of the [MND] is its failure to analyze the impacts of the project’s added road traffic on special-status species of wildlife, including California red-legged frog, California tiger salamander (*Ambystoma californiense*), and American badgers (*Taxidea taxus*) that, regardless of whether they live on the site, must cross roadways that will experience increased traffic volume caused by this project.

(*Id.*) Given the fair argument of a threat to wildlife posed by existing traffic and additional traffic from the Project, as discussed by Dr. Smallwood, an EIR is necessary to evaluate the direct and cumulative impacts of the Project’s vehicle collisions with wildlife.

#### **D. The MND Fails to Analyze the Project’s Impacts from the use of Pest Control Measures.**

⑤

The MND does not discuss the potential impact of using pesticides inside and outside of the proposed warehouse. As a wine storage distribution facility, there will likely be steps taken to abate pests. There are many businesses that provide services for controlling stored products pests, perching birds, and rodents and other mammal pests within and around distribution warehouses. (Smallwood, p. 21.) These businesses advertise exclusion strategies and fumigation for stored products pests, glue boards for rodents, and other measures including anticoagulant poisons and acute toxicants. “[T]he use of toxicants can harm non-target wildlife through direct exposure and indirect exposure via predation and scavenging.” (*Id.*) “[P]est control involving toxicants can result in the spread of toxicants beyond the project site.” (*Id.*)

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

#### **E. The Project will have Cumulative Impacts on Biological Resources.**

⑥

Dr. Smallwood concludes that the Project will have a significant cumulative impact on biological resources. (Smallwood Comments, p. 22.) An EIR is needed to fully analyze and mitigate the Project’s cumulative biological impacts, including not only future projects but the existing impacts as well.

### **III. The IS Utilized Unsubstantiated Input and Output Parameters to Estimate Project Emissions.**

#### **A. The MND fails to explain how the City Calculated the Project's Average Daily Construction Emissions of ROGs and NOx.**

⑦ The MND and Appendix B fail to provide sufficient information for a reviewer to understand and corroborate how the average daily emissions during construction were derived. As SWAPE explains, it is entirely unclear where the emissions estimates reported in the MND come from, because the estimates do not match those provided in any of the CalEEMod output files. (SWAPE Comments, pp. 2-3.) The MND provides the Project's emissions estimates in pounds per day. (MND, p. 22.) This indicates that the estimates should have come from either the winter or summer output file. (SWAPE Comments, pp. 2-3.) However, reviewing both the summer and winter output files and the emissions estimates, SWAPE's review could not match either. Insufficient details are provided in the MND either to inform the reader of the full extent of the air pollution and impacts that will result from the Project or how the insignificant determination was calculated and derived. The MND does not disclose a valid average daily emission calculation. For this reason, there is a fair argument that the Project may have significant air quality impacts.

#### **B. The MND Used Improper Modeling Inputs, Including for Water Use for Parking and Solid Waste Generation.**

⑧ Review of the Project's CalEEMod output files also demonstrates that the Project Applicant fails to adequately support substantial reductions in several air quality modelling inputs. In particular, the input for water use rate is decreased by almost 100 percent from the default value of 50,248,312.50 gallons per year ("gpy") to a mere 768 gpy. (SWAPE Comments, p. 8.) However, the Project is estimated to require an average of 142 gallons per day ("gpd") of potable water and 541 gpd of recycled water, resulting in a total daily water demand of 683 gpd or 249,295 gpy. Thus, the model underestimates the Project's total yearly water demand by approximately 239,186 gpy.

SWAPE also points out the lack of justification for the reduction in modeling inputs for solid waste generation by the Project. It is not explained how the Project would have dramatically lower solid waste rates than other typical projects. (SWAPE Comments, pp. 7-8.) Likewise, further corroboration that there would not be any weekend trips occurring at the facility or the lack of any potential for natural gas use by the Project should be further corroborated and explained in the MND. (*Id.*, pp. 5-7.) Lastly, the modelling relies on surface watering and limited vehicle speeds among other BMPs identified by BAAQMD. However, nothing in the MND sets forth these measures as mandatory BMPs or conditions of the Project. (*Id.*, pp. 9-11; MND, p. 23.) Because of the uncertainty resulting from inadequate justifications or miscalculation of annual water use, the MND's reliance on the CalEEMod analysis is not supported by substantial evidence that eliminates a fair argument that the Project may have significant air quality impacts.

**IV. SWAPE's CalEEMod Modeling Run Indicates a Fair Argument That the Project May Have a Significant Air Quality Impact.**

- ⑨ SWAPE reran the CalEEMod run for the Project adjusting for the deficiencies in the inputs that it identified. (SWAPE Comments, p. 11.) The resulting model result indicates that the Project may exceed the BAAQGM daily emission threshold of 54 lbs/day. This is substantial evidence of a fair argument that the Project may have a significant air quality impact.

**V. The IS Inadequately Evaluates Emissions of Diesel Particulate Matter.**

- ⑩ Diesel particulate matter ("DPM") is a known human carcinogen. The MND attempts to piggy-back on a health risk assessment performed for the nearby SDG Commerce 330 warehouse. (MND, p. 26.) This effort to borrow the HRA performed for that other project is problematic for a number of reasons.

**A. The HRA Fails to Account for the Fact That the Nearest Sensitive Receptor to the Project's Emissions is Located Only 500 Feet From the Soil Borrow Site.**

- ⑪ Although the MND notes that there is "one residence about 1,000 feet east of the site (on the Couch property)," this is referring to the site of the proposed warehouse building. (MND, p. 74.) In fact, the closest receptor is only 500-feet from the borrow pit portion of the Project. (*Id.*, p. 77 (Table Noise-4).) For the SDG Commerce 330 project, the sensitive receptor distance was about 900 feet. Because the closest receptor to the Project's affected area is only 500 feet, a new health risk assessment specific to the Project must be prepared. (SWAPE Comments, pp. 12-14.) Based on the current MND, there remains a fair argument that the Project may have a significant health risk impact on the nearest sensitive receptor.

**B. SWAPE's Analysis Provides Substantial Evidence of a Fair Argument that the Project may have Significant Health Risk Impacts from its Emissions of Toxic Air Contaminants.**

- ⑫ Based on the limited information provided by the MND, a fair argument exists that the Project may have a significant health risk impact to nearby sensitive receptors. SWAPE has prepared a Level 2 health risk screening assessment ("HRSA") for the project. BAAQMD recommends a significance threshold of an increased cancer risk of 10 in one million and an increased cumulative cancer risk of 100 in a million from all local sources. Applying the U.S. Environmental Protection Agency's AERSCREEN model, as recommended by OEHHA and the California Air Pollution Control Officers Association, SWAPE calculates that construction and operation of the Project will result in cancer risks to adults, infants, children and nearby residents over the course of a 30-year residential lifetime of, respectively, 11 in one million, 86 in one million, 73 in one million, and 180 in one million, all in excess of BAAQMD's threshold. (SWAPE Comment, pp. 14-18.) Based on this substantial screening evidence, a fair argument is present that the Project may have significant health risk impacts on nearby residents.

**VI. There is a Fair Argument That the Project May Have Significant GHG Impacts.**

SWAPE also reviewed the MND's discussion of the Project's potential GHG impacts. In addition to the deficiencies in the air modelling discussed above, a number of glaring problems with the analysis demonstrates that a fair argument remains that the Project may have significant GHG impacts.

**A. The MND's Reliance on the 1,100 MT CO<sub>2</sub>e Per Year Threshold is Only Designed to Achieve the GHG Reductions Required by 2020 and is Insufficient to Align the Project With the State's 2030 GHG Reduction Targets.**

As the BAAQMD states in its 2017 CEQA guidelines, BAAQMD based its GHG "bright line" significance threshold on the amount of GHG reductions that were necessary in the Bay area to achieve the AB 32 reduction goals by 2020. (BAAQMD CEQA Guidelines, p. D-16 (available at [https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en).) The threshold referenced in the MND is a bright-line threshold of 1,100 MT CO<sub>2</sub>e. (*Id.*, p. D-21. See SWAPE Comments, pp. 19-20.) That threshold was only intended to ensure compliance with AB 32's reduction goals required by 2020. (*Id.*) The 2020 GHG reduction goals sought to reduce business as usual GHG emissions to 1990 levels. In 2018, the Air Resources Board established the subsequent GHG reduction goal to reduce 1990 levels by another 40 percent by 2030. (California's 2017 Climate Change Scoping Plan, Executive Summary (Nov. 2017) (available at [https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping\\_plan\\_2017\\_es.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017_es.pdf).) That is the current goal with which the Project must ensure consistency order to claim no fair argument of a potential GHG impact.

As SWAPE points out, the Association of Environmental Professionals ("AEP") has derived a threshold of significance that is consistent with achieving the 2030 GHG reduction goals for projects coming online after 2020. AEP and SWAPE identify a "2030 Land Use Efficiency Threshold" of 2.6 metric tons of CO<sub>2</sub> equivalents per service population per year ("MT CO<sub>2</sub>e/SP/year") as a threshold of significance necessary for any specific project to be consistent with the 2030 reduction goals. As AEP states:

Once the state has a full plan for 2030 (which is expected in 2017), and then a project with a horizon between 2021 and 2030 should be evaluated based on a threshold using the 2030 target. A more conservative approach would be to apply a 2030 threshold based on SB 32 for any project with a horizon between 2021 and 2030 regardless of the status of the Scoping Plan Update.

(*Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*, October 18, 2016, p. 40 (available at: [https://califaep.org/docs/AEP-2016\\_Final\\_White\\_Paper.pdf](https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf).)

Applying the Project's estimate that it will create 50 new jobs, SWAPE calculates the

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2030 Land Use Efficiency Threshold for the project to be 11.80 MT CO<sub>2</sub>e/SP/year - well in excess of the calculated significance threshold of 2.6 MT CO<sub>2</sub>e/SP/year. (SWAPE Comments, pp. 20-21.) Based on this substantial evidence, there is a fair argument that the Project may have significant GHG impacts.

**B. The Project's Failure to Reduce its Expected VMT and Its Levels of VMT Per Capita are Evidence of a Fair Argument That the Project May Have Significant GHG Emission Impacts.**

14

In addition to failing to reduce its VMT by fifteen percent of the Project area average, as discussed above, the MND also is inconsistent with CARB's 2017 Scoping Plan's guidance on evaluating GHG impacts using a Project's VMT per capita calculations. CARB has provided County- and State-based VMT per capita baseline calculations and the necessary per capita reductions necessary to be consistent with the Scoping Plan's GHG reduction targets. (SWAPE Comments, p. 22, n. 44.) SWAPE has applied that guideline to calculate the Project's VMT per capita. (*Id.*, p. 22 & Attachment C.) Using the tables provided by CARB, SWAPE calculates that VMT per capita within Napa County must be reduced to 19.37 in order to be consistent with the 2030 GHG reduction target. (*Id.*, p. 22.) SWAPE calculates the Project's daily VMT per capita to be 33.21, well in excess of the VMT per capita levels necessary to meet the State reduction goals for 2030. (*id.*, p. 22.) As a result, the MND is incorrect in asserting that the Project is consistent with the 2017 Scoping Plan and AB 32. SWAPE's analysis is substantial evidence of a fair argument that the Project may have significant GHG emission impacts.

**CONCLUSION**

15

For the foregoing reasons, the MND is inadequate and an EIR is required to analyze and mitigate the Project's potentially significant environmental impacts. LIUNA reserves the right to supplement these comments in advance of and during public hearings concerning the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist.*, 60 Cal. App. 4th 1109, 1121 (1997). Thank you for your attention to these comments.

Sincerely,



Michael Lozeau  
Lozeau | Drury LLP

# EXHIBIT A



Shawn Smallwood, PhD  
3108 Finch Street  
Davis, CA 95616

Brent Cooper, Community Development Coordinator  
City of American Canyon  
4381 Broadway Street, Suite 201  
American Canyon, CA 94503

14 January 2020

RE: SDG Commerce 217 Warehouse

Dear Mr. Cooper,

I write to comment on the biological resources study (Monk & Associates 2020) and Initial Study ("IS") (City of American Canyon 2020) prepared for the proposed SDG Commerce 217 Warehouse project at 1075 Commerce Court, which I understand would be 217,294 square feet of new distribution warehousing on 10.39 acres (11.23 acres according to 'For Sale' sign on property).

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

### **SITE VISIT**

I visited the proposed project site on 5 January 2021 for 62 minutes starting at 08:23 hours. Prior to the construction of SDG Commerce 330, I had also visited the site on 23 January 2019 from 06:15 hours to 10:50 hours. Both times I walked along Commerce Way, the first time in cool, sunny weather and the second time in fog. During my first visit I detected 41 species of vertebrate wildlife within 155 minutes, and during my second visit I detected 9 species within 65 minutes (Table 1). I also walked a portion of the Napa River and Bay Trails south and west of the site for 125 minutes in 2021 and for an unrecorded time in 2019. At and near the site I detected 61 species of vertebrate wildlife between my two visits. Add my observations to those of Monk & Associates (2020), and the list grows to 86 vertebrate species of wildlife seen at or near the site



over only a few surveys in the last two years. The project area is rich in wildlife. Had I stayed longer, or had I visited during additional times of year and times of day, I would have seen many more species of wildlife. Given the abundance of roost sites amongst the surrounding eucalyptus groves, I expect multiple species of bats are present. An EIR needs to be prepared to address potential project impacts on wildlife.

In 2019, I saw a juvenile bald eagle fly over the project site (Photos 1 and 2). Bald eagles are protected by the Bald and Golden Eagle Protection Act and the California Endangered Species Act. In 2021, I saw a peregrine falcon just west of the project site, but it was too fast for me to photograph it. I saw a northern harrier (Photo 3) and Cooper's hawk (Photo 4) on the project site, both species of which have been assigned special-status in addition to the 'birds of prey' statute. I saw American kestrels (Photos 5 and 6), Anna's hummingbirds (Photo 7 and 8), pied-billed grebes (Photo 9), mourning doves (Photo 10), a house wren (Photo 11), golden-crowned sparrows (Photo 12), white-crowned sparrows (Photos 13 and 14), Say's phoebe (Photo 15), red-winged blackbirds (Photo 16), fox sparrows (Photo 17), and song sparrows (Photo 18).

Some animals flew over, including Canada geese, mallards, Herring gulls, ring-billed gulls, and swallows. Most, however, spent considerable time on and around the site. Some species displayed courtship or territorial behaviors indicative of breeding, including red-winged blackbirds, Say's phoebe, red-tailed hawks, and American kestrels. In 2019, a juvenile bald eagle hunted the site by carefully using the Eucalyptus trees for cover, but numerous small birds raised a ruckus, alerting of the eagle's approach. Also foraging on site were the northern harrier and Cooper's hawk in 2019. In 2019, two American kestrels harassed a perched great-horned owl, who hooted for about 10 minutes after the kestrels relented.

## **PROJECT DESCRIPTION**

The Napa River and Bay Trails wrap around the project from the south to the west. The site is next to an Audubon Society-designated Important Bird Area.

## **BASELINE ASSESSMENT**

**Project Description:** The IS (page 6) did not reveal the nearness of Clark Ranch and Napa River and Bay Trails as surrounding land uses, instead attempting to cast the 300-foot distance as a mitigating buffer (*See, e.g.* IS, p. 34). Clark Ranch has been dedicated as open space. The Napa River and Bay Trails not only provide public access to wildlife viewing, but is also designated by Audubon Society as one of its Important Bird Areas ("IBA"). An EIR is needed to address project impacts on the IBA, Napa River and Bay Trails, and Clark Ranch.

**Table 1.** Species of wildlife I observed during visits on 23 January 2019 and 5 January 2021 at the site of the proposed SDG Commerce 217 Warehouse. The offsite visit was made during my 2021 survey, and includes a walk along Napa River and Bay Trails just south and west of the project site.

Species	Scientific name	Status <sup>1</sup>	Visit Onsite		Offsite
Canada goose	<i>Branta canadensis</i>		2019		
Mallard	<i>Anas platyrhynchos</i>		2019		
Northern shoveler	<i>Anas clypeata</i>				Yes
American coot	<i>Fulica americana</i>				Yes
Pied-billed grebe	<i>Podilymbus podiceps</i>				Yes
Black-necked stilt	<i>Himantopus mexicanus</i>				Yes
American avocet	<i>Recurvirostra americanus</i>				Yes
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>				Yes
Least sandpiper	<i>Caladris minutilla</i>				Yes
California quail	<i>Callipepla californica</i>		2019		
Turkey vulture	<i>Cathartes aura</i>	FGC 3503.5			Yes
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, CE, CFP	2019		
Cooper's hawk	<i>Accipiter cooperi</i>	TWL, FGC 3503.5	2019		
Red-tailed hawk	<i>Buteo jamaicensis</i>	FGC 3503.5	2019	2021	Yes
Red-shouldered hawk	<i>Buteo lineatus</i>	FGC 3503.5			Yes
Northern harrier	<i>Circus cyaneus</i>	SSC3, FGC 3503.5	2019		Yes
American kestrel	<i>Falco sparverius</i>	FGC 3503.5.5	2019		Yes
Peregrine falcon	<i>Falco peregrinus</i>	CFP, FGC 3503.5			Yes
Herring gull	<i>Larus argentatus</i>		2019		Yes
Ring-billed gull	<i>Larus delawarensis</i>		2019		Yes
Mourning dove	<i>Zenaida macroura</i>		2019		Yes
Eurasian collared-dove	<i>Streptopelia decaocto</i>	Non-native	2019		
Great-horned owl	<i>Bubo virginianus</i>	CDFW 3503.5	2019		
Black-chinned hummingbird	<i>Archilochus alexandri</i>		2019		
Anna's hummingbird	<i>Calypte anna</i>		2019	2021	Yes
Northern flicker	<i>Colaptes auratus</i>		2019	2021	Yes
Nuttall's woodpecker	<i>Picoides nuttallii</i>	BCC	2019		Yes

<b>Species</b>	<b>Scientific name</b>	<b>Status<sup>1</sup></b>	<b>Visit Onsite</b>		<b>Offsite</b>
Say's phoebe	<i>Sayornis saya</i>		2019		Yes
Black phoebe	<i>Sayornis nigricans</i>		2019		Yes
Hutton's vireo	<i>Vireo huttoni</i>		2019		
Barn swallow	<i>Hirundo rustica</i>		2019		
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>		2019		
Bushtit	<i>Psatriparus minimus</i>		2019	2021	
House wren	<i>Troglodytes aedon</i>		2019		
Marsh wren	<i>Cistothorus palustris</i>				Yes
California scrub-jay	<i>Aphelocoma californica</i>		2019		
Common raven	<i>Corvus corax</i>		2019		Yes
American crow	<i>Corvus brachyrhynchos</i>		2019	2021	
Western bluebird	<i>Sialia mexicana</i>		2019		
Northern mockingbird	<i>Mimus polyglottos</i>		2019		Yes
European starling	<i>Sturnus vulgaris</i>	Non-native	2019	2021	Yes
Yellow-rumped warbler	<i>Setophaga coronata</i>		2019	2021	Yes
California towhee	<i>Pipilo crissalis</i>		2019		Yes
Song sparrow	<i>Melospiza melodia</i>				Yes
Lincoln's sparrow	<i>Melospiza lincolni</i>				Yes
White-crowned sparrow	<i>Zonotrichia leucophrys</i>		2019		Yes
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>		2019		Yes
Fox sparrow	<i>Passerella iliaca</i>				Yes
Dark-eyed junco	<i>Junco hyemalis</i>		2019	2021	Yes
Western meadowlark	<i>Sturnella neglecta</i>		2019		
Red-winged blackbird	<i>Agelaius phoeniceus</i>		2019		Yes
Brown-headed cowbird	<i>Molothrus ater</i>				Yes
Brewer's blackbird	<i>Euphagus cyanocephalus</i>		2019		Yes
American goldfinch	<i>Carduelis tristis</i>		2019		
Lesser goldfinch	<i>Carduelis psaltria</i>				Yes
House finch	<i>Carpodacus mexicanus</i>		2019		Yes
Sierran treefrog	<i>Pseudacris sierra</i>		2019		Yes
Botta's pocket gopher	<i>Thomomys bottae</i>				Yes

Species	Scientific name	Status <sup>1</sup>	Visit Onsite		Offsite
California ground squirrel	<i>Otospermophilus beecheyi</i>				Yes
Raccoon	<i>Procyon lotor</i>			2021	

<sup>1</sup> Listed as BGEPA = federal Bald and Golden Eagle Protection Act, BCC = federal Bird Species of Conservation Concern, CE = California endangered, CDFW 3503.5 = California Department of Fish and Wildlife Code 3503.5 (Birds of prey), SSC3 = California Species of Special Concern priority level 3, TWL = Taxa to Watch List (Shuford and Gardali 2008).



**Photos 1 and 2.** A bald eagle flew along the eucalyptus trees surrounding the project site on 23 January 2019. On 5 January 2021, Bay Trail visitors informed me that two bald eagles had been living in the area this winter.



**Photos 3 and 4.** *Cooper's hawk (left) and northern harrier (right) fly over the project site, 23 January 2019.*



**Photos 5 and 6.** *American kestrel perches on a Eucalyptus branch on southern boundary of proposed project site, 23 January 2019 (left) and on a pole just south of the project site on 5 January 2021 (right).*



***Photos 7 and 8, right.*** Anna's hummingbird perched next to the site of the proposed project on a foggy day, 5 January 2021.



***Photos 9 and 10.*** Pied-billed grebe (left) and mourning dove (right) next to the site of the proposed project, 5 January 2021.





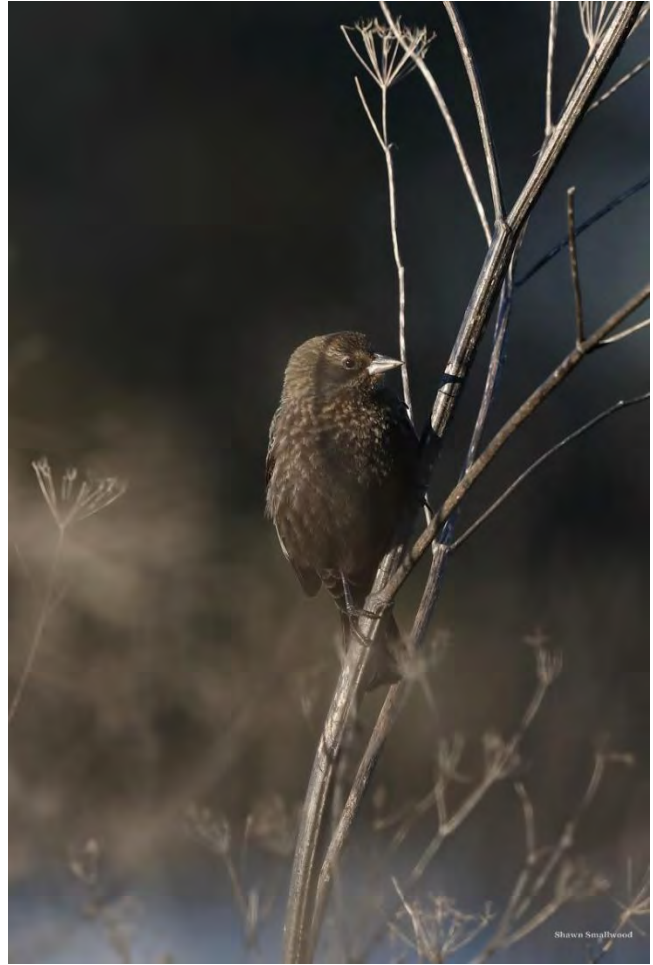
**Photo 11, left.** House wren next to the site of the proposed project, 23 January 2019.

**Photo 12, right.** Golden-crowned sparrow next to the site of the proposed project, 5 January 2021.



**Photos 13 and 14.** Male and female white-crowned sparrows next to the site of the proposed project, 5 January 2021.

**Photos 15 and 16.** Say's phoebe (left), triumphant after driving out a black phoebe, and red-winged blackbird (right) at the project site, 23 January 2019.



**Photos 17 and 18.** Fox sparrow (left) and song sparrow (right) next to the site of the proposed project, 5 January 2021.



**Reconnaissance surveys:** Monk & Associates (2020) performed surveys on the site on 19 and 27 December 2019. However, Monk & Associates reported no details of their surveys, such as who exactly did the surveys, when they arrived, how long they stayed, and what methods they used. The reporting did not include the most basic information that a wildlife ecologist would need for assessing whether the survey truly met due diligence standards.

**Peer review:** The IS (page 29) assures that Monk & Associates (2020) was peer reviewed. However, the date of the site visit in support of the peer review was 10 August 2018, which was prior to the Monk & Associates surveys of 2019. and prior to their 2020 report. If the date was correct for the peer-review site visit, then it is unclear what was peer-reviewed.

In claiming Monk & Associates (2020) was peer reviewed, the IS misapplies a process routinely used by scientists to improve their work. The purpose of peer review is to (1) improve the reporting of scientific research results, and (2) contribute to an editor's decision over whether to accept or reject a manuscript, or to require minor or major revisions before making the decision to accept or reject. The conclusions of peer reviewers are not necessarily right while the authors' conclusions are wrong. Peer review comments contribute to the scientific process by adding additional perspectives that the authors can use to improve their product, despite whether the product was rejected by the institution administering the peer review. Peer reviews also assess manuscripts according to scientific standards and to written guidelines maintained by the organization to which the manuscript was submitted. Peer review comments are supposed to be constructive. The important point here is that a "peer review" provided by Vollmar Natural Lands Consulting would have contributed nothing to Monk & Associates (2020) unless it resulted in constructive revisions to the report. Perhaps improvements were made to the report, but the reader cannot tell because the IS provides no report of the peer-review nor any responses to review comments.

To qualify as independent peer review, the administrator of the peer review as well as the reviewers themselves must not benefit financially or professionally from the outcome of the review. There must not be any hint of bias for a review to be considered independent. Another qualification is that the reviewers must be the authors' peers, meaning that reviewers possess sufficient experience performing research on the same or similar topic area as the authors, and that the reviewers understand the theoretical foundation of the topic at hand and the research challenges faced by the authors. In my experience, targeted reviews are prone to bias because the paid reviewer understands the desired outcome; it is in the reviewer's financial interest to review the client's work product favorably if the reviewer is to acquire repeat business. City of American Canyon needs to explain its relationship with Vollmar Natural Lands Consulting and between Vollmar Natural Lands Consulting and Monk & Associates.

**Determinations of occurrence likelihoods:** Monk & Associates (2020) mostly relied on California Natural Diversity Data Base (CNDDB) records to assess the likelihood of occurrence of special-status wildlife species whose geographic range maps

overlap the project site. Whereas consulting CNDDDB is fine for confirming presence of a species, it is inappropriate for determining absence and hence narrowing a list of potentially occurring species. CNDDDB is voluntary and not based on scientific sampling or equal access to properties. The limitations of CNDDDB are well-known, and they are summarized in a warning presented by CDFW on the CNDDDB web site (<https://www.wildlife.ca.gov/Data/CNDDDB/About>): *“We work very hard to keep the CNDDDB and the Spotted Owl Database as current and up-to-date as possible given our capabilities and resources. However, we cannot and do not portray the CNDDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers...”* Therefore, the foundation of many conclusions in the IS consists partly of a misapplication of CNDDDB and needs to be replaced by a sound methodology in an EIR.

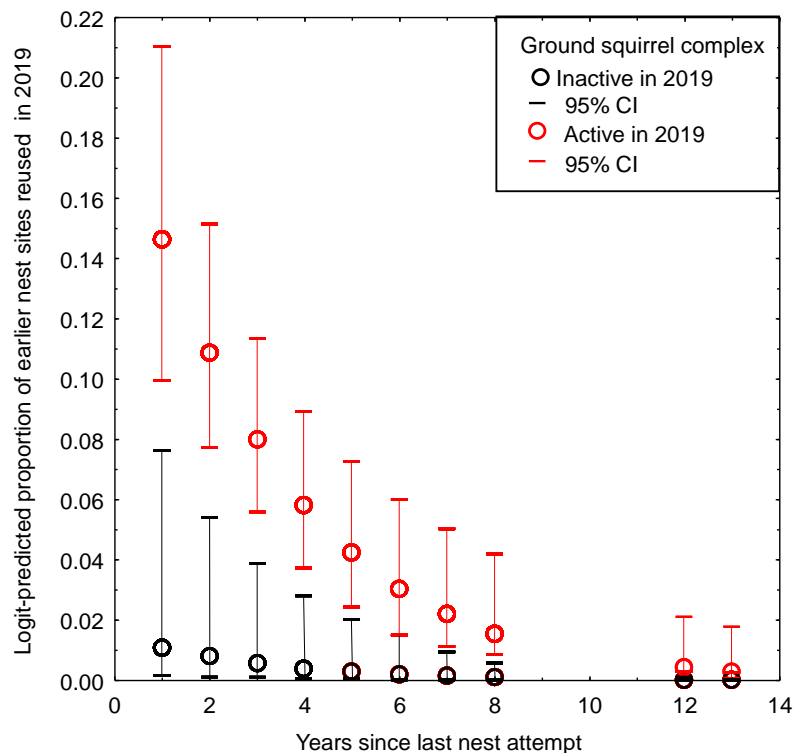
Consulting eBird reveals many sightings of special-status species near the project site (Table 2), many of which Monk & Associates (2020) conclude are less likely to occur at the site due to distant nearest-CNDDDB records. My review of eBird and iNaturalist reveals 66 special-status species of vertebrate wildlife likely to rely on the site at one time or another, 15 of which have been confirmed at or near the site during surveys performed by Monk & Associates (2020) and myself (Table 2). The IS, on the other hand, identifies only 3 such species as unlikely to occur at the site, including northern harrier which I saw on site, and Swainson's hawk and burrowing owl which have both been reported nearby in eBird. The IS falls grossly short of a comprehensive and accurate assessment of occurrence likelihoods of special-status species.

The inadequacy of IS's assessment of species occurrences stems mostly from two fallacious arguments: (1) that the site is unsuitable for nesting, and (2) the site was previously disturbed by the removal of a eucalyptus grove. The first fallacy is that habitat can be divided distinctly by functionality. Specific to this project, the IS distinguishes nesting habitat as the only type of habitat to be concerned about. But no animals can breed without finding sufficient forage, cover and stopover opportunities; no species can breed without surviving both the breeding and nonbreeding seasons. There is no clear distinction between types of habitat, as every portion of an animal's habitat is critical to its survival and its productivity.

The second fallacy is that some previous disturbance – the removal of a eucalyptus grove in this case – diminishes or destroys habitat of a species today. CEQA reviews are supposed to be based on existing conditions, rather than to some past event that a project proponent can claim without evidence to have prevented the site from ever again being used by a species. This CEQA standard noted, I must add that the scientific literature is full of examples of wildlife populating places that have been severely disturbed, such as the slopes of Mount St. Helens following the 1980 eruption, and wildlife reinhabiting the forests surrounding Ukraine's Chernobyl Nuclear Plant since its meltdown and massive radioactive release. Multiple scientific journals focus on habitat restoration, which involves deliberate, major disturbances to generate new complexes of

vegetation intended to benefit wildlife. The IS misleads where it claims that the removal of a eucalyptus grove years ago doomed the occurrence of wildlife species there today. The IS (page 32) further misleads that only ground squirrel burrows of ancient origin are useful to burrowing owls. Specifically, the IS claims burrowing owls are unlikely because “...ground squirrel burrows are few and of recent origin (Monk & Associates 2020).” The IS cites no evidence in support of this notion. It is also inconsistent with my research experience. For example, in a revisit to nearly 800 burrowing owl nest sites I had mapped over 9 years in the Altamont Pass Wind Resource Area, I found reuse of the nest sites in 2019 to have been much greater within actively used ground squirrel burrows previously used more recently (Figure 1). Further misleading is the IS’s argument that “Monk & Associates (2020) did not observe western burrowing owls or any indirect evidence that burrowing owls are using or residing on the project site during any of the site surveys.” This is misleading because negative findings cannot be supported in the absence of detection surveys such as those recommended by CDFW (2012). It does not matter that Monk & Associates found no evidence of burrowing owls because they did not perform the appropriate detection surveys.

**Figure 1.** *Proportion of revisited burrows that were either actively or inactively used by ground squirrels and where burrowing owls attempted re-nesting in 2019 declined quickly with years since the previous nest attempt.*



The IS (page 33) claims that the loss of foraging habitat of northern harrier is “not considered substantial.” However, the IS provides no evidence in support this conclusion. By what measure is the loss of foraging habitat judged substantial? Further, this conclusion neglects the possibility that the site is used by northern harrier for nesting as well as foraging. I saw a northern harrier fly over the site – the same site where the IS also says northern harriers would be unlikely to occur. The IS’s analysis of potential impacts to northern harrier is flawed.

**Table 2.** Species reported on eBird (<https://eBird.org>) or iNaturalist on or near the proposed project site, where those in bold font were also seen on or near the site by myself or Monk & Associates (2020).

Species	Scientific name	Status <sup>1</sup>	Occurrence likelihood	
			Monk & Associates	eBird or iNaturalist
Western pond turtle	<i>Actinemys marmorata</i>	SSC	None	Nearby
Pallid bat	<i>Antrozous pallidus</i>	SSC, WBWG H		Nearby
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC, WBWG H		Nearby
Western red bat	<i>Lasiurus blossevillei</i>	SSC, WBWG H		In region
Fringed myotis	<i>Myotis thysanodes</i>	SSC, WBWG H		In region
Yuma myotis	<i>Myotis yumanensis</i>	SSC, WBWG LM		In region
Long-eared myotis	<i>Myotis evotis</i>	WBWG M		In region
Small-footed myotis	<i>Myotis cililabrum</i>	WBWG M		In region
American badger	<i>Taxidea taxus</i>	SSC		In region
Aleutian cackling goose	<i>Branta hutchinsonii leucopareia</i>	TWL		Nearby
Redhead	<i>Aythya americana</i>	SSC <sub>2</sub>		Very close
American white pelican	<i>Pelecanus erythrorhynchos</i>	SSC <sub>1</sub>		Very close
Double-crested cormorant	<i>Phalacrocorax auritus</i>	TWL		Very close
White-faced ibis	<i>Plegadis chihi</i>	TWL		Very close
Sandhill crane	<i>Grus c. canadensis</i>	CT, CFP, SSC <sub>3</sub>		Very close
Marbled godwit	<i>Limosa fedua</i>	BCC		Very close
Snowy plover	<i>Charadrius alexandrinus</i>	SSC <sub>3</sub>		Very close
Long-billed curlew	<i>Numenius americanus</i>	BCC, TWL		Very close
Whimbrel	<i>Numenius phaeopus</i>	BCC		Very close
California gull	<i>Larus californicus</i>	TWL		Very close
Caspian tern	<i>Hydroprogne caspia</i>	TWL		Very close
Black tern	<i>Chlidonias niger</i>	SSC <sub>2</sub>		Nearby
California least tern	<i>Sterna antillarum browni</i>	FE, CE		Very close
Turkey vulture	<i>Cathartes aura</i>	FGC 3503.5		<b>Very close</b>
Osprey	<i>Pandion haliaetus</i>	TWL, FGC 3503.5		<b>Very close</b>
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, BCC, CE		<b>Very close</b>
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA, BCC, CFP		Very close

Species	Scientific name	Status <sup>1</sup>	Occurrence likelihood	
			Monk & Associates	eBird or iNaturalist
Red-tailed hawk	<i>Buteo jamaicensis</i>	FGC 3503.5		<b>Very close</b>
Rough-legged hawk	<i>Buteo regalis</i>	FGC 3503.5		Nearby
Ferruginous hawk	<i>Buteo regalis</i>	TWL, FGC 3503.5	None	Very close
Swainson's hawk	<i>Buteo swainsoni</i>	BCC, CT, FGC 3503.5	Unlikely	Very close
Red-shouldered hawk	<i>Buteo lineatus</i>	FGC 3503.5		<b>Very close</b>
Sharp-shinned hawk	<i>Accipiter striatus</i>	TWL, FGC 3503.5		Very close
Cooper's hawk	<i>Accipiter cooperi</i>	TWL, FGC 3503.5		<b>Very close</b>
Northern harrier	<i>Circus cyaneus</i>	SSC3, FGC 3503.5	Unlikely	<b>Very close</b>
White-tailed kite	<i>Elanus leucurus</i>	CFP, TWL		<b>Very close</b>
American kestrel	<i>Falco sparverius</i>	FGC 3503.5		<b>Very close</b>
Merlin	<i>Falco columbarius</i>	TWL, FGC 3503.5		Very close
Prairie falcon	<i>Falco mexicanus</i>	TWL, FGC 3503.5		Very close
Peregrine falcon	<i>Falco peregrinus</i>	CFP, FGC 3503.5	None	<b>Very close</b>
Burrowing owl	<i>Athene cunicularia</i>	BCC, SSC2	Unlikely	Nearby
Great-horned owl	<i>Bubo virginianus</i>	FGC 3503.5		<b>Very close</b>
Long-eared owl	<i>Asio otus</i>	SSC3, FGC 3503.5		Nearby
Short-eared owl	<i>Asio flammeus</i>	SSC3, FGC 3503.5		Nearby
Barn owl	<i>Tyto alba</i>	FGC 3503.5,		<b>Very close</b>
Western screech-owl	<i>Megascops kennicotti</i>	FGC 3503.5		Nearby
Nuttall's woodpecker	<i>Picoides nuttallii</i>	BCC		<b>Very close</b>
Lewis's woodpecker	<i>Melanerpes lewis</i>	BCC		Nearby
Allen's hummingbird	<i>Selasphorus sasin</i>	BCC		Very close
Vaux's swift	<i>Chaetura vauxi</i>	SCC2		Very close
Willow flycatcher	<i>Empidonax traillii extimus</i>	FE, CE		Very close
Olive-sided flycatcher	<i>Contopus cooperi</i>	SSC2		Very close
Oak titmouse	<i>Baeolophus inornatus</i>	BCC		Very close
Loggerhead shrike	<i>Lanius ludovicianus</i>	BCC, SSC2		Very close
Horned lark	<i>Eremophila alpestris</i>	TWL		Very close
Yellow-billed magpie	<i>Pica nuttalli</i>	BCC		Nearby
Purple martin	<i>Progne subis</i>	SSC2		Nearby

Species	Scientific name	Status <sup>1</sup>	Occurrence likelihood	
			Monk & Associates	eBird or iNaturalist
Yellow warbler	<i>Setophaga petechia</i>	SSC2		Very close
San Francisco common yellowthroat	<i>Geothlypis trichas sinuosa</i>	SSC3	None	Very close
Savannah sparrow	<i>Passerculus sandwichensis alaudinus</i>	SSC3		<b>Very close</b>
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC2		Nearby
Oregon vesper sparrow	<i>Pooecetes gramineus affinis</i>	SSC2		Nearby
Samuel's song sparrow	<i>Melospiza melodia samuelis</i>	SSC3	None	<b>Very close</b>
Summer tanager	<i>Piranga rubra</i>	SSC1		Very close
Tricolored blackbird	<i>Agelaius tricolor</i>	CT	None	Very close
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC3		Very close
Lawrence's goldfinch	<i>Spinus lawrencei</i>	BCC		Very close

<sup>1</sup> Listed as FT & FE = federal threatened and endangered, BGEPA = Bald and Golden Eagle Protection Act, BCC = U.S. Fish and Wildlife Service Bird species of Conservation Concern, BCC = federal Bird Species of Conservation Concern, CT & CE = California threatened and endangered, CFP = California Fully Protected (FGC Code 3511), FGC 3503.5 = California Fish and Game Code 3503.5 (Birds of prey), and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), and TWL = Taxa to Watch List (Shuford and Gardali 2008), WBWG = Western Bat Working Group with low, medium and high conservation priorities.

The IS (page 34) is also wrong in its conclusion of no impact to bats. The argument is that the site "...contains no roosting or nesting habitat because it has no trees, rock faces, structures, or cliffs." Trees surround the site. Bats undoubtedly roost in those trees. The site supports those roosts by providing forage. Night roosts of pallid bat, in particular, are typically located close to forage on open ground.

By relying solely on CNDDDB for determining occurrence likelihoods, the IS overlooks occurrences reported in other data bases. For example, whereas nearest CNDDDB records have Swainson's hawks and burrowing owls 2.5 and 2.6 miles away from the project site, eBird records show these species much closer. According to eBird, a Swainson's hawk was seen only 0.2 miles from the project site. Given the space used by Swainson's hawks, there should be no doubt that a Swainson's hawk 0.2 miles away would have also used the project site. Burrowing owls were seen by multiple observers only 0.2 miles from the project site. One of the observers is a good bird observer with whom I have worked for many years; his observation was as trustworthy.

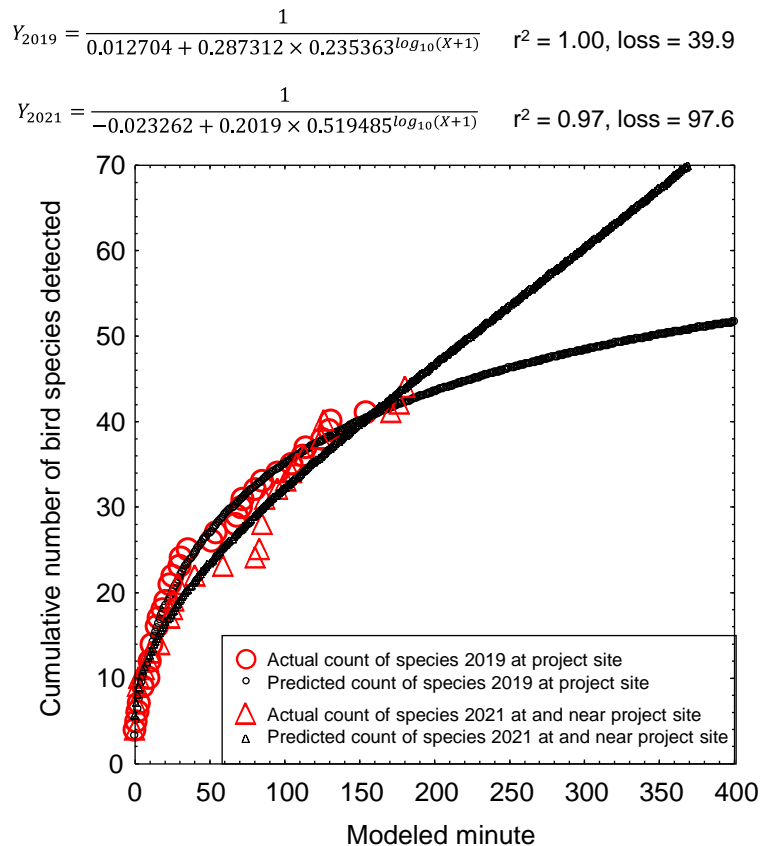
Relying on CNDDDB records, Monk & Associates (2020) claim the nearest northern harrier location was 2.7 miles away. However, not only did I see a northern harrier fly over the project site, but multiple other observers reported northern harrier sightings nearby.

Additional special-status species neglected by Monk & Associates include peregrine falcon and loggerhead shrike, both of which have been reported multiple times on eBird as having been seen near the project site. I saw a peregrine falcon right next to the site. And there are multiple others in addition to these species. I assert that Monk & Associates (2020) inadequately assessed potential project impacts to wildlife. Relying on CNDDDB was inappropriate and inadequate. And after making multiple site visits, the number of wildlife species detected by Monk & Associates numbered only 25, whereas mine numbered more than twice as many.

That the environmental setting has yet to be accurately characterized is further supported by known trends in species detections with survey effort. Figure 2 shows my counts of species detected at the site with time into each of my two surveys – it simply shows the cumulative number of species detected with increasing survey time. Just as I have seen for many other survey efforts, nonlinear regression models fit the data very well, explaining 97% of the variation in the data in 2021 and nearly 100% of the variation in the data in 2019, and for both surveys they showed progress towards the inevitable asymptotes of the nonlinear prediction curve where the same survey methods will eventually detect no more species. I note that the 2019 count of species was specific to the project site, whereas my 2021 count of species included areas around the project site. One model shows that had I continued doing what I was doing on 23 January 2019, I would have eventually detected about 55 species of terrestrial vertebrate wildlife on the project site, or more than double the number detected by Monk & Associates (2020). The other model shows that had I continued doing what I was doing on 5 January 2021, I would eventually have detected hundreds of terrestrial vertebrate

wildlife in the project area, confirming the wisdom of Audubon Society's designation of an IBA there.

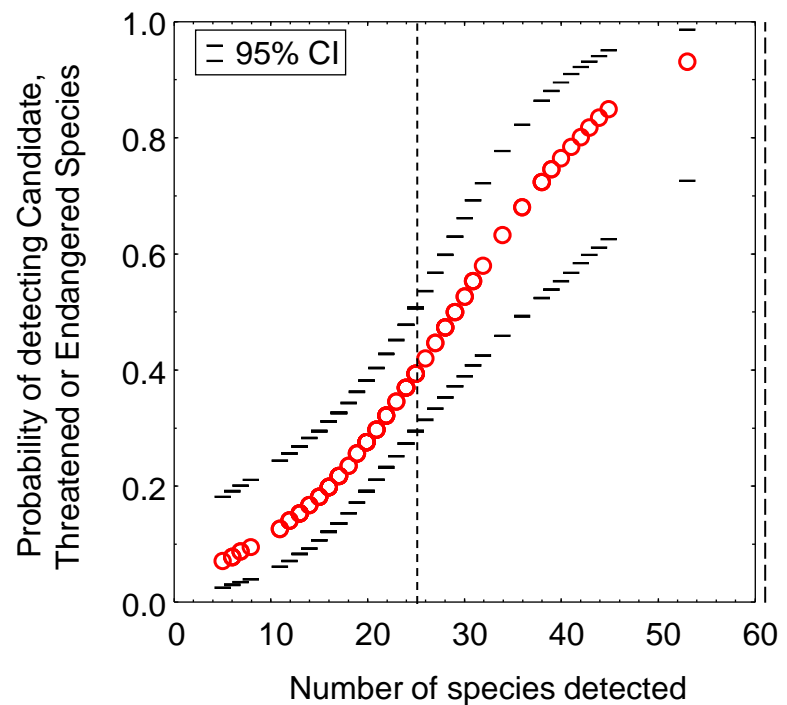
**Figure 2.** Actual and predicted relationships between the number of vertebrate wildlife species detected and the elapsed survey time based on visual scan on 23 January 2019 and 5 January 2021. Note that the relationships would differ if the surveys were based on another method, another time of day, or during another season. Also note that the cumulative number of vertebrate species across all methods, times of day, and seasons would increase substantially.



The likelihood of detecting special-status species is typically lower than that of more common species. This difference can be explained by the fact that special-status species tend to be rarer than common species. Special-status species also tend to be more cryptic, fossorial, or active during nocturnal periods when general biological surveys are not performed. Another useful relationship from careful recording of species detections and subsequent comparative analysis is the probability of detection of listed species as a function of increasing number of vertebrate wildlife species detected (Figure 3). (Note that listed species number fewer than special-status species, which are inclusive of listed species.) As demonstrated in Figure 2, the number of species detected is a function of survey effort. Therefore, greater survey effort increases the likelihood that listed species will be detected. The survey effort committed to the project site by City of American Canyon carried a 40% chance of detecting a listed species, whereas the effort committed by myself carried a nearly 100% chance of detecting a listed species. In fact, I detected 2 listed species, one on site and one just offsite, so my model prediction was accurate. Monk & Associates beat the odds by detecting white-tailed kite – a California Fully Protected species. Had we surveyed longer or using different methods, we would have detected more listed species. A fair argument can be made for the need to prepare an EIR to more comprehensive and more carefully analyze baseline conditions and potential project impacts to wildlife.



**Figure 3.** Probability of detecting  $\geq 1$  Candidate, Threatened or Endangered Species of wildlife listed under California or federal Endangered Species Acts, based on survey outcomes that I logit-regressed on the number of wildlife species I detected as an expert witness during 106 site visits throughout California. The vertical short-dashed line represents the number of species detected by Monk & Associates (2020), whereas the vertical short-dashed line depicts the number I detected between two site visits.



## Habitat Loss

A recent study documented a 29% decline in overall bird abundance across North America over the last 48 years – a decline driven by multiple factors including habitat loss and habitat fragmentation (Rosenberg et al. 2019). Habitat loss not only results in the immediate numerical decline of wildlife, but also in permanent loss of productive capacity. For example, studies in grassland/wetland/woodland complexes documented total bird nesting densities of 32.8 nests per acre (Young 1948) and 35.8 nests per acre (Yahner 1982), averaged at 34.3 nests per acre. Assuming the project site in the absence of wetlands immediately on site, would support a third of the total nesting density measured by Young (1948) and Yahner (1982), a density of 11.4 nests per acre multiplied against the project's take of 11.23 acres would predict the loss of 128 bird nest sites. After 100 years and further assuming an average bird generation time of 5 years, and assuming an average 2.9 chicks fledged per nest (Young 1948), the lost capacity of both breeders and annual fledgling production would total 42,240  $\{(\text{nests/year} \times \text{chicks/nest} \times \text{number of years}) + (2 \text{ adults/nest} \times \text{nests/year}) \times (\text{number of years} \div \text{years per generation})\}$ . These predicted losses would be substantial, and would qualify as significant impacts that have yet to be addressed by City of American Canyon. A fair argument can be made for the need to prepare an EIR to analyze the impacts of habitat destruction.

Habitat fragmentation, which is the reduction of connectivity of remaining habitat patches on a landscape, can further diminish the productive capacity of a site

(Smallwood 2015). Habitat fragmentation is one of the cumulative effects of this project that needs to be analyzed in an EIR.

## **Wildlife Movement**

The IS accurately defines the concept of a wildlife corridor as a connector between already-fragmented habitat patches (see Smallwood 2015), but then inaccurately asserts that significant impacts to wildlife movement in a region can only happen with the interference of an existing wildlife corridor. One problem with this assertion is that a finding of significance would first require that habitat in the project area had already been fragmented and then a corridor constructed to reduce the effects of fragmentation. The assertion precludes a finding of significance where habitat has not been fragmented and no corridor constructed. The IS asserts a false CEQA standard for determining whether a project would interfere with wildlife movement in the region.

The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. In fact, wildlife movement in the region is often diffuse rather than channeled (Runge et al. 2014, Taylor et al. 2011), and includes stop-over habitat used by birds and bats (Taylor et al. 2011), staging habitat (Warnock 2010), and crossover habitat used by nonvolant wildlife during dispersal, migration or home range patrol. The existence of a wildlife corridor is unnecessary for a project to interfere with wildlife movement in the region.

The IS (page 35) also speculates that the site's history of disturbance in the form of tree removal somehow precludes any possible project interference with wildlife movement. This speculation, however, is vulnerable to abuse, because it could be extended to any earlier site condition when terrestrial wildlife might not have been able to move across it, such as when it might have been under the sea. The site's use for movement by wildlife needs to be analyzed based on conditions existing at the time of the environmental review, consistent with CEQA's standard.

The IS (page 35) further speculates that wildlife movement in the region is prevented by "...continued disturbance associated with the paint ball facility located immediately to the southeast and construction of the SDG Commerce 330 facility to the south." Paint ball facilities do not prevent wildlife movement. I have recorded many wildlife observations at a paint ball facility near where I live, and have noticed no effect on bird activity. Northern harriers, white-tailed kites, American kestrels, Swanson's hawks, and many other species perch on site, using it for foraging, territory patrol and stopover habitat. The IS cites no evidence that paintball facilities interfere with wildlife movement or would do so on adjacent properties.

The IS (page 35) speculates even further by claiming, "The eucalyptus grove and the marshes associated with the Napa River to the west of the project site provide a more valuable wildlife corridor for terrestrial wildlife..." But without evidence that a eucalyptus grove is more valuable to wildlife movement, this claim is nothing more than

convenient speculation. I can agree that the marsh would be more valuable for wetland-adapted species, but not for all species.

The project would obviously interfere with wildlife movement in the region. Having studied millions of GPS telemetry data from 35 golden eagles tracked since 2013, I noticed a strong avoidance of anthropogenic structures such as warehouses and residential neighborhoods. I assume bald eagles express a similar level of avoidance. If this assumption is true, then the bald eagle I saw fly over the site in 2019 might not do so again since the SDG Commerce 330 warehouse was built. Many other species would continue to fly over the project site despite the neighboring warehouse. I have recorded many observations of animals moving across fields next to warehouses, including red-tailed hawks, peregrine falcons, and many others. A fair argument can be made for the need to prepare an EIR to analyze the project's impacts on wildlife movement in the region.

### **Traffic Impacts on Wildlife**

According to City of American Canyon (2020:88), the project would generate 367 daily vehicle trips. No analysis is provided in the IS of this traffic's impacts to wildlife in the area. The traffic would effectively extend the project's footprint well beyond the floor space, as trucks and cars traveling to and from the warehouse will drive over roads and highways that are also crossed by wildlife. On 23 January 2019 I saw two road-killed striped skunks on American Canyon Drive, and on 5 January 2021 I saw a road-killed striped skunk and an opossum killed on the same road – a road likely to be used by trucks and cars servicing the project. California red-legged frogs (*Rana draytonii*), which Monk & Associates (2020) concluded will suffer no impacts because CNDDB records are lacking west of Highway 29, will cross roads used by vehicles servicing the project. A shortfall of the IS is its failure to analyze the impacts of the project's added road traffic on special-status species of wildlife, including California red-legged frog, California tiger salamander (*Ambystoma californiense*), and American badgers (*Taxidea taxus*) that, regardless of whether they live on the site, must cross roadways that will experience increased traffic volume caused by this project.

Increased use of existing roads will increase wildlife fatalities (see Figure 7 in Kobylarz 2001). Across North America traffic impacts have taken devastating tolls on wildlife (Forman et al. 2003). In Canada, 3,562 birds were estimated killed per 100 km of road per year (Bishop and Brogan 2013), and the US estimate of avian mortality on roads is 2,200 to 8,405 deaths per 100 km per year, or 89 million to 340 million total per year (Loss et al. 2014). Local impacts can be more intense than nationally.

In a recent study of traffic-caused wildlife mortality, investigators found 1,275 carcasses of 49 species of mammals, birds, amphibians and reptiles over 15 months of searches along a 2.5 mile stretch of Vasco Road in Contra Costa County, California (Mendelsohn et al. 2009). Using carcass detection trials performed on land immediately adjacent to the traffic mortality study (Brown et al. 2016) to adjust the found fatalities for the proportion of fatalities not found due to scavenger removal and searcher error, the

estimated traffic-caused fatalities was 12,187. This fatality estimate translates to a rate of 3,900 wild animals per mile per year killed along 2.5 miles of road in 1.25 years. In terms comparable to the national estimates, the estimates from the Mendelsohn et al. (2009) study would translate to 243,740 animals killed per 100 km of road per year, or 29 times that of Loss et al.'s (2014) upper bound estimate and 68 times the Canadian estimate. An analysis is needed of whether increased traffic on roads to and from the project site would similarly result in intense local impacts on wildlife.

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

### **Pest Control and Target and Non-target Mortality**

As I understand it, the proposed project would store and distribute wine. The Initial Study did not mention the likelihood that pest control would be needed to protect stored products. Because multiple businesses advertise their services on the internet for controlling stored products pests, perching birds, and rodent and other mammal pests within and around warehousing and food processing buildings (e.g., <https://www.catseyepest.com/pest-control/commercial-pest-control/warehouse-and-distribution-facilities>, <http://advancedipm.com/commercial/commercial-pest-management-for-warehouses-and-distribution-centers/>, <https://www.terminix.com/blog/commercial/how-pests-impact-warehouses/>), I assume pest control would be necessary. These types of businesses advertise exclusion strategies, as well as fumigation for stored products pests, glue boards for rodents, and 'other measures.' Having a background in animal damage control, I am familiar with 'other methods,' including the use of anticoagulant poisons and acute toxicants such as strychnine. In my experience, the use of toxicants can harm non-target wildlife through direct exposure and indirect exposure via predation and scavenging (also see Gabriel et al. 2012). In other words, pest control involving toxicants can result in the spread of toxicants beyond the project site.

I reviewed the scientific literature on animal damage control associated with distribution warehousing. Little to no serious scientific attention has been directed toward animal damage control in these settings. That businesses are advertising their animal damage control services in these settings indicates either an awareness or an assumption that damage from wildlife is an issue. It is important, therefore, that an EIR be prepared to address the potential impacts of animal damage control associated with this proposed project. Industry practices related to animal damage control should be detailed, as well as anticipated practices at this project. Potential impacts caused by these practices need to be assessed, and suitable mitigation measures formulated along with assurances that they will be implemented.

## **Cumulative Impacts**

City of American Canyon (2019:97) concludes the project will result in no cumulative impacts because only one other new project is planned. The cumulative impacts analysis is flawed by considering only the single new project, and none of those under construction or already built. Had City of American Canyon listed all projects -- past, present and reasonably foreseeable projects -- then the need for a serious cumulative effects analysis would emerge as obvious. City of American Canyon has sprawled across nearly all of the available spaces between neighbor cities, hills to the east and San Pablo Bay to the west, leaving a fragmented mosaic of fields and woodlots as stop-over habitat for use by birds and bats. The project would also obviously be seen as adding more traffic extending the project's and the region's impacts far beyond their respective footprints.

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

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

## **MITIGATION MEASURES**

**MM BIO-1** I concur that preconstruction surveys are needed for burrowing owls. However, a preconstruction survey cannot serve as a surrogate for detection surveys. Preconstruction surveys have a specific purpose, which is take-avoidance salvage of readily detectable individuals in immediate jeopardy of harm just prior to construction. The purposes of detection surveys are to detect the species if it is present, to support determinations of absence, and to inform the CEQA review, preconstruction surveys about where the species is likely to be found on the project site, and the formulation of mitigation. To be consistent with the CDFW (2012) guidelines on burrowing owl mitigation, detection surveys are needed for burrowing owls and they need to be performed according to the guidelines. After the detection surveys are completed, then an impacts analysis is needed, and so is the formulation of mitigation measures, which might include compensatory mitigation. Based on the outcome of

detection surveys, an EIR should be prepared to adequately address impacts and mitigation related to burrowing owls.

**MM BIO-2** I concur that preconstruction surveys are needed for Swainson's hawks. However, detection surveys are also needed. It is already established on eBird that Swainson's hawks are in the area and that at minimum the project would remove foraging habitat. This impact needs to be analyzed in an EIR and mitigated.

**MM BIO-3** I concur that preconstruction surveys are needed for nesting raptors. However, detection surveys are needed first. Preconstruction surveys are intended to buffer or salvage nests immediately threatened by the tractor blade, but they do not inform of how many nests will be taken. The magnitude of the impact must be known or estimated in order to formulate appropriate minimization and compensatory mitigation. Detection surveys are needed to inform an EIR, which is needed to analyze potential impacts to nesting raptors.

**MM BIO-4** I concur that preconstruction surveys are needed for nesting passerine birds. However, detection surveys are needed first. The same issues apply here as those I raised in MM BIO-1 through MM BIO-3. I will add that additional bird species might nest on the project site other than raptors and passerines. Killdeer might nest there, in addition to others. Detection surveys are needed for nests of all species protected by both the California and federal Migratory Bird Treaty Acts.

### **Additional Comments on Mitigation**

The IS provides no mitigation for adverse impacts on regional movement of wildlife, nor for cumulative impacts on wildlife or even for direct impacts. At a minimum, an EIR needs to include substantial compensatory mitigation in response to the project's impacts on habitat loss and wildlife movement, including impacts to birds using the site as stop-over or staging during migration.

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

Compensatory mitigation ought also to include funding contributions to wildlife rehabilitation facilities to cover the costs of injured animals that will be delivered to these facilities for care. Most of the injuries will likely be caused by the increased trip generation of cars and trucks. Many animals need treatment caused by collision injuries and an increasing number appear to be injured by the turbulence of passing trucks.

Mitigation measures are also needed for management of vertebrate pests on the project site. The project site is adjacent to Clark Ranch and to Napa River and Bay Trails, so any pest control on site needs to be prevented from spilling over into designated open spaces.

The IS (page 11) says, “The Building’s roof structure is designed to accommodate solar panels and the building electrical infrastructure is designed to accept solar generation...” I suggest the building, if constructed, should include PV solar panels to the extent the roof can sustain. The project would use electrical energy, which if not generated on site will likely come from renewable energy sources. Utility-scale renewable energy is known to kill many members of many species of birds and bats. Onsite generation would kill many fewer birds and bats, if any (no fatalities have been documented to date as a result of collisions with rooftop solar).

Thank you for your attention,



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Shawn Smallwood, Ph.D.

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# **Kenneth Shawn Smallwood**

## **Curriculum Vitae**

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

## **Ecologist**

### **Expertise**

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

### **Education**

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

### **Experience**

- 665 professional publications, including:
  - 88 peer reviewed publications
  - 24 in non-reviewed proceedings
- 551 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 87 public presentations of research results

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

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC reviewed the science underlying the Alameda County Avian Protection Program, and advised

the County on how to reduce wildlife fatalities.

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

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

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their conservation and restoration opportunities based on ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County

to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science, *U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

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

## Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a \$718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founts of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al.* v. Rockwell International *et al.*, No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a \$553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a “properly functioning HCP.” Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson’s hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersions of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

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Smallwood, K. S., and D. A. Bell. 2020. Effects of wind turbine curtailment on bird and bat fatalities. *Journal of Wildlife Management* 84:684-696. DOI: 10.1002/jwmg.21844

Kitano, M., M. Ino, K. S. Smallwood, and S. Shiraki. 2020. Seasonal difference in carcass persistence rates at wind farms with snow, Hokkaido, Japan. *Ornithological Science* 19: 63 –

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

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#### **Comments on Environmental Documents (Year; pages)**

I was retained or commissioned to comment on environmental planning and review documents, including:

- Mulqueeney Ranch Wind Repowering Project DSEIR (2021; 98);
- Clawiter Road Industrial Project IS/MND, Hayward (2021; 18);
- Garnet Energy Center Stipulations, New York (2020);
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- Ameresco Keller Canyon RNG Project IS/MND, Martinez (2020; 11);
- Cambria Hotel Project Staff Report, Dublin (2020; 19);
- Central Pointe Mixed-Use Staff Report, Santa Ana (2020; 20);
- Oak Valley Town Center EIR Addendum, Calimesa (2020; 23);

- Coachillin Specific Plan MND Amendment, Desert Hot Springs (2020; 26);
- Stockton Avenue Hotel and Condominiums Project Tiering to EIR, San Jose (2020; 19);
- Cityline Sub-block 3 South Staff Report, Sunnyvale (2020; 22);
- Station East Residential/Mixed Use EIR, Union City (2020; 21);
- Multi-Sport Complex & Southeast Industrial Annexation Suppl. EIR, Elk Grove (2020; 24);
- Sun Lakes Village North EIR Amendment 5, Banning, Riverside County (2020; 27);
- 2<sup>nd</sup> comments on 1296 Lawrence Station Road, Sunnyvale (2020; 4);
- 1296 Lawrence Station Road, Sunnyvale (2020; 16);
- Mesa Wind Project EA, Desert Hot Springs (2020; 31);
- 11th Street Development Project IS/MND, City of Upland (2020; 17);
- Vista Mar Project IS/MND, Pacifica (2020; 17);
- Emerson Creek Wind Project Application, Ohio (2020; 64);
- Replies on Wister Solar Energy Facility EIR, Imperial County (2020; 12);
- Wister Solar Energy Facility EIR, Imperial County (2020; 28);
- Crimson Solar EIS/EIR, Mojave Desert (2020, 35) not submitted;
- Sakioka Farms EIR tiering, Oxnard (2020; 14);
- 3440 Wilshire Project IS/MND, Los Angeles (2020; 19);
- Replies on 2400 Barranca Office Development Project EIR, Irvine (2020; 8);
- 2400 Barranca Office Development Project EIR, Irvine (2020; 25);
- Replies on Heber 2 Geothermal Repower Project IS/MND, El Centro (2020; 4);
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- Lots 4-12 Oddstad Way Project IS/MND, Pacifica (2020; 16);
- Declaration on DDG Visalia Warehouse project (2020; 5);
- Terraces of Lafayette EIR Addendum (2020; 24);
- AMG Industrial Annex IS/MND, Los Banos (2020; 15);
- Replies to responses on Casmalia and Linden Warehouse (2020; 15);
- Clover Project MND, Petaluma (2020; 27);
- Ruby Street Apartments Project Env. Checklist, Hayward (2020; 20);
- Replies to responses on 3721 Mt. Diablo Boulevard Staff Report (2020; 5);
- 3721 Mt. Diablo Boulevard Staff Report (2020; 9);
- Steeno Warehouse IS/MND, Hesperia (2020; 19);
- UCSF Comprehensive Parnassus Heights Plan EIR (2020; 24);
- North Pointe Business Center MND, Fresno (2020; 14);
- Casmalia and Linden Warehouse IS, Fontana (2020; 15);
- Rubidoux Commerce Center Project IS/MND, Jurupa Valley (2020; 27);
- Haun and Holland Mixed Use Center MND, Menifee (2020; 23);
- First Industrial Logistics Center II, Moreno Valley IS/MND (2020; 23);
- GLP Store Warehouse Project Staff Report (2020; 15);
- Replies on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 29);
- 2<sup>nd</sup> comments on Beale WAPA Interconnection Project EA & CEQA checklist (2020; 34);
- Beale WAPA Interconnection Project EA & CEQA checklist (2020; 30);
- Levine-Fricke Softball Field Improvement Addendum, UC Berkeley (2020; 16);
- Greenlaw Partners Warehouse and Distribution Center Staff Report, Palmdale (2020; 14);

- Humboldt Wind Energy Project DEIR (2019; 25);
- Sand Hill Supplemental EIR, Altamont Pass (2019; 17);
- 1700 Dell Avenue Office Project, Campbell (2019, 28);
- 1180 Main Street Office Project MND, Redwood City (2019; 19);
- Summit Ridge Wind Farm Request for Amendment 4, Oregon (2019; 46);
- Shafter Warehouse Staff Report (2019; 4);
- Park & Broadway Design Review, San Diego (2019; 19);
- Pinnacle Pacific Heights Design Review, San Diego (2019; 19);
- Pinnacle Park & C Design Review, San Diego (2019; 19);
- Preserve at Torrey Highlands EIR, San Diego (2019; 24);
- Santana West Project EIR Addendum, San Jose (2019; 18);
- The Ranch at Eastvale EIR Addendum, Riverside County (2020; 19);
- Hageman Warehouse IS/MND, Bakersfield (2019; 13);
- Oakley Logistics Center EIR, Antioch (2019; 22);
- 27 South First Street IS, San Jose (2019; 23);
- 2<sup>nd</sup> replies on Times Mirror Square Project EIR, Los Angeles (2020; 11);
- Replies on Times Mirror Square Project EIR, Los Angeles (2020; 13);
- Times Mirror Square Project EIR, Los Angeles (2019; 18);
- East Monte Vista & Aviator General Plan Amend EIR Addendum, Vacaville (2019; 22);
- Hillcrest LRDP EIR, La Jolla (2019; 36);
- 555 Portola Road CUP, Portola Valley (2019; 11);
- Johnson Drive Economic Development Zone SEIR, Pleasanton (2019; 27);
- 1750 Broadway Project CEQA Exemption, Oakland (2019; 19);
- Mor Furniture Project MND, Murietta Hot Springs (2019; 27);
- Harbor View Project EIR, Redwood City (2019; 26);
- Visalia Logistics Center (2019; 13);
- Cordelia Industrial Buildings MND (2019; 14);
- Scheu Distribution Center IS/ND, Rancho Cucamonga (2019; 13);
- Mills Park Center Staff Report, San Bruno (2019; 22);
- Site visit to Desert Highway Farms IS/MND, Imperial County (2019; 9);
- Desert Highway Farms IS/MND, Imperial County (2019; 12);
- ExxonMobil Interim Trucking for Santa Ynez Unit Restart SEIR, Santa Barbara (2019; 9);
- Olympic Holdings Inland Center Warehouse Project MND, Rancho Cucamonga (2019; 14);
- Replies to responses on Lawrence Equipment Industrial Warehouse, Banning (2019; 19);
- PARS Global Storage MND, Murietta (2019; 13);
- Slover Warehouse EIR Addendum, Fontana (2019; 16);
- Seefried Warehouse Project IS/MND, Lathrop (2019; 19)
- World Logistics Center Site Visit, Moreno Valley (2019; 19);
- Merced Landfill Gas-To-Energy Project IS/MND (2019; 12);
- West Village Expansion FEIR, UC Davis (2019; 11);
- Site visit, Doheny Ocean Desalination EIR, Dana Point (2019; 11);
- Replies to responses on Avalon West Valley Expansion EIR, San Jose (2019; 10);
- Avalon West Valley Expansion EIR, San Jose (2019; 22);
- Sunroad – Otoy 50 EIR Addendum, San Diego (2019; 26);



- Del Rey Pointe Residential Project IS/MND, Los Angeles (2019; 34);
- 1 AMD Redevelopment EIR, Sunnyvale (2019; 22);
- Lawrence Equipment Industrial Warehouse IS/MND, Banning (2019; 14);
- SDG Commerce 330 Warehouse IS, American Canyon (2019; 21);
- PAMA Business Center IS/MND, Moreno Valley (2019; 23);
- Cupertino Village Hotel IS (2019; 24);
- Lake House IS/ND, Lodi (2019; 33);
- Campo Wind Project DEIS, San Diego County (DEIS, (2019; 14);
- Stirling Warehouse MND site visit, Victorville (2019; 7);
- Green Valley II Mixed-Use Project EIR, Fairfield (2019; 36);
- We Be Jammin rezone MND, Fresno (2019; 14);
- Gray Whale Cove Pedestrian Crossing IS/ND, Pacifica (2019; 7);
- Visalia Logistics Center & DDG 697V Staff Report (2019; 9);
- Mather South Community Masterplan Project EIR (2019; 35);
- Del Hombre Apartments EIR, Walnut Creek (2019; 23);
- Otay Ranch Planning Area 12 EIR Addendum, Chula Vista (2019; 21);
- The Retreat at Sacramento IS/MND (2019; 26);
- Site visit to Sunroad – Centrum 6 EIR Addendum, San Diego (2019; 9);
- Sunroad – Centrum 6 EIR Addendum, San Diego (2018; 22);
- North First and Brokaw Corporate Campus Buildings EIR Addendum, San Jose (2018; 30);
- South Lake Solar IS, Fresno County (2018; 18);
- Galloo Island Wind Project Application, New York (not submitted) (2018; 44);
- Doheny Ocean Desalination EIR, Dana Point (2018; 15);
- Stirling Warehouse MND, Victorville (2018; 18);
- LDK Warehouse MND, Vacaville (2018; 30);
- Gateway Crossings FEIR, Santa Clara (2018; 23);
- South Hayward Development IS/MND (2018; 9);
- CBU Specific Plan Amendment, Riverside (2018; 27);
- 2<sup>nd</sup> replies to responses on Dove Hill Road Assisted Living Project MND (2018; 11);
- Replies to responses on Dove Hill Road Assisted Living Project MND (2018; 7);
- Dove Hill Road Assisted Living Project MND (2018; 12);
- Deer Ridge/Shadow Lakes Golf Course EIR, Brentwood (2018; 21);
- Pyramid Asphalt BLM Finding of No Significance, Imperial County (2018; 22);
- Amáre Apartments IS/MND, Martinez (2018; 15);
- Petaluma Hill Road Cannabis MND, Santa Rosa (2018; 21);
- 2<sup>nd</sup> comments on Zeiss Innovation Center IS/MND, Dublin (2018; 12);
- Zeiss Innovation Center IS/MND, Dublin (2018; 32);
- City of Hope Campus Plan EIR, Duarte (2018; 21);
- Palo Verde Center IS/MND, Blythe (2018; 14);
- Logisticenter at Vacaville MND (2018; 24);
- IKEA Retail Center SEIR, Dublin (2018; 17);
- Merge 56 EIR, San Diego (2018; 15);
- Natomas Crossroads Quad B Office Project P18-014 EIR, Sacramento (2018; 12);
- 2900 Harbor Bay Parkway Staff Report, Alameda (2018; 30);

- At Dublin EIR, Dublin (2018; 25);
- Fresno Industrial Rezone Amendment Application No. 3807 IS (2018; 10);
- Nova Business Park IS/MND, Napa (2018; 18);
- Updated Collision Risk Model Priors for Estimating Eagle Fatalities, USFWS (2018; 57);
- 750 Marlborough Avenue Warehouse MND, Riverside (2018; 14);
- Replies to responses on San Bernardino Logistics Center IS (2018; 12);
- San Bernardino Logistics Center IS (2018; 19);
- CUP2017-16, Costco IS/MND, Clovis (2018; 11);
- Desert Land Ventures Specific Plan EIR, Desert Hot Springs (2018; 18);
- Ventura Hilton IS/MND (2018; 30);
- North of California Street Master Plan Project IS, Mountain View (2018; 11);
- Tamarind Warehouse MND, Fontana (2018; 16);
- Lathrop Gateway Business Park EIR Addendum (2018; 23);
- Centerpointe Commerce Center IS, Moreno Valley (2019; 18);
- Amazon Warehouse Notice of Exemption, Bakersfield (2018; 13);
- CenterPoint Building 3 project Staff Report, Manteca (2018; 23);
- Cessna & Aviator Warehouse IS/MND, Vacaville (2018; 24);
- Napa Airport Corporate Center EIR, American Canyon (2018; 15);
- 800 Opal Warehouse Initial Study, Mentone, San Bernardino County (2018; 18);
- 2695 W. Winton Ave Industrial Project IS, Hayward (2018; 22);
- Trinity Cannabis Cultivation and Manufacturing Facility DEIR, Calexico (2018; 15);
- Shoe Palace Expansion IS/MND, Morgan Hill (2018; 21);
- Newark Warehouse at Morton Salt Plant Staff Report (2018; 15);
- Northlake Specific Plan FEIR “Peer Review”, Los Angeles County (2018; 9);
- Replies to responses on Northlake Specific Plan SEIR, Los Angeles County (2018; 13);
- Northlake Specific Plan SEIR, Los Angeles County (2017; 27);
- Bogle Wind Turbine DEIR, east Yolo County (2017; 48);
- Ferrante Apartments IS/MND, Los Angeles (2017; 14);
- The Villages of Lakeview EIR, Riverside (2017; 28);
- Data Needed for Assessing Trail Management Impacts on Northern Spotted Owl, Marin County (2017; 5);
- Notes on Proposed Study Options for Trail Impacts on Northern Spotted Owl (2017; 4);
- Pyramid Asphalt IS, Imperial County (Declaration) (2017; 5);
- San Geronio Crossings EIR, Riverside County (2017; 22);
- Replies to responses on Jupiter Project IS and MND, Apple Valley (2017; 12);
- Proposed World Logistics Center Mitigation Measures, Moreno Valley (2017, 2019; 12);
- MacArthur Transit Village Project Modified 2016 CEQA Analysis (2017; 12);
- PG&E Company Bay Area Operations and Maintenance HCP (2017; 45);
- Central SoMa Plan DEIR (2017; 14);
- Suggested mitigation for trail impacts on northern spotted owl, Marin County (2016; 5);
- Colony Commerce Center Specific Plan DEIR, Ontario (2016; 16);
- Fairway Trails Improvements MND, Marin County (2016; 13);
- Review of Avian-Solar Science Plan (2016; 28);
- Replies on Pyramid Asphalt IS, Imperial County (2016; 5);

- Pyramid Asphalt IS, Imperial County (2016; 4);
- Agua Mansa Distribution Warehouse Project Initial Study (2016; 14);
- Santa Anita Warehouse MND, Rancho Cucamonga (2016; 12);
- CapRock Distribution Center III DEIR, Rialto (2016; 12);
- Orange Show Logistics Center IS/MND, San Bernardino (2016; 9);
- City of Palmdale Oasis Medical Village Project IS/MND (2016; 7);
- Comments on proposed rule for incidental eagle take, USFWS (2016, 49);
- Replies on Grapevine Specific and Community Plan FEIR, Kern County (2016; 25);
- Grapevine Specific and Community Plan DEIR, Kern County (2016; 15);
- Clinton County Zoning Ordinance for Wind Turbine siting (2016);
- Hallmark at Shenandoah Warehouse Project Initial Study, San Bernardino (2016; 6);
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- Hidden Canyon Industrial Park Plot Plan 16-PP-02, Beaumont (2016; 12);
- Kimball Business Park DEIR (2016; 10);
- Jupiter Project IS and MND, Apple Valley, San Bernardino County (2016; 9);
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- Palo Verde Mesa Solar Project EIR, Blythe (2016; 27);
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- Fairview Wind Project Natural Heritage Assessment, Ontario, Canada (2016; 41);
- Reply on Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 38);
- Amherst Island Wind Farm Natural Heritage Assessment, Ontario (2015, 31);
- Second Reply on White Pines Wind Farm, Ontario (2015, 6);
- Reply on White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 10);
- White Pines Wind Farm Natural Heritage Assessment, Ontario (2015, 9);
- Proposed Section 24 Specific Plan Agua Caliente Band of Cahuilla Indians DEIS (2015, 9);
- Replies on 24 Specific Plan Agua Caliente Band of Cahuilla Indians FEIS (2015, 6);
- Willow Springs Solar Photovoltaic Project DEIR, Rosamond (2015; 28);
- Sierra Lakes Commerce Center Project DEIR, Fontana (2015, 9);
- Columbia Business Center MND, Riverside (2015; 8);
- West Valley Logistics Center Specific Plan DEIR, Fontana (2015, 10);
- Willow Springs Solar Photovoltaic Project DEIR (2015, 28);
- Alameda Creek Bridge Replacement Project DEIR (2015, 10);
- World Logistic Center Specific Plan FEIR, Moreno Valley (2015, 12);
- Elkhorn Valley Wind Power Project Impacts, Oregon (2015; 143);
- Bay Delta Conservation Plan EIR/EIS, Sacramento (2014, 21);
- Addison Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Addison Wind Energy Project DEIR, Mojave (2014, 15);
- Addison and Rising Tree Wind Energy Project FEIR, Mojave (2014, 12);
- Palen Solar Electric Generating System FSA (CEC), Blythe (2014, 20);
- Rebuttal testimony on Palen Solar Energy Generating System (2014, 9);
- Seven Mile Hill and Glenrock/Rolling Hills impacts + Addendum, Wyoming (2014; 105);
- Rising Tree Wind Energy Project DEIR, Mojave (2014, 32);
- Replies on the Rising Tree Wind Energy Project DEIR, Mojave (2014, 15);
- Soitec Solar Development Project PEIR, Boulevard, San Diego County (2014, 18);

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- Alta East Wind Energy Project FEIS, Tehachapi Pass (2013, 23);
- Blythe Solar Power Project Staff Assessment, California Energy Commission (2013, 16);
- Clearwater and Yakima Solar Projects DEIR, Kern County (2013, 9);
- West Antelope Solar Energy Project IS/MND, Antelope Valley (2013, 18);
- Cuyama Solar Project DEIR, Carrizo Plain (2014, 19);
- Desert Renewable Energy Conservation Plan (DRECP) EIR/EIS (2015, 49);
- Kingbird Solar Photovoltaic Project EIR, Kern County (2013, 19);
- Lucerne Valley Solar Project IS/MND, San Bernardino County (2013, 12);
- Tule Wind project FEIR/FEIS (Declaration) (2013; 31);
- Sunlight Partners LANDPRO Solar Project MND (2013; 11);
- Declaration in opposition to BLM fracking (2013; 5);
- Blythe Energy Project (solar) CEC Staff Assessment (2013;16);
- Rosamond Solar Project EIR Addendum, Kern County (2013; 13);
- Pioneer Green Solar Project EIR, Bakersfield (2013; 13);
- Replies on Soccer Center Solar Project MND (2013; 6);
- Soccer Center Solar Project MND, Lancaster (2013; 10);
- Plainview Solar Works MND, Lancaster (2013; 10);
- Alamo Solar Project MND, Mojave Desert (2013; 15);
- Replies on Imperial Valley Solar Company 2 Project (2013; 10);
- Imperial Valley Solar Company 2 Project (2013; 13);
- FRV Orion Solar Project DEIR, Kern County (PP12232) (2013; 9);
- Casa Diablo IV Geothermal Development Project (2013; 6);
- Reply on Casa Diablo IV Geothermal Development Project (2013; 8);
- Alta East Wind Project FEIS, Tehachapi Pass (2013; 23);
- Metropolitan Air Park DEIR, City of San Diego (2013; );
- Davidon Homes Tentative Subdivision Rezoning Project DEIR, Petaluma (2013; 9);
- Oakland Zoo Expansion Impacts on Alameda Whipsnake (2013; 10);
- Campo Verde Solar project FEIR, Imperial Valley (2013; 11pp);
- Neg Dec comments on Davis Sewer Trunk Rehabilitation (2013; 8);
- North Steens Transmission Line FEIS, Oregon (Declaration) (2012; 62);
- Summer Solar and Springtime Solar Projects Ism Lancaster (2012; 8);
- J&J Ranch, 24 Adobe Lane Environmental Review, Orinda (2012; 14);
- Replies on Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 8);
- Hudson Ranch Power II Geothermal Project and Simbol Calipatria Plant II (2012; 9);
- Desert Harvest Solar Project EIS, near Joshua Tree (2012; 15);
- Solar Gen 2 Array Project DEIR, El Centro (2012; 16);
- Ocotillo Sol Project EIS, Imperial Valley (2012; 4);
- Beacon Photovoltaic Project DEIR, Kern County (2012; 5);
- Butte Water District 2012 Water Transfer Program IS/MND (2012; 11);
- Mount Signal and Callexico Solar Farm Projects DEIR (2011; 16);
- City of Elk Grove Sphere of Influence EIR (2011; 28);
- Sutter Landing Park Solar Photovoltaic Project MND, Sacramento (2011; 9);

- Rabik/Gudath Project, 22611 Coleman Valley Road, Bodega Bay (CPN 10-0002) (2011; 4);
- Ivanpah Solar Electric Generating System (ISEGS) (Declaration) (2011; 9);
- Draft Eagle Conservation Plan Guidance, USFWS (2011; 13);
- Niles Canyon Safety Improvement Project EIR/EA (2011; 16);
- Route 84 Safety Improvement Project (Declaration) (2011; 7);
- Rebuttal on Whistling Ridge Wind Energy Power DEIS, Skamania County, (2010; 6);
- Whistling Ridge Wind Energy Power DEIS, Skamania County, Washington (2010; 41);
- Klickitat County's Decisions on Windy Flats West Wind Energy Project (2010; 17);
- St. John's Church Project DEIR, Orinda (2010; 14);
- Results Radio Zone File #2009-001 IS/MND, Conaway site, Davis (2010; 20);
- Rio del Oro Specific Plan Project FEIR, Rancho Cordova (2010;12);
- Results Radio Zone File #2009-001, Mace Blvd site, Davis (2009; 10);
- Answers to Questions on 33% RPS Implementation Analysis Preliminary Results Report (2009; 9);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Second Declaration) (2008; 17);
- Draft 1A Summary Report to CAISO (2008; 10);
- Hilton Manor Project Categorical Exemption, County of Placer (2009; 9);
- Protest of CARE to Amendment to the Power Purchase and Sale Agreement for Procurement of Eligible Renewable Energy Resources Between Hatchet Ridge Wind LLC and PG&E (2009; 3);
- Tehachapi Renewable Transmission Project EIR/EIS (2009; 142);
- Delta Shores Project EIR, south Sacramento (2009; 11 + addendum 2);
- Declaration in Support of Care's Petition to Modify D.07-09-040 (2008; 3);
- The Public Utility Commission's Implementation Analysis December 16 Workshop for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 9);
- The Public Utility Commission's Implementation Analysis Draft Work Plan for the Governor's Executive Order S-14-08 to implement a 33% Renewable Portfolio Standard by 2020 (2008; 11);
- Draft 1A Summary Report to California Independent System Operator for Planning Reserve Margins (PRM) Study (2008; 7.);
- SEPA Determination of Non-significance regarding zoning adjustments for Skamania County, Washington (Declaration) (2008; 16);
- Colusa Generating Station, California Energy Commission PSA (2007; 24);
- Rio del Oro Specific Plan Project Recirculated DEIR, Mather (2008: 66);
- Replies on Regional University Specific Plan EIR, Roseville (2008; 20);
- Regional University Specific Plan EIR, Roseville (2008: 33);
- Clark Precast, LLC's "Sugarland" project, ND, Woodland (2008: 15);
- Cape Wind Project DEIS, Nantucket (2008; 157);
- Yuba Highlands Specific Plan EIR, Spenceville, Yuba County (2006; 37);
- Replies to responses on North Table Mountain MND, Butte County (2006; 5);
- North Table Mountain MND, Butte County (2006; 15);
- Windy Point Wind Farm EIS (2006; 14 and Powerpoint slide replies);
- Shiloh I Wind Power Project EIR, Rio Vista (2005; 18);

- Buena Vista Wind Energy Project NOP, Byron (2004; 15);
- Callahan Estates Subdivision ND, Winters (2004; 11);
- Winters Highlands Subdivision IS/ND (2004; 9);
- Winters Highlands Subdivision IS/ND (2004; 13);
- Creekside Highlands Project, Tract 7270 ND (2004; 21);
- Petition to California Fish and Game Commission to list Burrowing Owl (2003; 10);
- Altamont Pass Wind Resource Area CUP renewals, Alameda County (2003; 41);
- UC Davis Long Range Development Plan: Neighborhood Master Plan (2003; 23);
- Anderson Marketplace Draft Environmental Impact Report (2003; 18);
- Negative Declaration of the proposed expansion of Temple B'nai Tikyah (2003; 6);
- Antonio Mountain Ranch Specific Plan Public Draft EIR (2002; 23);
- Replies on East Altamont Energy Center evidentiary hearing (2002; 9);
- Revised Draft Environmental Impact Report, The Promenade (2002; 7);
- Recirculated Initial Study for Calpine's proposed Pajaro Valley Energy Center (2002; 3);
- UC Merced -- Declaration (2002; 5);
- Replies on Atwood Ranch Unit III Subdivision FEIR (2003; 22);
- Atwood Ranch Unit III Subdivision EIR (2002; 19);
- California Energy Commission Staff Report on GWF Tracy Peaker Project (2002; 20);
- Silver Bend Apartments IS/MND, Placer County (2002; 13);
- UC Merced Long-range Development Plan DEIR and UC Merced Community Plan DEIR (2001; 26);
- Colusa County Power Plant IS, Maxwell (2001; 6);
- Dog Park at Catlin Park, Folsom, California (2001; 5);
- Calpine and Bechtel Corporations' Biological Resources Implementation and Monitoring Program (BRMIMP) for the Metcalf Energy Center (2000; 10);
- Metcalf Energy Center, California Energy Commission FSA (2000);
- US Fish and Wildlife Service Section 7 consultation with the California Energy Commission regarding Calpine and Bechtel Corporations' Metcalf Energy Center (2000; 4);
- California Energy Commission's Preliminary Staff Assessment of the proposed Metcalf Energy Center (2000: 11);
- Site-specific management plans for the Natomas Basin Conservancy's mitigation lands, prepared by Wildlands, Inc. (2000: 7);
- Affidavit of K. Shawn Smallwood in Spirit of the Sage Council, et al. (Plaintiffs) vs. Bruce Babbitt, Secretary, U.S. Department of the Interior, et al. (Defendants), Injuries caused by the No Surprises policy and final rule which codifies that policy (1999: 9).
- California Board of Forestry's proposed amended Forest Practices Rules (1999);
- Sunset Skyranch Airport Use Permit IS/MND (1999);
- Ballona West Bluffs Project Environmental Impact Report (1999; oral presentation);
- Draft Recovery Plan for Giant Garter Snake (Fed. Reg. 64(176): 49497-49498) (1999; 8);
- Draft Recovery Plan for Arroyo Southwestern Toad (1998);
- Pacific Lumber Co. (Headwaters) HCP & EIR, Fortuna (1998; 28);
- Natomas Basin HCP Permit Amendment, Sacramento (1998);
- San Diego Multi-Species Conservation Program FEIS/FEIR (1997; 10);

**Comments on other Environmental Review Documents:**

- Proposed Regulation for California Fish and Game Code Section 3503.5 (2015: 12);
- Statement of Overriding Considerations related to extending Altamont Winds, Inc.'s Conditional Use Permit PLN2014-00028 (2015; 8);
- Covell Village PEIR, Davis (2005; 19);
- Bureau of Land Management Wind Energy Programmatic EIS Scoping (2003; 7.);
- NEPA Environmental Analysis for Biosafety Level 4 National Biocontainment Laboratory (NBL) at UC Davis (2003: 7);
- Notice of Preparation of UC Merced Community and Area Plan EIR, on behalf of The Wildlife Society—Western Section (2001: 8.);
- Preliminary Draft Yolo County Habitat Conservation Plan (2001; 2 letters totaling 35.);
- Merced County General Plan Revision, notice of Negative Declaration (2001: 2.);
- Notice of Preparation of Campus Parkway EIR/EIS (2001: 7.);
- Draft Recovery Plan for the bighorn sheep in the Peninsular Range (*Ovis candensis*) (2000);
- Draft Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*), on behalf of The Wildlife Society—Western Section (2000: 10.);
- Sierra Nevada Forest Plan Amendment Draft Environmental Impact Statement, on behalf of The Wildlife Society—Western Section (2000: 7.);
- State Water Project Supplemental Water Purchase Program, Draft Program EIR (1997);
- Davis General Plan Update EIR (2000);
- Turn of the Century EIR (1999: 10);
- Proposed termination of Critical Habitat Designation under the Endangered Species Act (Fed. Reg. 64(113): 31871-31874) (1999);
- NOA Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, termed the HCP 5-Point Policy Plan (Fed. Reg. 64(45): 11485 - 11490) (1999; 2 + attachments);
- Covell Center Project EIR and EIR Supplement (1997).

**Position Statements** I prepared the following position statements for the Western Section of The Wildlife Society, and one for nearly 200 scientists:

- Recommended that the California Department of Fish and Game prioritize the extermination of the introduced southern water snake in northern California. The Wildlife Society--Western Section (2001);
- Recommended that The Wildlife Society—Western Section appoint or recommend members of the independent scientific review panel for the UC Merced environmental review process (2001);
- Opposed the siting of the University of California's 10th campus on a sensitive vernal pool/grassland complex east of Merced. The Wildlife Society--Western Section (2000);
- Opposed the legalization of ferret ownership in California. The Wildlife Society--Western Section (2000);
- Opposed the Proposed "No Surprises," "Safe Harbor," and "Candidate Conservation Agreement" rules, including permit-shield protection provisions (Fed. Reg. Vol. 62, No. 103, pp. 29091-29098 and No. 113, pp. 32189-32194). This statement was signed by 188 scientists and went to the responsible federal agencies, as well as to the U.S. Senate and House of Representatives.

### **Posters at Professional Meetings**

Leyvas, E. and K. S. Smallwood. 2015. Rehabilitating injured animals to offset and rectify wind project impacts. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S., J. Mount, S. Standish, E. Leyvas, D. Bell, E. Walther, B. Karas. 2015. Integrated detection trials to improve the accuracy of fatality rate estimates at wind projects. Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 9-12 March 2015.

Smallwood, K. S. and C. G. Thelander. 2005. Lessons learned from five years of avian mortality research in the Altamont Pass WRA. AWEA conference, Denver, May 2005.

Neher, L., L. Wilder, J. Woo, L. Spiegel, D. Yen-Nakafugi, and K.S. Smallwood. 2005. Bird's eye view on California wind. AWEA conference, Denver, May 2005.

Smallwood, K. S., C. G. Thelander and L. Spiegel. 2003. Toward a predictive model of avian fatalities in the Altamont Pass Wind Resource Area. Windpower 2003 Conference and Convention, Austin, Texas.

Smallwood, K.S. and Eva Butler. 2002. Pocket Gopher Response to Yellow Star-thistle Eradication as part of Grassland Restoration at Decommissioned Mather Air Force Base, Sacramento County, California. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and Michael L. Morrison. 2002. Fresno kangaroo rat (*Dipodomys nitratoides*) Conservation Research at Resources Management Area 5, Lemoore Naval Air Station. White Mountain Research Station Open House, Barcroft Station.

Smallwood, K.S. and E.L. Fitzhugh. 1989. Differentiating mountain lion and dog tracks. Third Mountain Lion Workshop, Prescott, AZ.

Smith, T. R. and K. S. Smallwood. 2000. Effects of study area size, location, season, and allometry on reported *Sorex* shrew densities. Annual Meeting of the Western Section of The Wildlife Society.

### **Presentations at Professional Meetings and Seminars**

Dog detections of bat and bird fatalities at wind farms in the Altamont Pass Wind Resource Area. East Bay Regional Park District 2019 Stewardship Seminar, Oakland, California, 13 November 2019.

Repowering the Altamont Pass. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area, 1999-2007. Altamont Symposium, The Wildlife Society – Western Section, 5 February 2017.

Conservation and recovery of burrowing owls in Santa Clara Valley. Santa Clara Valley Habitat



Agency, Newark, California, 3 February 2017.

Mitigation of Raptor Fatalities in the Altamont Pass Wind Resource Area. Raptor Research Foundation Meeting, Sacramento, California, 6 November 2015.

From burrows to behavior: Research and management for burrowing owls in a diverse landscape. California Burrowing Owl Consortium meeting, 24 October 2015, San Jose, California.

The Challenges of repowering. Keynote presentation at Conference on Wind Energy and Wildlife Impacts, Berlin, Germany, 10 March 2015.

Research Highlights Altamont Pass 2011-2015. Scientific Review Committee, Oakland, California, 8 July 2015.

Siting wind turbines to minimize raptor collisions: Altamont Pass Wind Resource Area. US Fish and Wildlife Service Golden Eagle Working Group, Sacramento, California, 8 January 2015.

Evaluation of nest boxes as a burrowing owl conservation strategy. Sacramento Chapter of the Western Section, The Wildlife Society. Sacramento, California, 26 August 2013.

Predicting collision hazard zones to guide repowering of the Altamont Pass. Conference on wind power and environmental impacts. Stockholm, Sweden, 5-7 February 2013.

Impacts of Wind Turbines on Wildlife. California Council for Wildlife Rehabilitators, Yosemite, California, 12 November 2012.

Impacts of Wind Turbines on Birds and Bats. Madrone Audubon Society, Santa Rosa, California, 20 February 2012.

Comparing Wind Turbine Impacts across North America. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. California Energy Commission Staff Workshop: Reducing the Impacts of Energy Infrastructure on Wildlife, 20 July 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Alameda County Scientific Review Committee meeting, 17 February 2011

Comparing Wind Turbine Impacts across North America. Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 3 May 2011.

Update on Wildlife Impacts in the Altamont Pass Wind Resource Area. Raptor Symposium, The Wildlife Society—Western Section, Riverside, California, February 2011.

Siting Repowered Wind Turbines to Minimize Raptor Collisions. Raptor Symposium, The Wildlife Society - Western Section, Riverside, California, February 2011.

Wildlife mortality caused by wind turbine collisions. Ecological Society of America, Pittsburgh,

Pennsylvania, 6 August 2010.

Map-based repowering and reorganization of a wind farm to minimize burrowing owl fatalities. California burrowing Owl Consortium Meeting, Livermore, California, 6 February 2010.

Environmental barriers to wind power. Getting Real About Renewables: Economic and Environmental Barriers to Biofuels and Wind Energy. A symposium sponsored by the Environmental & Energy Law & Policy Journal, University of Houston Law Center, Houston, 23 February 2007.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Meeting with Japan Ministry of the Environment and Japan Ministry of the Economy, Wild Bird Society of Japan, and other NGOs Tokyo, Japan, 9 November 2006.

Lessons learned about bird collisions with wind turbines in the Altamont Pass and other US wind farms. Symposium on bird collisions with wind turbines. Wild Bird Society of Japan, Tokyo, Japan, 4 November 2006.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. California Society for Ecological Restoration (SERCAL) 13<sup>th</sup> Annual Conference, UC Santa Barbara, 27 October 2006.

Fatality associations as the basis for predictive models of fatalities in the Altamont Pass Wind Resource Area. EEI/APLIC/PIER Workshop, 2006 Biologist Task Force and Avian Interaction with Electric Facilities Meeting, Pleasanton, California, 28 April 2006.

Burrowing owl burrows and wind turbine collisions in the Altamont Pass Wind Resource Area. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, February 8, 2006.

Mitigation at wind farms. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Incorporating data from the California Wildlife Habitat Relationships (CWHR) system into an impact assessment tool for birds near wind farms. Shawn Smallwood, Kevin Hunting, Marcus Yee, Linda Spiegel, Monica Parisi. Workshop: Understanding and resolving bird and bat impacts. American Wind Energy Association and Audubon Society. Los Angeles, CA. January 10 and 11, 2006.

Toward indicating threats to birds by California's new wind farms. California Energy Commission, Sacramento, May 26, 2005.

Avian collisions in the Altamont Pass. California Energy Commission, Sacramento, May 26, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. EPRI Environmental Sector Council, Monterey, California, February 17, 2005.

Ecological solutions for avian collisions with wind turbines in the Altamont Pass Wind Resource Area. The Wildlife Society—Western Section Annual Meeting, Sacramento, California, January 19,

2005.

Associations between avian fatalities and attributes of electric distribution poles in California. The Wildlife Society - Western Section Annual Meeting, Sacramento, California, January 19, 2005.

Minimizing avian mortality in the Altamont Pass Wind Resources Area. UC Davis Wind Energy Collaborative Forum, Palm Springs, California, December 14, 2004.

Selecting electric distribution poles for priority retrofitting to reduce raptor mortality. Raptor Research Foundation Meeting, Bakersfield, California, November 10, 2004.

Responses of Fresno kangaroo rats to habitat improvements in an adaptive management framework. Annual Meeting of the Society for Ecological Restoration, South Lake Tahoe, California, October 16, 2004.

Lessons learned from five years of avian mortality research at the Altamont Pass Wind Resources Area in California. The Wildlife Society Annual Meeting, Calgary, Canada, September 2004.

The ecology and impacts of power generation at Altamont Pass. Sacramento Petroleum Association, Sacramento, California, August 18, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Consortium meeting, Hayward, California, February 7, 2004.

Burrowing owl mortality in the Altamont Pass Wind Resource Area. California Burrowing Owl Symposium, Sacramento, November 2, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. National Wind Coordinating Committee, Washington, D.C., November 17, 2003.

Raptor Behavior at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

Raptor Mortality at the Altamont Pass Wind Resource Area. Annual Meeting of the Raptor Research Foundation, Anchorage, Alaska, September, 2003.

California mountain lions. Ecological & Environmental Issues Seminar, Department of Biology, California State University, Sacramento, November, 2000.

Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. National Wind Coordinating Committee, Carmel, California, May, 2000.

Using a Geographic Positioning System (GPS) to map wildlife and habitat. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

Suggested standards for science applied to conservation issues. Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

The indicators framework applied to ecological restoration in Yolo County, California. Society for Ecological Restoration, September 25, 1999.

Ecological restoration in the context of animal social units and their habitat areas. Society for Ecological Restoration, September 24, 1999.

Relating Indicators of Ecological Health and Integrity to Assess Risks to Sustainable Agriculture and Native Biota. International Conference on Ecosystem Health, August 16, 1999.

A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Southern California Edison, Co. and California Energy Commission, March 4-5, 1999.

Mountain lion track counts in California: Implications for Management. Ecological & Environmental Issues Seminar, Department of Biological Sciences, California State University, Sacramento, November 4, 1998.

“No Surprises” -- Lack of science in the HCP process. California Native Plant Society Annual Conservation Conference, The Presidio, San Francisco, September 7, 1997.

In Your Interest. A half hour weekly show aired on Channel 10 Television, Sacramento. In this episode, I served on a panel of experts discussing problems with the implementation of the Endangered Species Act. Aired August 31, 1997.

Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Estimating prairie dog and pocket gopher burrow volume. Southwestern Association of Naturalists 44th Meeting, Fayetteville, Arkansas, April 10, 1997.

Ten years of mountain lion track survey. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Study and interpretive design effects on mountain lion density estimates. Fifth Mountain Lion Workshop, San Diego, February 27, 1996.

Small animal control. Session moderator and speaker at the California Farm Conference, Sacramento, California, Feb. 28, 1995.

Small animal control. Ecological Farming Conference, Asylomar, California, Jan. 28, 1995.

Habitat associations of the Swainson's Hawk in the Sacramento Valley's agricultural landscape. 1994 Raptor Research Foundation Meeting, Flagstaff, Arizona.

Alfalfa as wildlife habitat. Seed Industry Conference, Woodland, California, May 4, 1994.

Habitats and vertebrate pests: impacts and management. Managing Farmland to Bring Back Game Birds and Wildlife to the Central Valley. Yolo County Resource Conservation District, U.C. Davis, February 19, 1994.

Management of gophers and alfalfa as wildlife habitat. Orland Alfalfa Production Meeting and Sacramento Valley Alfalfa Production Meeting, February 1 and 2, 1994.

Patterns of wildlife movement in a farming landscape. Wildlife and Fisheries Biology Seminar Series: Recent Advances in Wildlife, Fish, and Conservation Biology, U.C. Davis, Dec. 6, 1993.

Alfalfa as wildlife habitat. California Alfalfa Symposium, Fresno, California, Dec. 9, 1993.

Management of pocket gophers in Sacramento Valley alfalfa. California Alfalfa Symposium, Fresno, California, Dec. 8, 1993.

Association analysis of raptors in a farming landscape. Plenary speaker at Raptor Research Foundation Meeting, Charlotte, North Carolina, Nov. 6, 1993.

Landscape strategies for biological control and IPM. Plenary speaker, International Conference on Integrated Resource Management and Sustainable Agriculture, Beijing, China, Sept. 11, 1993.

Landscape Ecology Study of Pocket Gophers in Alfalfa. Alfalfa Field Day, U.C. Davis, July 1993.

Patterns of wildlife movement in a farming landscape. Spatial Data Analysis Colloquium, U.C. Davis, August 6, 1993.

Sound stewardship of wildlife. Veterinary Medicine Seminar: Ethics of Animal Use, U.C. Davis. May 1993.

Landscape ecology study of pocket gophers in alfalfa. Five County Grower's Meeting, Tracy, California. February 1993.

Turbulence and the community organizers: The role of invading species in ordering a turbulent system, and the factors for invasion success. Ecology Graduate Student Association Colloquium, U.C. Davis. May 1990.

Evaluation of exotic vertebrate pests. Fourteenth Vertebrate Pest Conference, Sacramento, California. March 1990.

Analytical methods for predicting success of mammal introductions to North America. The Western Section of the Wildlife Society, Hilo, Hawaii. February 1988.

A state-wide mountain lion track survey. Sacramento County Dept Parks and Recreation. April 1986.

The mountain lion in California. Davis Chapter of the Audubon Society. October 1985.

Ecology Graduate Student Seminars, U.C. Davis, 1985-1990: Social behavior of the mountain lion; Mountain lion control; Political status of the mountain lion in California.

### **Other forms of Participation at Professional Meetings**

- Scientific Committee, Conference on Wind energy and Wildlife impacts, Berlin, Germany, March 2015.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Stockholm, Sweden, February 2013.
- Workshop co-presenter at Birds & Wind Energy Specialist Group (BAWESG) Information sharing week, Bird specialist studies for proposed wind energy facilities in South Africa, Endangered Wildlife Trust, Darling, South Africa, 3-7 October 2011.
- Scientific Committee, Conference on Wind energy and Wildlife impacts, Trondheim, Norway, 2-5 May 2011.
- Chair of Animal Damage Management Session, The Wildlife Society, Annual Meeting, Reno, Nevada, September 26, 2001.
- Chair of Technical Session: Human communities and ecosystem health: Comparing perspectives and making connection. Managing for Ecosystem Health, International Congress on Ecosystem Health, Sacramento, CA August 15-20, 1999.
- Student Awards Committee, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.
- Student Mentor, Annual Meeting of the Western Section of The Wildlife Society, Riverside, CA, January, 2000.

### **Printed Mass Media**

Smallwood, K.S., D. Mooney, and M. McGuinness. 2003. We must stop the UCD biolab now. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2002. Spring Lake threatens Davis. Op-Ed to the Davis Enterprise.

Smallwood, K.S. Summer, 2001. Mitigation of habitation. The Flatlander, Davis, California.

Entrikan, R.K. and K.S. Smallwood. 2000. Measure O: Flawed law would lock in new taxes. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 2000. Davis delegation lobbies Congress for Wildlife conservation. Op-Ed to the Davis Enterprise.

Smallwood, K.S. 1998. Davis Visions. The Flatlander, Davis, California.

Smallwood, K.S. 1997. Last grab for Yolo's land and water. The Flatlander, Davis, California.

Smallwood, K.S. 1997. The Yolo County HCP. Op-Ed to the Davis Enterprise.

**Radio/Television**

PBS News Hour,

FOX News, Energy in America: Dead Birds Unintended Consequence of Wind Power Development, August 2011.

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Mountain lion attacks (with guest Professor Richard Coss). 23 April 2009;

KXJZ Capital Public Radio -- Insight (Host Jeffrey Callison). Wind farm Rio Vista Renewable Power. 4 September 2008;

KQED QUEST Episode #111. Bird collisions with wind turbines. 2007;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. December 27, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. May 3, 2001;

KDVS Speaking in Tongues (host Ron Glick), Yolo County HCP: 1 hour. February 8, 2001;

KDVS Speaking in Tongues (host Ron Glick & Shawn Smallwood), California Energy Crisis: 1 hour. Jan. 25, 2001;

KDVS Speaking in Tongues (host Ron Glick), Headwaters Forest HCP: 1 hour. 1998;

Davis Cable Channel (host Gerald Heffernon), Burrowing owls in Davis: half hour. June, 2000;

Davis Cable Channel (hosted by Davis League of Women Voters), Measure O debate: 1 hour. October, 2000;

KXTV 10, In Your Interest, The Endangered Species Act: half hour. 1997.

**Reviews of Journal Papers** (Scientific journals for whom I've provided peer review)

<b>Journal</b>	<b>Journal</b>
American Naturalist	Journal of Animal Ecology
Journal of Wildlife Management	Western North American Naturalist
Auk	Journal of Raptor Research
Biological Conservation	National Renewable Energy Lab reports
Canadian Journal of Zoology	Oikos
Ecosystem Health	The Prairie Naturalist
Environmental Conservation	Restoration Ecology
Environmental Management	Southwestern Naturalist
Functional Ecology	The Wildlife Society--Western Section Trans.

<b>Journal</b>	<b>Journal</b>
Journal of Zoology (London)	Proc. Int. Congress on Managing for Ecosystem Health
Journal of Applied Ecology	Transactions in GIS
Ecology	Tropical Ecology
Wildlife Society Bulletin	Peer J
Biological Control	The Condor

**Committees**

- Scientific Review Committee, Alameda County, Altamont Pass Wind Resource Area
- Ph.D. Thesis Committee, Steve Anderson, University of California, Davis
- MS Thesis Committee, Marcus Yee, California State University, Sacramento



**Other Professional Activities or Products**

Testified in Federal Court in Denver during 2005 over the fate of radio-nuclides in the soil at Rocky Flats Plant after exposure to burrowing animals. My clients won a judgment of \$553,000,000. I have also testified in many other cases of litigation under CEQA, NEPA, the Warren-Alquist Act, and other environmental laws. My clients won most of the cases for which I testified.

Testified before Environmental Review Tribunals in Ontario, Canada regarding proposed White Pines, Amherst Island, and Fairview Wind Energy projects.

Testified in Skamania County Hearing in 2009 on the potential impacts of zoning the County for development of wind farms and hazardous waste facilities.

Testified in deposition in 2007 in the case of O'Dell et al. vs. FPL Energy in Houston, Texas.

Testified in Klickitat County Hearing in 2006 on the potential impacts of the Windy Point Wind Farm.

**Memberships in Professional Societies**

The Wildlife Society  
Raptor Research Foundation

**Honors and Awards**

Fulbright Research Fellowship to Indonesia, 1987  
J.G. Boswell Full Academic Scholarship, 1981 college of choice  
Certificate of Appreciation, The Wildlife Society—Western Section, 2000, 2001  
Northern California Athletic Association Most Valuable Cross Country Runner, 1984  
American Legion Award, Corcoran High School, 1981, and John Muir Junior High, 1977  
CIF Section Champion, Cross Country in 1978  
CIF Section Champion, Track & Field 2 mile run in 1981  
National Junior Record, 20 kilometer run, 1982  
National Age Group Record, 1500 meter run, 1978

**Community Activities**

District 64 Little League Umpire, 2003-2007  
Dixon Little League Umpire, 2006-07  
Davis Little League Chief Umpire and Board member, 2004-2005  
Davis Little League Safety Officer, 2004-2005  
Davis Little League Certified Umpire, 2002-2004  
Davis Little League Scorekeeper, 2002  
Davis Visioning Group member  
Petitioner for Writ of Mandate under the California Environmental Quality Act against City of Woodland decision to approve the Spring Lake Specific Plan, 2002  
Served on campaign committees for City Council candidates

### Representative Clients/Funders

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Law Offices of Stephan C. Volker	EDF Renewables
Blum Collins, LLP	National Renewable Energy Lab
Eric K. Gillespie Professional Corporation	Altamont Winds LLC
Law Offices of Berger & Montague	Salka Energy
Lozeau   Drury LLP	Comstocks Business (magazine)
Law Offices of Roy Haber	BioResource Consultants
Law Offices of Edward MacDonald	Tierra Data
Law Office of John Gabrielli	Black and Veatch
Law Office of Bill Kopper	Terry Preston, Wildlife Ecology Research Center
Law Office of Donald B. Mooney	EcoStat, Inc.
Law Office of Veneruso & Moncharsh	US Navy
Law Office of Steven Thompson	US Department of Agriculture
Law Office of Brian Gaffney	US Forest Service
California Wildlife Federation	US Fish & Wildlife Service
Defenders of Wildlife	US Department of Justice
Sierra Club	California Energy Commission
National Endangered Species Network	California Office of the Attorney General
Spirit of the Sage Council	California Department of Fish & Wildlife
The Humane Society	California Department of Transportation
Hagens Berman LLP	California Department of Forestry
Environmental Protection Information Center	California Department of Food & Agriculture
Goldberg, Kamin & Garvin, Attorneys at Law	Ventura County Counsel
Californians for Renewable Energy (CARE)	County of Yolo
Seatuck Environmental Association	Tahoe Regional Planning Agency
Friends of the Columbia Gorge, Inc.	Sustainable Agriculture Research & Education Program
Save Our Scenic Area	Sacramento-Yolo Mosquito and Vector Control District
Alliance to Protect Nantucket Sound	East Bay Regional Park District
Friends of the Swainson's Hawk	County of Alameda
Alameda Creek Alliance	Don & LaNelle Silverstien
Center for Biological Diversity	Seventh Day Adventist Church
California Native Plant Society	Escuela de la Raza Unida
Endangered Wildlife Trust	Susan Pelican and Howard Beeman
and BirdLife South Africa	Residents Against Inconsistent Development, Inc.
AquAlliance	Bob Sarvey
Oregon Natural Desert Association	Mike Boyd
Save Our Sound	Hillcroft Neighborhood Fund
G3 Energy and Pattern Energy	Joint Labor Management Committee, Retail Food Industry
Emerald Farms	Lisa Rocca
Pacific Gas & Electric Co.	Kevin Jackson
Southern California Edison Co.	Dawn Stover and Jay Letto
Georgia-Pacific Timber Co.	Nancy Havassy
Northern Territories Inc.	Catherine Portman (for Brenda Cedarblade)
David Magney Environmental Consulting	Ventus Environmental Solutions, Inc.
Wildlife History Foundation	Panorama Environmental, Inc.
NextEra Energy Resources, LLC	Adams Broadwell Professional Corporation
Ogin, Inc.	

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**Representative special-status species experience**

<b>Common name</b>	<b>Species name</b>	<b>Description</b>
<b>Field experience</b>		
California red-legged frog	<i>Rana aurora draytonii</i>	Protocol searches; Many detections
Foothill yellow-legged frog	<i>Rana boylei</i>	Presence surveys; Many detections
Western spadefoot	<i>Spea hammondi</i>	Presence surveys; Few detections
California tiger salamander	<i>Ambystoma californiense</i>	Protocol searches; Many detections
Coast range newt	<i>Taricha torosa torosa</i>	Searches and multiple detections
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	Detected in San Luis Obispo County
California horned lizard	<i>Phrynosoma coronatum frontale</i>	Searches; Many detections
Western pond turtle	<i>Clemmys marmorata</i>	Searches; Many detections
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Protocol searches; detections
Sumatran tiger	<i>Panthera tigris</i>	Track surveys in Sumatra
Mountain lion	<i>Puma concolor californicus</i>	Research and publications
Point Arena mountain beaver	<i>Aplodontia rufa nigra</i>	Remote camera operation
Giant kangaroo rat	<i>Dipodomys ingens</i>	Detected in Cholame Valley
San Joaquin kangaroo rat	<i>Dipodomys nitratoideus</i>	Monitoring & habitat restoration
Monterey dusky-footed woodrat	<i>Neotoma fuscipes luciana</i>	Non-target captures and mapping of dens
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	Habitat assessment, monitoring
Salinas harvest mouse	<i>Reithrodontomys megalotus distichlus</i>	Captures; habitat assessment
<b>Bats</b>		
California clapper rail	<i>Rallus longirostris</i>	Thermal imaging surveys
Golden eagle	<i>Aquila chrysaetos</i>	Surveys and detections
Swainson's hawk	<i>Buteo swainsoni</i>	Numerical & behavioral surveys
Northern harrier	<i>Circus cyaneus</i>	Numerical & behavioral surveys
White-tailed kite	<i>Elanus leucurus</i>	Numerical & behavioral surveys
Loggerhead shrike	<i>Lanius ludovicianus</i>	Numerical & behavioral surveys
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Large area surveys
Willow flycatcher	<i>Empidonax traillii extimus</i>	Detected in Monterey County
Burrowing owl	<i>Athene cunicularia hypugia</i>	Research at Sierra Nevada breeding sites
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Numerical & behavioral surveys
<b>Analytical</b>		Monitored success of relocation and habitat restoration
Arroyo southwestern toad	<i>Bufo microscaphus californicus</i>	Research and report.
Giant garter snake	<i>Thamnophis gigas</i>	Research and publication
Northern goshawk	<i>Accipiter gentilis</i>	Research and publication
Northern spotted owl	<i>Strix occidentalis</i>	Research and reports
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	Expert testimony

# EXHIBIT B



Technical Consultation, Data Analysis and  
Litigation Support for the Environment

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January 19, 2021

Michael R. Lozeau  
Lozeau | Drury LLP  
1939 Harrison Street, Suite 150  
Oakland, CA 94612

**Subject: Comments on SDG Commerce 217 Distribution Center Project (SCH No. 2020120302)**

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Dear Mr. Lozeau,

We have reviewed the December 2020 Draft Initial Study/Mitigated Negative Declaration ("IS/MND") for the SDG Commerce 217 Distribution Center Project ("Project") located in the City of American Canyon ("City"). The Project proposes to construct a 217,294-SF wine distribution center, including 4,350-SF of office space, as well as 134 vehicle and 21 truck dock parking spaces, on the 10.39-acre site.

Our review concludes that the IS/MND fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An EIR should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment.

## **Air Quality**

### **Incorrect Analysis of Construction Emissions**

The Bay Area Air Quality Management District ("BAAQMD") provides significance thresholds to evaluate air pollutant emissions in the form of pounds per day ("lbs/day") and tons per year ("tons/year").

CalEEMod provides three types of output files – winter, summer, and annual. Specifically, the CalEEMod User's Guide states:

“CalEEMod provides a simple platform to calculate both construction emissions and operational emissions from a land use project. It can calculate both the daily maximum and annual average for criteria pollutants as well as annual greenhouse gas (GHG) emissions” (emphasis added).<sup>1</sup>

While the annual output files provide annual emissions in tons/year, both the winter and summer output files provide daily emissions estimates in lbs/day. As such, the IS/MND should have relied upon the emissions estimates provided by the Project’s summer and winter output files in order to determine the significance of the Project’s air quality impact. However, review of the IS/MND and CalEEMod output files, provided in Appendix B-3 to the IS/MND, demonstrates that the emissions estimates purported by the IS/MND are inconsistent with the emissions estimates provided by the summer and winter CalEEMod output files.

Specifically, the IS/MND estimates that the Project would result in construction-related ROG, NO<sub>x</sub>, exhaust PM<sub>10</sub>, exhaust PM<sub>2.5</sub>, and CO emissions of 13.6-, 24.6-, 1.0-, 0.9-, and 19.5-lbs/day, respectively (see excerpt below) (p. 22, Table AQ-1).

**Table AQ-1. Estimated Daily Construction Emissions (pounds/day)**

Construction Year	ROG	NO <sub>x</sub>	PM10 (exhaust only)	PM2.5 (exhaust only)	CO
<i>Proposed Project Unmitigated Emissions</i>					
<b>2021</b>	<b>13.6</b>	<b>24.6</b>	<b>1.0</b>	<b>0.9</b>	<b>19.5</b>
<i>BAAQMD Significance Threshold</i>	<i>54</i>	<i>54</i>	<i>82</i>	<i>54</i>	<i>--</i>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>--</b>

**Source:** CalEEMod Version 2016.3.2

However, review of the “SDG Commerce 217 Wine Storage Project” winter output file demonstrates that the model estimates daily construction-related ROG, NO<sub>x</sub>, exhaust PM<sub>10</sub>, exhaust PM<sub>2.5</sub>, and CO emissions of 155.64-, 40.55-, 2.05-, 1.88-, and 22.64-lbs/day, respectively (see excerpt below) (Appendix B-3, pp. 72).

<sup>1</sup> CAPCOA (November 2017) CalEEMod User’s Guide, [http://www.aqmd.gov/docs/default-source/caleemod/01\\_user-39-s-guide2016-3-2\\_15november2017.pdf?sfvrsn=4](http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4), p. 1.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year	lb/day									
2021	155.6355	40.5472	22.6449	0.0540	9.0890	2.0454	11.1344	4.5956	1.8818	6.4774
Maximum	155.6355	40.5472	22.6449	0.0540	9.0890	2.0454	11.1344	4.5956	1.8818	6.4774

Similarly, review of the “SDG Commerce 217 Wine Storage Project” summer output file demonstrates that the model estimates daily construction-related ROG, NO<sub>x</sub>, exhaust PM<sub>10</sub>, exhaust PM<sub>2.5</sub>, and CO emissions of 155.63-, 40.54-, 2.05-, 1.88-, and 22.55-lbs/day, respectively (see excerpt below) (Appendix B-3, pp. 46).

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year	lb/day									
2021	155.6296	40.5366	22.5509	0.0553	9.0890	2.0454	11.1344	4.5956	1.8818	6.4774
Maximum	155.6296	40.5366	22.5509	0.0553	9.0890	2.0454	11.1344	4.5956	1.8818	6.4774

As you can see in the excerpts above, the emissions estimates purported by the IS/MND are underestimated and inconsistent with the emissions estimates provided by the summer and winter CalEEMod output files. This is incorrect, as CEQA requires disclosure of the full extent of a project’s impacts prior to mitigation in order to accurately disclose the severity of an impact. By relying on incorrect and underestimated emissions estimates, the IS/MND’s air quality analysis is incorrect, and the subsequent less-than-significant air quality impact conclusion should not be relied upon.

### Failure to Identify Significant Air Quality Impact

The IS/MND concludes that the Project would not result in a significant impact due to mitigated construction-related ROG emissions (see excerpt below) (p. 22, Table AQ-1).

**Table AQ-1. Estimated Daily Construction Emissions (pounds/day)**

Construction Year	ROG	NO <sub>x</sub>	PM10 (exhaust only)	PM2.5 (exhaust only)	CO
<i>Proposed Project Unmitigated Emissions</i>					
<b>2021</b>	<b>13.6</b>	<b>24.6</b>	<b>1.0</b>	<b>0.9</b>	<b>19.5</b>
<i>BAAQMD Significance Threshold</i>	<i>54</i>	<i>54</i>	<i>82</i>	<i>54</i>	<i>--</i>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>--</b>

**Source:** CalEEMod Version 2016.3.2

However, as previously discussed, the emissions estimates purported by the IS/MND are underestimated and inconsistent with the emissions estimates provided by the summer and winter CalEEMod output files. As a result, in order to correctly evaluate the Project's estimated daily emissions based on the BAAQMD threshold in lbs/day, we reviewed the IS/MND's winter CalEEMod output file, which estimates daily ROG emissions of approximately 156 lbs/day (see excerpt below) (Appendix B-3, pp. 72).

	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year	lb/day									
2021	155.6296	40.5366	22.5509	0.0553	9.0890	2.0454	11.1344	4.5956	1.8818	6.4774
<b>Maximum</b>	<b>155.6296</b>	<b>40.5366</b>	<b>22.5509</b>	<b>0.0553</b>	<b>9.0890</b>	<b>2.0454</b>	<b>11.1344</b>	<b>4.5956</b>	<b>1.8818</b>	<b>6.4774</b>

As the above excerpt demonstrates, the daily construction-related ROG emissions estimate provided by the "SDG Commerce 217 Wine Storage Project" winter output file clearly exceeds the BAAQMD threshold of 54 lbs/day, contrary to what is stated in the IS/MND. Thus, the IS/MND's conclusion that the Project's construction-related ROG emissions would result in a less-than-significant air quality impact is incorrect. An EIR should be prepared to adequately evaluate and mitigate the Project's significant construction-related ROG emissions.

### Unsubstantiated Input Parameters Used to Estimate Project Emissions

The IS/MND's air quality analysis relies on emissions calculated with CalEEMod.2016.3.2 (p. 22).<sup>2</sup> 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

<sup>2</sup> CAPCOA (November 2017) CalEEMod User's Guide, [http://www.aqmd.gov/docs/default-source/caleemod/01\\_user-39-s-guide2016-3-2\\_15november2017.pdf?sfvrsn=4](http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4).



type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act (“CEQA”) requires that such changes be justified by substantial evidence.<sup>3</sup> Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters were utilized in calculating the Project's air pollutant emissions and make known which default values were changed as well as provide justification for the values selected.<sup>4</sup>

When reviewing the Project's CalEEMod output files, provided in the CalEEMod Output Files for the Air Quality and GHG Emissions Data and Supporting Information as Appendix B-3 to the IS/MND, we found that several model inputs were not consistent with information disclosed in the IS/MND. As a result, the Project's construction and operational emissions are underestimated. An EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

### *Unsubstantiated Reductions to Saturday and Sunday Trip Rates*

Review of the CalEEMod output files demonstrates that the “SDG Commerce 217 Wine Storage Project” model includes unsubstantiated reductions to the default Saturday and Sunday operational vehicle trip rates (see excerpt below) (Appendix B-3, pp. 15, 45, 71).

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00

As you can see in the excerpt above, the model assumes the Project's Saturday and Sunday operational vehicle trip rate would be zero. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.<sup>5</sup> According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is: “Monday Thru Friday Operations” (Appendix B-3, pp. 14, 44, 70). However, the IS/MND fails to mention or substantiate the claim that the Project will only be operational Monday through Friday. Furthermore, the Air Quality Calculations (“AQ Calculations”), provided as Appendix B-2 to the IS/MND, state:

“It is anticipated that the proposed project would have approximately 32 full-time employees and up to 18 part-time employees and operate 12 to 18 hours a day during the peak season” (emphasis added) (Appendix B-2, pp. 10).

As the excerpt above demonstrates, the AQ Calculations fail to specify that Project operations will only occur on weekdays. As such, we cannot verify the revised Saturday and Sunday trip rates. These unsubstantiated reductions present an issue, as CalEEMod uses vehicle trip rates to calculate the

<sup>3</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 1, 9.

<sup>4</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 11, 12 – 13. A key feature of the CalEEMod program is the “remarks” feature, where the user explains why a default setting was replaced by a “user defined” value. These remarks are included in the report.

<sup>5</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

Project's emissions associated with operational motor vehicle emissions.<sup>6</sup> By including unsubstantiated reductions to the Project's Saturday and Sunday operational vehicle trip rates, the model may underestimate the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

### *Unsubstantiated Reductions to Energy Use Values*

Review of the CalEEMod output files demonstrates that the "SDG Commerce 217 Wine Storage Project" model includes unsubstantiated reductions to the default energy use values (see excerpt below) (Appendix B-3, pp. 15, 45, 71).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00
tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	3.00
tblEnergyUse	T24NG	0.73	0.00

As you can see in the excerpt above, the lighting energy electricity ("LightingElect"), the non-Title 24 electricity energy intensity ("NT24E"), the non-Title 24 natural gas energy intensity ("NT24NG"), and the Title 24 natural gas energy intensity ("T24NG") values were each reduced to 0 kilowatt hours per land use size per year ("KWhr/size/year"). Furthermore, the Title 24 electricity energy intensity ("T24E") was increased to 3 KWhr/size/year. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.<sup>7</sup> According to the User Entered Comments and Non-Default Data table, the justification provided for these changes is: "Energy use scaled down from SDG Commerce 330 Project" (Appendix B-3, pp. 14, 44, 70). Furthermore, the AQ Calculations state:

"CalEEMod default electrical usage was adjusted to be consistent with the SGE 258 Warehouse Project but scaled down to 217,294 square feet. The SGE 258 Warehouse Project energy use of was estimated using actual electrical usage from two nearby and almost identical buildings. Both buildings are insulated and refrigerated to the same degree as the proposed project.

CalEEMod default natural gas usage was adjusted to zero, although available in the street the proposed project would not bring it on site as there is no need. The proposed project would, instead, use electric water heaters and heat pump for the offices" (pp. 11).

However, these justifications are insufficient. The AQ Calculations cannot claim that "[t]he SGE 258 Warehouse Project energy use of was estimated using actual electrical usage from two nearby and almost identical buildings" without providing sufficient calculations or an adequate source. Similarly, the AQ Calculations cannot simply state that natural gas usage was adjusted to zero without providing an adequate source or additional information. According to the CalEEMod User's Guide:

<sup>6</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 28.

<sup>7</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

“CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA” (emphasis added).<sup>8</sup>

Here, however, the IS/MND fails to provide substantial evidence for the revised energy use values, and as a result, the changes are unsubstantiated.

These unsubstantiated reductions present an issue, as CalEEMod uses the energy use values to calculate the Project’s emissions associated with building electricity and non-hearth natural gas usage.<sup>9</sup> By including unsubstantiated changes to the Project’s energy use values, the model may underestimate the Project’s energy-source operational emissions and should not be relied upon to determine Project significance.

#### *Unsubstantiated Reduction to Solid Waste Generation Rate*

Review of the CalEEMod output files demonstrates that the “SDG Commerce 217 Wine Storage Project” model includes a manual reduction to the Project’s default solid generation rate (see excerpt below) (Appendix B-3, pp. 15, 45, 71).

Table Name	Column Name	Default Value	New Value
tblSolidWaste	SolidWasteGenerationRate	204.25	2.00

As you can see in the excerpt above, the solid waste generation rate is decreased by approximately 99%, from the default value of 204.25- to 2.00-tons per year (“tons/year”). As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.<sup>10</sup> According to the “User Entered Comments & Non-Default Data” table, the justification provided for this change is: “minimal solid waste generated” (Appendix B-3, pp. 14, 44, 70). Furthermore, the IS/MND states:

“The warehouses project would produce small quantities solid waste, approximately equivalent to that produced by one or two houses. If significant amounts of recyclables, such as cardboard boxes, are generated, the tenant/operators would bale this waste and have it picked up separately from other solid wastes and removed by Recology American Canyon” (p. 100).

However, these justifications are insufficient for two reasons. First, while the IS/MND indicates that “[t]he warehouses project would produce small quantities solid waste,” the IS/MND fails to provide an estimate of how much solid waste the warehouses would produce (p. 100). Second, the IS/MND fails to mention or provide a source for the 99% reduction to the solid waste generation rate. As such, we cannot verify the revised solid waste generation rate.

This unsubstantiated reduction presents an issue, as CalEEMod uses the solid waste generation rates to calculate the Project’s operation greenhouse gas (“GHG”) emissions associated with the disposal of solid

<sup>8</sup> CalEEMod Model 2013.2.2 User’s Guide, available at: <http://www.aqmd.gov/docs/default-source/caleemod/usersguideSept2016.pdf?sfvrsn=6>, p. 12.

<sup>9</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 43

<sup>10</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

waste into landfills.<sup>11</sup> Thus, by including an unsubstantiated reduction to the Project’s solid waste generation rate, the model may underestimate the Project’s operational emissions and should not be relied upon to determine Project significance.

### *Unsubstantiated Reduction to Indoor Water Use Rate*

Review of the CalEEMod output files demonstrates the “SDG Commerce 217 Wine Storage Project” model includes manual changes to the default indoor and outdoor water use rates (see excerpt below) (Appendix B-3, pp. 15, 45, 71).

Table Name	Column Name	Default Value	New Value
tblWater	IndoorWaterUseRate	50,248,312.50	768.00
tblWater	OutdoorWaterUseRate	0.00	9,341.00

As you can see in the excerpt above, the indoor water use rate was decreased by nearly 100%, from the default value of 50,248,312.50- to 768-gallons per year (“gpy”), while the outdoor water use rate was increased by 9,341 gpy. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.<sup>12</sup> According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is: “Water use scaled down from SDG Commerce 330 project” (Appendix B-3, pp. 14, 44, 70). Furthermore, the IS/MND states:

“[T]he proposed project is estimated to have an average potable water daily demand of 142 gallons/day (gpd), and a peak daily demand of 560 gpd. This is less than three percent of the UWMP’s projected use at the site, and represents approximately equivalent water demand to a one single-family house in American Canyon (274 gpd for single family dwelling and 242 gpd for the proposed warehouse use. In addition, it will use about 541 gpd of recycled water” (emphasis added) (p. 100).

As the above excerpt demonstrates, the Project is estimated to require an average of 142 gallons per day (“gpd”) of potable water and 541 gpd of recycled water, resulting in a total daily water demand of 683 gallons per day (“gpd”),<sup>13</sup> or 249,295 gpy.<sup>14</sup> Thus, the model underestimates the Project’s total daily water demand by approximately 239,186 gpy.<sup>15</sup> As a result, the indoor and outdoor water use rates inputted into the model are underestimated and inconsistent with the information provided by the IS/MND.

This underestimation presents an issue, as CalEEMod uses the water use rates to calculate the Project’s GHG emissions associated with the supply and treatment of water.<sup>16</sup> Thus, by including underestimated

<sup>11</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 46.

<sup>12</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

<sup>13</sup> Calculated by: (142 gallons per day) + (541 recycled gallons per day) = 683 total gpd.

<sup>14</sup> Calculated by: (683 gallons per day) \* (365 days) = 249,295 gallons per year.

<sup>15</sup> (249,295 gallons per year) – (768 indoor gallons per year) – (9,341 outdoor gallons per year) = 239,186 gallons per year.

<sup>16</sup> “CalEEMod User’s Guide.” CAPCOA, November 2017, available at: [http://www.aqmd.gov/docs/default-source/caleemod/01\\_user-39-s-guide2016-3-2\\_15november2017.pdf?sfvrsn=4](http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4), p. 44-45.

indoor and outdoor water use rates, the model underestimates the Project’s operational emissions and should not be relied upon to determine Project significance.

### *Incorrect Application of Construction-Related Mitigation Measures*

Review of the CalEEMod output files demonstrates that the “SDG Commerce 217 Wine Storage Project” model includes the following construction-related mitigation measures: “Water Exposed Area” and “Reduce Vehicle Speed on Unpaved Roads” (see excerpt below) (Appendix B-3, pp. 21, 51, 77).

#### **3.1 Mitigation Measures Construction**

Water Exposed Area  
Reduce Vehicle Speed on Unpaved Roads

Furthermore, the model includes a 15 miles per hour (“MPH”) vehicle speed (see excerpt below) (Appendix B-3, pp. 15, 45, 71).

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.<sup>17</sup> According to the “User Entered Comments & Non-Default Data” table, the justification provided for this change is: “BAAQMD basic fugitive dust measures” (Appendix B-3, pp. 14, 44, 70). Furthermore, the IS/MND states:

“The BAAQMD’s *CEQA Air Quality Guidelines* consider these impacts to be less than significant if best management practices are employed to reduce these emissions. The BAAQMD requires the following best management practices (BMPs) to reduce emissions of dust and particulates:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- A publicly visible sign shall be posted with the telephone number and person to contact at the Site Superintendent regarding dust complaints. This person shall respond and take corrective action with 48 hours. The Air District’s phone number and Lead Agency

<sup>17</sup> CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

contact information shall also be visible to ensure compliance with applicable regulations...

The implementation of these BMPs would reduce fugitive dust and combustion exhaust emissions per BAAQMD's *CEQA Air Quality Guidelines*.

Project construction emissions are less than the significance thresholds (See Table AQ-1) and the proposed project would also include BMPs required per BAAQMD's *CEQA Air Quality Guidelines*. Therefore, project impacts from construction emissions would be ***less than significant***" (p. 23).

However, these justifications are insufficient for three reasons.

First, simply because the IS/MND states the Project would implement the BAAQMD's best management practices ("BMPs") does not justify the inclusion of the above-mentioned construction-related mitigation measures in the model. According to the Association of Environmental Professionals ("AEP") *CEQA Portal Topic Paper* on mitigation measures:

"By definition, mitigation measures are not part of the original project design. Rather, mitigation measures are actions taken by the lead agency to reduce impacts to the environment resulting from the original project design. Mitigation measures are identified by the lead agency after the project has undergone environmental review and are above-and-beyond existing laws, regulations, and requirements that would reduce environmental impacts" (emphasis added).<sup>18</sup>

As you can see in the excerpt above, mitigation measures "are not part of the original project design" and are intended to go "above-and-beyond" existing regulatory requirements. As such, the inclusion of these measures, based on the Project's compliance with the BAAQMD's BMPs, is unsubstantiated.

Second, regarding these BMPs, BAAQMD guidance states:

"For fugitive dust emissions, staff recommends following the current best management practices approach which has been a pragmatic and effective approach to the control of fugitive dust emissions" (emphasis added).<sup>19</sup>

As you can see in the excerpt above, while these BMPs are recommended, they are not explicitly required by the BAAQMD. As a result, we cannot guarantee that they would be implemented, monitored, and enforced on the Project site.

Third, AEP guidance states:

"While not 'mitigation', a good practice is to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP). Often the

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<sup>18</sup> "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 5.

<sup>19</sup> "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2017, available at: [https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en), p. D-47.

MMRP is all that accompanies building and construction plans through the permit process. If the design features are not listed as important to addressing an environmental impact, it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact" (emphasis added).<sup>20</sup>

As you can see in the excerpts above, project design features are not mitigation measures and may be eliminated from the Project's design. Thus, as the above-mentioned construction-related mitigation measures are not formally included as mitigation measures, we cannot guarantee that they would be implemented, monitored, and enforced on the Project site. As a result, the inclusion of the above-mentioned construction-related mitigation measures is incorrect, and the model should not be relied upon to determine Project significance.

### Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to determine the construction-related and operational emissions associated with the Project, we prepared an updated CalEEMod model, using the Project-specific information provided by the IS/MND. In our updated model, we omitted the unsubstantiated changes to the Saturday and Sunday operational vehicle trip rates, energy use values, and solid waste generation rates; corrected the indoor and outdoor water use rates; and excluded the unsubstantiated construction-related mitigation measures. Our updated analysis demonstrates that the NO<sub>x</sub> emissions associated with Project construction exceed the 54-lbs/day threshold set by the BAAQMD, as referenced by Appendix B to the IS/MND (see table below) (Appendix B-1, pp. 7).

Construction Model	NO <sub>x</sub>
SWAPE	61.54
IS/MND	40.55
% Increase	52%
<b>BAAQMD Regional Threshold (lbs/day)</b>	<b>54</b>
<b>Threshold Exceeded?</b>	<b>Yes</b>

As you can see in the excerpt above, when modeled correctly, the Project's construction-related NO<sub>x</sub> emissions increase by approximately 52% and exceed the BAAQMD significance threshold. Thus, our model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the IS/MND. As a result, an EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the surrounding environment.

<sup>20</sup> "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 6.



## Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The IS/MND concludes that the proposed Project would result in a less-than-significant health risk impact, without conducting a quantified construction or operational health risk assessment (“HRA”) (p. 26). Specifically, the IS/MND states:

“Project construction activities would be limited to the project site (1,500 feet away) when school is in-session during Fall 2021 and would therefore not warrant a health risk evaluation and would be considered less-than-significant by the BAAQMD” (p. 26).

Furthermore, the IS/MND states:

“A Health Risk Assessment was prepared for the SDG 330 project in February 2019. The SDG 330 project is south of the proposed project and is much closer to existing residences and the future school. The SDG 330 project is also a larger project generating more vehicle trips than the proposed project. The Health Risk Assessment concluded that all construction and operational impacts from the SDG 330 project resulted in less-than-significant health impacts on residential and school receptors without mitigation” (p. 26).

Finally, the IS/MND concludes:

“The dominate wind direction in the project area is from the south/southwest. Wind direction plays a major role in the transport and dispersion of air pollutants. TAC emissions from the project would generally be dispersed in the dominant wind direction away from sensitive receptors and towards industrial land uses north/northwest of the project site. Therefore, health impacts associated with the proposed project would be **less than significant**” (p. 26).

However, the IS/MND’s evaluation of the Project’s potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for four reasons.

First, the IS/MND’s claim that health risk impacts would be less than significant, because construction activities would be located approximately 1,500 feet from the nearest school, is incorrect. According to BAAQMD guidelines, “BAAQMD recommends that all receptors located within a 1,000 foot radius of the project’s fence line be assessed for potentially significant impacts from the incremental increase in risks or hazards from the proposed new source.”<sup>21</sup> Here, the IS/MND states that there is “one residence about 1,000 feet east of the site” (p. 26). Moreover, further review of IS/MND demonstrates that the Project’s borrow pit and stockpile hauling area is only 500 feet from the nearest residence (see excerpt below) (p. 77, Table Noise-4).

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<sup>21</sup> “Assessing and Mitigating Local Community Risk and Hazard Impacts.” BAAQMD, May 2011, *available at*: [https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011\\_5\\_3\\_11.ashx](https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011_5_3_11.ashx), p. 5-7.



**Table Noise-4: Estimated Maximum Construction Noise Level at Nearest Residence**

Construction Activity	Approximate Distance to Residence (feet)	Noise Level (dB, Lmax) at Residence
Site Preparation, grading, and paving	1,000	53
Material stockpile hauling and borrow area grading	500	60
Warehouse construction	1,100	52

As you can see in the excerpt above, the nearest sensitive receptor is only 500 feet from the Project. As such, pursuant to BAAQMD guidelines, the IS/MND should have prepared a quantified HRA evaluating the potential health risk impacts posed to nearby sensitive receptors.

Second, the IS/MND makes the qualitative claims that an HRA prepared for the SDG 330 project, which is “a larger project generating more vehicle trips than the proposed project,” found a less-than-significant health risk impact, and “TAC emissions from the project would generally be dispersed in the dominant wind direction away from sensitive receptors and towards industrial land uses north/northwest of the project site” (p. 26). However, these qualitative claims are insufficient in justifying the omission of a construction and operational HRA. Simply because an HRA was prepared for a completely different project that found less-than-significant health risk impacts, does not guarantee that the health risk impacts posed by the proposed Project would be less than significant. Rather, construction of the Project will produce emissions of diesel particulate matter (“DPM”), a human carcinogen, through the exhaust stacks of construction equipment over a construction period of approximately 9.5 months (IS/MND, p. 12). Furthermore, the IS/MND indicates that Project operation would generate 367 daily weekday vehicle trips, which will generate additional exhaust emissions and continue to expose nearby sensitive receptors to DPM emissions (p. 45). As such, without making a reasonable effort to connect the Project’s construction-related and operational TAC emissions and the potential health risks posed to nearby receptors, the IS/MND should not conclude that the Project’s TAC emissions would be less than significant.

Third, by failing to prepare a construction HRA, the Project is inconsistent with the most recent guidance published by the Office of Environmental Health Hazard Assessment (“OEHHA”), the organization responsible for providing guidance on conducting HRAs in California. OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015.<sup>22</sup> This guidance document describes the types of projects that warrant the preparation of an HRA. The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors.<sup>23</sup> As the Project’s proposed 9.5-month construction duration vastly exceeds the 2-month requirement set forth by OEHHA, it is clear that the

<sup>22</sup> “Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments.” OEHHA, February 2015, available at: [http://oehha.ca.gov/air/hot\\_spots/hotspots2015.html](http://oehha.ca.gov/air/hot_spots/hotspots2015.html).

<sup>23</sup> “Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments.” OEHHA, February 2015, available at: [http://oehha.ca.gov/air/hot\\_spots/2015/2015GuidanceManual.pdf](http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf), p. 8-18.

Project meets the threshold requiring a quantified HRA under OEHHA guidance. Thus, we recommend that health risk impacts from Project construction be evaluated in an EIR, per OEHHA guidelines, in order to determine the nature and extent of the Project's health risk impacts.

Fourth, by failing to prepare an operational HRA, the Project is inconsistent with the most recent guidance published by OEHHA. Specifically, the OEHHA document recommends that exposure from projects lasting more than 6 months be evaluated for the duration of the project and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident ("MEIR").<sup>24</sup> Even though we were not provided with the expected lifetime of the Project, we can reasonably assume that the Project will operate for at least 30 years, if not more. Therefore, we recommend that health risk impacts from Project operation also be evaluated, as a 30-year exposure duration vastly exceeds the 6-month requirement set forth by OEHHA. These recommendations reflect the most recent state health risk policies, and as such, we recommend that an updated assessment of health risk impacts posed to nearby sensitive receptors from Project operation be included in an EIR for the Project.

Fifth, by claiming that the Project would result in a less-than-significant health risk impact without conducting a quantified construction or operational HRA, the IS/MND fails to compare the Project's estimated excess cancer risk to the BAAQMD's specific numeric threshold of 10 in one million, as referenced by the IS/MND (p. 26).<sup>25</sup> Thus, the IS/MND cannot conclude that Project construction and operation would result in a less-than-significant health risk impact without quantifying the resulting cancer risk to compare to the proper threshold. As a result, the IS/MND's less-than-significant health risk impact conclusion should not be relied upon.

### Screening-Level Analysis Demonstrates Significant Impacts

In an effort to demonstrate the potential health risk impacts posed by Project construction and operation to nearby, existing sensitive receptors utilizing site-specific emissions estimates, we prepared a screening-level HRA. The results of our assessment, as described below, demonstrate that the proposed Project may result in a significant impact not previously identified or addressed by the IS/MND.

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.<sup>26</sup> The model replaced SCREEN3, and AERSCREEN is included in the

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<sup>24</sup> "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: [http://oehha.ca.gov/air/hot\\_spots/2015/2015GuidanceManual.pdf](http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf), p. 8-6, 8-15

<sup>25</sup> "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2017, available at: [https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en), p. 2-5.

<sup>26</sup> U.S. EPA (April 2011) AERSCREEN Released as the EPA Recommended Screening Model, [http://www.epa.gov/ttn/scram/guidance/clarification/20110411\\_AERSCREEN\\_Release\\_Memo.pdf](http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf)

OEHHA<sup>27</sup> and the California Air Pollution Control Officers Associated (“CAPCOA”)<sup>28</sup> guidance as the appropriate air dispersion model for Level 2 health risk screening assessments (“HRSAs”). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRA of the Project’s construction and operational health-related impact to residential sensitive receptors using the annual PM<sub>10</sub> exhaust estimates from the IS/MND’s incorrect and unsubstantiated air model. Consistent with recommendations set forth by OEHHA, we assumed residential exposure begins during the third trimester stage of life. The CalEEMod output files indicate that construction activities will generate 204 pounds of DPM over the 291-day construction period. The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation:

$$\text{Emission Rate } \left( \frac{\text{grams}}{\text{second}} \right) = \frac{204 \text{ lbs}}{291 \text{ days}} \times \frac{453.6 \text{ grams}}{\text{lbs}} \times \frac{1 \text{ day}}{24 \text{ hours}} \times \frac{1 \text{ hour}}{3,600 \text{ seconds}} = \mathbf{0.00368 \text{ g/s}}$$

Using this equation, we estimated a construction emission rate of 0.000368 grams per second (“g/s”). Subtracting the 291-day construction period from the total residential duration of 30 years, we assumed that after Project construction, the sensitive receptor would be exposed to the Project’s operational DPM for an additional 29.2 years, approximately. The CalEEMod output files indicate that operational activities will generate 188 pounds of DPM per year throughout operation. Applying the same equation used to estimate the construction DPM rate, we estimated the following emission rate for Project operation:

$$\text{Emission Rate } \left( \frac{\text{grams}}{\text{second}} \right) = \frac{188 \text{ lbs}}{365 \text{ days}} \times \frac{453.6 \text{ grams}}{\text{lbs}} \times \frac{1 \text{ day}}{24 \text{ hours}} \times \frac{1 \text{ hour}}{3,600 \text{ seconds}} = \mathbf{0.00270 \text{ g/s}}$$

Using this equation, we estimated an operational emission rate of 0.00270 g/s. Construction and operational activity was simulated as a 10.39-acre rectangular area source in AERSCREEN with dimensions of 296 by 142 meters. A release height of three meters was selected to represent the height of exhaust stacks on operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

<sup>27</sup> OEHHA (February 2015) Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments, <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>.

<sup>28</sup> CAPCOA (July 2009) Health Risk Assessments for Proposed Land Use Projects, [http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA\\_HRA\\_LU\\_Guidelines\\_8-6-09.pdf](http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf).

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10%.<sup>29</sup> According to the IS/MND, the nearest sensitive receptor is a single-family residence located approximately 500 feet, or approximately 152 meters, from the Project site (p. 77). Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 3.827  $\mu\text{g}/\text{m}^3$  DPM at approximately 150 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.3827  $\mu\text{g}/\text{m}^3$  for Project construction at the MEIR. For Project operation, the single-hour concentration estimated by AERSCREEN is 2.812  $\mu\text{g}/\text{m}^3$  DPM at approximately 150 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.2812  $\mu\text{g}/\text{m}^3$  for Project operation at the MEIR.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA. Consistent with the construction schedule utilized in the IS/MND's CalEEMod model, the annualized average concentration for construction was used for the entire third trimester of pregnancy (0.25 years) and the first 0.55 years of the infantile stage of life (0 – 2 years). The annualized averaged concentration for operation was used for the remainder of the 30-year exposure period, which makes up the remaining 1.45 years of the infantile stage of life, the entire child stage of life (2 – 16 years), and the entire adult stage of life (16 – 30 years).

Consistent with OEHHA, as recommended by SCAQMD, BAAQMD, and SJVAPCD guidance, and referenced by the IS/MND, we used Age Sensitivity Factors ("ASFs") to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.<sup>30, 31, 32, 33</sup> According to this guidance, the quantified cancer risk should be multiplied by a factor of ten during the third trimester of pregnancy and during the first two years of life (infant) as well as multiplied by a factor of three during the child stage of life (2 – 16 years). Furthermore, in accordance with the guidance set forth by OEHHA,

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<sup>29</sup> "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised." EPA, 1992, *available at*: [https://www3.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019\\_OCR.pdf](https://www3.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf); *see also* "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at*: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>, p. 4-36.

<sup>30</sup> "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at*: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>.

<sup>31</sup> "Draft Environmental Impact Report (DEIR) for the Proposed The Exchange (SCH No. 2018071058)." SCAQMD, March 2019, *available at*: <http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2019/march/RVC190115-03.pdf?sfvrsn=8>, p. 4.

<sup>32</sup> "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2017, *available at*: [http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en), p. 56; *see also* "Recommended Methods for Screening and Modeling Local Risks and Hazards." BAAQMD, May 2011, *available at*: <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx>, p. 65, 86.

<sup>33</sup> "Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document." SJVAPCD, May 2015, *available at*: <https://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf>, p. 8, 20, 24.

we used the 95<sup>th</sup> percentile breathing rates for infants.<sup>34</sup> Finally, according to BAAQMD guidance, we used a Fraction of Time At Home (“FAH”) value of 0.85 for the 3rd trimester and infant receptors, 0.72 for child receptors, and 0.73 for the adult receptors.<sup>35</sup> We used a cancer potency factor of 1.1 (mg/kg-day)<sup>-1</sup> and an averaging time of 25,550 days. The results of our calculations are shown below.

**The Closest Exposed Individual at an Existing Residential Receptor**

Activity	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	Cancer Risk without ASFs*	ASF	Cancer Risk with ASFs*
Construction	0.25	0.3827	361	4.4E-07	10	4.4E-06
<b>3rd Trimester Duration</b>	<b>0.25</b>			<b>4.4E-07</b>	<b>3rd Trimester Exposure</b>	<b>4.4E-06</b>
Construction	0.55	0.3827	1090	2.9E-06	10	2.9E-05
Operation	1.45	0.2812	1090	5.7E-06	10	5.7E-05
<b>Infant Exposure Duration</b>	<b>2.00</b>			<b>8.6E-06</b>	<b>Infant Exposure</b>	<b>8.6E-05</b>
Operation	14.00	0.2812	572	2.4E-05	3	7.3E-05
<b>Child Exposure Duration</b>	<b>14.00</b>			<b>2.4E-05</b>	<b>Child Exposure</b>	<b>7.3E-05</b>
Operation	14.00	0.2812	261	1.1E-05	1	1.1E-05
<b>Adult Exposure Duration</b>	<b>14.00</b>			<b>1.1E-05</b>	<b>Adult Exposure</b>	<b>1.1E-05</b>
<b>Lifetime Exposure Duration</b>	<b>30.00</b>			<b>4.5E-05</b>	<b>Lifetime Exposure</b>	<b>1.8E-04</b>

\* We, along with CARB and BAAQMD, recommend using the more updated and health protective 2015 OEHHA guidance, which includes ASFs.

As demonstrated in the table above, the excess cancer risk to adults, children, infants, and during the 3<sup>rd</sup> trimester of pregnancy at the MEIR located approximately 150 meters away, over the course of Project operation, utilizing age sensitivity factors, are approximately 11, 73, 86, and 4.4 in one million, respectively. The excess cancer risk over the course of a residential lifetime (30 years), utilizing age sensitivity factors, is approximately 180 in one million. The infant, child, adult, and lifetime cancer risks exceed the BAAQMD threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the IS/MND. Utilizing age sensitivity factors is the most conservative, health-protective analysis according to the most recent guidance by OEHHA and reflects recommendations from the air district. Results without age sensitivity factors are presented in the table

<sup>34</sup> “Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics ‘Hot Spots’ Information and Assessment Act,” June 5, 2015, available at: <http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-risk-assessment-guidelines.pdf?sfvrsn=6>, p. 19.

“Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments.” OEHHA, February 2015, available at: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>

<sup>35</sup> “Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines.” BAAQMD, January 2016, available at: [http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines\\_clean\\_jan\\_2016-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en)

above, although we **do not** recommend utilizing these values for health risk analysis. Regardless, the excess cancer risk to adults, children, infants, and during the 3<sup>rd</sup> trimester of pregnancy at the MEIR located approximately 150 meters away, over the course of Project construction and operation, without age sensitivity factors, are approximately 11, 24, 8.6, and 0.44 in one million, respectively. The excess cancer risk over the course of a residential lifetime (30 years), without age sensitivity factors, is approximately 45 in one million. The adult, child, and lifetime cancer risk, without age sensitivity factors, exceeds the BAAQMD threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the IS/MND. While we recommend the use of age sensitivity factors, health risk impacts exceed the BAAQMD threshold regardless.

An agency must include an analysis of health risks that connects the Project's air emissions with the health risk posed by those emissions. Our analysis represents a screening-level HRA, which is known to be conservative and tends to err on the side of health protection.<sup>36</sup> The purpose of the screening-level construction and operational HRA shown above is to demonstrate the link between the proposed Project's emissions and the potential health risk. Our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. Therefore, since our screening-level HRA indicates a potentially significant impact, the City should prepare an EIR with an HRA which makes a reasonable effort to connect the Project's air quality emissions and the potential health risks posed to nearby receptors. Thus, the City should prepare an updated, quantified air pollution model as well as an updated, quantified refined health risk assessment which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

## Greenhouse Gas

### Failure to Adequately Evaluate Greenhouse Gas Impacts

The IS/MND estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 590 metric tons of CO<sub>2</sub> equivalents per year ("MT CO<sub>2</sub>e/year"), which would not exceed the BAAQMD threshold of 1,100 MT CO<sub>2</sub>e/year (see excerpt below) (p. 52, Table GHG-1).

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<sup>36</sup> "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>, p. 1-5

**Table GHG-1. Estimated Annual Construction Greenhouse Gas Emissions**

Emission Source	GHG CO <sub>2</sub> e Metric Tons Per Year
<b>Construction (30-year amortized)</b>	14
<b>Operations</b>	
Area	<1
Energy	87
Mobile	312
Off-Road Equipment (Forklifts)	176
Solid Waste	1
Water/Wastewater	<1
<b>Total Emissions (including Construction)</b>	<b>590</b>
<i>BAAQMD Significance Threshold</i>	1,100
<b>Potentially Significant?</b>	<b>No</b>

Source: CalEEMod Version 2016.3.2

Furthermore, the IS/MND states:

“The City of American Canyon has not adopted a Climate Action Plan regarding the mandatory reduction of GHG emissions. The applicable plan, policy or regulation adopted for the purpose of reducing the GHG emissions is SB 32, which extends AB 32 and requires that GHG emissions are reduced 40% below the 1990 levels by 2030 (as written into Executive Order B-30-15), and other State regulations with post-2020 goals such as Executive Order S-3-05. The proposed project would result in a significant impact if it would be in conflict with the goals of these State regulations. The assumption is that SB 32 and associated regulations will be successful in reducing GHG emissions and reducing the cumulative GHG emissions Statewide to meet 2030 goals and post-2030 goals. The State has taken these measures, because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG emissions. The proposed project has been reviewed relative to SB 32 and the State’s Climate Change Scoping Plan and it has been determined that the proposed project would not conflict with the goals of SB 32 and other State regulations. Therefore, the proposed project would result in a ***less-than-significant impact***” (p. 52).

As you can see in the excerpt above, the IS/MND relies upon qualitative analyses of the Project’s consistency with the SB 32 and CARB’s 2017 *Scoping Plan* to determine the significance of the Project’s GHG impact (p. 52). However, the IS/MND’S GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

- (1) The IS/MND’s quantitative GHG analysis relies upon an incorrect and unsubstantiated air model;
- (2) The IS/MND’s GHG analysis relies upon an outdated threshold;
- (3) The IS/MND fails to identify a potentially significant GHG impact; and
- (4) The IS/MND fails to demonstrate that the Project would be consistent with CARB’s *Scoping Plan*.



### *(1) Incorrect and Unsubstantiated Quantitative GHG Analysis*

As previously stated, the IS/MND estimates that the Project would generate net annual GHG emissions of 590 MT CO<sub>2</sub>e/year (p. 52, Table GHG-1). However, the IS/MND's quantitative GHG analysis should not be relied upon, as it relies upon an unsubstantiated air model. As previously discussed, when we reviewed the Project's CalEEMod output files, provided in the CalEEMod Output Files for the Air Quality and GHG Emissions Data and Supporting Information as Appendix B-3 to the IS/MND, we found that several of the values inputted into the model are not consistent with information disclosed in the IS/MND and associated documents. As a result, the model underestimates the Project's GHG emissions, and the IS/MND's quantitative GHG analysis should not be relied upon to determine Project significance. An EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

### *(2) Incorrect Reliance on an Outdated Threshold*

As discussed above, the IS/MND relies upon the BAAQMD's bright-line threshold of 1,100 MT CO<sub>2</sub>e/year. However, this threshold is outdated and inapplicable to the proposed Project, as it was developed for the air district's planned reductions for 2020, based on AB 32.<sup>37</sup> Thus, this threshold only applies to projects that will become operational by the year 2020. Given that it is January 2021, and the Project has not yet been approved, the Project will not become operational until after the year 2020. As such, the BAAQMD's 2020 bright-line threshold of 1,100 MT CO<sub>2</sub>e/year is inapplicable to the proposed Project. Rather, we recommend that the Project apply the AEP "2030 Land Use Efficiency Threshold" of 2.6 metric tons of CO<sub>2</sub> equivalents per service population per year ("MT CO<sub>2</sub>e/SP/year").<sup>38</sup> In support of this threshold for projects with a horizon year beyond 2020, AEP guidance states:

"Once the state has a full plan for 2030 (which is expected in 2017), and then a project with a horizon between 2021 and 2030 should be evaluated based on a threshold using the 2030 target. A more conservative approach would be to apply a 2030 threshold based on SB 32 for any project with a horizon between 2021 and 2030 regardless of the status of the Scoping Plan Update" (emphasis added).<sup>39</sup>

As the California Air Resources Board ("CARB") adopted *California's 2017 Climate Change Scoping Plan* in November of 2017, the proposed Project "should be evaluated based on a threshold using the 2030 target," according to the relevant guidance referenced above. As such, we recommend that an EIR be prepared, including an updated air model and comparing the Project's estimated GHG emissions to the "2030 Land Use Efficiency Threshold" of 2.6 MT CO<sub>2</sub>e/SP/year.

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<sup>37</sup> "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2017, *available at*: [http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en), p. D-20 – D-22.

<sup>38</sup> "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at*: [https://califaep.org/docs/AEP-2016\\_Final\\_White\\_Paper.pdf](https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf), p. 40.

<sup>39</sup> "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at*: [https://califaep.org/docs/AEP-2016\\_Final\\_White\\_Paper.pdf](https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf), p. 40.



### *(3) Failure to Identify a Potentially Significant GHG Impact*

The IS/MND's incorrect and unsubstantiated air model indicates a potentially significant GHG impact, when applying the "2030 Land Use Efficiency Threshold" of 2.6 MT CO<sub>2</sub>e/SP/year. As previously stated, the IS/MND estimates that the Project would generate net annual GHG emissions of 590 MT CO<sub>2</sub>e/year (p. 52, Table GHG-1). Furthermore, according to CAPCOA's *CEQA & Climate Change* report, service population is defined as "the sum of the number of residents and the number of jobs supported by the project."<sup>40</sup> The IS/MND estimates that the Project would employ approximately 50 people (p. 82). As the Project does not contain any residential land uses, we estimate a service population of 50 people.<sup>41</sup> Dividing the Project's GHG emissions, as estimated by the IS/MND, by a service population of 50 people, we find that the Project would emit approximately 11.80 MT CO<sub>2</sub>e/SP/year (see table below).<sup>42</sup>

IS/MND Service Population Efficiency	
Project Phase	Proposed Project (MT CO <sub>2</sub> e/year)
Total	590
Service Population	50
Service Population Efficiency	11.80
Threshold	2.6
Exceed?	Yes

As demonstrated above, when we compare the Project's service population efficiency value to the AEP "2030 Land Use Efficiency Threshold" of 2.6 MT CO<sub>2</sub>e/SP/year, we find that the Project would result in a significant GHG impact not previously identified or addressed by the IS/MND. Therefore, an EIR should be prepared and recirculated for the Project, and mitigation should be implemented where necessary.

### *(4) Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan*

As previously discussed, the IS/MND relies upon the Project's consistency with CARB's 2017 *Scoping Plan* to determine Project GHG significance (p. 52). However, this is incorrect, as the IS/MND fails to consider performance-based measures proposed by CARB.

#### *i. Passenger & Light Duty VMT Per Capita Benchmarks per SB 375*

In reaching the State's long-term GHG emission reduction goals, CARB's 2017 *Scoping Plan* explicitly cites to SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.<sup>43</sup> CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a "baseline scenario" that includes "current projections of VMT included in the existing Regional Transportation

<sup>40</sup> CAPCOA (Jan. 2008) *CEQA & Climate Change*, p. 71-72, <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>.

<sup>41</sup> Calculated: 50 employees + 0 residents = 50 people.

<sup>42</sup> Calculated: (590 MT CO<sub>2</sub>e/year) / (50 service population) = (11.80 MT CO<sub>2</sub>e/SP/year).

<sup>43</sup> CARB (Nov. 2017) 2017 *Scoping Plan*, p. 25, 98, 101-103, [https://www3.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State’s 18 Metropolitan Planning Organizations (MPOs) pursuant to SB 375 as of 2015.”<sup>44</sup> By dividing the projected daily VMT by the population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2022 (Project operational year), and 2030 (target years under SB 32) (see table below and Attachment B).

2017 Scoping Plan Daily VMT Per Capita						
	Napa County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	136,281	2,608,508.17	19.14	37,335,085	836,463,980.00	22.40
2022	145,557	2,870,053.23	19.72	41,321,565	916,010,146.00	22.17
2030	152,833	2,960,256.07	19.37	43,939,250	957,178,153.00	21.78

The below table compares the 2017 *Scoping Plan* daily VMT per capita values against the daily VMT per capita values for the Project based on the IS/MND’s modeling (see table below and Attachment C).

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Project
	IS/MND
Annual VMT from Auto & Light-Duty Vehicles	606,115
Daily VMT from Auto & Light-Duty Vehicles	1,661
Service Population	50
Daily VMT Per Capita	33.21
2017 Scoping Plan Benchmarks, Statewide	
22.40 VMT (2010 Baseline) Exceed?	Yes
22.17 VMT (2022 Projected) Exceed?	Yes
21.78 VMT (2030 Projected) Exceed?	Yes
2017 Scoping Plan Benchmarks, Napa County Specific	
19.14 VMT (2010 Baseline) Exceed?	Yes
19.72 VMT (2022 Projected) Exceed?	Yes
19.37 VMT (2030 Projected) Exceed?	Yes

As shown above, the IS/MND’s modeling shows that the Project exceeds the CARB 2017 *Scoping Plan* projections for 2010, 2022, and 2030. Because the exceeds the CARB 2017 *Scoping Plan* performance-based daily VMT per capita projections, the Project conflicts with the CARB 2017 *Scoping Plan* and SB 375. As such, the IS/MND’s claim that the proposed Project would not conflict with the CARB 2017

<sup>44</sup> CARB (Jan. 2019) 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals (“Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions”), Excel Sheet “Readme”, [https://ww2.arb.ca.gov/sites/default/files/2019-01/sp\\_mss\\_vmt\\_calculations\\_jan19\\_0.xlsx](https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx).

*Scoping Plan* is incorrect and unsubstantiated. An EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less than significant GHG impacts.

### Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project's air quality, health risk, and GHG emissions may result in significant impacts and should be mitigated further. In an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Feasible mitigation measures can be found in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*.<sup>45</sup> Therefore, to reduce the Project's emissions, consideration of the following measures should be made:

<b>CAPCOA's Quantifying Greenhouse Gas Mitigation Measures<sup>46</sup></b>	
<b>Measures – Energy</b>	
<b><i>Building Energy Use</i></b>	
Exceed Title-24 Building Envelope Energy Efficiency Standards (California Building Standards Code)	
Install Programmable Thermostat Timers	
Obtain Third-party HVAC Commissioning and Verification of Energy Savings	
Install Energy Efficient Appliances	
Install Energy Efficient Boilers	
<b><i>Lighting</i></b>	
Install Higher Efficacy Public Street and Area Lighting	
Limit Outdoor Lighting Requirements	
Replace Traffic Lights with LED Traffic Lights	
<b><i>Alternative Energy Generation</i></b>	
Establish Onsite Renewable or Carbon-Neutral Energy Systems	
Establish Onsite Renewable Energy System – Solar Power	
Establish Onsite Renewable Energy System – Wind Power	
Utilize a Combined Heat and Power System	
Establish Methane Recovery in Landfills	
Establish Methane Recovery in Wastewater Treatment Plants	
<b>Measures – Transportation</b>	
<b><i>Land Use/Location</i></b>	
Increase Density	
Increase Location Efficiency	

<sup>45</sup> <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

<sup>46</sup> "Quantifying Greenhouse Gas Mitigation Measures." California Air Pollution Control Officers Association (CAPCOA), August 2010, available at: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p.

Increase Diversity of Urban and Suburban Developments (Mixed Use)
Increase Destination Accessibility
Increase Transit Accessibility
Integrate Affordable and Below Market Rate Housing
Orient Project Toward Non-Auto Corridor
Locate Project near Bike Path/Bike Lane
<b><i>Neighborhood/Site Enhancements</i></b>
Provide Pedestrian Network Improvements, such as: <ul style="list-style-type: none"> <li>• Compact, mixed-use communities</li> <li>• Interconnected street network</li> <li>• Narrower roadways and shorter block lengths</li> <li>• Sidewalks</li> <li>• Accessibility to transit and transit shelters</li> <li>• Traffic calming measures and street trees</li> <li>• Parks and public spaces</li> <li>• Minimize pedestrian barriers</li> </ul>
Provide Traffic Calming Measures, such as: <ul style="list-style-type: none"> <li>• Marked crosswalks</li> <li>• Count-down signal timers</li> <li>• Curb extensions</li> <li>• Speed tables</li> <li>• Raised crosswalks</li> <li>• Raised intersections</li> <li>• Median islands</li> <li>• Tight corner radii</li> <li>• Roundabouts or mini-circles</li> <li>• On-street parking</li> <li>• Planter strips with trees</li> <li>• Chicanes/chokers</li> </ul>
Implement a Neighborhood Electric Vehicle (NEV) Network.
Create Urban Non-Motorized Zones
Incorporate Bike Lane Street Design (on-site)
Provide Bike Parking in Non-Residential Projects
Provide Bike Parking with Multi-Unit Residential Projects
Provide Electric Vehicle Parking
Dedicate Land for Bike Trails
<b><i>Parking Policy/Pricing</i></b>
Limit Parking Supply through: <ul style="list-style-type: none"> <li>• Elimination (or reduction) of minimum parking requirements</li> <li>• Creation of maximum parking requirements</li> </ul>

<ul style="list-style-type: none"> <li>• Provision of shared parking</li> </ul>
Unbundle Parking Costs from Property Cost
Implement Market Price Public Parking (On-Street)
Require Residential Area Parking Permits
<b><i>Commute Trip Reduction Programs</i></b>
Implement Commute Trip Reduction (CTR) Program – Voluntary <ul style="list-style-type: none"> <li>• Carpooling encouragement</li> <li>• Ride-matching assistance</li> <li>• Preferential carpool parking</li> <li>• Flexible work schedules for carpools</li> <li>• Half time transportation coordinator</li> <li>• Vanpool assistance</li> <li>• Bicycle end-trip facilities (parking, showers and lockers)</li> <li>• New employee orientation of trip reduction and alternative mode options</li> <li>• Event promotions and publications</li> <li>• Flexible work schedule for employees</li> <li>• Transit subsidies</li> <li>• Parking cash-out or priced parking</li> <li>• Shuttles</li> <li>• Emergency ride home</li> </ul>
Implement Commute Trip Reduction (CTR) Program – Required Implementation/Monitoring <ul style="list-style-type: none"> <li>• Established performance standards (e.g. trip reduction requirements)</li> <li>• Required implementation</li> <li>• Regular monitoring and reporting</li> </ul>
Provide Ride-Sharing Programs <ul style="list-style-type: none"> <li>• Designate a certain percentage of parking spaces for ride sharing vehicles</li> <li>• Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles</li> <li>• Providing a web site or messaging board for coordinating rides</li> <li>• Permanent transportation management association membership and funding requirement.</li> </ul>
Implement Subsidized or Discounted Transit Program
Provide Ent of Trip Facilities, including: <ul style="list-style-type: none"> <li>• Showers</li> <li>• Secure bicycle lockers</li> <li>• Changing spaces</li> </ul>
Encourage Telecommuting and Alternative Work Schedules, such as: <ul style="list-style-type: none"> <li>• Staggered starting times</li> <li>• Flexible schedules</li> <li>• Compressed work weeks</li> </ul>
Implement Commute Trip Reduction Marketing, such as: <ul style="list-style-type: none"> <li>• New employee orientation of trip reduction and alternative mode options</li> <li>• Event promotions</li> <li>• Publications</li> </ul>

Implement Preferential Parking Permit Program
Implement Car-Sharing Program
Implement School Pool Program
Provide Employer-Sponsored Vanpool/Shuttle
Implement Bike-Sharing Programs
Implement School Bus Program
Price Workplace Parking, such as: <ul style="list-style-type: none"> <li>• Explicitly charging for parking for its employees;</li> <li>• Implementing above market rate pricing;</li> <li>• Validating parking only for invited guests;</li> <li>• Not providing employee parking and transportation allowances; and</li> <li>• Educating employees about available alternatives.</li> </ul>
Implement Employee Parking “Cash-Out”
<b><i>Transit System Improvements</i></b>
Transit System Improvements, including: <ul style="list-style-type: none"> <li>• Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route.</li> <li>• Frequent, high-capacity service</li> <li>• High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride.</li> <li>• Pre-paid fare collection to minimize boarding delays.</li> <li>• Integrated fare systems, allowing free or discounted transfers between routes and modes.</li> <li>• Convenient user information and marketing programs.</li> <li>• High quality bus stations with Transit Oriented Development in nearby areas.</li> <li>• Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.</li> </ul>
Implement Transit Access Improvements, such as: <ul style="list-style-type: none"> <li>• Sidewalk/crosswalk safety enhancements</li> <li>• Bus shelter improvements</li> </ul>
Expand Transit Network
Increase Transit Service Frequency/Speed
Provide Bike Parking Near Transit
Provide Local Shuttles
<b><i>Road Pricing/Management</i></b>
Implement Area or Cordon Pricing
Improve Traffic Flow, such as: <ul style="list-style-type: none"> <li>• Signalization improvements to reduce delay;</li> <li>• Incident management to increase response time to breakdowns and collisions;</li> <li>• Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions; and</li> </ul>

<ul style="list-style-type: none"> <li>Speed management to reduce high free-flow speeds.</li> </ul>
Required Project Contributions to Transportation Infrastructure Improvement Projects
Install Park-and-Ride Lots
<b><i>Vehicles</i></b>
Electrify Loading Docs and/or Require Idling-Reduction Systems
Utilize Alternative Fueled Vehicles, such as: <ul style="list-style-type: none"> <li>Biodiesel (B20)</li> <li>Liquefied Natural Gas (LNG)</li> <li>Compressed Natural Gas (CNG)</li> </ul>
Utilize Electric or Hybrid Vehicles
<b>Measures – Water</b>
<b><i>Water Supply</i></b>
Use Reclaimed Water
Use Gray Water
Use Locally Sourced Water Supply
<b><i>Water Use</i></b>
Install Low-Flow Water Fixtures
Adopt a Water Conservation strategy
Design Water-Efficient Landscapes (see California Department of Water Resources Model Water Efficient Landscape Ordinance), such as: <ul style="list-style-type: none"> <li>Reducing lawn sizes;</li> <li>Planting vegetation with minimal water needs, such as native species;</li> <li>Choosing vegetation appropriate for the climate of the project site;</li> <li>Choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.</li> </ul>
Use Water-Efficient Landscape Irrigation Systems (“Smart” irrigation control systems)
Reduce Turf in Landscapes and Lawns
Plant Native or Drought-Resistant Trees and Vegetation
<b>Measures – Area Landscaping</b>
<b><i>Landscaping Equipment</i></b>
Prohibit Gas Powered Landscape Equipment
Implement Lawnmower Exchange Program
Electric Yard Equipment Compatibility
<b>Measures – Solid Waste</b>
<b><i>Solid Waste</i></b>
Institute Recycling and Composting Services
Recycle Demolished Construction Material

<b>Measures – Vegetation</b>
<b><i>Vegetation</i></b>
Urban Tree Planting
Create New Vegetated Open Space
<b>Measures – Construction</b>
<b><i>Construction</i></b>
Use Alternative Fuels for Construction Equipment
Urban Tree Planting
Use Electric and Hybrid Construction Equipment
Limit Construction Equipment Idling Beyond Regulation Requirements
Institute a Heavy-Duty Off-Road Vehicle Plan, including: <ul style="list-style-type: none"> <li>• Construction vehicle inventory tracking system;</li> <li>• Requiring hour meters on equipment;</li> <li>• Document the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment; and</li> <li>• Daily logging of the operating hours of the equipment.</li> </ul>
Implement a Construction Vehicle Inventory Tracking System
<b>Measures – Miscellaneous</b>
<b><i>Miscellaneous</i></b>
Establish a Carbon Sequestration Project, such as: <ul style="list-style-type: none"> <li>• Geologic sequestration or carbon capture and storage techniques, in which CO<sub>2</sub> from point sources is captured and injected underground;</li> <li>• Terrestrial sequestration in which ecosystems are established or preserved to serve as CO<sub>2</sub> sinks;</li> <li>• Novel techniques involving advanced chemical or biological pathways; or</li> <li>• Technologies yet to be discovered.</li> </ul>
Establish Off-Site Mitigation
Use Local and Sustainable Building Materials
Require best Management Practices in Agriculture and Animal Operations
Require Environmentally Responsible Purchasing, such as: <ul style="list-style-type: none"> <li>• Purchasing products with sustainable packaging;</li> <li>• Purchasing post-consumer recycled copier paper, paper towels, and stationary;</li> <li>• Purchasing and stocking communal kitchens with reusable dishes and utensils;</li> <li>• Choosing sustainable cleaning supplies;</li> <li>• Leasing equipment from manufacturers who will recycle the components at their end of life;</li> <li>• Choosing ENERGY STAR appliances and Water Sense-certified water fixtures;</li> <li>• Choosing electronic appliances with built in sleep-mode timers;</li> <li>• Purchasing 'green power' (e.g. electricity generated from renewable or hydropower) from the utility; and</li> <li>• Choosing locally-made and distributed products.</li> </ul>
Implement an Innovative Strategy for GHG Mitigation



<b>Measures – General Plans</b>
<b>General Plans</b>
<p>Fund Incentives for Energy Efficiency, such as:</p> <ul style="list-style-type: none"> <li>• Retrofitting or designing new buildings, parking lots, streets, and public areas with energy-efficient lighting;</li> <li>• Retrofitting or designing new buildings with low-flow water fixtures and high-efficiency appliances;</li> <li>• Retrofitting or purchasing new low-emissions equipment;</li> <li>• Purchasing electric or hybrid vehicles;</li> <li>• Investing in renewable energy systems</li> </ul>
Establish a Local Farmer’s Market
Establish Community Gardens
Plant Urban Shade Trees
<p>Implement Strategies to Reduce Urban Heat-Island Effect, such as:</p> <ul style="list-style-type: none"> <li>• Planting urban shade trees;</li> <li>• Installing reflective roofs; and</li> <li>• Using light-colored or high-albedo pavements and surfaces.</li> </ul>

Furthermore, in an effort to reduce the Project’s emissions, we identified several mitigation measures that are applicable to the proposed Project from NEDC’s *Diesel Emission Controls in Construction Projects*.<sup>47</sup> Therefore, to reduce the Project’s emissions, consideration of the following measures should be made:

<b>NEDC’s Diesel Emission Controls in Construction Projects<sup>48</sup></b>
<b>Measures – Diesel Emission Control Technology</b>
<p>a. Diesel Onroad Vehicles</p> <p>All diesel nonroad vehicles on site for more than 10 total days must have either (1) engines that meet EPA onroad emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.</p>
<p>b. Diesel Generators</p> <p>All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.</p>
<p>c. Diesel Nonroad Construction Equipment</p> <p>i. All nonroad diesel engines on site must be Tier 2 or higher. Tier 0 and Tier 1 engines are not allowed on site</p>

<sup>47</sup> “Diesel Emission Controls in Construction Projects.” Northeast Diesel Collaborative (NEDC), December 2010, available at: <https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf>.

<sup>48</sup> “Diesel Emission Controls in Construction Projects.” Northeast Diesel Collaborative (NEDC), December 2010, available at: <https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf>.

ii.	All diesel nonroad construction equipment on site for more than 10 total days must have either (1) engines meeting EPA Tier 4 nonroad emission standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines 50hp and greater and by a minimum of 20% for engines less than 50hp.
d.	Upon confirming that the diesel vehicle, construction equipment, or generator has either an engine meeting Tier 4 non road emission standards or emission control technology, as specified above, installed and functioning, the developer will issue a compliance sticker. All diesel vehicles, construction equipment, and generators on site shall display the compliance sticker in a visible, external location as designated by the developer.
e.	Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.
f.	All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend <sup>49</sup> approved by the original engine manufacturer with sulfur content of 15 ppm or less.
<b>Measures – Idling Requirements</b>	
During periods of inactivity, idling of diesel onroad vehicles and nonroad equipment shall be minimized and shall not exceed the time allowed under state and local laws.	
<b>Measures – Additional Diesel Requirements</b>	
a.	Construction shall not proceed until the contractor submits a certified list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following: <ul style="list-style-type: none"> <li>i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.</li> <li>ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.</li> <li>iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.</li> </ul>
b.	If the contractor subsequently needs to bring on site equipment not on the list, the contractor shall submit written notification within 24 hours that attests the equipment complies with all contract conditions and provide information.
c.	All diesel equipment shall comply with all pertinent local, state, and federal regulations relative to exhaust emission controls and safety.
d.	The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.
<b>Reporting</b>	

<sup>49</sup> Biodiesel blends are only to be used in conjunction with the technologies which have been verified for use with biodiesel blends and are subject to the following requirements:  
<http://www.arb.ca.gov/diesel/verdev/reg/biodieselcompliance.pdf>.

<p>a. For each onroad diesel vehicle, nonroad construction equipment, or generator, the contractor shall submit to the developer's representative a report prior to bringing said equipment on site that includes:</p> <ul style="list-style-type: none"> <li>i. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, and engine serial number.</li> <li>ii. The type of emission control technology installed, serial number, make, model, manufacturer, and EPA/CARB verification number/level.</li> <li>iii. The Certification Statement signed and printed on the contractor's letterhead.</li> </ul>
<p>b. The contractor shall submit to the developer's representative a monthly report that, for each onroad diesel vehicle, nonroad construction equipment, or generator onsite, includes:</p> <ul style="list-style-type: none"> <li>i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date.</li> <li>ii. Any problems with the equipment or emission controls.</li> <li>iii. Certified copies of fuel deliveries for the time period that identify: <ul style="list-style-type: none"> <li>1. Source of supply</li> <li>2. Quantity of fuel</li> <li>3. Quality of fuel, including sulfur content (percent by weight)</li> </ul> </li> </ul>

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce emissions released during Project construction and operation. An EIR should be prepared to include all feasible mitigation measures, as well as include an updated health risk and GHG analysis to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's significant emissions are reduced to the maximum extent possible.

## Disclaimer

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

Sincerely,



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



Paul E. Rosenfeld, Ph.D.

Attachments A-C: SWAPE GHG and VMT Calculations  
Attachment D: SWAPE Project CalEEMod Modeling  
Attachment E: SWAPE Project AERSCREEN Modeling  
Attachment F: Paul Rosenfeld CV  
Attachment G: Matt Hagemann CV

## Attachment A

**GHG CALCULATIONS: IS/MND Modeling**

Line (L)	Value	Unit
<b>Daily VMT Per Capita From Passenger and Light Duty Vehicles</b>		
1	765,788	Project Total VMT (CalEEMod Annual Output, Tbl. 4.2 Trip Summary)
2	79.15%	Passenger and Light-Duty VMT Fleet Mix (CalEEMod Annual Output, Tbl. 4.4 Fleet Mix)
3	606,115	VMT from Passenger & Light-Duty Vehicles [Calc: (L1*L2)]
4	1,661	Daily VMT from Passenger & Light-Duty Vehicles [Calc: (L3/365)]
5	50.00	Service Population [0 residents + 50 long-term jobs]
6	33.21	Daily VMT Per Capita [(Calc: L4/L5)]

Attachment B

2017 Scoping Plan Daily VMT Per Capita						
Year	Napa County			State		
	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	136,281	2,608,508.17	19.14	37,335,085	836,463,980.00	22.40
2022	145,557	2,870,053.23	19.72	41,321,565	916,010,146.00	22.17
2030	152,833	2,960,256.07	19.37	43,939,250	957,178,153.00	21.78

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Project
	IS/MND
Annual VMT from Auto & Light-Duty Vehicles	606,115
Daily VMT from Auto & Light-Duty Vehicles	1,661
Service Population	50
Daily VMT Per Capita	33.21
2017 Scoping Plan Benchmarks, Statewide	
22.40 VMT (2010 Baseline) Exceed?	Yes
22.17 VMT (2022 Projected) Exceed?	Yes
21.78 VMT (2030 Projected) Exceed?	Yes
2017 Scoping Plan Benchmarks, Napa County Specific	
19.14 VMT (2010 Baseline) Exceed?	Yes
19.72 VMT (2022 Projected) Exceed?	Yes
19.37 VMT (2030 Projected) Exceed?	Yes

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

## SDG Commerce 217 Wine Storage Project

### Napa County, Annual

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	217.29	1000sqft	4.99	217,294.00	0
Other Asphalt Surfaces	89.77	1000sqft	2.06	89,768.00	0
Parking Lot	155.00	Space	1.39	62,000.00	0

### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

### 1.3 User Entered Comments & Non-Default Data



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Project Characteristics - Consistent with the IS/MND's model.

Land Use - Consistent with the IS/MND's model.

Construction Phase - Consistent with the IS/MND's model.

Grading - Consistent with the IS/MND's model.

Trips and VMT - Consistent with the IS/MND's model.

Vehicle Trips - Weekday trip rate consistent with the IS/MND's model. See SWAPE comment regarding Saturday and Sunday trip rates.

Energy Use - See SWAPE comment regarding energy use values.

Water And Wastewater - See SWAPE comment regarding to water use rates.

Solid Waste - See SWAPE comment regarding solid waste generation rate,

Operational Off-Road Equipment - Consistent with the IS/MND's model.

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	230.00	130.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	PhaseEndDate	5/20/2022	5/13/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	11/5/2021
tblConstructionPhase	PhaseEndDate	5/7/2021	5/28/2021
tblGrading	AcresOfGrading	17.50	17.00
tblGrading	AcresOfGrading	0.00	17.00
tblGrading	MaterialImported	0.00	38,000.00
tblLandUse	LandUseSquareFeet	217,290.00	217,294.00
tblLandUse	LandUseSquareFeet	89,770.00	89,768.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	10.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	0.25
tblVehicleTrips	WD_TR	1.68	1.69
tblWater	IndoorWaterUseRate	50,248,312.50	239,954.00
tblWater	OutdoorWaterUseRate	0.00	9,341.00

## 2.0 Emissions Summary

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## SDG Commerce 217 Wine Storage Project - Napa County, Annual

## 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					
2021	0.2378	2.4411	1.8763	4.5000e-003	0.3263	0.0945	0.4208	0.1396	0.0882	0.2278	0.0000	405.0842	405.0842	0.0669	0.0000	406.7570
2022	1.1831	0.1227	0.1686	2.8000e-004	3.0200e-003	6.3100e-003	9.3300e-003	8.0000e-004	5.8600e-003	6.6600e-003	0.0000	24.3706	24.3706	6.6600e-003	0.0000	24.5372
Maximum	1.1831	2.4411	1.8763	4.5000e-003	0.3263	0.0945	0.4208	0.1396	0.0882	0.2278	0.0000	405.0842	405.0842	0.0669	0.0000	406.7570

### 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					
2021	0.2378	2.4411	1.8763	4.5000e-003	0.3263	0.0945	0.4208	0.1396	0.0882	0.2278	0.0000	405.0840	405.0840	0.0669	0.0000	406.7568
2022	1.1831	0.1227	0.1686	2.8000e-004	3.0200e-003	6.3100e-003	9.3300e-003	8.0000e-004	5.8600e-003	6.6600e-003	0.0000	24.3706	24.3706	6.6600e-003	0.0000	24.5371
Maximum	1.1831	2.4411	1.8763	4.5000e-003	0.3263	0.0945	0.4208	0.1396	0.0882	0.2278	0.0000	405.0840	405.0840	0.0669	0.0000	406.7568

[illegible]

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2021	5-31-2021	1.1555	1.1555
2	6-1-2021	8-31-2021	0.8846	0.8846
3	9-1-2021	11-30-2021	0.6373	0.6373
5	3-1-2022	5-31-2022	1.3057	1.3057
		Highest	1.3057	1.3057

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9753	4.0000e-005	4.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.2600e-003	8.2600e-003	2.0000e-005	0.0000	8.8000e-003
Energy	4.4400e-003	0.0404	0.0339	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	325.4885	325.4885	0.0290	6.6300e-003	328.1894
Mobile	0.1106	0.6758	1.3456	4.7300e-003	0.3988	4.4100e-003	0.4032	0.1071	4.1400e-003	0.1112	0.0000	435.4204	435.4204	0.0169	0.0000	435.8420
Offroad	0.1484	1.3782	1.5074	2.0000e-003		0.0913	0.0913		0.0840	0.0840	0.0000	175.4516	175.4516	0.0567	0.0000	176.8702
Waste						0.0000	0.0000		0.0000	0.0000	41.4609	0.0000	41.4609	2.4503	0.0000	102.7176
Water						0.0000	0.0000		0.0000	0.0000	0.0761	0.1751	0.2512	7.8400e-003	1.9000e-004	0.5032
<b>Total</b>	<b>1.2388</b>	<b>2.0945</b>	<b>2.8911</b>	<b>6.9700e-003</b>	<b>0.3988</b>	<b>0.0988</b>	<b>0.4976</b>	<b>0.1071</b>	<b>0.0912</b>	<b>0.1983</b>	<b>41.5370</b>	<b>936.5438</b>	<b>978.0809</b>	<b>2.5607</b>	<b>6.8200e-003</b>	<b>1,044.1313</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9753	4.0000e-005	4.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.2600e-003	8.2600e-003	2.0000e-005	0.0000	8.8000e-003
Energy	4.4400e-003	0.0404	0.0339	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	325.4885	325.4885	0.0290	6.6300e-003	328.1894
Mobile	0.1106	0.6758	1.3456	4.7300e-003	0.3988	4.4100e-003	0.4032	0.1071	4.1400e-003	0.1112	0.0000	435.4204	435.4204	0.0169	0.0000	435.8420
Offroad	0.1484	1.3782	1.5074	2.0000e-003		0.0913	0.0913		0.0840	0.0840	0.0000	175.4516	175.4516	0.0567	0.0000	176.8702
Waste						0.0000	0.0000		0.0000	0.0000	41.4609	0.0000	41.4609	2.4503	0.0000	102.7176
Water						0.0000	0.0000		0.0000	0.0000	0.0761	0.1751	0.2512	7.8400e-003	1.9000e-004	0.5032
<b>Total</b>	<b>1.2388</b>	<b>2.0945</b>	<b>2.8911</b>	<b>6.9700e-003</b>	<b>0.3988</b>	<b>0.0988</b>	<b>0.4976</b>	<b>0.1071</b>	<b>0.0912</b>	<b>0.1983</b>	<b>41.5370</b>	<b>936.5438</b>	<b>978.0809</b>	<b>2.5607</b>	<b>6.8200e-003</b>	<b>1,044.1313</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/27/2021	4/9/2021	5	10	
2	Grading	Grading	4/10/2021	5/28/2021	5	35	
3	Building Construction	Building Construction	5/8/2021	11/5/2021	5	130	
4	Paving	Paving	3/26/2022	4/22/2022	5	20	
5	Architectural Coating	Architectural Coating	4/23/2022	5/13/2022	5	15	

**Acres of Grading (Site Preparation Phase): 17**

**Acres of Grading (Grading Phase): 17**

**Acres of Paving: 3.45**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 325,941; Non-Residential Outdoor: 108,647; Striped Parking Area: 9,106 (Architectural Coating – sqft)**

**OffRoad Equipment**

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

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

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	6	15.00	0.00	4,750.00	10.80	7.30	0.25	LD_Mix	HDT_Mix	HHDT
Building Construction	9	155.00	60.00	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	31.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

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**3.2 Site Preparation - 2021****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					0.0994	0.0000	0.0994	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
<b>Total</b>	<b>0.0194</b>	<b>0.2025</b>	<b>0.1058</b>	<b>1.9000e-004</b>	<b>0.0994</b>	<b>0.0102</b>	<b>0.1096</b>	<b>0.0506</b>	<b>9.4000e-003</b>	<b>0.0600</b>	<b>0.0000</b>	<b>16.7179</b>	<b>16.7179</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8530</b>

**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	3.2000e-004	2.2000e-004	2.3600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5930	0.5930	2.0000e-005	0.0000	0.5934
<b>Total</b>	<b>3.2000e-004</b>	<b>2.2000e-004</b>	<b>2.3600e-003</b>	<b>1.0000e-005</b>	<b>7.1000e-004</b>	<b>0.0000</b>	<b>7.2000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>0.5930</b>	<b>0.5930</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5934</b>



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**3.2 Site Preparation - 2021****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					0.0994	0.0000	0.0994	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
<b>Total</b>	<b>0.0194</b>	<b>0.2025</b>	<b>0.1058</b>	<b>1.9000e-004</b>	<b>0.0994</b>	<b>0.0102</b>	<b>0.1096</b>	<b>0.0506</b>	<b>9.4000e-003</b>	<b>0.0600</b>	<b>0.0000</b>	<b>16.7178</b>	<b>16.7178</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8530</b>

**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	3.2000e-004	2.2000e-004	2.3600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5930	0.5930	2.0000e-005	0.0000	0.5934
<b>Total</b>	<b>3.2000e-004</b>	<b>2.2000e-004</b>	<b>2.3600e-003</b>	<b>1.0000e-005</b>	<b>7.1000e-004</b>	<b>0.0000</b>	<b>7.2000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>0.5930</b>	<b>0.5930</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5934</b>

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**3.3 Grading - 2021****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					0.1185	0.0000	0.1185	0.0595	0.0000	0.0595	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0401	0.4329	0.2775	5.2000e-004		0.0203	0.0203		0.0187	0.0187	0.0000	45.5940	45.5940	0.0148	0.0000	45.9626
<b>Total</b>	<b>0.0401</b>	<b>0.4329</b>	<b>0.2775</b>	<b>5.2000e-004</b>	<b>0.1185</b>	<b>0.0203</b>	<b>0.1388</b>	<b>0.0595</b>	<b>0.0187</b>	<b>0.0782</b>	<b>0.0000</b>	<b>45.5940</b>	<b>45.5940</b>	<b>0.0148</b>	<b>0.0000</b>	<b>45.9626</b>

**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	4.1000e-003	0.2208	0.0309	2.4000e-004	5.5000e-004	1.4000e-004	6.9000e-004	1.6000e-004	1.4000e-004	2.9000e-004	0.0000	23.1121	23.1121	3.5300e-003	0.0000	23.2004
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	9.4000e-004	6.6000e-004	6.8900e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.7296	1.7296	5.0000e-005	0.0000	1.7308
<b>Total</b>	<b>5.0400e-003</b>	<b>0.2214</b>	<b>0.0378</b>	<b>2.6000e-004</b>	<b>2.6200e-003</b>	<b>1.5000e-004</b>	<b>2.7800e-003</b>	<b>7.1000e-004</b>	<b>1.5000e-004</b>	<b>8.5000e-004</b>	<b>0.0000</b>	<b>24.8418</b>	<b>24.8418</b>	<b>3.5800e-003</b>	<b>0.0000</b>	<b>24.9312</b>

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**3.3 Grading - 2021****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					0.1185	0.0000	0.1185	0.0595	0.0000	0.0595	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0401	0.4329	0.2775	5.2000e-004		0.0203	0.0203		0.0187	0.0187	0.0000	45.5939	45.5939	0.0148	0.0000	45.9626
<b>Total</b>	<b>0.0401</b>	<b>0.4329</b>	<b>0.2775</b>	<b>5.2000e-004</b>	<b>0.1185</b>	<b>0.0203</b>	<b>0.1388</b>	<b>0.0595</b>	<b>0.0187</b>	<b>0.0782</b>	<b>0.0000</b>	<b>45.5939</b>	<b>45.5939</b>	<b>0.0148</b>	<b>0.0000</b>	<b>45.9626</b>

**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	4.1000e-003	0.2208	0.0309	2.4000e-004	5.5000e-004	1.4000e-004	6.9000e-004	1.6000e-004	1.4000e-004	2.9000e-004	0.0000	23.1121	23.1121	3.5300e-003	0.0000	23.2004
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	9.4000e-004	6.6000e-004	6.8900e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.7296	1.7296	5.0000e-005	0.0000	1.7308
<b>Total</b>	<b>5.0400e-003</b>	<b>0.2214</b>	<b>0.0378</b>	<b>2.6000e-004</b>	<b>2.6200e-003</b>	<b>1.5000e-004</b>	<b>2.7800e-003</b>	<b>7.1000e-004</b>	<b>1.5000e-004</b>	<b>8.5000e-004</b>	<b>0.0000</b>	<b>24.8418</b>	<b>24.8418</b>	<b>3.5800e-003</b>	<b>0.0000</b>	<b>24.9312</b>

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**3.4 Building Construction - 2021****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	0.1236	1.1331	1.0774	1.7500e-003		0.0623	0.0623		0.0586	0.0586	0.0000	150.5642	150.5642	0.0363	0.0000	151.4723
<b>Total</b>	<b>0.1236</b>	<b>1.1331</b>	<b>1.0774</b>	<b>1.7500e-003</b>		<b>0.0623</b>	<b>0.0623</b>		<b>0.0586</b>	<b>0.0586</b>	<b>0.0000</b>	<b>150.5642</b>	<b>150.5642</b>	<b>0.0363</b>	<b>0.0000</b>	<b>151.4723</b>

**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	0.0133	0.4258	0.1112	1.0500e-003	0.0256	9.7000e-004	0.0265	7.3900e-003	9.3000e-004	8.3100e-003	0.0000	100.3882	100.3882	5.1100e-003	0.0000	100.5160
Worker	0.0360	0.0252	0.2643	7.3000e-004	0.0796	5.4000e-004	0.0802	0.0212	4.9000e-004	0.0217	0.0000	66.3852	66.3852	1.7300e-003	0.0000	66.4284
<b>Total</b>	<b>0.0493</b>	<b>0.4509</b>	<b>0.3755</b>	<b>1.7800e-003</b>	<b>0.1052</b>	<b>1.5100e-003</b>	<b>0.1067</b>	<b>0.0286</b>	<b>1.4200e-003</b>	<b>0.0300</b>	<b>0.0000</b>	<b>166.7734</b>	<b>166.7734</b>	<b>6.8400e-003</b>	<b>0.0000</b>	<b>166.9444</b>

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**3.4 Building Construction - 2021****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	0.1236	1.1331	1.0774	1.7500e-003		0.0623	0.0623		0.0586	0.0586	0.0000	150.5641	150.5641	0.0363	0.0000	151.4722
<b>Total</b>	<b>0.1236</b>	<b>1.1331</b>	<b>1.0774</b>	<b>1.7500e-003</b>		<b>0.0623</b>	<b>0.0623</b>		<b>0.0586</b>	<b>0.0586</b>	<b>0.0000</b>	<b>150.5641</b>	<b>150.5641</b>	<b>0.0363</b>	<b>0.0000</b>	<b>151.4722</b>

**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	0.0133	0.4258	0.1112	1.0500e-003	0.0256	9.7000e-004	0.0265	7.3900e-003	9.3000e-004	8.3100e-003	0.0000	100.3882	100.3882	5.1100e-003	0.0000	100.5160
Worker	0.0360	0.0252	0.2643	7.3000e-004	0.0796	5.4000e-004	0.0802	0.0212	4.9000e-004	0.0217	0.0000	66.3852	66.3852	1.7300e-003	0.0000	66.4284
<b>Total</b>	<b>0.0493</b>	<b>0.4509</b>	<b>0.3755</b>	<b>1.7800e-003</b>	<b>0.1052</b>	<b>1.5100e-003</b>	<b>0.1067</b>	<b>0.0286</b>	<b>1.4200e-003</b>	<b>0.0300</b>	<b>0.0000</b>	<b>166.7734</b>	<b>166.7734</b>	<b>6.8400e-003</b>	<b>0.0000</b>	<b>166.9444</b>

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**3.5 Paving - 2022****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	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	4.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0156</b>	<b>0.1113</b>	<b>0.1458</b>	<b>2.3000e-004</b>		<b>5.6800e-003</b>	<b>5.6800e-003</b>		<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>0.0000</b>	<b>20.0276</b>	<b>20.0276</b>	<b>6.4800e-003</b>	<b>0.0000</b>	<b>20.1895</b>

**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	5.0000e-004	3.4000e-004	3.6000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9522	0.9522	2.0000e-005	0.0000	0.9528
<b>Total</b>	<b>5.0000e-004</b>	<b>3.4000e-004</b>	<b>3.6000e-003</b>	<b>1.0000e-005</b>	<b>1.1900e-003</b>	<b>1.0000e-005</b>	<b>1.1900e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>0.9522</b>	<b>0.9522</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.9528</b>

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**3.5 Paving - 2022****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	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	4.5200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0156</b>	<b>0.1113</b>	<b>0.1458</b>	<b>2.3000e-004</b>		<b>5.6800e-003</b>	<b>5.6800e-003</b>		<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>0.0000</b>	<b>20.0275</b>	<b>20.0275</b>	<b>6.4800e-003</b>	<b>0.0000</b>	<b>20.1895</b>

**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	5.0000e-004	3.4000e-004	3.6000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9522	0.9522	2.0000e-005	0.0000	0.9528
<b>Total</b>	<b>5.0000e-004</b>	<b>3.4000e-004</b>	<b>3.6000e-003</b>	<b>1.0000e-005</b>	<b>1.1900e-003</b>	<b>1.0000e-005</b>	<b>1.1900e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>0.9522</b>	<b>0.9522</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.9528</b>

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**3.6 Architectural Coating - 2022****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	1.1647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5300e-003	0.0106	0.0136	2.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	1.9149	1.9149	1.2000e-004	0.0000	1.9181
<b>Total</b>	<b>1.1662</b>	<b>0.0106</b>	<b>0.0136</b>	<b>2.0000e-005</b>		<b>6.1000e-004</b>	<b>6.1000e-004</b>		<b>6.1000e-004</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>1.9149</b>	<b>1.9149</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.9181</b>

**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	7.7000e-004	5.2000e-004	5.5700e-003	2.0000e-005	1.8400e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4759	1.4759	4.0000e-005	0.0000	1.4768
<b>Total</b>	<b>7.7000e-004</b>	<b>5.2000e-004</b>	<b>5.5700e-003</b>	<b>2.0000e-005</b>	<b>1.8400e-003</b>	<b>1.0000e-005</b>	<b>1.8500e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.4759</b>	<b>1.4759</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4768</b>



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**3.6 Architectural Coating - 2022****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	1.1647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5300e-003	0.0106	0.0136	2.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	1.9149	1.9149	1.2000e-004	0.0000	1.9181
<b>Total</b>	<b>1.1662</b>	<b>0.0106</b>	<b>0.0136</b>	<b>2.0000e-005</b>		<b>6.1000e-004</b>	<b>6.1000e-004</b>		<b>6.1000e-004</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>1.9149</b>	<b>1.9149</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.9181</b>

**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	7.7000e-004	5.2000e-004	5.5700e-003	2.0000e-005	1.8400e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4759	1.4759	4.0000e-005	0.0000	1.4768
<b>Total</b>	<b>7.7000e-004</b>	<b>5.2000e-004</b>	<b>5.5700e-003</b>	<b>2.0000e-005</b>	<b>1.8400e-003</b>	<b>1.0000e-005</b>	<b>1.8500e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.4759</b>	<b>1.4759</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4768</b>

**4.0 Operational Detail - Mobile**

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## 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	0.1106	0.6758	1.3456	4.7300e-003	0.3988	4.4100e-003	0.4032	0.1071	4.1400e-003	0.1112	0.0000	435.4204	435.4204	0.0169	0.0000	435.8420
Unmitigated	0.1106	0.6758	1.3456	4.7300e-003	0.3988	4.4100e-003	0.4032	0.1071	4.1400e-003	0.1112	0.0000	435.4204	435.4204	0.0169	0.0000	435.8420

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	367.22	365.05	365.05	1,070,291	1,070,291
Total	367.22	365.05	365.05	1,070,291	1,070,291

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

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**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988
Parking Lot	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988
Refrigerated Warehouse-No Rail	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988

**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	281.5411	281.5411	0.0282	5.8200e-003	283.9808
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	281.5411	281.5411	0.0282	5.8200e-003	283.9808
NaturalGas Mitigated	4.4400e-003	0.0404	0.0339	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	43.9475	43.9475	8.4000e-004	8.1000e-004	44.2086
NaturalGas Unmitigated	4.4400e-003	0.0404	0.0339	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	43.9475	43.9475	8.4000e-004	8.1000e-004	44.2086

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**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	823544	4.4400e-003	0.0404	0.0339	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	43.9475	43.9475	8.4000e-004	8.1000e-004	44.2086
<b>Total</b>		<b>4.4400e-003</b>	<b>0.0404</b>	<b>0.0339</b>	<b>2.4000e-004</b>		<b>3.0700e-003</b>	<b>3.0700e-003</b>		<b>3.0700e-003</b>	<b>3.0700e-003</b>	<b>0.0000</b>	<b>43.9475</b>	<b>43.9475</b>	<b>8.4000e-004</b>	<b>8.1000e-004</b>	<b>44.2086</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	823544	4.4400e-003	0.0404	0.0339	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	43.9475	43.9475	8.4000e-004	8.1000e-004	44.2086
<b>Total</b>		<b>4.4400e-003</b>	<b>0.0404</b>	<b>0.0339</b>	<b>2.4000e-004</b>		<b>3.0700e-003</b>	<b>3.0700e-003</b>		<b>3.0700e-003</b>	<b>3.0700e-003</b>	<b>0.0000</b>	<b>43.9475</b>	<b>43.9475</b>	<b>8.4000e-004</b>	<b>8.1000e-004</b>	<b>44.2086</b>

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**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	21700	2.8545	2.9000e-004	6.0000e-005	2.8792
Refrigerated Warehouse-No Rail	2.11862e+006	278.6866	0.0279	5.7700e-003	281.1016
<b>Total</b>		<b>281.5411</b>	<b>0.0282</b>	<b>5.8300e-003</b>	<b>283.9808</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	21700	2.8545	2.9000e-004	6.0000e-005	2.8792
Refrigerated Warehouse-No Rail	2.11862e+006	278.6866	0.0279	5.7700e-003	281.1016
<b>Total</b>		<b>281.5411</b>	<b>0.0282</b>	<b>5.8300e-003</b>	<b>283.9808</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

**6.0 Area Detail****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9753	4.0000e-005	4.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.2600e-003	8.2600e-003	2.0000e-005	0.0000	8.8000e-003
Unmitigated	0.9753	4.0000e-005	4.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.2600e-003	8.2600e-003	2.0000e-005	0.0000	8.8000e-003

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

**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	0.1165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8585					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	4.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.2600e-003	8.2600e-003	2.0000e-005	0.0000	8.8000e-003
<b>Total</b>	<b>0.9753</b>	<b>4.0000e-005</b>	<b>4.2500e-003</b>	<b>0.0000</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.2600e-003</b>	<b>8.2600e-003</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.8000e-003</b>

**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	0.1165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8585					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	4.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.2600e-003	8.2600e-003	2.0000e-005	0.0000	8.8000e-003
<b>Total</b>	<b>0.9753</b>	<b>4.0000e-005</b>	<b>4.2500e-003</b>	<b>0.0000</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.2600e-003</b>	<b>8.2600e-003</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.8000e-003</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.2512	7.8400e-003	1.9000e-004	0.5032
Unmitigated	0.2512	7.8400e-003	1.9000e-004	0.5032

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0.239954 / 0.009341	0.2512	7.8400e-003	1.9000e-004	0.5032
<b>Total</b>		<b>0.2512</b>	<b>7.8400e-003</b>	<b>1.9000e-004</b>	<b>0.5032</b>



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**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0.239954 / 0.009341	0.2512	7.8400e-003	1.9000e-004	0.5032
<b>Total</b>		<b>0.2512</b>	<b>7.8400e-003</b>	<b>1.9000e-004</b>	<b>0.5032</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste**

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	41.4609	2.4503	0.0000	102.7176
Unmitigated	41.4609	2.4503	0.0000	102.7176

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	204.25	41.4609	2.4503	0.0000	102.7176
<b>Total</b>		<b>41.4609</b>	<b>2.4503</b>	<b>0.0000</b>	<b>102.7176</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Annual

**8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	204.25	41.4609	2.4503	0.0000	102.7176
<b>Total</b>		<b>41.4609</b>	<b>2.4503</b>	<b>0.0000</b>	<b>102.7176</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	10	8.00	260	89	0.20	Electrical

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**UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Forklifts	0.1484	1.3782	1.5074	2.0000e-003		0.0913	0.0913		0.0840	0.0840	0.0000	175.4516	175.4516	0.0567	0.0000	176.8702
<b>Total</b>	<b>0.1484</b>	<b>1.3782</b>	<b>1.5074</b>	<b>2.0000e-003</b>		<b>0.0913</b>	<b>0.0913</b>		<b>0.0840</b>	<b>0.0840</b>	<b>0.0000</b>	<b>175.4516</b>	<b>175.4516</b>	<b>0.0567</b>	<b>0.0000</b>	<b>176.8702</b>

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

## SDG Commerce 217 Wine Storage Project

### Napa County, Summer

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	217.29	1000sqft	4.99	217,294.00	0
Other Asphalt Surfaces	89.77	1000sqft	2.06	89,768.00	0
Parking Lot	155.00	Space	1.39	62,000.00	0

### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

### 1.3 User Entered Comments & Non-Default Data

SDG Commerce 217 Wine Storage Project - Napa County, Summer

Project Characteristics - Consistent with the IS/MND's model.

Land Use - Consistent with the IS/MND's model.

Construction Phase - Consistent with the IS/MND's model.

Grading - Consistent with the IS/MND's model.

Trips and VMT - Consistent with the IS/MND's model.

Vehicle Trips - Weekday trip rate consistent with the IS/MND's model. See SWAPE comment regarding Saturday and Sunday trip rates.

Energy Use - See SWAPE comment regarding energy use values.

Water And Wastewater - See SWAPE comment regarding to water use rates.

Solid Waste - See SWAPE comment regarding solid waste generation rate,

Operational Off-Road Equipment - Consistent with the IS/MND's model.

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	230.00	130.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	PhaseEndDate	5/20/2022	5/13/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	11/5/2021
tblConstructionPhase	PhaseEndDate	5/7/2021	5/28/2021
tblGrading	AcresOfGrading	17.50	17.00
tblGrading	AcresOfGrading	0.00	17.00
tblGrading	MaterialImported	0.00	38,000.00
tblLandUse	LandUseSquareFeet	217,290.00	217,294.00
tblLandUse	LandUseSquareFeet	89,770.00	89,768.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	10.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	0.25
tblVehicleTrips	WD_TR	1.68	1.69
tblWater	IndoorWaterUseRate	50,248,312.50	239,954.00
tblWater	OutdoorWaterUseRate	0.00	9,341.00

## 2.0 Emissions Summary

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## SDG Commerce 217 Wine Storage Project - Napa County, Summer

## 2.1 Overall Construction (Maximum Daily Emission)

### 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	lb/day										lb/day					
2021	5.2515	61.8015	40.3160	0.1004	20.0170	2.1495	22.0624	10.1646	1.9977	12.0464	0.0000	9,996.8945	9,996.8945	1.8722	0.0000	10,043.7005
2022	155.6070	11.1543	14.9681	0.0239	0.2547	0.5687	0.6919	0.0676	0.5232	0.5559	0.0000	2,319.9089	2,319.9089	0.7167	0.0000	2,337.8264
Maximum	155.6070	61.8015	40.3160	0.1004	20.0170	2.1495	22.0624	10.1646	1.9977	12.0464	0.0000	9,996.8945	9,996.8945	1.8722	0.0000	10,043.7005

### 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	lb/day										lb/day					
2021	5.2515	61.8015	40.3160	0.1004	20.0170	2.1495	22.0624	10.1646	1.9977	12.0464	0.0000	9,996.8945	9,996.8945	1.8722	0.0000	10,043.7005
2022	155.6070	11.1543	14.9681	0.0239	0.2547	0.5687	0.6919	0.0676	0.5232	0.5559	0.0000	2,319.9089	2,319.9089	0.7167	0.0000	2,337.8264
Maximum	155.6070	61.8015	40.3160	0.1004	20.0170	2.1495	22.0624	10.1646	1.9977	12.0464	0.0000	9,996.8945	9,996.8945	1.8722	0.0000	10,043.7005

[illegible]



## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**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	lb/day										lb/day					
Area	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
Energy	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
Mobile	0.6870	3.5991	7.6915	0.0274	2.2804	0.0242	2.3046	0.6102	0.0227	0.6329		2,775.1527	2,775.1527	0.1027		2,777.7194
Offroad	1.1417	10.6017	11.5952	0.0154		0.7023	0.7023		0.6461	0.6461		1,487.7099	1,487.7099	0.4812		1,499.7387
<b>Total</b>	<b>7.1994</b>	<b>14.4225</b>	<b>19.5197</b>	<b>0.0441</b>	<b>2.2804</b>	<b>0.7435</b>	<b>3.0238</b>	<b>0.6102</b>	<b>0.6858</b>	<b>1.2960</b>		<b>4,528.4091</b>	<b>4,528.4091</b>	<b>0.5892</b>	<b>4.8700e-003</b>	<b>4,544.5887</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
Energy	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
Mobile	0.6870	3.5991	7.6915	0.0274	2.2804	0.0242	2.3046	0.6102	0.0227	0.6329		2,775.1527	2,775.1527	0.1027		2,777.7194
Offroad	1.1417	10.6017	11.5952	0.0154		0.7023	0.7023		0.6461	0.6461		1,487.7099	1,487.7099	0.4812		1,499.7387
<b>Total</b>	<b>7.1994</b>	<b>14.4225</b>	<b>19.5197</b>	<b>0.0441</b>	<b>2.2804</b>	<b>0.7435</b>	<b>3.0238</b>	<b>0.6102</b>	<b>0.6858</b>	<b>1.2960</b>		<b>4,528.4091</b>	<b>4,528.4091</b>	<b>0.5892</b>	<b>4.8700e-003</b>	<b>4,544.5887</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/27/2021	4/9/2021	5	10	
2	Grading	Grading	4/10/2021	5/28/2021	5	35	
3	Building Construction	Building Construction	5/8/2021	11/5/2021	5	130	
4	Paving	Paving	3/26/2022	4/22/2022	5	20	
5	Architectural Coating	Architectural Coating	4/23/2022	5/13/2022	5	15	

**Acres of Grading (Site Preparation Phase): 17**

**Acres of Grading (Grading Phase): 17**

**Acres of Paving: 3.45**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 325,941; Non-Residential Outdoor: 108,647; Striped Parking Area: 9,106 (Architectural Coating – sqft)**

**OffRoad Equipment**

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

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

**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	6	15.00	0.00	4,750.00	10.80	7.30	0.25	LD_Mix	HDT_Mix	HHDT
Building Construction	9	155.00	60.00	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	31.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.2 Site Preparation - 2021****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	lb/day										lb/day					
Fugitive Dust					19.8691	0.0000	19.8691	10.1254	0.0000	10.1254			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
<b>Total</b>	<b>3.8882</b>	<b>40.4971</b>	<b>21.1543</b>	<b>0.0380</b>	<b>19.8691</b>	<b>2.0445</b>	<b>21.9136</b>	<b>10.1254</b>	<b>1.8809</b>	<b>12.0063</b>		<b>3,685.6569</b>	<b>3,685.6569</b>	<b>1.1920</b>		<b>3,715.4573</b>

**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	lb/day										lb/day					
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
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
Worker	0.0676	0.0395	0.5078	1.4000e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		139.8138	139.8138	3.6200e-003		139.9042
<b>Total</b>	<b>0.0676</b>	<b>0.0395</b>	<b>0.5078</b>	<b>1.4000e-003</b>	<b>0.1479</b>	<b>9.6000e-004</b>	<b>0.1488</b>	<b>0.0392</b>	<b>8.8000e-004</b>	<b>0.0401</b>		<b>139.8138</b>	<b>139.8138</b>	<b>3.6200e-003</b>		<b>139.9042</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.2 Site Preparation - 2021****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	lb/day										lb/day					
Fugitive Dust					19.8691	0.0000	19.8691	10.1254	0.0000	10.1254			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
<b>Total</b>	<b>3.8882</b>	<b>40.4971</b>	<b>21.1543</b>	<b>0.0380</b>	<b>19.8691</b>	<b>2.0445</b>	<b>21.9136</b>	<b>10.1254</b>	<b>1.8809</b>	<b>12.0063</b>	<b>0.0000</b>	<b>3,685.6569</b>	<b>3,685.6569</b>	<b>1.1920</b>		<b>3,715.4573</b>

**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	lb/day										lb/day					
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
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
Worker	0.0676	0.0395	0.5078	1.4000e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		139.8138	139.8138	3.6200e-003		139.9042
<b>Total</b>	<b>0.0676</b>	<b>0.0395</b>	<b>0.5078</b>	<b>1.4000e-003</b>	<b>0.1479</b>	<b>9.6000e-004</b>	<b>0.1488</b>	<b>0.0392</b>	<b>8.8000e-004</b>	<b>0.0401</b>		<b>139.8138</b>	<b>139.8138</b>	<b>3.6200e-003</b>		<b>139.9042</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.3 Grading - 2021****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	lb/day										lb/day					
Fugitive Dust					6.7701	0.0000	6.7701	3.4011	0.0000	3.4011			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
<b>Total</b>	<b>2.2903</b>	<b>24.7367</b>	<b>15.8575</b>	<b>0.0296</b>	<b>6.7701</b>	<b>1.1599</b>	<b>7.9300</b>	<b>3.4011</b>	<b>1.0671</b>	<b>4.4682</b>		<b>2,871.9285</b>	<b>2,871.9285</b>	<b>0.9288</b>		<b>2,895.1495</b>

**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	lb/day										lb/day					
Hauling	0.2217	12.7917	1.4845	0.0144	0.0324	7.2700e-003	0.0397	9.1200e-003	6.9500e-003	0.0161		1,531.3371	1,531.3371	0.2097		1,536.5797
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
Worker	0.0563	0.0329	0.4232	1.1700e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		116.5115	116.5115	3.0100e-003		116.5868
<b>Total</b>	<b>0.2780</b>	<b>12.8246</b>	<b>1.9076</b>	<b>0.0155</b>	<b>0.1556</b>	<b>8.0700e-003</b>	<b>0.1637</b>	<b>0.0418</b>	<b>7.6900e-003</b>	<b>0.0495</b>		<b>1,647.8486</b>	<b>1,647.8486</b>	<b>0.2127</b>		<b>1,653.1665</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.3 Grading - 2021****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	lb/day										lb/day					
Fugitive Dust					6.7701	0.0000	6.7701	3.4011	0.0000	3.4011			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
<b>Total</b>	<b>2.2903</b>	<b>24.7367</b>	<b>15.8575</b>	<b>0.0296</b>	<b>6.7701</b>	<b>1.1599</b>	<b>7.9300</b>	<b>3.4011</b>	<b>1.0671</b>	<b>4.4682</b>	<b>0.0000</b>	<b>2,871.9285</b>	<b>2,871.9285</b>	<b>0.9288</b>		<b>2,895.1495</b>

**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	lb/day										lb/day					
Hauling	0.2217	12.7917	1.4845	0.0144	0.0324	7.2700e-003	0.0397	9.1200e-003	6.9500e-003	0.0161		1,531.3371	1,531.3371	0.2097		1,536.5797
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
Worker	0.0563	0.0329	0.4232	1.1700e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		116.5115	116.5115	3.0100e-003		116.5868
<b>Total</b>	<b>0.2780</b>	<b>12.8246</b>	<b>1.9076</b>	<b>0.0155</b>	<b>0.1556</b>	<b>8.0700e-003</b>	<b>0.1637</b>	<b>0.0418</b>	<b>7.6900e-003</b>	<b>0.0495</b>		<b>1,647.8486</b>	<b>1,647.8486</b>	<b>0.2127</b>		<b>1,653.1665</b>



## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.4 Building Construction - 2021****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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
<b>Total</b>	<b>1.9009</b>	<b>17.4321</b>	<b>16.5752</b>	<b>0.0269</b>		<b>0.9586</b>	<b>0.9586</b>		<b>0.9013</b>	<b>0.9013</b>		<b>2,553.3639</b>	<b>2,553.3639</b>	<b>0.6160</b>		<b>2,568.7643</b>

**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	lb/day										lb/day					
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
Vendor	0.2001	6.4679	1.6028	0.0163	0.4057	0.0147	0.4204	0.1168	0.0140	0.1308		1,719.8015	1,719.8015	0.0835		1,721.8898
Worker	0.5821	0.3401	4.3729	0.0121	1.2733	8.2500e-003	1.2815	0.3377	7.6000e-003	0.3453		1,203.9520	1,203.9520	0.0311		1,204.7304
<b>Total</b>	<b>0.7822</b>	<b>6.8081</b>	<b>5.9757</b>	<b>0.0283</b>	<b>1.6790</b>	<b>0.0229</b>	<b>1.7019</b>	<b>0.4545</b>	<b>0.0216</b>	<b>0.4761</b>		<b>2,923.7535</b>	<b>2,923.7535</b>	<b>0.1147</b>		<b>2,926.6203</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.4 Building Construction - 2021****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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
<b>Total</b>	<b>1.9009</b>	<b>17.4321</b>	<b>16.5752</b>	<b>0.0269</b>		<b>0.9586</b>	<b>0.9586</b>		<b>0.9013</b>	<b>0.9013</b>	<b>0.0000</b>	<b>2,553.3639</b>	<b>2,553.3639</b>	<b>0.6160</b>		<b>2,568.7643</b>

**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	lb/day										lb/day					
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
Vendor	0.2001	6.4679	1.6028	0.0163	0.4057	0.0147	0.4204	0.1168	0.0140	0.1308		1,719.8015	1,719.8015	0.0835		1,721.8898
Worker	0.5821	0.3401	4.3729	0.0121	1.2733	8.2500e-003	1.2815	0.3377	7.6000e-003	0.3453		1,203.9520	1,203.9520	0.0311		1,204.7304
<b>Total</b>	<b>0.7822</b>	<b>6.8081</b>	<b>5.9757</b>	<b>0.0283</b>	<b>1.6790</b>	<b>0.0229</b>	<b>1.7019</b>	<b>0.4545</b>	<b>0.0216</b>	<b>0.4761</b>		<b>2,923.7535</b>	<b>2,923.7535</b>	<b>0.1147</b>		<b>2,926.6203</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.5 Paving - 2022****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	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.4520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.5548</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>		<b>2,207.660 3</b>	<b>2,207.660 3</b>	<b>0.7140</b>		<b>2,225.510 4</b>

**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	lb/day										lb/day					
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
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
Worker	0.0523	0.0295	0.3877	1.1300e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		112.2486	112.2486	2.7000e-003		112.3160
<b>Total</b>	<b>0.0523</b>	<b>0.0295</b>	<b>0.3877</b>	<b>1.1300e-003</b>	<b>0.1232</b>	<b>7.7000e-004</b>	<b>0.1240</b>	<b>0.0327</b>	<b>7.1000e-004</b>	<b>0.0334</b>		<b>112.2486</b>	<b>112.2486</b>	<b>2.7000e-003</b>		<b>112.3160</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.5 Paving - 2022****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	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.4520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.5548</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>	<b>0.0000</b>	<b>2,207.660 3</b>	<b>2,207.660 3</b>	<b>0.7140</b>		<b>2,225.510 4</b>

**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	lb/day										lb/day					
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
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
Worker	0.0523	0.0295	0.3877	1.1300e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		112.2486	112.2486	2.7000e-003		112.3160
<b>Total</b>	<b>0.0523</b>	<b>0.0295</b>	<b>0.3877</b>	<b>1.1300e-003</b>	<b>0.1232</b>	<b>7.7000e-004</b>	<b>0.1240</b>	<b>0.0327</b>	<b>7.1000e-004</b>	<b>0.0334</b>		<b>112.2486</b>	<b>112.2486</b>	<b>2.7000e-003</b>		<b>112.3160</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.6 Architectural Coating - 2022****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	lb/day										lb/day					
Archit. Coating	155.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>155.4988</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

**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	lb/day										lb/day					
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
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
Worker	0.1082	0.0609	0.8012	2.3300e-003	0.2547	1.6000e-003	0.2563	0.0676	1.4700e-003	0.0690		231.9804	231.9804	5.5800e-003		232.1198
<b>Total</b>	<b>0.1082</b>	<b>0.0609</b>	<b>0.8012</b>	<b>2.3300e-003</b>	<b>0.2547</b>	<b>1.6000e-003</b>	<b>0.2563</b>	<b>0.0676</b>	<b>1.4700e-003</b>	<b>0.0690</b>		<b>231.9804</b>	<b>231.9804</b>	<b>5.5800e-003</b>		<b>232.1198</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**3.6 Architectural Coating - 2022****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	lb/day										lb/day					
Archit. Coating	155.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>155.4988</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

**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	lb/day										lb/day					
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
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
Worker	0.1082	0.0609	0.8012	2.3300e-003	0.2547	1.6000e-003	0.2563	0.0676	1.4700e-003	0.0690		231.9804	231.9804	5.5800e-003		232.1198
<b>Total</b>	<b>0.1082</b>	<b>0.0609</b>	<b>0.8012</b>	<b>2.3300e-003</b>	<b>0.2547</b>	<b>1.6000e-003</b>	<b>0.2563</b>	<b>0.0676</b>	<b>1.4700e-003</b>	<b>0.0690</b>		<b>231.9804</b>	<b>231.9804</b>	<b>5.5800e-003</b>		<b>232.1198</b>

**4.0 Operational Detail - Mobile**

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

## 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	lb/day										lb/day					
Mitigated	0.6870	3.5991	7.6915	0.0274	2.2804	0.0242	2.3046	0.6102	0.0227	0.6329		2,775.1527	2,775.1527	0.1027		2,777.7194
Unmitigated	0.6870	3.5991	7.6915	0.0274	2.2804	0.0242	2.3046	0.6102	0.0227	0.6329		2,775.1527	2,775.1527	0.1027		2,777.7194

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	367.22	365.05	365.05	1,070,291	1,070,291
Total	367.22	365.05	365.05	1,070,291	1,070,291

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988
Parking Lot	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988
Refrigerated Warehouse-No Rail	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988

**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	lb/day										lb/day					
NaturalGas Mitigated	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
NaturalGas Unmitigated	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228



## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**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	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-No Rail	2256.29	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
<b>Total</b>		<b>0.0243</b>	<b>0.2212</b>	<b>0.1858</b>	<b>1.3300e-003</b>		<b>0.0168</b>	<b>0.0168</b>		<b>0.0168</b>	<b>0.0168</b>		<b>265.4454</b>	<b>265.4454</b>	<b>5.0900e-003</b>	<b>4.8700e-003</b>	<b>267.0228</b>

**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	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-No Rail	2.25629	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
<b>Total</b>		<b>0.0243</b>	<b>0.2212</b>	<b>0.1858</b>	<b>1.3300e-003</b>		<b>0.0168</b>	<b>0.0168</b>		<b>0.0168</b>	<b>0.0168</b>		<b>265.4454</b>	<b>265.4454</b>	<b>5.0900e-003</b>	<b>4.8700e-003</b>	<b>267.0228</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**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	lb/day										lb/day					
Mitigated	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
Unmitigated	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**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	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3900e-003	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
<b>Total</b>	<b>5.3464</b>	<b>4.3000e-004</b>	<b>0.0473</b>	<b>0.0000</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>0.1011</b>	<b>0.1011</b>	<b>2.7000e-004</b>		<b>0.1078</b>

**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	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3900e-003	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
<b>Total</b>	<b>5.3464</b>	<b>4.3000e-004</b>	<b>0.0473</b>	<b>0.0000</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>0.1011</b>	<b>0.1011</b>	<b>2.7000e-004</b>		<b>0.1078</b>

**7.0 Water Detail**

## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	10	8.00	260	89	0.20	Electrical

**UnMitigated/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
Equipment Type	lb/day										lb/day					
Forklifts	1.1417	10.6017	11.5952	0.0154		0.7023	0.7023		0.6461	0.6461		1,487.7099	1,487.7099	0.4812		1,499.7387
<b>Total</b>	<b>1.1417</b>	<b>10.6017</b>	<b>11.5952</b>	<b>0.0154</b>		<b>0.7023</b>	<b>0.7023</b>		<b>0.6461</b>	<b>0.6461</b>		<b>1,487.7099</b>	<b>1,487.7099</b>	<b>0.4812</b>		<b>1,499.7387</b>

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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## SDG Commerce 217 Wine Storage Project - Napa County, Summer

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## SDG Commerce 217 Wine Storage Project - Napa County, Winter

## SDG Commerce 217 Wine Storage Project

### Napa County, Winter

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	217.29	1000sqft	4.99	217,294.00	0
Other Asphalt Surfaces	89.77	1000sqft	2.06	89,768.00	0
Parking Lot	155.00	Space	1.39	62,000.00	0

### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

### 1.3 User Entered Comments & Non-Default Data

SDG Commerce 217 Wine Storage Project - Napa County, Winter

Project Characteristics - Consistent with the IS/MND's model.

Land Use - Consistent with the IS/MND's model.

Construction Phase - Consistent with the IS/MND's model.

Grading - Consistent with the IS/MND's model.

Trips and VMT - Consistent with the IS/MND's model.

Vehicle Trips - Weekday trip rate consistent with the IS/MND's model. See SWAPE comment regarding Saturday and Sunday trip rates.

Energy Use - See SWAPE comment regarding energy use values.

Water And Wastewater - See SWAPE comment regarding to water use rates.

Solid Waste - See SWAPE comment regarding solid waste generation rate,

Operational Off-Road Equipment - Consistent with the IS/MND's model.

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	230.00	130.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	PhaseEndDate	5/20/2022	5/13/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	11/5/2021
tblConstructionPhase	PhaseEndDate	5/7/2021	5/28/2021
tblGrading	AcresOfGrading	17.50	17.00
tblGrading	AcresOfGrading	0.00	17.00
tblGrading	MaterialImported	0.00	38,000.00
tblLandUse	LandUseSquareFeet	217,290.00	217,294.00
tblLandUse	LandUseSquareFeet	89,770.00	89,768.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	10.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	0.25
tblVehicleTrips	WD_TR	1.68	1.69
tblWater	IndoorWaterUseRate	50,248,312.50	239,954.00
tblWater	OutdoorWaterUseRate	0.00	9,341.00

## 2.0 Emissions Summary

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## SDG Commerce 217 Wine Storage Project - Napa County, Winter

## 2.1 Overall Construction (Maximum Daily Emission)

### 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	lb/day										lb/day					
2021	5.3254	61.5419	41.0487	0.0974	20.0170	2.1521	22.0624	10.1646	2.0002	12.0464	0.0000	9,676.6805	9,676.6805	1.9073	0.0000	9,724.3627
2022	155.6125	11.1623	14.9532	0.0238	0.2547	0.5687	0.6919	0.0676	0.5232	0.5559	0.0000	2,311.4860	2,311.4860	0.7166	0.0000	2,329.3999
Maximum	155.6125	61.5419	41.0487	0.0974	20.0170	2.1521	22.0624	10.1646	2.0002	12.0464	0.0000	9,676.6805	9,676.6805	1.9073	0.0000	9,724.3627

### 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	lb/day										lb/day					
2021	5.3254	61.5419	41.0487	0.0974	20.0170	2.1521	22.0624	10.1646	2.0002	12.0464	0.0000	9,676.6805	9,676.6805	1.9073	0.0000	9,724.3627
2022	155.6125	11.1623	14.9532	0.0238	0.2547	0.5687	0.6919	0.0676	0.5232	0.5559	0.0000	2,311.4860	2,311.4860	0.7166	0.0000	2,329.3999
Maximum	155.6125	61.5419	41.0487	0.0974	20.0170	2.1521	22.0624	10.1646	2.0002	12.0464	0.0000	9,676.6805	9,676.6805	1.9073	0.0000	9,724.3627

[illegible]

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**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	lb/day										lb/day					
Area	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
Energy	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
Mobile	0.6000	3.7964	7.8140	0.0258	2.2804	0.0244	2.3048	0.6102	0.0229	0.6331		2,614.9196	2,614.9196	0.1054		2,617.5546
Offroad	1.1417	10.6017	11.5952	0.0154		0.7023	0.7023		0.6461	0.6461		1,487.7099	1,487.7099	0.4812		1,499.7387
<b>Total</b>	<b>7.1124</b>	<b>14.6198</b>	<b>19.6422</b>	<b>0.0425</b>	<b>2.2804</b>	<b>0.7437</b>	<b>3.0240</b>	<b>0.6102</b>	<b>0.6860</b>	<b>1.2962</b>		<b>4,368.1759</b>	<b>4,368.1759</b>	<b>0.5919</b>	<b>4.8700e-003</b>	<b>4,384.4239</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
Energy	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
Mobile	0.6000	3.7964	7.8140	0.0258	2.2804	0.0244	2.3048	0.6102	0.0229	0.6331		2,614.9196	2,614.9196	0.1054		2,617.5546
Offroad	1.1417	10.6017	11.5952	0.0154		0.7023	0.7023		0.6461	0.6461		1,487.7099	1,487.7099	0.4812		1,499.7387
<b>Total</b>	<b>7.1124</b>	<b>14.6198</b>	<b>19.6422</b>	<b>0.0425</b>	<b>2.2804</b>	<b>0.7437</b>	<b>3.0240</b>	<b>0.6102</b>	<b>0.6860</b>	<b>1.2962</b>		<b>4,368.1759</b>	<b>4,368.1759</b>	<b>0.5919</b>	<b>4.8700e-003</b>	<b>4,384.4239</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/27/2021	4/9/2021	5	10	
2	Grading	Grading	4/10/2021	5/28/2021	5	35	
3	Building Construction	Building Construction	5/8/2021	11/5/2021	5	130	
4	Paving	Paving	3/26/2022	4/22/2022	5	20	
5	Architectural Coating	Architectural Coating	4/23/2022	5/13/2022	5	15	

**Acres of Grading (Site Preparation Phase): 17**

**Acres of Grading (Grading Phase): 17**

**Acres of Paving: 3.45**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 325,941; Non-Residential Outdoor: 108,647; Striped Parking Area: 9,106 (Architectural Coating – sqft)**

**OffRoad Equipment**

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

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

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	6	15.00	0.00	4,750.00	10.80	7.30	0.25	LD_Mix	HDT_Mix	HHDT
Building Construction	9	155.00	60.00	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	31.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.2 Site Preparation - 2021****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	lb/day										lb/day					
Fugitive Dust					19.8691	0.0000	19.8691	10.1254	0.0000	10.1254			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
<b>Total</b>	<b>3.8882</b>	<b>40.4971</b>	<b>21.1543</b>	<b>0.0380</b>	<b>19.8691</b>	<b>2.0445</b>	<b>21.9136</b>	<b>10.1254</b>	<b>1.8809</b>	<b>12.0063</b>		<b>3,685.6569</b>	<b>3,685.6569</b>	<b>1.1920</b>		<b>3,715.4573</b>

**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	lb/day										lb/day					
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
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
Worker	0.0710	0.0502	0.4903	1.3000e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		129.3211	129.3211	3.4300e-003		129.4070
<b>Total</b>	<b>0.0710</b>	<b>0.0502</b>	<b>0.4903</b>	<b>1.3000e-003</b>	<b>0.1479</b>	<b>9.6000e-004</b>	<b>0.1488</b>	<b>0.0392</b>	<b>8.8000e-004</b>	<b>0.0401</b>		<b>129.3211</b>	<b>129.3211</b>	<b>3.4300e-003</b>		<b>129.4070</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.2 Site Preparation - 2021****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	lb/day										lb/day					
Fugitive Dust					19.8691	0.0000	19.8691	10.1254	0.0000	10.1254			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
<b>Total</b>	<b>3.8882</b>	<b>40.4971</b>	<b>21.1543</b>	<b>0.0380</b>	<b>19.8691</b>	<b>2.0445</b>	<b>21.9136</b>	<b>10.1254</b>	<b>1.8809</b>	<b>12.0063</b>	<b>0.0000</b>	<b>3,685.6569</b>	<b>3,685.6569</b>	<b>1.1920</b>		<b>3,715.4573</b>

**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	lb/day										lb/day					
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
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
Worker	0.0710	0.0502	0.4903	1.3000e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		129.3211	129.3211	3.4300e-003		129.4070
<b>Total</b>	<b>0.0710</b>	<b>0.0502</b>	<b>0.4903</b>	<b>1.3000e-003</b>	<b>0.1479</b>	<b>9.6000e-004</b>	<b>0.1488</b>	<b>0.0392</b>	<b>8.8000e-004</b>	<b>0.0401</b>		<b>129.3211</b>	<b>129.3211</b>	<b>3.4300e-003</b>		<b>129.4070</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.3 Grading - 2021****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	lb/day										lb/day					
Fugitive Dust					6.7701	0.0000	6.7701	3.4011	0.0000	3.4011			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
<b>Total</b>	<b>2.2903</b>	<b>24.7367</b>	<b>15.8575</b>	<b>0.0296</b>	<b>6.7701</b>	<b>1.1599</b>	<b>7.9300</b>	<b>3.4011</b>	<b>1.0671</b>	<b>4.4682</b>		<b>2,871.9285</b>	<b>2,871.9285</b>	<b>0.9288</b>		<b>2,895.1495</b>

**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	lb/day										lb/day					
Hauling	0.2512	12.3547	2.1377	0.0127	0.0324	9.3600e-003	0.0417	9.1200e-003	8.9500e-003	0.0181		1,351.5191	1,351.5191	0.2393		1,357.5023
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
Worker	0.0592	0.0418	0.4086	1.0800e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		107.7676	107.7676	2.8600e-003		107.8391
<b>Total</b>	<b>0.3103</b>	<b>12.3965</b>	<b>2.5463</b>	<b>0.0138</b>	<b>0.1556</b>	<b>0.0102</b>	<b>0.1658</b>	<b>0.0418</b>	<b>9.6900e-003</b>	<b>0.0515</b>		<b>1,459.2867</b>	<b>1,459.2867</b>	<b>0.2422</b>		<b>1,465.3415</b>



## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.3 Grading - 2021****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	lb/day										lb/day					
Fugitive Dust					6.7701	0.0000	6.7701	3.4011	0.0000	3.4011			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
<b>Total</b>	<b>2.2903</b>	<b>24.7367</b>	<b>15.8575</b>	<b>0.0296</b>	<b>6.7701</b>	<b>1.1599</b>	<b>7.9300</b>	<b>3.4011</b>	<b>1.0671</b>	<b>4.4682</b>	<b>0.0000</b>	<b>2,871.9285</b>	<b>2,871.9285</b>	<b>0.9288</b>		<b>2,895.1495</b>

**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	lb/day										lb/day					
Hauling	0.2512	12.3547	2.1377	0.0127	0.0324	9.3600e-003	0.0417	9.1200e-003	8.9500e-003	0.0181		1,351.5191	1,351.5191	0.2393		1,357.5023
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
Worker	0.0592	0.0418	0.4086	1.0800e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		107.7676	107.7676	2.8600e-003		107.8391
<b>Total</b>	<b>0.3103</b>	<b>12.3965</b>	<b>2.5463</b>	<b>0.0138</b>	<b>0.1556</b>	<b>0.0102</b>	<b>0.1658</b>	<b>0.0418</b>	<b>9.6900e-003</b>	<b>0.0515</b>		<b>1,459.2867</b>	<b>1,459.2867</b>	<b>0.2422</b>		<b>1,465.3415</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.4 Building Construction - 2021****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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
<b>Total</b>	<b>1.9009</b>	<b>17.4321</b>	<b>16.5752</b>	<b>0.0269</b>		<b>0.9586</b>	<b>0.9586</b>		<b>0.9013</b>	<b>0.9013</b>		<b>2,553.363 9</b>	<b>2,553.363 9</b>	<b>0.6160</b>		<b>2,568.764 3</b>

**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	lb/day										lb/day					
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
Vendor	0.2124	6.5448	1.8478	0.0159	0.4057	0.0152	0.4209	0.1168	0.0145	0.1313		1,678.502 7	1,678.502 7	0.0907		1,680.769 8
Worker	0.6114	0.4319	4.2220	0.0112	1.2733	8.2500e-003	1.2815	0.3377	7.6000e-003	0.3453		1,113.598 7	1,113.598 7	0.0296		1,114.337 6
<b>Total</b>	<b>0.8238</b>	<b>6.9766</b>	<b>6.0697</b>	<b>0.0271</b>	<b>1.6790</b>	<b>0.0234</b>	<b>1.7024</b>	<b>0.4545</b>	<b>0.0221</b>	<b>0.4766</b>		<b>2,792.101 4</b>	<b>2,792.101 4</b>	<b>0.1203</b>		<b>2,795.107 5</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.4 Building Construction - 2021****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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
<b>Total</b>	<b>1.9009</b>	<b>17.4321</b>	<b>16.5752</b>	<b>0.0269</b>		<b>0.9586</b>	<b>0.9586</b>		<b>0.9013</b>	<b>0.9013</b>	<b>0.0000</b>	<b>2,553.363 9</b>	<b>2,553.363 9</b>	<b>0.6160</b>		<b>2,568.764 3</b>

**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	lb/day										lb/day					
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
Vendor	0.2124	6.5448	1.8478	0.0159	0.4057	0.0152	0.4209	0.1168	0.0145	0.1313		1,678.502 7	1,678.502 7	0.0907		1,680.769 8
Worker	0.6114	0.4319	4.2220	0.0112	1.2733	8.2500e-003	1.2815	0.3377	7.6000e-003	0.3453		1,113.598 7	1,113.598 7	0.0296		1,114.337 6
<b>Total</b>	<b>0.8238</b>	<b>6.9766</b>	<b>6.0697</b>	<b>0.0271</b>	<b>1.6790</b>	<b>0.0234</b>	<b>1.7024</b>	<b>0.4545</b>	<b>0.0221</b>	<b>0.4766</b>		<b>2,792.101 4</b>	<b>2,792.101 4</b>	<b>0.1203</b>		<b>2,795.107 5</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.5 Paving - 2022****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	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.4520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.5548</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>		<b>2,207.660 3</b>	<b>2,207.660 3</b>	<b>0.7140</b>		<b>2,225.510 4</b>

**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	lb/day										lb/day					
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
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
Worker	0.0550	0.0374	0.3727	1.0400e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		103.8257	103.8257	2.5500e-003		103.8895
<b>Total</b>	<b>0.0550</b>	<b>0.0374</b>	<b>0.3727</b>	<b>1.0400e-003</b>	<b>0.1232</b>	<b>7.7000e-004</b>	<b>0.1240</b>	<b>0.0327</b>	<b>7.1000e-004</b>	<b>0.0334</b>		<b>103.8257</b>	<b>103.8257</b>	<b>2.5500e-003</b>		<b>103.8895</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.5 Paving - 2022****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	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.4520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.5548</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>	<b>0.0000</b>	<b>2,207.660 3</b>	<b>2,207.660 3</b>	<b>0.7140</b>		<b>2,225.510 4</b>

**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	lb/day										lb/day					
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
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
Worker	0.0550	0.0374	0.3727	1.0400e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		103.8257	103.8257	2.5500e-003		103.8895
<b>Total</b>	<b>0.0550</b>	<b>0.0374</b>	<b>0.3727</b>	<b>1.0400e-003</b>	<b>0.1232</b>	<b>7.7000e-004</b>	<b>0.1240</b>	<b>0.0327</b>	<b>7.1000e-004</b>	<b>0.0334</b>		<b>103.8257</b>	<b>103.8257</b>	<b>2.5500e-003</b>		<b>103.8895</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.6 Architectural Coating - 2022****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	lb/day										lb/day					
Archit. Coating	155.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>155.4988</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

**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	lb/day										lb/day					
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
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
Worker	0.1136	0.0773	0.7703	2.1500e-003	0.2547	1.6000e-003	0.2563	0.0676	1.4700e-003	0.0690		214.5731	214.5731	5.2800e-003		214.7050
<b>Total</b>	<b>0.1136</b>	<b>0.0773</b>	<b>0.7703</b>	<b>2.1500e-003</b>	<b>0.2547</b>	<b>1.6000e-003</b>	<b>0.2563</b>	<b>0.0676</b>	<b>1.4700e-003</b>	<b>0.0690</b>		<b>214.5731</b>	<b>214.5731</b>	<b>5.2800e-003</b>		<b>214.7050</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**3.6 Architectural Coating - 2022****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	lb/day										lb/day					
Archit. Coating	155.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>155.4988</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

**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	lb/day										lb/day					
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
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
Worker	0.1136	0.0773	0.7703	2.1500e-003	0.2547	1.6000e-003	0.2563	0.0676	1.4700e-003	0.0690		214.5731	214.5731	5.2800e-003		214.7050
<b>Total</b>	<b>0.1136</b>	<b>0.0773</b>	<b>0.7703</b>	<b>2.1500e-003</b>	<b>0.2547</b>	<b>1.6000e-003</b>	<b>0.2563</b>	<b>0.0676</b>	<b>1.4700e-003</b>	<b>0.0690</b>		<b>214.5731</b>	<b>214.5731</b>	<b>5.2800e-003</b>		<b>214.7050</b>

**4.0 Operational Detail - Mobile**

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

## 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	lb/day										lb/day					
Mitigated	0.6000	3.7964	7.8140	0.0258	2.2804	0.0244	2.3048	0.6102	0.0229	0.6331		2,614.9196	2,614.9196	0.1054		2,617.5546
Unmitigated	0.6000	3.7964	7.8140	0.0258	2.2804	0.0244	2.3048	0.6102	0.0229	0.6331		2,614.9196	2,614.9196	0.1054		2,617.5546

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	367.22	365.05	365.05	1,070,291	1,070,291
Total	367.22	365.05	365.05	1,070,291	1,070,291

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3



## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988
Parking Lot	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988
Refrigerated Warehouse-No Rail	0.586522	0.036345	0.168625	0.112459	0.022729	0.006000	0.017299	0.036828	0.003880	0.001801	0.005497	0.001027	0.000988

**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	lb/day										lb/day					
NaturalGas Mitigated	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
NaturalGas Unmitigated	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**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	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-No Rail	2256.29	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
<b>Total</b>		<b>0.0243</b>	<b>0.2212</b>	<b>0.1858</b>	<b>1.3300e-003</b>		<b>0.0168</b>	<b>0.0168</b>		<b>0.0168</b>	<b>0.0168</b>		<b>265.4454</b>	<b>265.4454</b>	<b>5.0900e-003</b>	<b>4.8700e-003</b>	<b>267.0228</b>

**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	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-No Rail	2.25629	0.0243	0.2212	0.1858	1.3300e-003		0.0168	0.0168		0.0168	0.0168		265.4454	265.4454	5.0900e-003	4.8700e-003	267.0228
<b>Total</b>		<b>0.0243</b>	<b>0.2212</b>	<b>0.1858</b>	<b>1.3300e-003</b>		<b>0.0168</b>	<b>0.0168</b>		<b>0.0168</b>	<b>0.0168</b>		<b>265.4454</b>	<b>265.4454</b>	<b>5.0900e-003</b>	<b>4.8700e-003</b>	<b>267.0228</b>

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**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	lb/day										lb/day					
Mitigated	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
Unmitigated	5.3464	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**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	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3900e-003	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
<b>Total</b>	<b>5.3464</b>	<b>4.3000e-004</b>	<b>0.0473</b>	<b>0.0000</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>0.1011</b>	<b>0.1011</b>	<b>2.7000e-004</b>		<b>0.1078</b>

**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	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3900e-003	4.3000e-004	0.0473	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004		0.1011	0.1011	2.7000e-004		0.1078
<b>Total</b>	<b>5.3464</b>	<b>4.3000e-004</b>	<b>0.0473</b>	<b>0.0000</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>1.7000e-004</b>	<b>1.7000e-004</b>		<b>0.1011</b>	<b>0.1011</b>	<b>2.7000e-004</b>		<b>0.1078</b>

**7.0 Water Detail**

## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	10	8.00	260	89	0.20	Electrical

**UnMitigated/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
Equipment Type	lb/day										lb/day					
Forklifts	1.1417	10.6017	11.5952	0.0154		0.7023	0.7023		0.6461	0.6461		1,487.7099	1,487.7099	0.4812		1,499.7387
<b>Total</b>	<b>1.1417</b>	<b>10.6017</b>	<b>11.5952</b>	<b>0.0154</b>		<b>0.7023</b>	<b>0.7023</b>		<b>0.6461</b>	<b>0.6461</b>		<b>1,487.7099</b>	<b>1,487.7099</b>	<b>0.4812</b>		<b>1,499.7387</b>

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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## SDG Commerce 217 Wine Storage Project - Napa County, Winter

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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Attachment E

Start date and time 01/12/21 12:34:14

AERSCREEN 16216

SDG Commerce 217 Construction

SDG Commerce 217 Construction

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

METRIC

ENGLISH

\*\* AREADATA \*\*

Emission Rate: 0.368E-02 g/s 0.292E-01 lb/hr

Area Height: 3.00 meters 9.84 feet

Area Source Length: 296.00 meters 971.13 feet

Area Source Width: 142.00 meters 465.88 feet

Vertical Dimension: 1.50 meters 4.92 feet

Model Mode: URBAN

Population: 20359

Dist to Ambient Air: 1.0 meters 3. feet

\*\* BUILDING DATA \*\*

No Building Downwash Parameters

\*\* TERRAIN DATA \*\*

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

\*\* FUMIGATION DATA \*\*

No fumigation requested

\*\* METEOROLOGY DATA \*\*

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

Minimum Wind Speed: 0.5 m/s



Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity ( $u^*$ ): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

2021.01.12\_SDGCommerce217\_Construction.out

\*\*\* AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

\*\*\*\*\*

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

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

Creating met files aerscreen\_01\_01.sfc & aerscreen\_01\_01.pfl

Creating met files aerscreen\_02\_01.sfc & aerscreen\_02\_01.pfl

Creating met files aerscreen\_03\_01.sfc & aerscreen\_03\_01.pfl

Creating met files aerscreen\_04\_01.sfc & aerscreen\_04\_01.pfl

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

FLOWSECTOR started 01/12/21 12:35:31

\*\*\*\*\*

Running AERMOD

Processing Winter

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Running AERMOD

Processing Spring

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

## Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

## Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

## Running AERMOD

## Processing Summer

## Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*



Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

FLOWSECTOR ended 01/12/21 12:35:46

REFINE started 01/12/21 12:35:46

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

REFINE ended 01/12/21 12:35:48

\*\*\*\*\*

AERSCREEN Finished Successfully

## But with Warnings

Check log file for details

\*\*\*\*\*

Ending date and time 01/12/21 12:35:50

Concentration			Distance	Elevation	Diag	Season/Month			Zo sector		Date		
H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS	HT
REF	TA	HT											
	0.28843E+01		1.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.30847E+01		25.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.32687E+01		50.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.34322E+01		75.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.35779E+01		100.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.37104E+01		125.00	0.00	5.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.38271E+01		150.00	0.00	10.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
*	0.38304E+01		151.00	0.00	10.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.31267E+01		175.00	0.00	25.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.24599E+01		200.00	0.00	20.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.20819E+01		225.00	0.00	20.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.18360E+01		250.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.16503E+01		275.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.14940E+01		300.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.13625E+01		325.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0												
	0.12489E+01		350.00	0.00	0.0			Winter		0-360	10011001		
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0	

310.0	2.0										
	0.11506E+01	375.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.10646E+01	400.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.98884E+00	425.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.92250E+00	450.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.86262E+00	475.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.80956E+00	500.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.76136E+00	525.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.71849E+00	550.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.67922E+00	575.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.64332E+00	600.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.61090E+00	625.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.58103E+00	650.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.55355E+00	675.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.52843E+00	700.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.50513E+00	725.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.48341E+00	750.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043 -9.000	0.020 -999.	21.		6.0 1.000 1.50		0.35	0.50	10.0		
310.0	2.0										
	0.46317E+00	775.00	0.00	0.0		Winter	0-360	10011001			

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.44445E+00		800.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42709E+00		825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.41094E+00		850.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.39586E+00		875.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.38151E+00		900.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.36795E+00		925.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.35525E+00		950.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.34332E+00		975.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.33210E+00		1000.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.32153E+00		1025.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.31157E+00		1050.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30208E+00		1075.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.29301E+00		1100.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.28442E+00		1125.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.27628E+00		1150.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043										



0.26115E+00	1200.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.25408E+00	1225.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.24735E+00	1250.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.24094E+00	1275.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.23481E+00	1300.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.22896E+00	1325.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.22337E+00	1350.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.21796E+00	1375.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.21277E+00	1400.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.20779E+00	1425.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.20301E+00	1450.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.19843E+00	1475.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.19403E+00	1500.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.18980E+00	1525.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.18573E+00	1550.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.18181E+00	1575.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.17804E+00	1600.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				

310.0	2.0											
	0.17440E+00	1625.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.17090E+00	1650.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.16750E+00	1675.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.16421E+00	1700.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.16102E+00	1725.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.15795E+00	1750.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.15498E+00	1775.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.15210E+00	1800.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.14932E+00	1825.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.14661E+00	1850.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.14397E+00	1875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.14142E+00	1900.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.13894E+00	1925.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.13654E+00	1950.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.13421E+00	1975.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.13195E+00	2000.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.12975E+00	2025.00	0.00	0.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12762E+00		2050.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12556E+00		2075.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12355E+00		2100.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.12160E+00		2125.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11969E+00		2150.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11784E+00		2175.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11603E+00		2200.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11428E+00		2225.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11257E+00		2250.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.11090E+00		2275.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10929E+00		2300.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10771E+00		2325.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10617E+00		2350.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10467E+00		2375.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.10320E+00		2400.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0										

0.10038E+00	2450.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.99022E-01	2475.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.97694E-01	2500.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.96397E-01	2525.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.95130E-01	2550.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.93884E-01	2575.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.92667E-01	2600.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.91477E-01	2625.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.91544E-01	2650.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.90375E-01	2675.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.89231E-01	2700.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.88113E-01	2725.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.87018E-01	2750.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.85947E-01	2775.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.84898E-01	2800.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.83872E-01	2825.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				
310.0 2.0						
0.82866E-01	2850.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35 0.50 10.0				

310.0	2.0											
	0.81882E-01	2875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.80917E-01	2900.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.79972E-01	2925.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.79046E-01	2950.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.78139E-01	2975.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.77249E-01	3000.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.76377E-01	3025.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.75521E-01	3050.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.74682E-01	3075.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.73860E-01	3100.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.73052E-01	3125.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.72260E-01	3150.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.71483E-01	3175.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.70720E-01	3200.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.69970E-01	3225.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.69235E-01	3250.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.68513E-01	3275.00	0.00	0.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.67804E-01		3300.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.67107E-01		3325.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.66423E-01		3350.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.65751E-01		3375.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.65090E-01		3400.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.64441E-01		3425.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.63803E-01		3450.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.63176E-01		3475.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.62559E-01		3500.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.61953E-01		3525.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.61357E-01		3550.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.60771E-01		3575.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.60194E-01		3600.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.59627E-01		3625.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.59069E-01		3650.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0										

0.57980E-01	3700.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.57448E-01	3725.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.56925E-01	3750.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.56410E-01	3775.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.55903E-01	3800.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.55404E-01	3825.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.54912E-01	3849.99	0.00	15.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.54428E-01	3875.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.53951E-01	3900.00	0.00	15.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.53482E-01	3925.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.53019E-01	3950.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.52564E-01	3975.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.52115E-01	4000.00	0.00	10.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.51673E-01	4025.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.51237E-01	4050.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.50807E-01	4075.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.50384E-01	4100.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		

310.0	2.0											
	0.49967E-01	4125.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.49556E-01	4150.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.49150E-01	4175.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.48751E-01	4200.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.48356E-01	4225.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.47968E-01	4250.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.47585E-01	4275.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.47206E-01	4300.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.46834E-01	4325.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.46466E-01	4350.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.46103E-01	4375.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.45745E-01	4400.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.45392E-01	4425.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.45044E-01	4450.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.44700E-01	4475.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.44361E-01	4500.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.44026E-01	4525.00	0.00	5.0		Winter	0-360	10011001				



-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43695E-01		4550.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43369E-01		4575.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43047E-01		4600.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42729E-01		4625.00		0.00	25.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42415E-01		4650.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42105E-01		4675.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.41800E-01		4700.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.41497E-01		4725.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.41199E-01		4750.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.40904E-01		4775.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.40613E-01		4800.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.40326E-01		4825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.40151E-01		4850.00		0.00	0.0		Winter	0-360	10010612	
7.12	0.119	0.300	0.020	130.	95.	-20.5	1.000	1.50	0.35	0.50	10.0
280.0	2.0										
	0.40006E-01		4875.00		0.00	0.0		Winter	0-360	10010612	
7.12	0.119	0.300	0.020	130.	95.	-20.5	1.000	1.50	0.35	0.50	10.0
280.0	2.0										
	0.39863E-01		4900.00		0.00	5.0		Winter	0-360	10010612	
7.12											

0.39580E-01	4950.00	0.00	0.0	Winter	0-360	10010612
7.12 0.119 0.300	0.020 130.	95.	-20.5 1.000 1.50	0.35	0.50	10.0
280.0 2.0						
0.39441E-01	4975.00	0.00	0.0	Winter	0-360	10010612
7.12 0.119 0.300	0.020 130.	95.	-20.5 1.000 1.50	0.35	0.50	10.0
280.0 2.0						
0.39302E-01	5000.00	0.00	5.0	Winter	0-360	10010612
7.12 0.119 0.300	0.020 130.	95.	-20.5 1.000 1.50	0.35	0.50	10.0
280.0 2.0						

Start date and time 01/08/21 14:23:57

AERSCREEN 16216

SDG Commerce

SDG Commerce

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

METRIC

ENGLISH

\*\* AREADATA \*\*

Emission Rate: 0.270E-02 g/s 0.215E-01 lb/hr

Area Height: 3.00 meters 9.84 feet

Area Source Length: 296.00 meters 971.13 feet

Area Source Width: 142.00 meters 465.88 feet

Vertical Dimension: 1.50 meters 4.92 feet

Model Mode: URBAN

Population: 20359

Dist to Ambient Air: 1.0 meters 3. feet

\*\* BUILDING DATA \*\*

No Building Downwash Parameters

\*\* TERRAIN DATA \*\*

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

\*\* FUMIGATION DATA \*\*

No fumigation requested

\*\* METEOROLOGY DATA \*\*

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

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity ( $u^*$ ): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

2021.01.08\_SDG\_Operation.out

\*\*\* AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

\*\*\*\*\*

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

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

Creating met files aerscreen\_01\_01.sfc & aerscreen\_01\_01.pfl

Creating met files aerscreen\_02\_01.sfc & aerscreen\_02\_01.pfl

Creating met files aerscreen\_03\_01.sfc & aerscreen\_03\_01.pfl

Creating met files aerscreen\_04\_01.sfc & aerscreen\_04\_01.pfl

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

FLOWSECTOR started 01/08/21 14:24:56

\*\*\*\*\*

Running AERMOD

Processing Winter

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*



Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Running AERMOD

Processing Spring

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

## Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320	36	URBOPT: Input Parameter May Be Out-of-Range for Parameter
URB-POP		

\*\*\*\*\*

## Running AERMOD

## Processing Summer

## Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

\*\*\*\*\*

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 30

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

CO W320 36 URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

FLOWSECTOR ended 01/08/21 14:25:16

REFINE started 01/08/21 14:25:16

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*



CO W320            36            URB OPT: Input Parameter May Be Out-of-Range for Parameter  
URB-POP

REFINE            ended 01/08/21 14:25:18

\*\*\*\*\*

AERSCREEN Finished Successfully

But with Warnings

Check log file for details

\*\*\*\*\*

Ending date and time 01/08/21 14:25:20

Concentration			Distance	Elevation	Diag	Season/Month			Zo sector		Date	
H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
REF	TA	HT										HT
	0.21194E+01		1.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.22666E+01		25.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.24018E+01		50.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.25219E+01		75.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.26290E+01		100.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.27264E+01		125.00	0.00	5.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.28121E+01		150.00	0.00	10.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
*	0.28145E+01		151.00	0.00	10.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.22975E+01		175.00	0.00	25.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.18075E+01		200.00	0.00	20.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.15297E+01		225.00	0.00	20.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.13490E+01		250.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.12126E+01		275.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.10978E+01		300.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.10012E+01		325.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0											
	0.91770E+00		350.00	0.00	0.0			Winter		0-360		10011001
-1.30	0.043	-9.000	0.020	-999.	21.		6.0	1.000	1.50	0.35	0.50	10.0

310.0	2.0										
	0.84543E+00	375.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.78221E+00	400.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.72658E+00	425.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.67784E+00	450.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.63383E+00	475.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.59484E+00	500.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.55943E+00	525.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.52793E+00	550.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.49907E+00	575.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.47270E+00	600.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.44888E+00	625.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.42693E+00	650.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.40674E+00	675.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.38828E+00	700.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.37116E+00	725.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.35520E+00	750.00	0.00	0.0		Winter	0-360	10011001			
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.34033E+00	775.00	0.00	0.0		Winter	0-360	10011001			

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.32657E+00		800.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.31382E+00		825.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30195E+00		850.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.29087E+00		875.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.28032E+00		900.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.27036E+00		925.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.26103E+00		950.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.25226E+00		975.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.24402E+00		1000.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.23626E+00		1025.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.22893E+00		1050.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.22196E+00		1075.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.21530E+00		1100.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.20899E+00		1125.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.20300E+00		1150.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043										

0.19189E+00	1200.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.18669E+00	1225.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.18175E+00	1250.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.17704E+00	1275.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.17254E+00	1300.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.16824E+00	1325.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.16413E+00	1350.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.16015E+00	1375.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.15634E+00	1400.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.15268E+00	1425.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.14917E+00	1450.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.14580E+00	1475.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.14257E+00	1500.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.13946E+00	1525.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.13647E+00	1550.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.13359E+00	1575.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0
310.0 2.0						
0.13082E+00	1600.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.				6.0 1.000 1.50	0.35	0.50 10.0

310.0	2.0											
	0.12815E+00	1625.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.12557E+00	1650.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.12308E+00	1675.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.12066E+00	1700.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.11832E+00	1725.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.11606E+00	1750.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.11388E+00	1775.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.11176E+00	1800.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.10972E+00	1825.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.10773E+00	1850.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.10579E+00	1875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.10391E+00	1900.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.10209E+00	1925.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.10033E+00	1950.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.98613E-01	1975.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.96951E-01	2000.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.95339E-01	2025.00	0.00	0.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.93773E-01		2050.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.92259E-01		2075.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.90784E-01		2100.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.89347E-01		2125.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.87948E-01		2150.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.86585E-01		2175.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.85258E-01		2200.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.83967E-01		2225.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.82713E-01		2250.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.81491E-01		2275.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.80301E-01		2300.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.79141E-01		2325.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.78010E-01		2350.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.76908E-01		2375.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.75832E-01		2400.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0										

0.73759E-01	2450.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.72759E-01	2475.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.71783E-01	2500.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.70830E-01	2525.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.69899E-01	2550.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.68984E-01	2575.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.68090E-01	2600.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.67216E-01	2625.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.67264E-01	2650.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.66405E-01	2675.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.65565E-01	2700.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.64743E-01	2725.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.63939E-01	2750.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.63152E-01	2775.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.62382E-01	2800.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.61627E-01	2825.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.60889E-01	2850.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		



310.0	2.0											
	0.60165E-01	2875.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.59457E-01	2900.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.58762E-01	2925.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.58082E-01	2950.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.57415E-01	2975.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.56761E-01	3000.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.56120E-01	3025.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.55491E-01	3050.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.54875E-01	3075.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.54270E-01	3100.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.53677E-01	3125.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.53095E-01	3150.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.52524E-01	3175.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.51963E-01	3200.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.51413E-01	3225.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.50873E-01	3250.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
	0.50342E-01	3275.00	0.00	0.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.49821E-01		3300.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.49309E-01		3325.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.48806E-01		3350.00		0.00	5.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.48312E-01		3375.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.47827E-01		3400.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.47350E-01		3425.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.46881E-01		3450.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.46420E-01		3475.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.45967E-01		3500.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.45522E-01		3525.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.45084E-01		3550.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.44653E-01		3575.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.44229E-01		3600.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43813E-01		3625.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.43403E-01		3650.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0										

0.42602E-01	3700.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.42212E-01	3725.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.41827E-01	3750.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.41449E-01	3775.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.41076E-01	3800.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.40709E-01	3825.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.40348E-01	3849.99	0.00	15.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.39993E-01	3875.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.39642E-01	3900.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.39297E-01	3925.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.38957E-01	3950.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.38623E-01	3975.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.38293E-01	4000.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.37968E-01	4025.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.37648E-01	4050.00	0.00	0.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.37332E-01	4075.00	0.00	5.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		
310.0 2.0						
0.37021E-01	4100.00	0.00	10.0	Winter	0-360	10011001
-1.30 0.043 -9.000 0.020 -999. 21.	6.0 1.000 1.50	0.35	0.50	10.0		

310.0	2.0											
0.36715E-01		4125.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.36412E-01		4149.99	0.00	20.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.36115E-01		4175.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.35821E-01		4200.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.35531E-01		4225.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.35246E-01		4250.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.34964E-01		4275.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.34686E-01		4300.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.34412E-01		4325.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.34142E-01		4350.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.33876E-01		4375.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.33613E-01		4400.00	0.00	10.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.33353E-01		4425.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.33097E-01		4450.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.32845E-01		4475.00	0.00	5.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.32595E-01		4500.00	0.00	0.0		Winter	0-360	10011001				
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0	
310.0	2.0											
0.32349E-01		4525.00	0.00	10.0		Winter	0-360	10011001				

-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.32107E-01		4550.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.31867E-01		4575.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.31630E-01		4600.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.31397E-01		4625.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.31166E-01		4650.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30938E-01		4675.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30714E-01		4700.00		0.00	15.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30491E-01		4725.00		0.00	25.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30272E-01		4750.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.30056E-01		4775.00		0.00	20.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.29842E-01		4800.00		0.00	0.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.29631E-01		4825.00		0.00	15.0		Winter	0-360	10011001	
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50	10.0
310.0	2.0										
	0.29502E-01		4850.00		0.00	0.0		Winter	0-360	10010612	
7.12	0.119	0.300	0.020	130.	95.	-20.5	1.000	1.50	0.35	0.50	10.0
280.0	2.0										
	0.29396E-01		4875.00		0.00	0.0		Winter	0-360	10010612	
7.12	0.119	0.300	0.020	130.	95.	-20.5	1.000	1.50	0.35	0.50	10.0
280.0	2.0										
	0.29290E-01		4900.00		0.00	0.0		Winter	0-360	10010612	
7.12											

0.29083E-01	4950.00	0.00	0.0	Winter	0-360	10010612
7.12 0.119 0.300	0.020 130.	95.	-20.5 1.000 1.50	0.35	0.50	10.0
280.0 2.0						
0.28980E-01	4975.00	0.00	0.0	Winter	0-360	10010612
7.12 0.119 0.300	0.020 130.	95.	-20.5 1.000 1.50	0.35	0.50	10.0
280.0 2.0						
0.28878E-01	5000.00	0.00	0.0	Winter	0-360	10010612
7.12 0.119 0.300	0.020 130.	95.	-20.5 1.000 1.50	0.35	0.50	10.0
280.0 2.0						



Technical Consultation, Data Analysis and  
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***Paul Rosenfeld, Ph.D.***

*Principal Environmental Chemist*

**Chemical Fate and Transport & Air Dispersion Modeling**

**Risk Assessment & Remediation Specialist**

**Education**

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

**Professional Experience**

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial sources.

## **Professional History:**

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner  
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)  
UCLA School of Public Health; 2003 to 2006; Adjunct Professor  
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator  
UCLA Institute of the Environment, 2001-2002; Research Associate  
Komex H<sub>2</sub>O Science, 2001 to 2003; Senior Remediation Scientist  
National Groundwater Association, 2002-2004; Lecturer  
San Diego State University, 1999-2001; Adjunct Professor  
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager  
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager  
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor  
King County, Seattle, 1996 – 1999; Scientist  
James River Corp., Washington, 1995-96; Scientist  
Big Creek Lumber, Davenport, California, 1995; Scientist  
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist  
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## **Publications:**

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health*. 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P.**, (2015) Modeling the Effect of Refinery Emission On Residential Property Value. *Journal of Real Estate Research*. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.**, Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermol and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

**Rosenfeld, P.E.** & Feng, L. (2011). *The Risks of Hazardous Waste*. Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries*. Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P.** (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution*, 123 (17), 319-327.



Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

**Rosenfeld, P.E.**, J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

**Rosenfeld, P. E.**, M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities*. Boston Massachusetts: Elsevier Publishing

**Rosenfeld, P.E.**, and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

**Rosenfeld P. E.**, J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004*. New Orleans, October 2-6, 2004.

**Rosenfeld, P.E.**, and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

**Rosenfeld, P.E.**, and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49( 9), 171-178.

**Rosenfeld, P. E.**, Grey, M. A., Sellev, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

**Rosenfeld, P.E.**, Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS-6), Sacramento, CA Publication #442-02-008.

**Rosenfeld, P.E.**, and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

**Rosenfeld, P.E.**, and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality*. 29, 1662-1668.

**Rosenfeld, P.E.**, C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

**Rosenfeld, P.E.**, and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

**Rosenfeld, P.E.**, and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld**. (1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

**Rosenfeld, P. E.** (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

**Rosenfeld, P. E.** (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

**Rosenfeld, P. E.** (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

**Rosenfeld, P. E.** (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

**Rosenfeld, P. E.** (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

## **Presentations:**

**Rosenfeld, P.E.**, Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society*. Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

**Rosenfeld, P.E.** (April 19-23, 2009). Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

**Rosenfeld, P.E.** (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States” Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P.** (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

**Rosenfeld, P. E.** (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water. Lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld P. E.** (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

**Rosenfeld P. E.** (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting*. Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition*. Lecture conducted from Boston Massachusetts.

**Paul Rosenfeld Ph.D.** (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference*. Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

**Paul Rosenfeld Ph.D.** (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

**Paul Rosenfeld Ph.D.** (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel in Irvine, California.

**Paul Rosenfeld Ph.D.** (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference*. Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

**Paul Rosenfeld Ph.D.** (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

**Paul Rosenfeld Ph.D.** (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld Ph.D.** (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

**Paul Rosenfeld, Ph.D.** (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

**Paul Rosenfeld, Ph.D.** (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

**Rosenfeld, P. E.,** Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants..* Lecture conducted from Hyatt Regency Phoenix Arizona.

**Paul Rosenfeld, Ph.D.** (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

**Paul Rosenfeld, Ph.D.** (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E.** and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

**Rosenfeld, P.E.** and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conference*. Lecture conducted from Indianapolis, Maryland.

**Rosenfeld, P.E.** (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation*. Lecture conducted from Anaheim California.

**Rosenfeld, P.E.** (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest*. Lecture conducted from Ocean Shores, California.

**Rosenfeld, P.E.** (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E.,** C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.,** and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

**Rosenfeld, P.E.,** C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell*. Lecture conducted from Seattle Washington.

**Rosenfeld, P.E.,** C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest*. Lecture conducted from Lake Chelan, Washington.

**Rosenfeld, P.E.,** C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.,** C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

## **Teaching Experience:**

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

## **Academic Grants Awarded:**

California Integrated Waste Management Board. \$41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: \$10,000 grant awarded to San Diego State University. Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. \$100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. \$20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: \$10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: \$15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. \$500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

## **Deposition and/or Trial Testimony:**

In the United States District Court For The Southern District of Illinois

Duarte et al, *Plaintiffs*, vs. United States Metals Refining Company et. al. *Defendant*.

Case No.: 3:19-cv-00302-SMY-GCS

Rosenfeld Deposition. 2-19-2020

In the Circuit Court of Jackson County, Missouri

Karen Cornwell, *Plaintiff*, vs. Marathon Petroleum, LP, *Defendant*.

Case No.: 1716-CV10006

Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey

Duarte et al, *Plaintiffs*, vs. United States Metals Refining Company et. al. *Defendant*.

Case No.: 2:17-cv-01624-ES-SCM

Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division

M/T Carla Maersk, *Plaintiffs*, vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS “Conti Perdido” *Defendant*.

Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237

Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica

Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants

Case No.: No. BC615636

Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica

The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants

Case No.: No. BC646857

Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado

Bells et al. Plaintiff vs. The 3M Company et al., Defendants

Case: No 1:16-cv-02531-RBJ

Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112<sup>th</sup> Judicial District

Phillip Bales et al., Plaintiff vs. Dow Agrosiences, LLC, et al., Defendants

Cause No 1923

Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa

Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants

Cause No C12-01481

Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois

Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants

Case No.: No. 0i9-L-2295

Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi  
Guy Manuel vs. The BP Exploration et al., Defendants  
Case: No 1:19-cv-00315-RHW  
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles  
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC  
Case No.: LC102019 (c/w BC582154)  
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division  
Brenda J. Cooper, et al., *Plaintiffs*, vs. Meritor Inc., et al., *Defendants*  
Case Number: 4:16-cv-52-DMB-JVM  
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish  
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants  
Case No.: No. 13-2-03987-5  
Rosenfeld Deposition, February 2017  
Trial, March 2017

In The Superior Court of the State of California, County of Alameda  
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants  
Case No.: RG14711115  
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County  
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants  
Case No.: LALA002187  
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County  
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants  
Law No.: LALA105144 - Division A  
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County  
Doug Pauls, et al., et al., Plaintiffs vs. Richard Warren, et al., Defendants  
Law No.: LALA105144 - Division A  
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia  
Robert Andrews, et al. v. Antero, et al.  
Civil Action N0. 14-C-30000  
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico  
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward  
DeRuyter, Defendants  
Rosenfeld Deposition: July 2015

In The Iowa District Court For Muscatine County  
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant  
Case No 4980  
Rosenfeld Deposition: May 2015



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

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

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.

B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certifications:**

California Professional Geologist

California Certified Hydrogeologist

Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014, 2017;
- Senior Environmental Analyst, Komex H<sub>2</sub>O Science, Inc. (2000 -- 2003);



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

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt’s responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 150 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

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

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

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

#### **Executive Director:**

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

#### **Hydrogeology:**

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

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

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

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

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

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

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

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

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

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

### **Policy:**

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

Activities included the following:

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

principles into the policy-making process.

- Established national protocol for the peer review of scientific documents.

### **Geology:**

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

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

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

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

### **Teaching:**

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

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

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

### **Invited Testimony, Reports, Papers and Presentations:**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Other Experience:**

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

# EXHIBIT C



**California Air Resources Board**

## **Quantification Methodology**

**Strategic Growth Council  
Affordable Housing and Sustainable Communities Program**

**California Climate Investments**



**November 1, 2019**

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**List of Acronyms and Abbreviations**

<b>Acronym</b>	<b>Term</b>
AHSC	Affordable Housing and Sustainable Communities
CARB	California Air Resources Board
CMAQ	Congestion Mitigation and Air Quality
Diesel PM <sub>10</sub>	diesel particulate matter with a diameter less than 10 micrometers
DC	direct current
g	grams
gal	gallons
GGRF	Greenhouse Gas Reduction Fund
GHG	greenhouse gas
ICP	Integrated Connectivity Project Area
kg	kilograms
kWh	kilowatt hours
lbs	pounds
MTCO <sub>2e</sub>	metric tons of carbon dioxide equivalent
NO <sub>x</sub>	nitrous oxide
PM <sub>2.5</sub>	particulate matter with a diameter less than 2.5 micrometers
PV	photovoltaic
RIPA	Rural Innovation Project Area
ROG	reactive organic gas
scf	standard cubic feet
SGC	Strategic Growth Council
TOD	Transit Oriented Development Project Area
VMT	vehicle miles traveled

## Section A. Introduction

California Climate Investments is a statewide initiative that puts billions of Cap-and-Trade dollars to work facilitating GHG emission reductions; strengthening the economy; improving public health and the environment; and providing benefits to residents of disadvantaged communities, low-income communities, and low-income households, collectively referred to as “priority populations.” Where applicable and to the extent feasible, California Climate Investments must maximize economic, environmental, and public health co-benefits to the State.

CARB is responsible for providing guidance on estimating the GHG emission reductions and co-benefits from projects receiving monies from the GGRF. This guidance includes quantification methodologies, co-benefit assessment methodologies, and benefit calculator tools. CARB develops these methodologies and tools based on the project components eligible for funding by each administering agency, as reflected in the program expenditure records available at: [www.arb.ca.gov/ccr-expenditurerecords](http://www.arb.ca.gov/ccr-expenditurerecords).

For the SGC AHSC Program, CARB and SGC developed this AHSC Quantification Methodology to provide guidance for estimating the GHG emission reductions and selected co-benefits of each proposed project type. This methodology uses calculations to estimate GHG emission reductions from avoided passenger VMT as a result of land use, housing, and transportation strategies to support infill, compact, and affordable housing development projects, in addition to GHG emission reductions from solar PV electricity generation.

The AHSC Benefits Calculator Tool automates methods described in this document, provides a link to a step-by-step user guide with a project example, and outlines documentation requirements. Applicants will estimate and SGC will report the total project GHG emission reductions and co-benefits estimated using the AHSC Benefits Calculator Tool, as well as the total project GHG emission reductions per dollar of GGRF funds requested. The AHSC Benefits Calculator Tool is available for download at: [www.arb.ca.gov/ccr-resources](http://www.arb.ca.gov/ccr-resources).

Using many of the same inputs required to estimate GHG emission reductions, the AHSC Benefits Calculator Tool estimates the following co-benefits and key variables from AHSC projects:

- Passenger VMT reductions (miles);
- Net density (dwelling units per acre);
- Renewable energy generation (kWh);
- Local and remote ROG emission reductions (lbs);
- Local and remote NO<sub>x</sub> emission reductions (lbs);
- Local and remote PM<sub>2.5</sub> emission reductions (lbs);
- Local diesel PM<sub>10</sub> emission reductions (lbs);

- Fossil fuel use reductions (gallons);
- Travel cost savings (\$); and
- Energy and fuel cost savings (\$).

Additional co benefits for which CARB assessment methodologies were not incorporated into the Benefits Calculator Tool may also be applicable to the project. Applicants should consult the AHSC Guidelines<sup>1</sup>, solicitation materials, and agreements to ensure they meet AHSC requirements. All CARB co-benefit assessment methodologies are available at: [www.arb.ca.gov/cc-cobenefits](http://www.arb.ca.gov/cc-cobenefits).

## Methodology Development

CARB and SGC developed this Quantification Methodology consistent with the guiding principles of California Climate Investments, including ensuring transparency and accountability.<sup>2</sup> CARB developed this AHSC Quantification Methodology to be used to estimate the outcomes of proposed projects, inform project selection, and track results of funded projects. The implementing principles ensure that the methodology would:

- Apply at the project level;
- Provide uniform methods to be applied statewide and be accessible by all applicants;
- Use existing and proven tools and methods, where available and appropriate;
- Use project-level data, where available and appropriate; and
- Result in GHG emission reduction estimates that are conservative and supported by empirical literature.

CARB assessed peer-reviewed literature and tools and consulted with experts, as needed, to determine methods appropriate for the AHSC project types. CARB also consulted with SGC to determine the project-level inputs available. The methods were developed to provide estimates that are as accurate as possible with data readily available at the project level. CARB released the Draft AHSC Quantification Methodology and Draft AHSC Benefits Calculator Tool for public comment in August 2019. This Final AHSC Quantification Methodology and accompanying AHSC Benefits Calculator Tool have been updated to address public comments, where appropriate, and for consistency with updates to the AHSC Guidelines.

The “Methods to Find the Cost-effectiveness of Funding Air Quality Projects for Evaluating Motor Vehicle Registration Fee Projects and Congestion Mitigation and Air Quality Improvement Projects” were the basis for developing the GHG emission reduction estimates for transit and connectivity project features.<sup>3</sup> The CMAQ

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<sup>1</sup> Strategic Growth Council. <http://sgc.ca.gov/programs/ahsc/resources/guidelines.html>

<sup>2</sup> California Air Resources Board. [www.arb.ca.gov/cc-fundingguidelines](http://www.arb.ca.gov/cc-fundingguidelines)

<sup>3</sup> California Air Resources Board and California Department of Transportation. *Methods to Find the Cost-Effectiveness of Funding Air Quality Projects for Evaluating Motor Vehicle Registration Fee*

Methods are equations for evaluating the cost-effectiveness of certain types of transportation projects, such as bicycle paths, vanpools, and new bus services. CARB and the California Department of Transportation developed the CMAQ Methods, which are used statewide by transportation agencies to assess criteria and toxic pollutant emission reductions from transportation projects competing for State motor vehicle fee and federal CMAQ funding. All of the CMAQ Methods equations and assumptions needed for this quantification method are included in this document, and some assumptions have been modified as necessary. Therefore, the equations presented in this Quantification Methodology are referred to as Transit and Connectivity Methods. The CMAQ Methods Guide is available at: [www.arb.ca.gov/planning/tsaq/eval/eval.htm](http://www.arb.ca.gov/planning/tsaq/eval/eval.htm).

To develop VMT reduction estimates for projects that include affordable housing developments, the AHSC Benefits Calculator Tool uses information from the California Statewide Travel Demand Model,<sup>4</sup> metropolitan planning organizations,<sup>5</sup> the Institute of Transportation Engineers Trip Generation Manual<sup>6</sup> and Parking Generation Manual,<sup>7</sup> and the California Air Pollution Control Officers Association “Quantifying Greenhouse Gas Mitigation Measures” report<sup>8</sup> and California Emissions Estimator Model®.<sup>9</sup> The AHSC Benefits Calculator Tool adapts a methodology from this model for ease of use and alignment with the specific requirements of the AHSC Program.

In addition, the University of California, Berkeley, in collaboration with CARB, developed assessment methodologies for a variety of co-benefits such as providing cost savings, lessening the impacts and effects of climate change, and strengthening community engagement. Co-benefit assessment methodologies are posted at: [www.arb.ca.gov/cc-cobenefits](http://www.arb.ca.gov/cc-cobenefits).

The AHSC Quantification Methodology and AHSC Benefits Calculator Tool are applicable only to AHSC project types and should not be used to estimate GHG

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*Projects and Congestion Mitigation and Air Quality Improvement Projects.* May 2005.  
[www.arb.ca.gov/planning/tsaq/eval/eval.htm](http://www.arb.ca.gov/planning/tsaq/eval/eval.htm).

<sup>4</sup> California Department of Transportation. *California Statewide Travel Demand Model.* 2016.  
<https://dot.ca.gov/programs/transportation-planning/multi-modal-system-planning/statewide-modeling>

<sup>5</sup> The Association of Monterey Bay Area Governments, Butte County Association of Governments, Metropolitan Transportation Commission, Sacramento Area Council of Governments, San Luis Obispo Council of Governments, and Southern California Association of Governments provided trip length data for this AHSC Quantification Methodology.

<sup>6</sup> Institute of Transportation Engineers. *Trip Generation Manual, 10<sup>th</sup> Edition.* 2017.  
<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/trip-generation-10th-edition-formats/>

<sup>7</sup> Institute of Transportation Engineers. *Parking Generation Manual, 4<sup>th</sup> Edition.* 2010.  
<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>

<sup>8</sup> California Air Pollution Control Officers Association. *Quantifying Greenhouse Gas Mitigation Measures.* 2010.  
[www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf](http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf)

<sup>9</sup> California Air Pollution Control Officers Association. *California Emissions Estimator Model, version 2016.3.2.* 2017. [www.caleemod.com](http://www.caleemod.com).

emission reductions or co-benefits for any projects which do not meet AHSC Program requirements.

## Tools

The AHSC Benefits Calculator Tool relies on project-specific outputs from the National Renewable Energy Laboratory PVWatts® Calculator, a web-based tool that estimates the electricity production of grid-connected roof- or ground-mounted solar PV systems. PVWatts calculates estimated values for the proposed system's monthly and annual electricity production. For projects that include solar PV systems, the AHSC Benefits Calculator Tool relies on estimates of solar PV electricity generation from PVWatts. PVWatts is publicly available to anyone with internet access, free of charge, and subject to regular updates to incorporate new information. The tool can be accessed at: <http://pvwatts.nrel.gov/>.

In addition to PVWatts, the AHSC Benefits Calculator Tool relies on CARB-developed emission factors. CARB has established a single repository for emission factors used in CARB benefits calculator tools, referred to as the California Climate Investments Quantification Methodology Emission Factor Database, available at: <http://www.arb.ca.gov/cc-resources>. The Emission Factor Database Documentation explains how emission factors used in CARB benefits calculator tools are developed and updated.

Applicants must use the AHSC Benefits Calculator Tool to estimate the GHG emission reductions and co-benefits of the proposed project. The AHSC Benefits Calculator Tool and User Guide can be downloaded from: <http://www.arb.ca.gov/cc-resources>.

## Updates

CARB staff periodically review each quantification methodology to evaluate its effectiveness and update methodologies to make them more robust, user-friendly, and appropriate to the projects being quantified. CARB updated the AHSC Quantification Methodology and AHSC Benefits Calculator Tool from the previous versions<sup>10</sup> to enhance the analysis and provide additional clarity, including the following additions:

- Equations to estimate avoided VMT from affordable housing developments;
- Home-based trip length information from metropolitan planning organizations and the California Statewide Travel Demand Model;

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<sup>10</sup> California Air Resources Board. November 2018. <https://ww2.arb.ca.gov/our-work/programs/california-climate-investments/cc-archived-quantification-materials>

- Trip generation rates from 10<sup>th</sup> Edition Institute of Transportation Engineers Trip Generation Manual, including “Senior Adult Housing (Attached)” trip rates for age-restricted housing rather than “Retirement Community” trip rates;
- Compound degradation for solar PV electricity generation estimates;
- Calculations of criteria and toxic air pollutant emission reductions from transit and active transportation components past 2050;
- Passenger auto and transit vehicle emission factors derived from EMFAC2017;
- Updated default trip lengths for transit and active transportation components;
- Equations to estimate GHG emission reductions and co-benefits from electric bike share;
- Updated costs for energy, fuel, and transportation;
- Descriptions of additional data sources used; and
- An expanded project example and additional guidance to clarify frequently asked questions.



## Section B. Methods

The following section provides details on the methods supporting emission reductions in the AHSC Benefits Calculator Tool.

### Project Components

SGC developed five categories of eligible costs that meet the objectives of the AHSC Program.<sup>11</sup> For quantification purposes, CARB defined project components within those eligible costs for which there are methods to quantify GHG emission reductions.

Other project features may be eligible for funding under the AHSC Program; however, each project requesting GGRF funding must include at least one of the project components listed in Table 1 below.

**Table 1. Project Components by Eligible Cost**

Eligible Cost	Project Component
Affordable Housing Development; Housing-related Infrastructure	Construction or substantial rehabilitation of affordable housing, including mixed-use development, and related infrastructure
	Grid-connected solar PV system
Sustainable Transportation Infrastructure; Transportation-related Amenities	New bicycle facility (Class I bike path, Class II bike lane, or Class IV separated bikeway)
	New walkway
	New bike share equipment <sup>12</sup>
	New or expanded transit service (bus, cable car, ferry, heavy rail, light rail, streetcar, shuttle, trolley bus, or vanpool)
	Capital improvement that encourages mode shift
Program	Transit passes for residents
	New bike share operations <sup>12</sup>

<sup>11</sup> Strategic Growth Council. <http://sgc.ca.gov/programs/ahsc/resources/guidelines.html>

<sup>12</sup> Bike share infrastructure and fleets are eligible Sustainable Transportation Infrastructure costs according to the AHSC Guidelines, while bike share operations are eligible Active Transportation Program costs. Quantification of the benefits of new bike share infrastructure, fleets, or operations is equivalent regardless of the funding type requested.

## General Approach

This section describes the methods used in the AHSC Benefits Calculator Tool to estimate GHG emission reductions and air pollutant emission co-benefits by project component. These methods account for emission reductions from avoided passenger VMT and the generation of solar PV electricity.

In general, the GHG and air pollutant emission reductions are estimated in the AHSC Benefits Calculator Tool using the quantification approaches by project component outlined in Table 2 below.

**Table 2. General Approach to Quantification by Project Component**

<b>Project Component</b>	<b>Emission Reductions Estimated</b>
Affordable housing development or residential transit subsidy	Emissions from avoided passenger VMT
Solar PV electricity generation	Emissions from avoided grid electricity production
New bicycle facility, walkway, or bike share	Emissions from displaced autos (less emissions from electric bikes, if applicable)
New or expanded transit service	Emissions from displaced autos less emissions from new service vehicle
Capital improvements	Emissions from displaced autos

## A. Affordable Housing Developments and Residential Transit Subsidies

The emission reductions from affordable housing developments and residential transit subsidies are calculated as the emission reductions from avoided passenger VMT compared to a baseline scenario lacking VMT reduction measures. Equations 1 through 4 are used to estimate unmitigated VMT for the baseline scenario.<sup>13</sup>

### Equation 1: Average Daily Trips per Dwelling Unit

$$\text{Average Daily Trips} = \frac{(\text{Weekday Trips} * 5) + \text{Saturday Trips} + \text{Sunday Trips}}{7 \text{ days}}$$

<i>Where,</i>		
<i>Average Daily Trips</i>	= Average daily trip rate per dwelling unit for applicable dwelling type	<u>Units</u> trips/ dwelling unit-day
<i>Weekday Trips</i>	= Average weekday trip rate per dwelling unit for applicable dwelling type	trips/ dwelling unit
<i>Saturday Trips</i>	= Average Saturday trip rate per dwelling unit for applicable dwelling type	trips/ dwelling unit
<i>Sunday Trips</i>	= Average Sunday trip rate per dwelling unit for applicable dwelling type	trips/ dwelling unit

<sup>13</sup> Equations 1 through 4 use a methodology and trip type and link percentages described in Appendices A and D of the *User's Guide for CalEEMod Version 2016.3.2*.

<http://www.aqmd.gov/caleemod/user's-guide>

Trip rates are derived from the *Trip Generation Manual, 10<sup>th</sup> Edition*.

<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/trip-generation-10th-edition-formats/>

Trip lengths not provided by metropolitan planning organizations are calculated for multi-county regions from the California Statewide Travel Demand Model.

<https://dot.ca.gov/programs/transportation-planning/multi-modal-system-planning/statewide-modeling>

**Equation 2: Primary Trip Length***Primary Trip Length*

$$= (H-W \text{ Length} * H-W \text{ Share}) + (H-S \text{ Length} * H-S \text{ Share}) + (H-O \text{ Length} * H-O \text{ Share})$$

<i>Where,</i>		<u>Units</u>
<i>Primary Trip Length</i>	= County-specific average length of urban or rural primary home-based trip	miles
<i>H-W Length</i>	= County-specific average length of urban or rural trip between home and work	miles
<i>H-W Share</i>	= Statewide default percentage of primary home-based trips which are between home and work (42.3%)	%
<i>H-S Length</i>	= County-specific average length of urban or rural trip between home and shopping	miles
<i>H-S Share</i>	= Statewide default percentage of primary home-based trips which are between home and shopping (19.6%)	%
<i>H-O Length</i>	= County-specific average length of urban or rural trip between home and locations other than work or shopping	miles
<i>H-O Share</i>	= Statewide default percentage of primary home-based trips which are between home and other locations (38.1%)	%

**Equation 3: Overall Trip Length***Overall Trip Length*

$$= (Primary \text{ Trip Length} * Primary \text{ Share}) + (Primary \text{ Trip Length} * 25\% * Diverted \text{ Share}) + (0.1 \text{ miles} * Pass\text{-}by \text{ Share})$$

<i>Where,</i>		<u>Units</u>
<i>Overall Trip Length</i>	= County-specific average length of urban or rural overall home-based trip	miles
<i>Primary Trip Length</i>	= County-specific average length of urban or rural primary home-based trip, from Equation 2	miles
<i>Primary Share</i>	= Statewide average percentage of home-based trips which are primary (86%)	%
<i>Diverted Share</i>	= Statewide average percentage of home-based trips which are diverted (11%)	%
<i>Pass-by Share</i>	= Statewide average percentage of home-based trips which are pass-by (3%)	%

**Equation 4: Annual Unmitigated VMT***Annual Unmitigated VMT*

$$= \text{Average Daily Trips} * \text{Overall Trip Length} * \text{Total Units} * 365 \text{ days}$$

<i>Where,</i> <b>Annual Unmitigated VMT</b>	= Annual VMT by residents of housing development without VMT mitigation measures	<u>Units</u> miles/year
<b>Average Daily Trips</b>	= Average daily trip rate per dwelling unit for applicable dwelling type, from Equation 1	trips/ dwelling unit*day
<b>Overall Trip Length</b>	= County-specific average length of urban or rural overall home-based trip, from Equation 3	miles
<b>Total Units</b>	= Number of dwelling units in affordable housing development	dwelling units

Equations 5 through 17 are used to calculate the expected percent reductions in passenger VMT resulting from the characteristics of the affordable housing development.<sup>14</sup>

**Equation 5: VMT Reductions from Increased Density**

$$\text{Density VMT Reductions} = \left( \frac{\text{Density} - \text{Required Density}}{\text{Required Density}} \right) * 7\%$$

<i>Where,</i> <b>Density VMT Reductions</b>	= VMT reductions associated with increased net density over required baseline, capped at 30%	<u>Units</u> %
<b>Density</b>	= Net density of affordable housing development	dwelling units/acre
<b>Required Density</b>	= Required baseline net density per Project Area Type, defined by the AHSC Guidelines (see Table 3)	dwelling units/acre

<sup>14</sup> Equations 5 through 17 use methodologies and elasticities described in the *Quantifying Greenhouse Gas Mitigation Measures* report.

[www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf](http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf)

Table 3. Minimum Net Density by Project Area Type

Project Area Type	Minimum Net Density (dwelling units per acre) <sup>15</sup>
TOD	30
ICP	20
RIPA	15

Equations 6 and 7 are applicable to mixed-use developments only.

**Equation 6: Land Use Index**

$$Land\ Use\ Index = - \left[ \frac{4 * (0.01 * \ln 0.01) + \left( \left( \frac{RS}{RS + MS} \right) * \ln \left( \frac{RS}{RS + MS} \right) \right) + \left( \left( \frac{MS}{RS + MS} \right) * \ln \left( \frac{MS}{RS + MS} \right) \right)}{\ln 6} \right]$$

Where,		<u>Units</u>
Land Use Index	= Measure of diversity of land use in mixed-use development	unitless
RS	= Space for residential uses in mixed-use development	square feet
MS	= Publically accessible space for commercial or social services uses in mixed-use development	square feet

**Equation 7: VMT Reductions from Increased Land Use Diversity**

$$Diversity\ VMT\ Reductions = \left( \frac{Land\ Use\ Index - 0.15}{0.15} \right) * 9\%$$

Where,		<u>Units</u>
Diversity VMT Reductions	= VMT reductions associated with increased land use diversity over baseline, capped at 30%, with increase in land use diversity capped at 500%	%
Land Use Index	= Measure of diversity of land use in mixed-use development, from Equation 6	unitless

<sup>15</sup> Strategic Growth Council. <http://sgc.ca.gov/programs/ahsc/resources/guidelines.html>

**Equation 8: VMT Reductions from Increased Destination Accessibility**

$$\text{Accessibility VMT Reductions} = \left( \frac{12 \text{ miles} - \text{Distance}}{12 \text{ miles}} \right) * 20\%$$

Where,		
Accessibility VMT Reductions	= VMT reductions associated with increased destination accessibility, capped at 20%	<u>Units</u> %
Distance	= Distance from affordable housing development to nearest central business district	miles

**Equation 9: VMT Reductions from Integration of Affordable Housing**

$$\text{Affordability VMT Reductions} = \left( \frac{\text{Affordable Units}}{\text{Total Units}} \right) * 4\%$$

Where,		
Affordability VMT Reductions	= VMT reductions associated with integration of affordable dwelling units into housing development, capped at 4%	<u>Units</u> %
Affordable Units	= Number of affordable dwelling units in affordable housing development	dwelling units
Total Units	= Number of dwelling units in affordable housing development	dwelling units

**Equation 10: Total VMT Reductions from Land Use Measures**

$$\begin{aligned} \text{Land Use VMT Reductions} \\ = 1 - (1 - \text{Density VMT Reductions}) * (1 - \text{Diversity VMT Reductions}) \\ * (1 - \text{Accessibility VMT Reductions}) \\ * (1 - \text{Affordability VMT Reductions}) \end{aligned}$$

Where,		
Land Use VMT Reductions	= VMT reductions associated with all land use measures, capped according to Project Area Type (see Table 4)	<u>Units</u> %
Density VMT Reductions	= VMT reductions associated with increased density over required baseline, capped at 35%, from Equation 5	%
Diversity VMT Reductions	= VMT reductions associated with increased land use diversity over baseline, capped at 30%, from Equation 7	%
Accessibility VMT Reductions	= VMT reductions associated with increased destination accessibility, capped at 20%, from Equation 8	%
Affordability VMT Reductions	= VMT reductions associated with integration of affordable dwelling units into housing development, capped at 4%, from Equation 9	%



**Table 4. Maximum VMT Reductions by Project Area Type<sup>16</sup>**

Project Area Type	Land Use Measures	Land Use, Parking, and Traffic Calming Measures	Total
TOD	65%	70%	75%
ICP	30%	35%	40%
RIPA	5%	10%	15%

**Equation 11: VMT Reductions from Limited Parking Supply***Parking Supply VMT Reductions*

$$= \left( \frac{\text{Total Units} * \text{Parking Rate} - \text{Parking Spaces}}{\text{Total Units} * \text{Parking Rate}} \right) * 50\%$$

<i>Where,</i>		
<i>Parking Supply VMT Reductions</i>	= VMT reductions associated with limited residential parking supply, capped at 12.5%	<u>Units</u> %
<i>Total Units</i>	= Number of dwelling units in affordable housing development	dwelling units
<i>Parking Rate</i>	= Average peak parking demand per dwelling unit for applicable dwelling type	vehicles/ unit
<i>Parking Spaces</i>	= Number of residential parking spaces in affordable housing development	parking spaces

**Equation 12: VMT Reductions from Unbundled Parking Cost**

$$\text{Unbundled Parking VMT Reductions} = \text{Unbundled Cost} * \left( \frac{12 \text{ months}}{\$4,000} \right) * 0.4 * 85\%$$

<i>Where,</i>		
<i>Unbundled Parking VMT Reductions</i>	= VMT reductions associated with unbundled residential parking cost, capped at 20%	<u>Units</u> %
<i>Unbundled Cost</i>	= Monthly unbundled cost for on-site residential parking	\$/month

<sup>16</sup> VMT reduction caps are aligned with the “urban” location type from the *Quantifying Greenhouse Gas Mitigation Measures* report for TOD, “compact infill” for ICP, and “suburban” for RIPA.  
[www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf](http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf)



### Equation 13: VMT Reductions from Increased On-street Parking Price

$$\text{Street Parking VMT Reductions} = \text{Street Cost} * 0.11$$

Where,		<u>Units</u>
Street Parking VMT Reductions	= VMT reductions associated with increased price of on-street parking, capped at 5.5%	%
Street Cost	= Percent increase in on-street parking price above baseline within ½ mile of affordable housing development	%

### Equation 14: Total VMT Reductions from Parking Measures

$$\text{Parking VMT Reductions}$$

$$= 1 - (1 - \text{Parking Supply VMT Reductions}) \\ * (1 - \text{Unbundled Parking VMT Reductions}) \\ * (1 - \text{Street Parking VMT Reductions})$$

Where,		<u>Units</u>
Parking VMT Reductions	= VMT reductions associated with all parking measures, capped at 20%	%
Parking Supply VMT Reductions	= VMT reductions associated with limited residential parking supply, capped at 12.5%, from Equation 11	%
Unbundled Parking VMT Reductions	= VMT reductions associated with unbundled residential parking cost, capped at 20%, from Equation 12	%
Street Parking VMT Reductions	= VMT reductions associated with increased price of on-street parking, capped at 5.5%, from Equation 13	%

### Equation 15: VMT Reductions from Traffic Calming Measures

$$\text{Traffic Calming VMT Reductions} = 1\%$$

Where,		<u>Units</u>
Traffic Calming VMT Reductions	= VMT reductions associated with traffic calming measures within ½ mile of affordable housing development	%

**Equation 16: VMT Reductions from Residential Transit Subsidy**

$$\text{Subsidy VMT Reductions} = \text{Elasticity} * \frac{\text{Recipients}}{\text{Total Units}} * \frac{\text{Duration}}{30 \text{ years}}$$

Where, Subsidy VMT Reductions	= VMT reductions associated with transit passes for residents, capped at 20%	<u>Units</u> %
Elasticity	= Elasticity of VMT specific to annual value of transit passes to residents and urban or rural project setting	unitless
Recipients	= Number of dwelling units receiving transit passes in affordable housing development	dwelling units
Total Units	= Number of dwelling units in affordable housing development	dwelling units
Duration	= Number of years for which transit passes are funded	years

**Equation 17: Total VMT Reductions**

*Total VMT Reductions*

$$= \text{Land Use VMT Reductions} + \text{Parking VMT Reductions} + \text{Traffic Calming VMT Reductions} + \text{Subsidy VMT Reductions}$$

Where, Total VMT Reductions	= VMT reductions associated with all mitigation measures, capped according to Project Area Type (see Table 3)	<u>Units</u> %
Land Use VMT Reductions	= VMT reductions associated with all land use measures, capped according to Project Area Type, from Equation 10	%
Parking VMT Reductions	= VMT reductions associated with all parking measures, capped at 20%, from Equation 14	%
Traffic Calming VMT Reductions	= VMT reductions associated with traffic calming measures within ½ mile of affordable housing development, from Equation 15	%
Subsidy VMT Reductions	= VMT reductions associated with transit passes for residents, capped at 20%, from Equation 16	%

Equations 18 and 19 are used to apply the expected percent reductions in VMT to estimate avoided VMT from the affordable housing development.

### Equation 18: Annual Avoided VMT

$$\text{Annual Avoided VMT} = \text{Annual Unmitigated VMT} * \text{Total VMT Reductions}$$

Where,		<u>Units</u>
Annual Avoided VMT	= Annual reductions in baseline residential VMT	miles/year
Annual Unmitigated VMT	= Annual VMT by residents of housing development without VMT mitigation measures, from Equation 4	miles/year
Total VMT Reductions	= VMT reductions associated with all mitigation measures, from Equation 17	%

### Equation 19: Total Avoided VMT

$$\text{Total Avoided VMT} = \text{Annual Avoided VMT} * 30 \text{ years}$$

Where,		<u>Units</u>
Total Avoided VMT	= Reductions in baseline residential VMT for quantification period of affordable housing development (30 years)	miles
Annual Avoided VMT	= Annual reductions in baseline residential VMT	miles/year

### Equation 20: Auto Emission Reductions from Affordable Housing Development and Residential Transit Subsidies

$$\text{Emission Reductions} = \left( \frac{\text{Annual Avoided VMT} * EF_{Yr1} + \text{Annual Avoided VMT} * EF_{YrF}}{2} \right) * 30 \text{ years} * U^{-1}$$

Where,		<u>Units</u>
Auto Emission Reductions	= Auto GHG or criteria and toxic air pollutant emission reductions for quantification period of affordable housing development (30 years)	MTCO <sub>2</sub> e or lbs
Annual Avoided VMT	= Annual reductions in baseline residential VMT, from Equation 18	miles/year
EF <sub>Yr1</sub>	= County-specific auto vehicle emission factor for first year of project life	g/mile
EF <sub>YrF</sub>	= County-specific auto vehicle emission factor for final year of project life	g/mile
U	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

## B. Solar PV Electricity Generation

The emission reductions from grid-connected solar PV projects are calculated as the emission reductions from avoided fossil-fuel-based electricity generation.<sup>17</sup>

### Equation 21: Emission Reductions from Solar PV

$$\text{Emission Reductions} = \sum_{n=1}^{30} (1 - \text{Degradation})^{n-1} * \text{Production} * EF$$

<i>Where,</i>		<u>Units</u>
<i>Emission Reductions</i>	= GHG or criteria and toxic air pollutant emission reductions for useful life of solar PV system (30 years)	MTCO <sub>2e</sub> or lbs
<i>Degradation</i>	= Annual rate of system degradation (0.5%)	%/year
<i>Production</i>	= Annual electricity generation estimated using PVWatts Calculator	kWh/year
<i>EF</i>	= Emission factor for California grid electricity	MTCO <sub>2e</sub> /kWh or lbs/kWh

<sup>17</sup> The 30-year useful life was obtained from the National Renewable Energy Laboratory "Life Cycle Greenhouse Gas Emissions from Solar Photovoltaics" fact sheet.

[www.nrel.gov/docs/fy13osti/56487.pdf](http://www.nrel.gov/docs/fy13osti/56487.pdf)

The estimated rate of system degradation was obtained from the National Renewable Energy Laboratory Technical Report "Photovoltaic Degradation Rates – An Analytical Review." 2012.

[www.nrel.gov/docs/fy12osti/51664.pdf](http://www.nrel.gov/docs/fy12osti/51664.pdf)

## C. New Bicycle Facility or Walkway

The emission reductions from new bicycle facilities or walkways are calculated as the emission reductions from displaced autos.

### Equation 22: VMT Reductions from Bicycle Facility or Walkway

$$VMT\ Displaced = D * ADT * (A + C) * L$$

Where,		Units
VMT Displaced	= Annual passenger VMT replaced by cycling or walking trips	miles/year
D	= Default annual days of use of new facility (200 days)	days/year
ADT	= Average two-way daily traffic on road parallel to facility	vehicle trips/day
A	= Adjustment factor for active transportation (see Table 5)	unitless
C	= Credit for Key Destinations near facility (see Table 6)	unitless
L	= Average length of auto trip replaced (1.5 miles for cycling; 0.3 miles for walking)	miles

**Table 5. Active Transportation Adjustment Factors**

Average Daily Traffic (vehicle trips per day)	One-way Facility Length <sup>18</sup> (miles)	Adjustment Factor for Population > 250,000 or Non-university Town with Population < 250,000	Adjustment Factor University Town with Population < 250,000
1 to 12,000	≤ 1	0.0019	0.0104
	1.01 to 2	0.0029	0.0155
	> 2	0.0038	0.0207
12,001 to 24,000	≤ 1	0.0014	0.0073
	1.01 to 2	0.0020	0.0109
	> 2	0.0027	0.0145
24,001 to 30,000	≤ 1	0.0010	0.0052
	1.01 to 2	0.0014	0.0078
	> 2	0.0019	0.0104

<sup>18</sup> The length of bicycle facilities and walkways should be measured in one direction because average daily traffic accounts for two-way traffic volume. Crosswalks should not be included in the length of sidewalks since they are accounted for as traffic calming measures.

Table 6. Key Destination Credits

Number of Key Destinations	Credit Within ½ Mile of Facility	Credit Within ¼ Mile of Facility
0 to 2	0	0
3	0.0005	0.001
4 to 6	0.0010	0.002
≥ 7	0.0015	0.003

**Equation 23: Auto Emission Reductions from Bicycle Facility or Walkway**

$$\text{Auto Emission Reductions} = \left( \frac{\text{VMT Displaced} * EF_{Yr1} + \text{VMT Displaced} * EF_{YrF}}{2} \right) * UL * U^{-1}$$

<i>Where,</i>		
<i>Auto Emission Reductions</i>	= Auto GHG or criteria and toxic air pollutant emission reductions for useful life of bicycle facility or walkway	<u>Units</u> MTCO <sub>2e</sub> or lbs
<i>VMT Displaced</i>	= Annual passenger VMT replaced by cycling or walking trips, from Equation 22	miles/year
<i>EF<sub>Yr1</sub></i>	= County-specific auto vehicle emission factor for first year of useful life	g/mile
<i>EF<sub>YrF</sub></i>	= County-specific auto vehicle emission factor for final year of useful life	g/mile
<i>UL</i>	= Useful life of bicycle facility or walkway (20 years for Class I bike path or walkway; 15 years for Class II bike lane or Class IV separated bikeway)	years
<i>U</i>	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

## D. New or Expanded Bike Share

The emission reductions from bike share components that result in an increase in bike trips are calculated as the emission reductions from displaced autos less the emissions from electric bicycles, if applicable.

### Equation 24: VMT Reductions from Bike Share

$$VMT\ Displaced = T * A * L$$

<i>Where,</i>		<u>Units</u>
<i>VMT Displaced</i>	= Annual passenger VMT replaced by bike share trips	miles/year
<i>T</i>	= Total number of trips using bike share expected in first year of service	trips/year
<i>A</i>	= Adjustment factor to account for induced demand and recreational bike share use (0.5)	unitless
<i>L</i>	= Average length of auto trip replaced (1.5 miles)	miles

### Equation 25: Auto Emission Reductions from Bike Share

*Auto Emission Reductions*

$$= \left( \frac{VMT\ Displaced * EF_{Yr1} + VMT\ Displaced * EF_{YrF}}{2} \right) * 10\ years * U^{-1}$$

<i>Where,</i>		<u>Units</u>
<i>Auto Emission Reductions</i>	= Auto GHG or criteria and toxic air pollutant emission reductions for useful life of bike share (10 years)	MTCO <sub>2</sub> e or lbs
<i>VMT Displaced</i>	= Annual passenger VMT replaced by bike share trips, from Equation 24	miles/year
<i>EF<sub>Yr1</sub></i>	= County-specific auto vehicle emission factor for first year of service	g/mile
<i>EF<sub>YrF</sub></i>	= County-specific auto vehicle emission factor for final year of service	g/mile
<i>U</i>	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

Equations 26 and 27 apply to electric bike share only.

### Equation 26: Emissions from Electric Bike Share

$$\text{Electric Bicycle Emissions} = T * L * EC * EF * 10 \text{ years}$$

Where,		<u>Units</u>
Electric Bicycle Emissions	= Electric bicycle GHG or criteria and toxic air pollutant emissions for useful life of bike share (10 years)	MTCO <sub>2e</sub> or lbs
T	= Total number of trips using bike share expected in first year of service	trips
L	= Average length of auto trip replaced (1.5 miles)	miles
EC	= Energy consumption per mile for electric bicycles	kWh/mile
EF	= Emission factor for California grid electricity	MTCO <sub>2e</sub> /kWh or lbs/kWh

### Equation 27: Net Emission Reductions from Electric Bike Share

$$\text{Net Emission Reductions} = \text{Auto Emission Reductions} - \text{Electric Bicycle Emissions}$$

Where,		<u>Units</u>
Net Emission Reductions	= GHG or criteria and toxic air pollutant emission reductions for useful life of electric bike share (10 years)	MTCO <sub>2e</sub> or lbs
Auto Emission Reductions	= Auto GHG or criteria and toxic air pollutant emission reductions for useful life of bike share, from Equation 25	MTCO <sub>2e</sub> or lbs
Electric Bicycle Emissions	= Electric bicycle GHG or criteria and toxic air pollutant emissions for useful life of bike share, from Equation 26	MTCO <sub>2e</sub> or lbs



## E. New or Expanded Bus, Cable Car, Rail, Streetcar, Shuttle, Trolley Bus, or Vanpool Service

The emission reductions from new or expanded transit service are calculated as the emission reductions from displaced autos less the new emissions from transit vehicles.

### Equation 28: VMT Reductions from New or Expanded Transit Service

$$VMT\ Displaced = D * R * A * L$$

Where,		<u>Units</u>
<i>VMT Displaced</i>	= Annual passenger VMT replaced by transit trips	miles/year
<i>D</i>	= Annual days of operation of transit service	days/year
<i>R</i>	= Increase in daily transit ridership in first or last year of service	trips/day
<i>A</i>	= Adjustment factor for transit dependency (default or user-defined; see Table 7)	unitless
<i>L</i>	= Length of average auto trip replaced (default or user-defined; see Table 7)	miles

**Table 7. Default Trip Lengths and Adjustment Factors by Mode**

Mode	Statewide Average Trip Length (miles) <sup>19</sup>	Default Adjustment Factor
Bus rapid transit	6.56	0.542
Cable car	1.26	0.479
Commuter rail	25.69	0.867
Ferry	10.85	1.000
Heavy rail	11.48	0.794
Light rail	5.44	0.685
Local bus	3.77	0.561
Long-distance commuter bus	17.57	0.705
Shuttle	9.08	0.585
Streetcar	1.43	0.479
Trolley bus	1.48	0.479
Vanpool	42.28	0.879

<sup>19</sup> Federal Transit Administration. National Transit Database. 2017. <https://www.transit.dot.gov/ntd>. Caltrans calculated the statewide average trip lengths by mode as passenger miles traveled divided by unlinked passenger trips, using 2017 annual data.

**Equation 29: Auto Emission Reductions from New or Expanded Transit Service**

*Auto Emission Reductions*

$$= \frac{(VMT\ Displaced_{Yr1} * EF_{Yr1}) + (VMT\ Displaced_{YrF} * EF_{YrF})}{2} * UL * U^{-1}$$

Where,

<i>Auto Emission Reductions</i>	= Auto GHG or criteria and toxic air pollutant emission reductions for quantification period of new or expanded service	<u>Units</u> MTCO <sub>2e</sub> or lbs
<i>VMT Displaced<sub>Yr1</sub></i>	= Annual passenger VMT replaced by transit trips in first year of service, from Equation 28	miles/year
<i>VMT Displaced<sub>YrF</sub></i>	= Annual passenger VMT replaced by transit trips in final year of service, from Equation 28	miles/year
<i>EF<sub>Yr1</sub></i>	= County-specific auto vehicle emission factor for first year of service	g/mile
<i>EF<sub>YrF</sub></i>	= County-specific auto vehicle emission factor for final year of service	g/mile
<i>UL</i>	= Quantification period for transit service, not to exceed maximum useful life per capital type (see Table 8)	years
<i>U</i>	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

The quantification period for a transit component is the number of years for which there are enforceable committed funds to operate the new or expanded service. The quantification period may not exceed the maximum useful life defined per capital type by the Federal Transit Administration guidelines.<sup>20</sup>

**Table 8. Maximum Useful Life by Capital Type**

Capital Type	Maximum Useful Life (years)
Bus	12
Ferry	25
Rail vehicle	25
Shuttle	10
Structure	40
Van	4

<sup>20</sup> Federal Transit Administration. Circular FTA C 5010.1E. July 2018.  
[www.transit.dot.gov/regulations-and-guidance/fta-circulars/award-management-requirements-circular-50101e](http://www.transit.dot.gov/regulations-and-guidance/fta-circulars/award-management-requirements-circular-50101e)

**Equation 30: Transit Vehicle Emissions**

$$\text{Transit Vehicle Emissions} = \text{Transit VMT} * EF_{YrM} * UL * U^{-1}$$

Where,		Units
Transit Vehicle Emissions	= Transit vehicle GHG or criteria and toxic air pollutant emissions for quantification period of new or expanded service	MTCO <sub>2e</sub> or lbs
Transit VMT	= Annual VMT of transit vehicles to operate new or expanded service	miles/year
EF <sub>YrM</sub>	= Transit vehicle emission factor for middle year of service	g/mile
UL	= Quantification period for transit service, not to exceed maximum useful life per capital type (see Table 8)	years
U	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

**Equation 31: Net Emission Reductions from New or Expanded Transit Service**

$$\text{Net Emission Reductions} = \text{Auto Emission Reductions} - \text{Transit Vehicle Emissions}$$

Where,		Units
Net Emission Reductions	= GHG or criteria and toxic air pollutant emission reductions for quantification period of new or expanded transit service	MTCO <sub>2e</sub> or lbs
Auto Emission Reductions	= Auto GHG or criteria and toxic air pollutant emission reductions for quantification period of new or expanded service, from Equation 29	MTCO <sub>2e</sub> or lbs
Transit Vehicle Emissions	= Transit vehicle GHG or criteria and toxic air pollutant emissions for quantification period of new or expanded service, from Equation 30	MTCO <sub>2e</sub> or lbs

## F. New or Expanded Ferry Service

The emission reductions from new or expanded ferry service are calculated as the emission reductions from displaced autos less the new emissions from the ferry.

### Equation 32: VMT Reductions from New or Expanded Ferry Service

$$VMT\ Displaced = D * R * A * L$$

<i>Where,</i>		<u>Units</u>
<i>VMT Displaced</i>	= Annual passenger VMT replaced by ferry trips	miles/year
<i>D</i>	= Annual days of operation of ferry service	days/year
<i>R</i>	= Increase in daily ferry ridership in first or last year of service	trips/day
<i>A</i>	= Adjustment factor for transit dependency (default or user-defined; see Table 7)	unitless
<i>L</i>	= Length of average auto trip replaced (default or user-defined; see Table 7)	miles

### Equation 33: Auto Emission Reductions from New or Expanded Ferry Service

$$Auto\ Emission\ Reductions = \frac{(VMT\ Displaced_{Yr1} * EF_{Yr1}) + (VMT\ Displaced_{YrF} * EF_{YrF})}{2} * UL * U^{-1}$$

<i>Where,</i>		<u>Units</u>
<i>Auto Emission Reductions</i>	= Auto GHG or criteria and toxic air pollutant emission reductions for quantification period of new or expanded service	MTCO <sub>2e</sub> or lbs
<i>VMT Displaced<sub>Yr1</sub></i>	= Annual passenger VMT replaced by ferry trips in first year of service, from Equation 32	miles/year
<i>VMT Displaced<sub>YrF</sub></i>	= Annual passenger VMT replaced by ferry trips in final year of service, from Equation 32	miles/year
<i>EF<sub>Yr1</sub></i>	= County-specific auto vehicle emission factor for first year of service	g/mile
<i>EF<sub>YrF</sub></i>	= County-specific auto vehicle emission factor for final year of service	g/mile
<i>UL</i>	= Quantification period for ferry service, not to exceed 25 years (see Table 8)	years

**Equation 34: Ferry Emissions**

$$\text{Ferry Emissions} = \text{Fuel Consumption} * EF * UL * U^{-1}$$

<i>Where,</i>		<u>Units</u>
<i>Ferry Emissions</i>	= Ferry GHG or criteria and toxic air pollutant emissions for quantification period of new or expanded service	MTCO <sub>2e</sub> or lbs
<i>Fuel Consumption</i>	= Annual quantity of fuel consumed by ferry to operate new or expanded service	gal, scf, kWh, or kg
<i>EF</i>	= Fuel-specific carbon intensity emission factor for ferry	g/unit of fuel
<i>UL</i>	= Quantification period for ferry service, not to exceed 25 years (see Table 8)	years
<i>U</i>	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

**Equation 35: Net Emission Reductions from New or Expanded Ferry Service**

$$\text{Net Emission Reductions} = \text{Auto Emission Reductions} - \text{Ferry Emissions}$$

<i>Where,</i>		<u>Units</u>
<i>Net Emission Reductions</i>	= GHG or criteria and toxic air pollutant emission reductions for quantification period of new or expanded ferry service	MTCO <sub>2e</sub> or lbs
<i>Auto Emission Reductions</i>	= Auto GHG or criteria and toxic air pollutant emission reductions for quantification period of new or expanded service, from Equation 33	MTCO <sub>2e</sub> or lbs
<i>Ferry Emissions</i>	= Ferry GHG or criteria and toxic air pollutant emissions for quantification period of new or expanded service, from Equation 34	MTCO <sub>2e</sub> or lbs

## G. Capital Improvements

The emission reductions from capital improvements that result in mode shift to transit are calculated as the emission reductions from displaced autos.

### Equation 36: VMT Reductions from Capital Improvements

$$VMT\ Displaced = D * R * A * L$$

Where,		<u>Units</u>
<i>VMT Displaced</i>	= Annual passenger VMT replaced by transit trips	miles/year
<i>D</i>	= Annual days of operation of transit service utilizing capital improvement	days/year
<i>R</i>	= Increase in daily transit ridership in first or last year of service	trips/day
<i>A</i>	= Adjustment factor for transit dependency (default or user-defined; see Table 7)	unitless
<i>L</i>	= Length of average auto trip reduced (default or user-defined; see Table 7)	miles

### Equation 37: Auto Emission Reductions from Capital Improvements

*Auto Emission Reductions*

$$= \left( \frac{VMT\ Displaced_{Yr1} * EF_{Yr1} + VMT\ Displaced_{YrF} * EF_{YrF}}{2} \right) * UL * U^{-1}$$

Where,		<u>Units</u>
<i>Auto Emission Reductions</i>	= Auto GHG or criteria and toxic air pollutant emission reductions for quantification period of capital improvement	MTCO <sub>2e</sub> or lbs
<i>VMT Displaced</i>	= Annual passenger VMT replaced by transit trips, from Equation 36	miles/year
<i>EF<sub>Yr1</sub></i>	= County-specific auto vehicle emission factor for first year of service	g/mile
<i>EF<sub>YrF</sub></i>	= County-specific auto vehicle emission factor for final year of service	g/mile
<i>UL</i>	= Quantification period for transit utilizing capital improvement service, not to exceed 40 years (see Table 8)	years
<i>U</i>	= Unit conversion factor (1,000,000 for grams to metric tons; 453.59 for grams to pounds)	g/MT or g/lb

## Section C. References

The following references were used in the development of this Quantification Methodology and the AHSC Benefits Calculator Tool.

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# EXHIBIT D

# **Quantifying Reductions in Vehicle Miles Traveled from New Bike Paths, Lanes, and Cycle Tracks**

## **Summary Report**

California Climate Investments Quantification Methods Assessment  
California Air Resources Board  
Agreement #16TTD004

Prepared by:  
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**March 25, 2019**

## Background

Under California's Cap-and-Trade program, the State's portion of the proceeds from Cap-and-Trade auctions is deposited in the Greenhouse Gas Reduction Fund (GGRF). The Legislature and Governor enact budget appropriations from the GGRF for State agencies to invest in projects that help achieve the State's climate goals. These investments are collectively called California Climate Investments. Senate Bill (SB) 862 requires the California Air Resources Board (CARB) to develop guidance on reporting and quantification methods for all State agencies that receive appropriations from the GGRF. CARB may review and update quantification methodologies, as needed.

To date, multiple California Climate Investments programs have offered funding for new bicycle paths or lanes<sup>1</sup> (CARB, 2016, 2017, 2018, 2019). CARB developed quantification methodologies to provide project-level greenhouse gas (GHG) emission reduction and co-benefit estimates for administering agencies to use when selecting projects for funding. To measure GHG emission reductions from new bike paths and lanes, CARB relies on a method it published with the California Department of Transportation (Caltrans) in 2005 for evaluating motor vehicle fee registration projects and congestion mitigation and air quality improvement (CMAQ) projects (CARB, 2016, 2018, 2019; CARB & Caltrans, 2005).

This report summarizes outcomes from a literature review to determine whether and how the CMAQ methods could be modified to better reflect emerging data and methods for estimating reductions in vehicle miles traveled (VMT) from new bike facilities, the first step in estimating GHG emission reductions.<sup>2</sup> The report also proposes an alternative VMT reduction quantification method based on existing bicyclist counts along the project corridor.

The current VMT reduction estimation equation uses five inputs: (1) days per year of facility use, (2) average annual two-way daily vehicular traffic on a road parallel to the proposed facility, (3) an adjustment factor, (4) an activity center credit, and (5) bike trip length. Our report reviews only those inputs—or the components of inputs—whose values are clearly derived in the methodology documentation, specifically the facility use factor, bike trip length, and the mode share and facility-level bicycle ridership change values used to calculate the adjustment factors. The report also reviews the merits of correcting for bike trip type—utilitarian versus recreational. The report does not probe the activity center credit values because it is unclear how they were derived.

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<sup>1</sup> The new bike paths and lanes category of projects includes "Bicycle paths (Class I), bicycle lanes (Class II), or separated bikeways (Class IV) that are targeted to reduce commute VMT and other auto travel," with emissions "reduced by replacing auto trips with bicycle trips" (CARB, 2016).

<sup>2</sup> The full list of literature reviewed is provided in the section I of the accompanying technical documentation.

## Summary of Current Quantification Method

CARB's current method estimates VMT reductions from new Class I (bike path), II (bike lane) and IV (cycle track) bicycle facilities (CARB, 2016, 2018, 2019). CARB does not currently include Class III facilities (bicycle boulevards) in its VMT reduction quantification method, or distinguish Class IV facilities that replace auto travel lanes or parking from those that replace existing Class II bike lanes. CARB's current method estimates the annual VMT reductions from new bicycle facilities using Equation 1 (CARB, 2016 [B-1], 2018 [26], 2019 [16]):

### Equation 1: Auto VMT Reductions (current method)

$$\text{Auto VMT Reduced} = (D) * (ADT) * (A + C) * (L)$$

Where,

		Units
<i>D</i>	= days of use per year (default is 200 days)	Days
<i>ADT</i>	= annual average two-way daily vehicular traffic on parallel road (project-specific data, with a maximum of 30,000)	Trips/day
<i>A</i>	= adjustment factor (table lookup value)	-
<i>C</i>	= activity center credit (table lookup value)	-
<i>L</i>	= bike trip length (1.8 miles/trip in one direction)	Miles/trip

The multi-component adjustment factor uses mode share and facility-level bicycle ridership change data and assumptions to estimate how much of the measured ADT would be converted to bicycle trips after bicycle facility installation. The adjustment factors “were derived from a limited set of bicycle commute mode split data for cities and university towns in the southern and western United States,”<sup>3</sup> then multiplied by 0.7 to “estimate potential auto travel diverted to bikes,” and again by a 0.65 “growth factor” to “estimate the growth in bicycle trips from construction of the bike facility” (CARB & Caltrans, 2005 [31]). However, it is unclear from the method documentation what portion of the cited mode split data was used to calculate the adjustment factors, and how it was used to create different factors by ADT and bicycle facility length.

The activity center credit is an accessibility proxy that increases the adjustment factor for bike facilities that are closer to more “activity centers,” like banks, churches, hospitals, light rail stations, office parks, post offices, public libraries, shopping areas, grocery stores, or schools and universities (CARB, 2016 [B-2], 2018 [28], 2019 [17]). It is unclear how the activity center credits were derived, as there is no documentation for this component of the method.

<sup>3</sup> As compiled by the Federal Highway Administration in its 1992 National Bicycling and Walking Study.

## Key Report Findings

The literature reviewed in the report indicates a need to update multiple factors in CARB's existing equation for estimating VMT reductions from new bicycle facilities. The report findings include:

- The 0.65 “growth rate” for cycling trips following new facility construction that the current quantification method uses may be low. Recent research indicates the growth rate may be closer to 1.0 for Class I bike paths, Class II bike lanes, and Class IV cycle tracks that do not replace existing Class II facilities. However, the growth rates may be lower for Class IV facilities that replace existing bike lanes (possibly closer to 0.6) and Class III bike boulevards (possibly closer to 0.3 or 0.4) (City of Toronto, 2001; Cohen et al., 2008; Dill et al., 2014; Fitzhugh et al., 2010; Goodno et al., 2013; Guduz et al., 2016; Matute et al., 2016; Monsere et al., 2014; Sallaberry, 2000).
- Methods exist for more accurately accounting for temporal variation in cycling levels than by assuming a new bicycle facility would be used a limited number of days per year (National Bicycle and Pedestrian Documentation Project, 2009; Nordback & Sellinger, 2014).
- The average bicycle trip length for all trips could be updated from the baseline 1.8 miles used in the current quantification method, based on more recent and/or California-specific data (Caltrans, 2013).
- Most of the cyclists riding on new facilities who did not take the same route prior to facility installation switch from other bicycle routes rather than from other travel modes. The available data indicate an overall stated substitution rate (from any non-cycling travel mode) of between 0.2 and 0.3, and an auto substitution rate of about 0.1, meaning that about 10 percent of the new bicycle trips replaced driving trips (Matute et al., 2016; Monsere et al., 2014; Thakuriah, Metaxatos, Lin, & Jensen, 2012).
- Nearly half of bicycle trips nationally are made for recreational purposes (Kuzmyak & Dill, 2012). The current quantification method does not fully exclude recreational trips from its VMT reduction calculus. And at least one recent study indicates that bike facilities do influence people's choice to bicycle instead of drive for recreational purposes (Matute et al., 2016). Nonetheless, if desired, decrementing the VMT reduction estimate by the percentage of recreational trips provides a more conservative estimate.
- A possible method is presented to project VMT reductions from new bicycle facilities based on existing bicycle counts, without using vehicular ADT. One reason to rely on bicycling count data rather than vehicular ADT is that using vehicular ADT assumes that higher auto volumes correlate to higher bicycling volumes, which is often not the case. Another reason is that

pre-facility-installation bicycle counts appear to be a reasonably reliable predictor of post-installation counts (Matute et al., 2016). In addition, there is a growing body of literature on the auto substitution rate for cyclists using a new facility and route, as well as average bicycle trip lengths.

Table 1 summarizes the values used in the current quantification method that could be directly updated based on the literature reviewed in the report. The next section presents the alternative quantification method.

**Table 1. Summary of Potential Updates to Current Quantification Method Values**

Method Input	Current Value	Updated Value
Bicycle Trip Growth Rate	0.65	1.0
Bicycle Trip Length	1.8 miles	1.5 miles
Auto-Bike Substitution Rate	0.7	0.1 <sup>4</sup>

## Alternative Quantification Method

Estimating VMT reductions from new bicycle facilities without vehicular ADT begins with obtaining bike counts on the route for the proposed facility (or an adjacent route, if no road or path currently exists where the facility is proposed to run). The short-duration ridership counts must then be converted to average annual daily bike trips using a temporal and seasonal adjustment factor. Post-installation bike ridership can then be estimated from that initial adjusted count using a growth factor based on ridership studies. The growth factor can be adjusted based on facility type and length, although more facility-specific data is needed. Multiplying that new ridership estimate by an average trip length yields new bicycle miles traveled from adding a bike facility. Not all of those new bicycle trips replace vehicle trips, however. Further adjustment is needed, including an auto-bicycle substitution rate, a carpool factor (not every vehicle trip has just one occupant) and, to be conservative, a trip type factor (recreational bike trips may be less likely than utilitarian bike trips to replace auto trips).

Equation 2 is one potential bicycle-count-based method.

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<sup>4</sup> This could be adjusted to correct for carpooling (not all bicyclists who would have made the same trip by car would have done it alone) by dividing the substitution rate (or total number of substituted trips) by the average vehicle occupancy rate (average number of people per auto) used by Caltrans (1.15) (Caltrans, 2016).

## Equation 2: Auto VMT Reductions (alternative method)

$$\text{Auto VMT Reduced} = (D) * (BC) * (S) * (GF) * (AS) * (C) * (T) * (L)$$

Where,			Units
<i>D</i>	=	days of use per year (default is 365 days, since counts can be adjusted seasonally)	Days/year
<i>BC</i>	=	average hourly (or daily) bicycle count (counts taken on the street to be improved with the bike facility, or, in the case of a facility not on an existing street, a parallel street)	Trips/day
<i>S</i>	=	seasonal adjustment factor (adjusts bicycle count to annual average daily bicycle trips)	-
<i>GF</i>	=	growth factor (expected rate of increase in bicycle count, e.g. 1.0 for a 100% increase in trips on the route)	-
<i>AS</i>	=	automobile substitution rate (expected rate at which cyclists who did not bike on the same route prior to bicycle facility installation switched from driving, or being driven in, an automobile to cycling)	-
<i>C</i>	=	carpool factor (default is 1/1.15, to reflect the California average number of vehicle trips per person trips by personal auto)	-
<i>T</i>	=	trip type factor (optional inclusion for conservative estimates; default is 0.506)	-
<i>L</i>	=	bike trip length (default is 1.5 miles/trip in one direction)	Miles/trip

Values for the first two variables, *D* and *BC*, would be provided by the funding applicant. *D* would have a default of 365, but it could be changed based on local conditions and the type of seasonable adjustment factor used.

The seasonal adjustment factor, *S*, could use local data where available. But to ensure continuity in application across California, the National Bicycle and Pedestrian Documentation Project's adjustment factors can be used in the interim (National Bicycle and Pedestrian Documentation Project, 2009).

The growth factor, *GF*, could be approximated based on the findings from the count-based studies reviewed in the full report. As discussed, it appears from the literature that a uniform, facility-agnostic growth rate around 1.0 could be appropriate. The literature also indicates at least some correlation between facility length and ridership increases (at least for Class IV cycle tracks), but more research is needed to clarify the facility length-ridership relationship.

The auto substitution factor, *AS*, could be based on the available data discussed above, which indicate an auto substitution rate of about 0.1. However, the auto substitution factor should be adjusted to account for carpooling (not all bicyclists who would have made the same trip by car would have done it alone).

The carpool factor, *C*, corrects for that, by dividing the total number of substituted trips by the average vehicle occupancy rate (average number of people per auto) used by Caltrans (1.15) (Caltrans, 2016).

The (optional) trip type factor,  $T$ , is included to correct for the fact that bike trips that are purely for exercise, sport or recreation are not as likely to substitute for auto trips as utilitarian bike trips. The default value for  $T$  is based on the combined share (49.4%) of bicycle trips made for “vacation” (2.1%) or “other social or recreational” (47.3%) purposes, taken from the 2009 National Household Travel Survey (Kuzmyak & Dill, 2012). The default value is the percentage of all other (non-vacation, social or recreational) trips, calculated as  $1 - 0.494 (=0.506)$ . This approximation of commute and utilitarian trip share is likely conservative, however. Furthermore, the auto substitution factor already accounts for recreational ridership (Matute et al., 2016; Monsere et al., 2014; Thakuriah et al., 2012).

The trip length factor,  $L$ , is based on the average length of bicycle trips taken for any purpose, using the default 1.5-mile average from most recent California Household Travel Survey data.

## **Ease of Applying the Alternative Quantification Method**

To gauge how easy it would be to use the alternative quantification method, jurisdictions’ housing projects that received funding from the Affordable Housing and Sustainable Communities program or Active Transportation Program were surveyed about the type, timing and location of their bicycle and vehicular counts, and who conducted the counts. The bicycle and vehicular count information available online for the jurisdictions was also reviewed. The results, along with the insights from the case study presented in the technical documentation, indicate that the alternative quantification method would be at least as easy to use as the existing method, for at least two reasons.

First, once a funding applicant has the requisite hourly (or daily) bicycle count data or vehicular ADT, the alternative quantification method can be applied more quickly than the existing method. Default values are available for all other factors in the alternative method besides the bike count. The existing method, on the other hand, requires the potentially time-consuming identification and documentation of all the “activity centers” within  $\frac{1}{2}$ -mile and  $\frac{1}{4}$ -mile buffers of the planned bicycle facility.

Second, in many jurisdictions it may be just as easy for a funding applicant to obtain the requisite hourly bicycle count data as the necessary vehicular ADT. Most of the jurisdictions for which information was obtained about their bike and auto traffic data collect bike counts at dozens of locations, most updated at least annually. Multiple jurisdictions also collect at least some bike count data using continuous counters, while multiple others are planning to either expand or initiate continuous bike count programs. And many of the surveyed jurisdictions have bike count data for nearly as many locations as automobile counts.



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## **I. RESPONSES TO LOZEAU DRURY DRAFT IS/MND COMMENT LETTER, JANUARY 19, 2021**

The following responses are keyed to the numbers of the comments in the “Analysis” section of the Lozeau Drury LLP comment letter. The comment letter is included as Attachment A to this appendix. Responses are keyed to comments in the attorneys’ cover letter, however the underlying technical studies have been reviewed by the IS preparers and additional relevant items in those studies also have been addressed in these responses. Responses to the biological resources comments have been prepared by Monk and Associates, with peer review by Jake Schweitzer of Vollmar Natural Lands Consulting (VNLC). Responses to air quality/GHG comments have been prepared for the City by The RCH Group. Responses to VMT comments have been prepared by GHD, with City staff peer review.

**Comment 1:** There is a fair argument that the project may have significant traffic and GHG impacts because the purported mitigation measure for VMT is not supported by substantial evidence and defies common sense.

**Response:** The VMT reduction (bicycle commute mode share) included in the original technical memorandum and analysis by GHD was based on the average commute length of Napa County residents, as established using Streetlight Data (approximately 17 miles). The comment letter questions the use of the existing average commute length (based on automobile travel mode) as the basis for estimating potential bicycle commute trip length, following anticipated mode shift once the proposed bicycle trail connection is complete. The methodology used by GHD is consistent with typical application of the bicycle commute mode shift analysis process outlined in the nationally recognized publication (NCHRP 552). GHD has, however, refined the analysis to use an average bicycle commute trip length of 5.2 miles which results in a conservative analysis. This trip length was established in *Understanding and Measuring Bicycling Behavior: A Focus on Travel Time and Route Choice* (OTREC-RR-08-03, December 2008) and was utilized irrespective of existing commute lengths in Napa County.

Upon review of the trip length assumptions questioned in the comment letter, GHD reviewed its analytical basis for establishing average trip lengths in Napa County and for the Project Area, and in turn the basis for establishing a trip length baseline and threshold (15% below baseline) and the basis for establishing an average commute length for the proposed Project. Upon further review of data provided by the applicant, indicating a roughly 11-mile one-way commute length, GHD revisited the available sources and found compelling evidence for using an average of three data sources (Streetlight Data, Census Longitudinal Employer-Household Dynamics, and the California Statewide Travel Demand Model). This additional analysis and supporting evidence for using an average of the available data sources, is provided in GHD’s updated memorandum (Section 3), which is included in the Final IS/MND Traffic Appendices. Based on the refined analysis, the proposed Project’s net VMT over the calculated threshold level was determined to be 729 daily VMT, as opposed to the previously reported 1,001.

The applicant had previously proposed a 300-foot bicycle trail project to help reduce VMT in the project area by inducing existing and future employee commutes using bicycles instead of

automobiles. The bicycle trail provides significant ancillary benefits outside the question of VMT reduction, including closing a significant gap in the regional bicycle network. Since preparing the prior analysis, the applicant has indicated that a previously-assumed bike trail along the frontage of a new school, south of the proposed project, is no longer being constructed. Thus, the applicant has proposed to nonetheless close the bicycle network gap by funding the construction of the bike trail along the school's frontage as well, extending the length of the proposed bike trail from about 300 to about 800 feet. This bike trail will close the gap between the Class II bikeways on Commerce Court and the existing bike trail along Wetlands Edge Road that currently terminates at Eucalyptus Drive. The prior analysis underrepresented the potential bicycle commute mode shift of the gap closure. Upon further review of the methodology used to estimate induced bicycle commutes, GHD has developed a refined methodology that better captures the anticipated benefits of the closure in the bicycle network gap.

Estimating the benefits of the 800-foot bike trail on its own assumes the bicycle commute potential of the existing trail on Wetlands Edge Road is already fully realized. Due to the isolation of this existing trail, however, this assumption is not realistic. Existing residents along Wetlands Edge Road, and those within a reasonable access buffer, would currently need to navigate State Route 29, which lacks bicycle facilities, to arrive at any significant employment destinations. Only the most experienced and fearless bicyclists would venture this journey to work (this finding is consistent with the industry-standard level-of-traffic-stress, or LTS, ranking of bikeways relative to potential user groups). Therefore, using only the proposed 800-foot bike trail is insufficient in estimating the potential bicycle commute mode shift that could reasonably be anticipated through closure of the gap in the regional bicycle network. GHD also estimated the bicycle mode shift reduction using the entirety of the existing Wetlands Edge Road bike trail in addition to the proposed 800-foot gap closure. This assessment implicitly assumes zero utilization of the existing Wetlands Edge Road bike trail. Although this assumption is likely closer to common-sense estimation of bicycle commute use of the existing trail, GHD used an average of both scenarios to estimate the potential bicycle mode shift of closing the gap in the regional bicycle network, between the existing bike trail on Wetlands Edge Road, and the bike lanes on Commerce Court. GHD has revised the analysis and now estimates an average of 96.5 daily commuters, including existing commuters and commuters to the proposed Project, can be assumed to utilize the available bicycle network to commute in lieu of automotive travel.

The cited data from CARB is misconstrued in the comment letter. The CARB report recommends assuming a bicycle commute length of 1.5 miles only in the absence of better data, and for the purpose of generating a conservative assessment. CARB's own report presents a table that shows a 2016 intercept survey in Los Angeles that presents an average 7-mile trip length. The CARB report also presents a 2.3-mile bicycle trip length from a 2012 National Household Travel Survey. The 1.5-mile bicycle trip length is from a 2013 California Household Travel Survey. The sample sizes for household travel surveys are notoriously small, and the data relative to trip length by mode are not specific to trip type (i.e. commute trip length). The 5.2-mile bicycle trip length applied in this study, from the cited *Understanding and Measuring Bicycling Behavior: A Focus on Travel Time and Route Choice* is more conservative than the 7-mile bicycle trip length from the 2016 intercept survey in Los Angeles. Both sources are of actual bicycle commuters.

The cited household travel surveys, besides the sample size issues, blend all trip purposes rather than focusing on commute trips. Other trip purposes, such as home-based-school and home-based-shopping trips are demonstrably shorter on average than commutes. Commutes are, on average, the longest distance regular household trips. CARB's recommendation is overly conservative in this case, in which our analysis is focused on home-based-work commute trips.

Evidence of potential commuters that could use the proposed bike trail has been further shown in the revised memorandum, through demonstration of significant commute patterns between the proposed Project vicinity and residential communities in American Canyon, in particular along Wetlands Edge Road. Data from Census Transportation Planning Products (CTPP) and Census Longitudinal Employer-Household Dynamics (LEHD) show several hundred commute pairs between these geographies. In the future, the utility of additional proposed and funded bicycle infrastructure along Green Island Road and Devlin Road, will be greatly increased with the closure of the gap in bicycle infrastructure between Eucalyptus Drive and Commerce Court. These indirect cumulative benefits are not included in this analysis. Additionally, non-commute trips are not included in the VMT reduction benefit assessment of the bicycle trail gap closure. The added non-commute bicycle trip inducement of the trail, including safe access to the new school, health benefit of recreational use, and VMT reduction of other non-commute trip mode shift will combine to result in significant societal benefits not included in the GHD analysis.

At an average one-way distance of 5.2 miles, the estimated 96.5 bike commuters calculated to be generated by the proposed 800-foot bike path extension mitigation would reduce VMT by approximately 1004 miles. This would more than offset the un-mitigated project's 729 VMT exceedance of the 15% VMT reduction significance threshold.

The VMT analysis in Item XVII.b, in the Final IS/MND, as well as Mitigation Measure TRA-2 (in the IS/MND and MMRP) have been updated to incorporate this more conservative analysis and the additional length of the path to be constructed by the applicant. The impact significance is not changed.

**Comment 2:** The MND fails to adequately analyze impacts to biological resources because it relies upon an incomplete baseline and the project may have adverse impacts on numerous sensitive species currently using the site or adjacent areas.

**Response:** The IS/MND identifies potential impacts to special-status birds, nesting raptors, passerine birds, the western pond turtle, and requires mitigation (BIO-1, BIO-2, BIO-3, BIO-4, BIO-5). The required mitigation (as modified in response to the CDFW comment letter and included in the Final IS/MND and MMRP) reduces impacts to these species to a less-than-significant level. The information provided in the comment letter does not change that conclusion. With respect to the adequacy of the baseline, as noted in Monk & Associates, Inc. (M&A) March 2020 *Biological Resources Analysis* report that was provided to the City of American Canyon's consultant for peer review and incorporation into the Mitigated Negative Declaration, M&A biologists have a long history of field surveys associated with the approximately 35-acre parcel, of which the approximately 10-acre project site is a part. M&A

biologists conducted site surveys on the parcel on March 1 and April 27, 2006, June 14, 2011, February 14, March 21, and June 12, 2012, May 18, 2017, and on March 30, 2018, December 19 and December 27, 2019. In 2006, and again in 2011, M&A conducted a wetland delineation on the entire parcel. This delineation of “waters of the U.S.” was confirmed by the U.S. Army Corps of Engineers in 2012 and reverified by this agency in 2017. During the site surveys and wetland delineation, M&A biologists recorded biological resources and assessed the likelihood of resource regulated areas on the project site. In addition to the wetland delineations, the survey involved searching all habitats on the site and recording all plant and wildlife species observed. M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species. The peer review, conducted for the City’s consultants by biologist Jake Schweitzer of Vollmar Natural Lands Consulting, confirmed these conditions.

California Environmental Quality Act (CEQA) Guidelines Section 15125(a) requires that the CEQA document prepared for a project discuss the “baseline” environmental conditions at and in the vicinity of the project site. CEQA Guidelines Section 15125 (see also Section 15126.6(e)(2)) states the following regarding the environmental setting as it relates to baseline:

(a) [the CEQA review document] must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to understanding the significant effects of the proposed project...

In order to perform an impact analysis, it is necessary for one to “fix” the baseline conditions of the project site because this enables the lead agency to determine how the site conditions would be changed as a result of the proposed project. The intent of CEQA Guidelines Section 15125 is to provide guidance to lead agencies as to when to “fix” the baseline conditions of the project site.

The environmental “baseline” is the combined circumstances existing at the time the CEQA document is published, which in the case of M&A’s Biological Resources Analysis is March 2020, which preceded an application submittal to the City of American Canyon for the proposed project. Consequently, past surveys and past species sightings by M&A in past years were not discussed for the currently proposed project. Note that the proposed project site is 10 acres of the original 35-acre parcel that M&A surveyed in 2006, 2011, and 2012, 2017, 2018, and 2019. M&A’s Biological Resources Analysis report for this project also discusses wildlife habitats and species observed onsite during the current (2020) baseline survey that was used to prepare that report, and acknowledges that many other bird species likely nest in the eucalyptus trees adjacent to the project site to the west, north and south. Finally, CEQA does not require an exhaustive list of all bird species that could occur on a project site, only an analysis of potential

impacts to special-status birds and/or nesting habitat for common birds that raise to the level of significance, which M&A's Biological Resources Analysis addressed.

Dr. Smallwood stated that M&A did not consult eBird, the web-based list server that birders use to report their bird sightings. He also states that M&A "mostly relied" on the California Department of Fish and Wildlife's (CDFW) RareFind database (CNDDDB) which provides records of special-status species nesting, breeding, or permanently residing in the area. CDFW's CNDDDB is extremely useful because it documents nesting records and documents breeding "habitats" as opposed to an incidental sighting of a species (which is what eBird data are). Many of the nesting/breeding/permanent species habitat records in the CNDDDB are reported by professional biologists, such as M&A biologists, who hold federal Recovery Permits (10(a)(1)(A) permits) with the U.S. Fish and Wildlife Service (USFWS) and/or a State Memorandum of Understanding (MOU) with the CDFW that allows us to work with specific federal and/or state listed wildlife species. Reporting these listed species sightings to the CNDDDB is a *requirement* of these permits. In other words, the biologists making their reports to the CNDDDB are experienced, qualified biologists who have been vetted by the federal and state government agencies in order to receive these federal and state permits. Whereas anyone can report their incidental bird sightings to eBird without any way to confirm the qualifications of the observer. Also, since the data reported to the CNDDDB is a known occurrence of a nesting or breeding habitat (and not just an incidental flyover), this is relevant for assessing a development project's impacts in that geographic area.

It is important to note that merely observing sensitive birds flying over a property (as Dr. Smallwood reported), or foraging over the site, or using the habitat on the site in the month of January (the non-nesting season), does not warrant reporting to the CNDDDB as these sightings are not of permanent breeding/nesting/larval development habitat (dependent on what type of animal it is) that warrant protection. The types of "incidental" sightings of common bird species, as Dr. Smallwood reported, do not necessarily translate into a "potentially significant biological impact" under CEQA.

While it is interesting to record birds flying overhead on their way to other more suitable habitats, observing a "flyover" bird or a bird resting in a tree adjacent to or on a project site does not necessarily translate into the project site providing "suitable habitat" or that development of that project site would cause a "significant adverse impact" to that species that warrants any special measures to reduce the significance of the potential impacts to a level regarded as less than significant under CEQA. Therefore, loss of *foraging habitat* that may occur on the project site for birds mentioned by Dr. Smallwood such as the red-tailed hawk, great horned owl (*Bubo virginianus*), Nuttall's woodpecker (*Picoides nuttallii*), Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), red-winged blackbird (*Agelaius phoeniceus*), Say's phoebe (*Sayornis saya*), and other wildlife species *is not necessarily a potentially significant impact*. Indeed, there is a plethora of such foraging habitats throughout the City of American Canyon and throughout this area of Napa County. The project site does not provide unique foraging habitat and the loss of this habitat is not significant relative to the amount of readily available similar foraging habitats located both locally and regionally.

Therefore, impacts to foraging or flyover habitat in most cases do not result in significant biological impacts that require mitigation. The project's impact to foraging habitat is therefore considered to be less-than-significant and does not warrant recirculation of the IS/MND or preparation of an EIR under Public Resources Code Section 21151.

As discussed above, the comment incorrectly states that M&A mostly relied on CNDDDB RareFind records to make our biological impacts assessment. M&A biologists have extensive experience conducting biological surveys in the City of American Canyon and in southern Napa County. Also, as stated earlier in this response letter, M&A biologists have years of experience on this project site. It was this breadth of knowledge about the biological resources in American Canyon and on this particular project site that allowed M&A to determine which special-status species could be affected by the proposed development project, and therefore, which species warrant avoidance and minimization measures as necessary to address potentially significant adverse impacts. As noted previously M&A's findings were peer reviewed by an independent biologist under contract to the City's CEQA Consultant.

**Comment 3:** The Project will have a significant impact on wildlife movement and habitat fragmentation.

**Response:** The March 2020 *Biological Resources Analysis* prepared by Monk & Associates concluded that the proposed project would not interfere with the movement of native wildlife. The project site has a history of disturbance starting with eucalyptus tree removal in 2012, continued disturbance associated with the paintball facility located immediately to the southeast, and the recent construction of the SDG Commerce 330 Distribution Center distribution center to the south. The eucalyptus grove and the marshes associated with the Napa River to the west of the project site provide a more valuable wildlife corridor for terrestrial wildlife.

Regional wildlife corridors that have significant values include, well known and agency-recognized deer herd or elk herd migration corridors or any other regionally recognized wildlife corridor. The project site is not recognized by the CDFW or the USFWS as providing regionally or locally important wildlife corridors. Other than a wildlife movement area for an occasional Virginia opossum (*Didelphis virginiana*) or perhaps a striped skunk (*Mephitis mephitis*), or an occasional Columbian black-tailed deer (*Odocoileus hemionus columbianus*), the project site likely has little to no value as a local wildlife corridor at best. Impacts to this localized use area would not be considered significant pursuant to CEQA.

**Comment 4:** The MND Fails to Analyze the Project's Impacts on Wildlife from Additional Traffic Generated by the Project.

**Response:** The comment states that: "The MND contains no analysis of the impacts of the Project's added road traffic on special-status species of wildlife, including species such as the California red-legged frog and California tiger salamanders." "Regardless of whether these species live on site, these and other special status species must cross roadways that will



experience increased traffic volume as a result of the Project.” The commenter continues “California red-legged frogs (*Rana draytonii*), which Monk & Associates (2020) concluded will suffer no impacts because CNDDDB records are lacking west of Highway 29, will cross roads used by vehicles servicing the project.”

California red-legged frogs (*Rana draytonii*) and California tiger salamanders (*Ambystoma californiense*) do not occur onsite. In the American Canyon/Napa area, there are no records for the California red-legged frog west of Highway 29 (aka State Route 29) where the project site is located. Rather all known records are east of State Route 29. Thus, if this frog is not known on the west side of State Route 29, the commenter’s statement that this frog will cross roads used by vehicles servicing the project is not logical; any amphibian trying to cross Highway 29 to reach the project site would be squashed by traffic. The closest known California red-legged frog occurrence is 1.4 miles east of the project site (CNDDDB Occurrence No. 896), east of State Route 29, a major geographic barrier to movements of the California red-legged frog to the west of this highway. It is noteworthy that M&A biologists have surveyed tributaries of the Napa River west of State Route 29 many times over numerous years and have yet to find this frog west of Highway 29. M&A biologists were the first biologists to identify the California red-legged frog east of Highway 29 in Napa County in 1996. Accordingly, they are qualified to assess potential impacts to this species. M&A concluded that increased traffic associated with the project west of State Route 29 would not affect the California red-legged frog.

There are no records for the California tiger salamander in Napa County. The closest known California tiger salamander occurrence is in Solano County located approximately 17 miles east of the project site (CNDDDB Occurrence No. 485). M&A biologists carry both federal and state permits that allow us to work directly with the California tiger salamander. Mr. Monk has worked with this salamander throughout its known range in California. Indeed, Mr. Monk was on the scientific advisory panel for the recently completed USFWS Santa Rosa Plain California Tiger Salamander Recovery Plan (USFWS 2016)<sup>1</sup>. M&A concludes that increased traffic associated with the project will not affect the California tiger salamander.

Common wildlife road kill, such as the commenter has observed in the project area, of species associated with man and residential developments, Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*), is not considered a significant impact pursuant to CEQA. There are no regulations that protect common wildlife species that could be killed by vehicular traffic. While it is unfortunate that wildlife is killed on roadways by vehicular traffic, and we wish this was not the case, this is not a direct or cumulative impact that rises to a level that would be regarded as an impact that significantly affects a species or that requires mitigation pursuant to CEQA. Therefore, an EIR is not necessary to evaluate the

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<sup>1</sup> USFWS (U.S. Fish and Wildlife Service). 2016. Recovery Plan for the Santa Rosa Plain: *Blennosperma bakeri* (Sonoma sunshine); *Lasthenia burkei* (Burke’s goldfields); *Limnanthes vincularis* (Sebastopol meadowfoam); California Tiger Salamander Sonoma County Distinct Population Segment (*Ambystoma californiense*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. vi + 128 pp. June 20, 2016. Federal Register. Pages: 39945-39946.

direct and cumulative impacts of the project's vehicle collisions with common wildlife species under Public Resources Code Section 21151.

**Comment 5:** The MND fails to analyze the project's impacts from the use of pest control measures.

**Response:** The comment states that "The MND does not discuss the potential impact of using pesticides inside and outside of the proposed warehouse." The applicant would employ a pest control company that implements an Integrated Pest Management program. Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. IPM is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.

The project warehouse would be built to current code and through building design, would exclude rodents from the facility and would not provide an attractive nuisance. Other exclusion strategies would be incorporated into the design of the façade of the warehouse building, specifically the gables, eaves, overhangs, to prevent or discourage birds from establishing nests, or exclude birds from perching or nesting by using nets. In addition, the applicant uses Bird Gard Pro Plus, which is a sonic bird control system that uses a variety of naturally recorded bird distress calls to frighten, confuse and disorient birds in the immediate area. This has proven to be an effective way to discourage swallows from establishing nests on other warehouse buildings in the City of American Canyon owned by the applicant. Pesticides that would be routinely sprayed around the warehouse include Suspend SC and Essentria® G Granule Insecticide. Suspend is used for insect control on commercial and residential turf and landscape areas. The active ingredient is Deltamethrin (4.75%). Essentria® G Granule Insecticide is an environmentally friendly insecticide derived from essential oils. Essentria® G Granular Insecticide is a natural insecticide formulation for treatments in sensitive areas. Active ingredients include Eugenol (Clove Oil) 2.90% and Thyme Oil 0.60%. This insecticide is used to control ants, centipedes, chinch bugs, clover mites, cockroaches, crickets, earwigs, fleas, leafhoppers, millipedes, and other insect pests in landscape, turf, and perimeters around residential and commercial areas. These products do not result in harm to non-target wildlife. Instead of using an anticoagulant rodenticide to control rodents on this project site, the applicant is proposing to use a multi-use PROTECTA bait station, monitoring device and snap trap holder to capture rodents without the use of poison. The attractant used will be non-toxic, in combination with Trapper T Rex Rat Traps (snap traps) or Catchmaster Glue Traps inside the bait station. This would eliminate the potential risk of secondary poisoning of non-target animals through direct exposure and indirect exposure via predation and scavenging of affected pest animals. Consequently, there is no anticipated use of rodenticides for this project at this time, but if there was a rat or mice infestation of the warehouse grounds, the applicant would use CONTRAC rodenticide, which is considered to be less toxic to non-target animals, in both primary and secondary poisoning situations, than other single-feeding anticoagulants. The

applicant would continue to follow all state and federal laws regarding the use of anticoagulant rodenticides.

**Comment 6:** The project will have cumulative impacts on biological resources.

**Response:** The comment concludes that “the Project will have a significant cumulative impact on biological resources. An EIR is needed to fully analyze and mitigate the Project’s cumulative biological impacts, including not only future projects but the existing impacts as well.” The commenter states that the “City of American Canyon has sprawled across nearly all the available spaces between neighbor cities, hills to the east and San Pablo Bay to the west...” Over the past few decades the City of American Canyon has been transitioning from agricultural use to residential development. However, many open space preserves and parks have been established to preserve and protect open space habitats within the City limits and in this region. The Jack & Bernice Newell Wilderness Preserve (Newell Preserve), the Lynch Canyon Preserve, Canyon Estates Preserve (proposed) and the CDFW California Red-Legged Frog Preserve represent over 2,000 acres of permanently protected contiguous open space east of the project site. Closer to the project site, the Wetlands Open Space, Napa River Bay Trail, Clark Ranch and the Napa Plant Site Restoration Project represent several hundred additional acres of preserved open space and valuable wildlife habitats that are preserved in perpetuity. Therefore, conversion of approximately 10 acres of ruderal habitat on the project site to commercial development would be a less-than-significant contribution to the overall cumulative impact, given the extent of preserved open space in this region.

Implementation of the proposed project would result in cumulative impacts to ruderal habitats and less than significant impacts to common plant and animal species. While the project-related impacts would be considered cumulative with other projects in the City, the mitigation measures prescribed in the MND would offset cumulative impacts to special-status species and plant communities/wildlife habitats to levels regarded as less than significant. The mitigation measures identified in the MND (as modified in response to the CDFW comment letter, below) would be required to be adopted by the applicant upon project approval, and appropriately addresses potential impacts to western burrowing owl, Swainson’s hawk, nesting raptors and nesting passerine birds, and reduce those impacts to a less-than-significant level in both the project and cumulative contexts. Therefore, no additional cumulative impacts assessment is required in the MND.

**Comment 7:** The IS utilized unsubstantiated input and output parameters to estimate project emissions. Specifically, The MND fails to explain how the City calculated the project’s average daily construction emissions of ROG and NOx.

**Response:** The daily construction emissions provided in Table AQ-1 on page 22 of the MND do not match the daily emissions estimates from the CalEEMod output files provided in Appendix B-3 because CalEEMod output files report construction emissions as maximum daily emissions and Table AQ-1 on page 22 of the MND reports average daily construction emissions, consistent with the BAAQMD’s *CEQA Guidelines*. This is explained on page 22 of the MND, “As the

construction phases (i.e., grading, paving, building construction, etc.) are sequential, the average daily construction period emissions (i.e., total construction period emissions divided by the number of construction days) were compared to the BAAQMD significance thresholds.”

For instance, average daily construction emissions of ROG and NOx were calculated to be 13.6 and 24.6 lbs/day, respectively (See Table AQ-1 on page 22 of MND). This was calculated by taking the annual emissions estimates for ROG (1.4226 tons/year) and NOx (2.5827 tons/year) from the CalEEMod annual output files in Appendix B-3, converting them to pounds (2,000 lbs/ton), and dividing them by the number of construction days (210 days) as shown in the construction schedule provided in the CalEEMod output files in Appendix B-3 and the air quality calculations supporting information in Appendix B-2. The average daily emissions calculations for ROG and NOx are the following:

- ROG:  $(1.4226 \text{ tons/year}) \times (2,000 \text{ lbs/ton}) \times (210 \text{ days}) = 13.6 \text{ average annual lbs/day of ROG}$
- NOx:  $(2.5827 \text{ tons/year}) \times (2,000 \text{ lbs/ton}) \times (210 \text{ days}) = 24.6 \text{ average annual lbs/day of NOx}$

As demonstrated by the calculations above, the average daily construction emissions shown in Table AQ-1 on page 22 of the MND are valid and were calculated in accordance with BAAQMD's *CEQA Guidelines*. As stated on page 22 of the MND, “All construction-related emissions would be below the BAAQMD significance thresholds.” Therefore, project construction activities would result in a less-than-significant impact.

**Comment 8:** The MND used improper modeling inputs, including for water use for parking and solid waste generation.

**Response:** The water demand assumptions input into CalEEMod were based on the approved SDG 330 Warehouse project, but was scaled down proportionally to the building square footage of the proposed project. As stated on page 100 of the MND, the project's water use would be “approximately equivalent water demand to a one single-family house in American Canyon (274 gpd for single family dwelling and 242 gpd for the proposed warehouse use.” Furthermore, water use does not generate air quality emissions under CalEEMod (as detailed in the CalEEMod annual output files in Appendix B-3), water use only generates GHG emissions under the CalEEMod. Adjusting CalEEMod to a total daily water demand of 683 gallons per day or 249,295 gallons per year would result in no increased local air quality emissions and less than one additional metric ton of CO<sub>2</sub>e per year. Therefore, the proposed project water use results in negligible emissions and adjustments to that level of water use would not change the air quality emissions or conclusions of the MND.

CalEEMod default values for solid waste generation were not used because the proposed project would generate very little solid waste. Solid waste generation was based on the approved SDG 330 Warehouse project, but was scaled down proportionally to the square footage of the proposed project. As stated on page 100 of the MND, “The warehouses project

would produce small quantities solid waste, approximately equivalent to that produced by one or two houses. If significant amounts of recyclables, such as cardboard boxes, are generated, the tenant/operators would bale this waste and have it picked up separately from other solid wastes and removed by Recology American Canyon.” Therefore, the solid waste generation assumptions input into the CalEEMod accurately reflect the estimated solid waste generation of the proposed project.

Similar to the operation of the approved SDG 330 Warehouse project, the proposed project was assumed to only generate trips Monday through Friday and would not need to bring natural gas to the warehouse building since there is no need for natural gas for the warehousing operations. The City of American Canyon considers the best management practices (BMPs) to reduce emissions of dust and particulates to be required and the BMPs would be implemented as part of the proposed project. As stated on page 24 of the MND, “Project construction emissions are less than the significance thresholds (See Table AQ-1) and the proposed project would also include BMPs required per BAAQMD’s CEQA Air Quality Guidelines. Therefore, project impacts from construction emissions would be less than significant.”

**Comment 9:** SWAPE’s CalEEMod modeling run indicates a fair argument that the project may have a significant air quality impact.

**Response:** The comment is comparing maximum daily emissions estimated by CalEEMod to BAAQMD’s **average daily** emissions significance thresholds. SWAPE’s comments state that their CalEEMod re-run caused NOx to exceed BAAQMD’s average daily significance threshold of 54 lbs/day. However, their CalEEMod re-run actually resulted in lower NOx emissions compared to the CalEEMod modeling for the MND provided in Appendix B-3 (2.58 vs. 2.56 tons of NOx during the entire construction period). Both CalEEMod runs result in average daily NOx emissions of approximately 25 lbs/day, which is less than 50% of BAAQMD’s significance threshold of 54 lbs/day for NOx emissions during construction (See Response III.A. for how to calculate average daily construction emissions). Therefore, average daily construction emissions would be below BAAQMD’s significance thresholds and project impacts from construction emissions would be less than significant.

**Comments 10, 11, 12:** The IS inadequately evaluates emissions of diesel particulate matter. Specifically, The HRA fails to account for the fact that the nearest sensitive receptor to the project’s emissions is located only 500 feet from the soil borrow site. SWAPE’s analysis provides substantial evidence of a fair argument that the project may have significant health risk impacts from its emissions of toxic air contaminants.

**Response:** The Draft IS acknowledges that a single residence is located within 500 feet of the project site. However, impacts to a single house are not considered potentially significant as CEQA does not consider the impacts on a few particular persons, but on the environment of persons in general. See, *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720, 734; *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58

Cal.App.3d 188, 195. There are no other sensitive receptors within 1,000 feet of the project site.

A review of the SWAPE HRA also found a number of deficiencies in that document that skewed its results:

1. SWAPE 's HRA uses maximum daily emissions for DPM instead of using the annual emissions to calculate an emission rate.
2. SWAPE's HRA assumes all of the proposed project construction occurs 500 feet from the one residence, but only approximately 35 days of construction occurs that close (because grading activities are borrowing soil from the property to the south). All other construction activities are roughly 1,000 feet away.
3. SWAPE's HRA assumes that operation of the project occurs 500 feet away from the one residence, but the project site is roughly 1,000 feet away.
4. SWAPE uses AERSCREEN modeling. AERSCREEN modeling is a screening tool which determines the maximum hourly concentrations based on worst-case meteorological and land use conditions. That maximum hourly concentration is then multiplied by a factor of 10 percent to estimate the wind direction variability over a year. Regardless it still uses that worst-case meteorological condition for each hour within that 10 percent period. These worst-case meteorological include wind speeds of about 1 mph and generally stable atmospheric conditions which tend to occur during overnight hours. In this case, construction occurs primarily during the daytime except for the concrete pour. The area does have a high percentage of calm winds but also a moderate percentage of winds greater than 5.5 mph. Also, the SWAPE analysis uses a land use of "urban" to determine meteorological land use parameters of Bowen Ratio, albedo, and surface roughness. These parameters are used to produce the worst-case meteorological conditions. The surrounding land uses to the project site are a combination of open space and one/two story buildings. By using the screening approach, their model greatly overstates the construction and operational health impacts.
5. The majority of operational PM<sub>2.5</sub> exhaust emissions calculated in the CalEEMod model are incorrectly calculated from electric forklifts. CalEEMod incorrectly ascribes combustion emissions for the electric forklifts. Electric forklifts do not have engines and therefore do not produce exhaust or generate PM<sub>2.5</sub>. The project would use only electric forklifts. Therefore, project operational emissions would be negligible and would occur approximately 1,000 feet from the nearest residence.

**Comment 13:** There is a fair argument that the project may have significant GHG impacts. The MND's reliance on the 1,100 MT CO<sub>2</sub>e per year threshold is only designed to achieve the GHG reductions required by 2020 and is insufficient to align the project with the State's 2030 GHG Reduction Targets.

**Response:** The BAAQMD adopted a “bright line” and “efficiency” GHG threshold because some projects have a very low service population, like the proposed project. Applying an efficiency metric for GHG emissions for projects like the proposed project is not appropriate, which is why BAAQMD’s “bright line” threshold was used in the MND. As stated by the Commenter, “BAAQMD based its GHG “bright line” significance threshold on the amount of GHG reductions that were necessary in the Bay area to achieve the AB 32 reduction goals by 2020. California’s 2030 GHG reduction goals (outlined in SB 32) require a 40% reduction in the State’s GHG emissions from the 2020 reduction goal level (1990 levels). Thus, a 40% reduction from BAAQMD’s 1,100 metric tons of CO<sub>2</sub>e per year threshold or 660 metric tons of CO<sub>2</sub>e per year would ensure a project is in line with the State’s 2030 GHG reduction goals. As shown in Table GHG-1 on page 52 of the MND, the proposed project would generate 590 metric tons of CO<sub>2</sub>e per year (amortized construction emissions plus operational emissions) for the first year of operations assumed to be year 2022, which is well below 660 metric tons of CO<sub>2</sub>e per year. Furthermore, proposed project emissions would continue to decrease each year of operation as engine technology gets cleaner, fuels achieve reduced carbon intensity, and electricity generation utilizes more renewable and lower carbon sources. Therefore, the proposed project would have less-than-significant impacts on GHG emissions.

**Comment 14:** The project’s failure to reduce its expected VMT and its levels of VMT per capita are evidence of a fair argument that the project may have significant GHG emission impacts.

**Response:** Please see response to comment 1, above.

**Comment 15:** For the foregoing reasons, the MND is inadequate and an EIR is required to analyze and mitigate the Project’s potentially significant environmental impacts.

**Response:** As detailed in the responses to the comments presented above, no new or substantially increased impacts have been identified in the comments, and no substantive revisions are required to the Draft IS/MND in response to these comments. Therefore, the impacts remain mitigated to a less-than-significant level and an EIR is not required.



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
Bay Delta Region  
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Fairfield, CA 94534  
(707) 428-2002  
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**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



January 11, 2021

Mr. William He, Associate Planner  
City of American Canyon  
4381 Broadway Street, Suite 201  
American Canyon, CA 94503  
[whe@cityofamericancanyon.org](mailto:whe@cityofamericancanyon.org)

Subject: SDG Commerce 217 Distribution Center Project, Mitigated Negative  
Declaration, SCH No. 2020120302, Napa County

Dear Mr. He:

The California Department of Fish and Wildlife (CDFW) reviewed the Mitigated Negative Declaration (MND) for the SDG Commerce 217 Distribution Center Project (Project) and is submitting the following comments on the MND to inform the City of American Canyon, as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project.

CDFW is a Trustee Agency pursuant to the California Environmental Quality Act (CEQA) and is responsible for the conservation, protection, and management of the State's biological resources (Pub. Resources Code, § 21000 et seq.; Cal. Code Regs., tit. 14, § 15386). CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as a California Endangered Species Act (CESA) Permit, Native Plant Protection Act Permit, Lake and Streambed Alteration (LSA) Agreement, and other provisions of the Fish and Game Code that afford protection to California's (State's) fish and wildlife trust resources.

### **Project Description**

The proposed Project will develop a 217,294 square-foot wine distribution center, associated parking areas, a detention/bioretenention pond, and will utilize a soil borrow area immediately north of the SDG Commerce 330 Distribution Center.

### **Project Location and Environmental Setting**

The Project site is located at 1075 Commerce Court (previously Commerce Boulevard) in the City of American Canyon, Napa County, and is centered at approximately 38.187092 latitude, -122.273383 longitude. Access to the Project site is from State Route 29 via Green Island Road to Commerce Court. The Project will occur on a 10.39-acre parcel comprised of annual grassland habitat surrounded by blue gum eucalyptus (*Eucalyptus globulus*). The Project site also includes an approximately 46,700 cubic-yard soil borrow area within the parcel between the Project parcel and the southernmost

*Conserving California's Wildlife Since 1870*



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parcel where the nearly completed wine distribution center (i.e., SDG Commerce 330 Distribution Center) occurs. North Slough, a tributary to the Napa River, occurs immediately west of the Project site and is separated from it by a dense stand of eucalyptus. Industrial buildings occur to the north. The recently completed Commerce Court road extension borders the eastern side of the Project.

## Comments and Recommendations

### **Swainson's hawk (*Buteo swainsoni*)**

Mitigation Measure BIO-2 would not reduce potential impact to Swainson's hawk, a State listed as threatened species, to less-than-significant. CDFW recommends that surveys be conducted within a 0.5-mile radius as stated in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (May 31, 2000) available on CDFW's webpage at <https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>. CDFW recommends that Mitigation Measure BIO-2 be revised as follows (added language in **bold italics**, deleted language in ~~strikethrough~~):

①

***If Project activities must occur during the Swainson's hawk nesting season (i.e., typically March 1 through September 15), a qualified biologist (i.e., a biologist with at least two years' experience conducting protocol-level surveys for Swainson's hawk with detections) shall conduct p***~~Pre-construction surveys for nesting Swainson's hawks within shall be conducted for a halfquarter-mile radius around all project activities for at least two survey periods immediately prior to a project's initiation. The surveys shall be conducted in accordance with CDFW's "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" (CDFG 2000), which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements.~~

***If Swainson's hawks are found to be nesting on the project site or within a 0.5-mile of the project site, the project proponent shall either, a) delay project activities until all Swainson's hawk nests within 0.5 miles of the Project site are no longer active, as determined by a qualified biologist, b) determine if the 0.5-mile buffer zone may be reduced in consultation with CDFW based on site specific conditions, or c) if take cannot be avoided, obtain a CESA Incidental Take Permit from CDFW prior to starting project activities.*** ~~consultation with CDFW shall be conducted. The size of the nest protection buffer shall be determined during consultation with CDFW but at a minimum there will be a 300-foot non-disturbance buffer around the nest site.~~

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### ***Western burrowing owl (*Athene cunicularia*)***

Mitigation Measure BIO-1 in the MND would not reduce potential impacts to burrowing owl, a California Species of Special Concern, to less-than-significant because conducting a single survey within 14 days of the start of Project activities would be unlikely to detect burrowing owls. Burrowing owls may use the Project site and adjacent habitat for foraging, overwintering, and/or nesting habitat.

CDFW recommends that Mitigation Measure BIO-1 be revised as follows (added language in ***bold italics***, deleted language in ~~strikethrough~~):

***A qualified biologist shall conduct surveys in accordance with the California Department of Fish and Game (now CDFW) 2012 Staff Report on Burrowing Owl Mitigation survey methodology (see***

***<https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>***.

***Surveys shall encompass the project area and a sufficient buffer zone to detect owls nearby that may be impacted. Time lapses between surveys or project activities shall trigger subsequent surveys including but not limited to a final survey within 24 hours prior to ground disturbance before construction equipment mobilizes to the Project area. The qualified biologist shall have a minimum of two years of experience implementing the CDFW 2012 Staff Report survey methodology resulting in detections.*** ~~preconstruction survey for burrowing owls shall be conducted 14 days prior or less to initiating ground disturbance. As burrowing owls may recolonize a site after only a few days, time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance to ensure absence. If no owls are found during these surveys, no further actions to protect burrowing owl would be necessary.~~

~~1) Burrowing owl surveys shall be conducted by walking the entire project site. Pedestrian survey transects shall be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines shall be seven meters to 20 meters and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. Poor weather may affect the surveyor's ability to detect burrowing owls thus, avoid conducting surveys when wind speed is greater than 20 kilometers per hour and there is precipitation or dense fog. To avoid impacts to owls from surveyors, owls and/or occupied burrows shall be avoided by a minimum of 50 meters (approximately 160 feet) wherever practical to avoid flushing occupied burrows. Disturbance to occupied burrows shall be avoided during all seasons.~~

***1) If burrowing owls are detected on or adjacent to the site, the following restricted activity dates and setback distances recommended per CDFW's Staff Report (2012)***

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*shall be implemented, **unless reduced buffers are accepted by CDFW in writing based on site specific conditions:***

- *From April 1 through October 15, low disturbance and medium disturbance activities shall have a 200-meter buffer while high disturbance activities **shall** have a 500-meter buffer from occupied nests **and wintering sites.***
- *From October 16 through March 31, low disturbance activities shall have a 50-meter buffer, medium disturbance activities shall have a 100-meter buffer, and high disturbance activities shall have a 500-meter buffer from occupied nests **and wintering sites.***
- *No earth-moving activities or other disturbance should occur within the aforementioned buffer zones of occupied burrows. These buffer zones **shall be marked with high visibility fencing or flagging** ~~should be fenced as well. If burrowing owls are found in the project area, a qualified biologist shall delineate the extent of burrowing owl habitat on the site.~~*

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*2) If burrowing owls are present outside of the nesting season, burrowing owls may be passively relocated from the project site **and adjacent habitat** using CDFW-~~accepted~~ approved methods so that construction can proceed. Any required passive relocation of burrowing owls would require CDFW ~~acceptance~~ approval. **If passive relocation of burrowing owls is necessary, a qualified biologist shall prepare a Relocation Plan, including compensatory habitat as described below, for CDFW review and acceptance prior to the start of construction activities.***

*3) If the survey determines that the project site is actively being used by burrowing owl, **or any owls are passively relocated as described above**, then compensatory habitat mitigation shall be provided. The habitat mitigation/compensation plan **shall be submitted to CDFW for review and approval prior to the start of project activities. Habitat compensation acreages shall be approved by CDFW, as the amount depends on site specific conditions, and completed before project construction. It shall also include placement of a conservation easement and preparation and implementation of a long-term management plan.** ~~would be subject to approval of the CDFW.~~ If burrowing owls are observed during surveys, notification shall also be submitted to the California Natural Diversity Database (CNDDDB; see <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>).*

### **Nesting Raptors and Other Birds**

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CDFW is concerned with the language in Mitigation Measures BIO-3 and BIO-4, particularly that surveys would be conducted within 30 days of the start of Project activities. Surveys should be completed as close to the start of Project activities as

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possible to minimize the likelihood of raptors and other birds nesting on or adjacent to the Project site between the time of the survey and the start of Project activities. CDFW recommends Mitigation Measures BIO-3 and BIO-4 be revised as follows (added language in ***bold italics***, deleted language in ~~strikethrough~~):

*To ensure that impacts to ~~tree or ground~~ nesting raptors and other birds are avoided, the following mitigation measures shall be implemented:*

*1) In order to avoid impacts to nesting raptors, a preconstruction nesting survey shall be conducted by a qualified ~~raptor~~ biologist (i.e., ***a biologist with at least 2 years' experience conducting surveys for nesting raptors with detections***) prior to commencing with earth-moving or construction work, if this work would commence between February 1st and August 31st. The survey shall be conducted within ***7 days*** ~~the 30-day period~~ prior to site disturbance. The raptor nesting surveys shall include examination of all trees and other suitable nesting structures, within ***500***~~200~~ feet of the project site.*

*2) If nesting raptors are identified during the surveys, ***a qualified biologist shall determine appropriate, species-specific no-disturbance buffers around all active nests. No-disturbance buffers shall be demarcated in the field with the*** ~~dripline of the nest tree or ground nesting site shall be fenced with orange construction fencing (provided the nest site is on the project site), and a 200-foot radius around the nest tree or nest site shall be staked with orange construction fencing, or similar.~~ If the tree or ***other*** nest site is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. ***If nesting white-tailed kites are found during surveys, a minimum 300-foot no-disturbance buffer shall be established. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site for a minimum of one consecutive week and then weekly during construction. If the qualified biologist observes any nesting raptor displaying potential nest-disturbance behavior, the qualified biologist shall require that all project activities cease. In this event, the qualified biologist and/or project proponent shall consult with CDFW regarding appropriate avoidance and minimization measures; and project activities shall not resume without CDFW's written permission. No-disturbance buffers shall remain in place until the nests are no longer active, as determined by a qualified biologist. The size of the buffer may be altered if a qualified raptor biologist conducts behavioral observations and determines the nesting raptors are well acclimated to disturbance. If this occurs, the raptor biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors. No construction or earth-moving activity shall occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid****

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~~project construction zones. This typically occurs by August 1st. This date may be earlier or later, and shall be determined by a qualified raptor biologist. If a qualified biologist is not hired to watch the nesting raptors then the buffers shall be maintained in place through the month of August and work within the buffer can commence on September 1st.~~

3) If the preconstruction nesting survey identifies a large stick or other type of raptor nest that appears inactive at the time of the survey, but there are territorial raptors evident in the nest site vicinity, a protection buffer (as described above) shall be established around the potential nest **site** until the qualified ~~raptor~~ biologist determines that the nest is not being used. In the absence of conclusive observations indicating the nest site is not being used, the buffer shall remain in place until a second follow-up nesting survey can be conducted to determine the status of the nest and eliminate the possibility that the nest is utilized by a late-spring nesting raptor (for example, red-tailed hawk). This second survey shall be conducted even if construction has commenced. If during the follow-up late season nesting survey a nesting raptor is identified utilizing the nest, the protection buffer shall remain until it is determined by a qualified raptor biologist that **the nest is no longer active**. If the nest remains inactive, the protection buffer can be removed and construction and earth-moving activities can proceed unrestrained.

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(cont.)

To ensure that impacts to nesting passerine birds are avoided, a **qualified biologist** ~~nesting survey~~ shall be conducted **a survey** within 7-15 days prior to commencing construction/grading or tree removal activities if this work would commence between **February March 1** and September 1. If common passerine birds or special-status passerine birds are identified nesting on **or adjacent to** the project site **within 200 feet, a qualified biologist shall determine appropriate, species-specific a non-**disturbance buffers **for all nests. The no-disturbance buffers shall be clearly demarcated in the field with** of 75 feet shall be established or as otherwise ~~prescribed by a qualified ornithologist. The buffer shall be demarcated with orange construction fencing, or similar, prior to the start of project activities.~~ Disturbance within the buffer shall be postponed until **a qualified biologist determines** ~~it is determined by a qualified ornithologist~~ that the young have fledged and have attained sufficient flight skills to leave the area, **and** that the nesting cycle has otherwise completed. **To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site for a minimum of one consecutive week and then weekly during construction. If the qualified biologist observes any nesting bird displaying potential nest-disturbance behavior, the qualified biologist shall require that all project activities cease. In this event, the qualified biologist and/or project proponent shall consult with CDFW regarding appropriate avoidance and minimization measures; and project activities shall not resume without CDFW's written permission. Typically, most passerine birds in the region of the**



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~~project site are expected to complete nesting by August 1st. Many species can complete nesting by the end of June or in early to mid-July. Regardless, nesting buffers shall be maintained until September 1 unless a qualified ornithologist determines that young have fledged and are independent of their nests at an earlier date. If buffers are removed prior to September 1, the qualified biologist conducting the nesting surveys should prepare a report that provides details about the nesting outcome and the removal of buffers. This report shall be submitted to the City of American Canyon Planning Department prior to the time that nest protection buffers are removed if the date is before September 1.~~

#### **Western Pond Turtle (*Emys marmorata*)**

The CNDDDB shows an occurrence of western pond turtle from 2002 within 0.28 miles north of the Project site within North Slough. Western pond turtle is a California Species of Special Concern and impacts to this species would be potentially significant. Western pond turtles travel over land to reach nesting locations and may breed year-round. CDFW recommends the following mitigation measure:

④

*A qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for western pond turtle with detections) shall submit a wildlife exclusion fencing plan to CDFW for review and approval prior to starting construction. Exclusion fencing shall be installed along the western perimeter of the project site preventing the species from traveling from North Slough onto the project site during construction. A qualified biologist shall survey the project site and adjacent habitat within 72 hours of the start of project activities to determine if western pond turtle or their nests are present and guide the installation of the exclusion fence. If western pond turtles are discovered, a qualified biologist with experience handling and relocating the species shall move the species to the nearest suitable habitat outside of the project area and exclusion fencing. If western pond turtle nests or evidence of their presence is found, CDFW shall be consulted with, prior to starting project activities, regarding appropriate avoidance and minimization measures, such as delaying project activities until the nest is no longer active, as determined by a qualified biologist. In this event, project activities shall not begin without CDFW's written permission.*

#### **Filing Fees**

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

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CDFW appreciates the opportunity to provide comments on the MND for the proposed Project and is available to meet with you to further discuss our concerns. If you have any questions, please contact Mr. Garrett Allen, Environmental Scientist, at [Garrett.Allen@wildlife.ca.gov](mailto:Garrett.Allen@wildlife.ca.gov); or Ms. Melanie Day, Acting Senior Environmental Scientist (Supervisory), at [Melanie.Day@wildlife.ca.gov](mailto:Melanie.Day@wildlife.ca.gov).

Sincerely,

DocuSigned by:  
  
BE74D4C93C804EA...  
Gregg Erickson  
Regional Manager  
Bay Delta Region

cc: State Clearinghouse

## II. RESPONSES TO CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DRAFT IS/MND COMMENT LETTER, JANUARY 11, 2021

New or revised IS text resulting from the following responses are identified in underline (added text) or strike through (deleted text). The updated mitigation measures are included in the Final IS text as well as the MMRP.

### **Comment 1:** Adequacy of Swainson's Hawk mitigation

**Response:** The Final Initial Study has been revised to incorporate all of CDFW's suggested language into the Swainson's hawk mitigation measure, as follows (new language shown in underline). This mitigation measure would assure that impacts to the Swainson's hawk are reduced to a less-than-significant level because it meets or exceeds all standard resource agency requirements for this species, and is consistent with professionally accepted approaches to mitigating impacts to this species.

**Mitigation Measure BIO-2:** If project activities must occur during the Swainson's hawk nesting season (i.e., typically March 1 through September 15), a qualified biologist (i.e., a biologist with at least two years' experience conducting surveys who has made Swainson's hawk detections) shall conduct pre-construction surveys for nesting Swainson's hawks within a half-mile radius around all project activities for at least two survey periods immediately prior to a project's initiation. The surveys shall be conducted in accordance with CDFW's "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" (CDFG 2000), which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements.

If Swainson's hawks are found to be nesting on the project site or within a 0.5-mile of the project site, the project proponent shall either: a) delay project activities until all Swainson's hawk nests within 0.5-mile of the project site are no longer active, as determined by a qualified biologist, b) determine if the 0.5-mile buffer zone may be reduced in consultation with CDFW based on site specific conditions, or c) if take cannot be avoided, obtain a CESA Incidental Take Permit from CDFW prior to starting project activities.

### **Comment 2:** Adequacy of Western Burrowing Owl mitigation

**Response:** The suggested burrowing owl mitigation language provided by CDFW that was incorporated into the mitigation measure is shown in underline/strike through below. We did not incorporate all of CDFW's changes into the mitigation measure because some of the new language CDFW suggested is not standard mitigation that an applicant is typically held to for the presence of a wintering or transient owl observed spending a day or a week on a project site as it is passing through the area in the non-nesting season. Regardless, the mitigation



measure as revised is equally protective of the burrowing owl as CDFW's language, and meets the substantive protective goals of their suggested language.

***Mitigation Measure BIO-1:*** A qualified western burrowing owl biologist shall conduct surveys in accordance with the California Department of Fish and Game (now CDFW) 2012 Staff Report on Burrowing Owl Mitigation survey methodology (see <https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds>). Surveys shall encompass the project area and a sufficient buffer zone or approximately 200-500 feet depending on the neighboring terrain and vegetation as necessary to detect owls nearby that may be impacted. Time lapses between surveys or project activities shall trigger subsequent surveys including but not limited to a final survey within 24 hours prior to ground disturbance before construction equipment mobilizes to the project area. If no owls are found during these surveys, no further actions to protect burrowing owl would be necessary.

1) If burrowing owls are detected on or adjacent to the site, the following restricted activity dates and setback distances recommended per CDFW's Staff Report (2012) shall be implemented, unless reduced buffers are accepted by CDFW in writing based on site specific conditions:

- From April 1 through October 15, low disturbance and medium disturbance activities shall have a 200-meter buffer while high disturbance activities shall have a 500-meter buffer from occupied nests and wintering sites.
- From October 16 through March 31, low disturbance activities shall have a 50-meter buffer, medium disturbance activities shall have a 100-meter buffer, and high disturbance activities should have a 500-meter buffer from occupied nests and wintering sites.
- No earth-moving activities or other disturbance should occur within the aforementioned buffer zones of occupied burrows. These buffer zones shall be marked with high visibility fencing or flagging.

2) If burrowing owls are present outside of the nesting season, burrowing owls may be passively relocated from the project site and adjacent habitat using CDFW-accepted methods so that construction can proceed. Any required passive relocation of burrowing owls would require CDFW acceptance. If passive relocation of non-nesting burrowing owls is necessary, a qualified biologist shall prepare a Relocation Plan and submit it to CDFW.

3) If a nesting season survey determines that a burrow or refugia on the project site is occupied by nesting burrowing owls, then compensatory mitigation in the form of a permanently protected, deed restricted, set aside on open space land owned or obtained by the applicant shall be provided if such a protected area makes sense for

protection of nesting owls. This permanently protected area would be recorded within 90 days after commencement of project construction. If burrowing owls are observed during surveys, notification shall also be submitted to the CNDDDB.

This mitigation measure would reduce impacts to the western burrowing owl to a less than significant level because it meets or exceeds all standard resource agency requirements for this species, and is consistent with professionally accepted approaches to mitigating impacts to this species.

**Comment 3:** Adequacy of mitigation for nesting raptors and other birds

**Response:** CDFW's suggested mitigation language nesting raptors and nesting passerine birds has been added to Mitigation Measures BIO-3 and BIO-4, below.

**Mitigation Measure BIO-3:** To ensure that impacts to nesting raptors are avoided, the following mitigation measures shall be implemented:

1) In order to avoid impacts to nesting raptors, a preconstruction nesting survey shall be conducted by a qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for nesting raptors with detections) prior to commencing with earth-moving or construction work if this work would commence between February 1st and August 31st. The survey shall be conducted within 7 days prior to site disturbance. The raptor nesting surveys shall include examination of all trees and other suitable nesting structures/areas within 500 feet of the project site.

2) If nesting raptors are identified during the surveys, a qualified biologist shall determine appropriate, species-specific no-disturbance buffers around all active nests. No-disturbance buffers shall be demarcated in the field with orange construction fencing or similar. If the tree or other nest site is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. If nesting white-tailed kites are found during surveys, a suitable no-disturbance buffer shall be established by a qualified biologist (as defined above) but in no case shall the buffer be less than 200 feet. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site daily for a minimum of one week and then weekly during construction. If the qualified biologist observes any nesting raptor displaying distress, the qualified biologist shall require that all project activities cease. In this event, the qualified biologist shall ensure proper measures are taken so that no harm comes to the nest/nesting attempt and all activities causing distress shall cease until the nesting attempt is completed as determined by a qualified biologist.

3) If the preconstruction nesting survey identifies a large stick or other type of raptor nest that appears inactive at the time of the survey, but there are territorial raptors evident in the nest site vicinity, a protection buffer (as described above) shall be

established around the potential nest site until the qualified biologist determines that the nest is not being used. In the absence of conclusive observations indicating the nest site is not being used, the buffer shall remain in place until a second follow-up nesting survey can be conducted to determine the status of the nest and eliminate the possibility that the nest is utilized by a late-spring nesting raptor (for example, Cooper's hawk). This second survey shall be conducted even if construction has commenced. If during the follow-up late season nesting survey a nesting raptor is identified utilizing the nest, the protection buffer shall remain until it is determined by a qualified biologist that the nest is no longer active. If the nest remains inactive, the protection buffer can be removed and construction and earth-moving activities can proceed unrestrained.

***Mitigation Measure BIO-4:*** To ensure that impacts to nesting passerine birds are avoided, a qualified biologist shall conduct a survey within 7 days prior to commencing construction/ grading or tree removal activities if this work would commence between February 1 and September 1. If common passerine birds or special-status passerine birds are identified nesting on or adjacent to the project site within 200 feet, a qualified biologist shall determine appropriate, species-specific no-disturbance buffers for all nests. The no-disturbance buffers shall be clearly demarcated in the field with orange construction fencing or similar, prior to the start of project activities. Disturbance within the buffer shall be postponed until a qualified biologist determines that the young have fledged and have attained sufficient flight skills to leave the area, and that the nesting cycle has otherwise completed. To ensure the no-disturbance buffers are adequate, a qualified biologist shall monitor the active nests within and adjacent to the project site on a daily basis for a minimum of one week and then weekly during construction. If the qualified biologist observes any nesting bird displaying distress, the qualified biologist shall have the authority to require that all project activities cease until the nesting distress has been ameliorated. In this event, the qualified biologist shall ensure proper measures are taken so that no harm comes to the nest/nesting attempt until the nesting attempt is completed as determined by a qualified biologist. These measures may include increasing the no-disturbance buffer, postponing specific construction activities causing the distress until the nesting attempt is completed, or other appropriate protection measures as determined in the field.

These revised mitigation measures would reduce impacts to nesting raptors and passerines to a less-than-significant level because they meet or exceed all standard resource agency requirements for nesting raptors, and are consistent with professionally accepted approaches to mitigating impacts to nesting raptors and passerines.

***Comment 4:*** Adequacy of Western Pond Turtle mitigation

***Response:*** The Draft IS/MND did not include a mitigation measure for the western pond turtle. However, upon reviewing CDFW's comment letter, we agree that it is appropriate to include a mitigation measure for this special-status species given the proximity of North Slough and western pond turtle sightings to the project site. Below we include CDFW's mitigation language

and bolster that language with additional measures that have proven effective on other projects with pond turtle populations.

The following has been added as the second paragraph on p. 32 of the Final IS/MND:

The western pond turtle (*Emys marmorata*) is a California “species of special concern.” In April of 2015, the USFWS issued a 90-day finding on a petition to list this species under FESA. In September 2016, M&A spoke with USFWS’ Sacramento Field Office and was told that they “hope to finish a 12-month finding in the fiscal year of 2021” (G. Tarr, USFWS, Sacramento Field Office, pers. comm. with S. Lynch of M&A, September 21, 2016). Until the western pond turtle is formally listed it is not afforded the protections of FESA.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that western pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Lithobates catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

According to the CDFW’s CNDDDB there is a 2002 record of this turtle in North Slough approximately 0.28-mile to 0.45-mile north of the project site. There is no aquatic habitat onsite and the upland habitat onsite appears to be most unsuitable for nesting turtles as it is a former eucalyptus forest that now, though devoid of trees, has

undulating topography from past land disturbance including from eucalyptus tree removal that took place in 2012. While it appears to be a most unlikely area for turtles to haul out and nest, in an abundance of caution that there is a possibility of turtles nesting onsite, impacts to western pond turtles from the proposed project are considered ***potentially significant***. Mitigation Measure BIO-5 would reduce this impact to a ***less-than-significant*** level.

The following mitigation measure has been added to the Biological Resources mitigation measures:

**Mitigation Measure BIO-5:** A qualified biologist (i.e., a biologist with at least 2 years' experience conducting surveys for western pond turtle detections) has prepared a wildlife exclusion plan for this project and has attached an exhibit of that fencing plan herein (please see attached Exhibit A). This wildlife exclusion fencing will be constructed of manufactured ERTEC wildlife exclusion fencing. This exclusion fencing shall be installed along the western perimeter of the project site returning back 50 feet to the north and 50 feet to the south preventing species from traveling from North Slough onto the project site during construction (see Exhibit A). A qualified biologist shall survey the project site and adjacent habitat within 72 hours of the start of project activities to determine if western pond turtles or their nests are present and guide the installation of the exclusion fence. If western pond turtles are discovered, a qualified biologist with experience handling and relocating the species shall move the species to the nearest suitable habitat outside of the project area and exclusion fencing. If western pond turtle nests are found, CDFW shall be notified prior to starting project activities, and the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent North Slough. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Grading within the nest site's 50-foot buffer area shall be delayed until the young leave the nest as determined by a qualified biologist. If the CDFW allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of the CDFW.

Implementation of this mitigation measure reduces the project's impact to western pond turtle to a less than significant level because it meets or exceeds all standard resource agency requirements for this species, and is consistent with professionally accepted approaches to mitigating impacts to this species.

### III. CALTRANS INQUIRY EMAILS AND RESPONSES

The City received an email inquiry on the Draft IS/MND from Caltrans staff, which was satisfied in correspondence. No formal comments on the IS/MND were received from that agency. The email chain is presented below.

From: Luo, Yunsheng@DOT <[Yunsheng.Luo@dot.ca.gov](mailto:Yunsheng.Luo@dot.ca.gov)>  
Sent: Wednesday, January 6, 2021 4:37 PM  
To: Todd Tregenza <[Todd.Tregenza@ghd.com](mailto:Todd.Tregenza@ghd.com)>; Brian Doswald <[bdoswald@icc-stravinski.com](mailto:bdoswald@icc-stravinski.com)>; Kamesh Vedula <[Kamesh.Vedula@ghd.com](mailto:Kamesh.Vedula@ghd.com)>  
Cc: Emily Krause <[ekrause@icc-stravinski.com](mailto:ekrause@icc-stravinski.com)>; Carol Guillen <[cguillen@icc-stravinski.com](mailto:cguillen@icc-stravinski.com)>; Diana Gutierrez <[dgutierrez@icc-stravinski.com](mailto:dgutierrez@icc-stravinski.com)>; John Wojtas <[jwojtas@icc-stravinski.com](mailto:jwojtas@icc-stravinski.com)>; Neil S. Thompson <[nsthompson@icc-stravinski.com](mailto:nsthompson@icc-stravinski.com)>; William He <[whe@cityofamericancanyon.org](mailto:whe@cityofamericancanyon.org)>; Edison Bisnar <[Ebisnar@cityofamericancanyon.org](mailto:Ebisnar@cityofamericancanyon.org)>; Brent Cooper <[bcooper@cityofamericancanyon.org](mailto:bcooper@cityofamericancanyon.org)>; [gencons@aol.com](mailto:gencons@aol.com)  
Subject: RE: [External] SDG Commerce 217 Distribution Center project

I see. Thanks for the additional explanation. And good luck with the project!

Yunsheng Luo  
Caltrans, District 4  
Cell: 626-673-7057

From: Todd Tregenza <[Todd.Tregenza@ghd.com](mailto:Todd.Tregenza@ghd.com)<<mailto:Todd.Tregenza@ghd.com>>>  
Sent: Wednesday, January 6, 2021 3:57 PM  
To: Luo, Yunsheng@DOT <[Yunsheng.Luo@dot.ca.gov](mailto:Yunsheng.Luo@dot.ca.gov)<<mailto:Yunsheng.Luo@dot.ca.gov>>>  
Subject: RE: SDG Commerce 217 Distribution Center project

Yunsheng,

Good question - I should have clarified. The project is not a public-facing retail building, with very little "customer" traffic. In this case, the non-commute trips are either trucks (excluded from SB 743 analysis for reasons described below) or other work-based non-commute trips (small deliveries, lunch trips, etc.) Therefore, the average worker commute trip (home-based work) was used to make the VMT assessment, as it is directly comparable to the home-based work commute trip of other employment destinations in the region.

Thanks,

Todd

From: Luo, Yunsheng@DOT <[Yunsheng.Luo@dot.ca.gov](mailto:Yunsheng.Luo@dot.ca.gov)<<mailto:Yunsheng.Luo@dot.ca.gov>>>  
Sent: Wednesday, January 6, 2021 3:44 PM  
To: Todd Tregenza <[Todd.Tregenza@ghd.com](mailto:Todd.Tregenza@ghd.com)<<mailto:Todd.Tregenza@ghd.com>>>

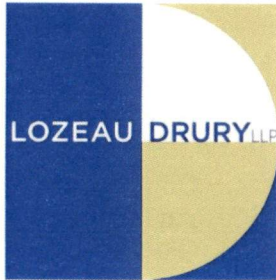
Subject: RE: SDG Commerce 217 Distribution Center project

Good afternoon Todd,

Thanks for sharing the information and the detailed explanation with me. We respect the city's preference in choosing the proper methodology for the VMT analysis. It is more for the discussion purpose for us to understand better about why/how the city does the VMT analysis in CEQA. Can I ask a follow-up question: because the employee trips only account for 1/3 of the total trips, while the visitor trips account for 2/3. Why in this case, the employee trips, instead of the visitor trips, were considered as the primary traffic generator of this project, since this is not a typical office project?

Thank you for your time.

Yunsheng Luo  
Caltrans, District 4  
Cell: 626-673-7057



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*Via Email*

February 25, 2021

Tyrone Navarro, Chair  
Crystal Mallare, Vice Chair  
Eric Altman  
Andrew Goff  
Tammy Wong  
City of American Canyon Planning Commission  
Publiccomment@cityofamericancanyon.org

William He, AICP, Associate Planner  
City of American Canyon Community  
Development Department  
4381 Broadway, Suite 201  
American Canyon, CA 94503  
whe@cityofamericancanyon.org

RECEIVED

FEB 25 2021

City of American Canyon  
Community Development Department

**Re: SDG Commerce 217 Distribution Center (PL20-0008) - Mitigated Negative Declaration (February 25, 2021 Planning Commission Meeting, Agenda Item No. 5.2)**

Dear Commissioners and Mr. He:

Please accept this brief comment on behalf of Laborers International Union of North America, Local 324 ("LIUNA") and its members living and working in and around the City of American Canyon regarding the Draft Initial Study and Mitigated Negative Declaration ("MND") prepared for the proposed SDG Commerce 217 Distribution Center Project (the "Project"). Thank you for the responses prepared to our earlier comments submitted to the Commission on January 17, 2021.

We appreciate the acknowledgement in the responses that the original VMT analysis was incorrect and employed bike trip lengths that could not be substantiated in fact or based on any effort to gather information on bike commuting in general or in the American Canyon area. It appears, however, that the City's consultant, in responding to those obvious shortcomings, has now embellished its VMT mitigation analysis with numerous other unsubstantiated claims and speculation. Rather than an objective analysis of the actual incremental VMT reductions that will



result from an 800-foot stretch of bike lane connecting two existing bike lanes, the effort seeks, without evidentiary basis, to achieve a desired outcome. The notion that an 800-foot connecting bike lane will, by itself, induce 96 new bike commuters to commute to jobs to the north of the Project and reduce VMTs by 1004 is farfetched. The only way the consultant generates such a number is by ignoring the terms of the federal guidance it claims to be applying, blatantly attempting to assign benefits of other parties' bike lane construction efforts to the applicant, and making believe that, without the connector bike lane, bike commuters from the neighborhood south of the Project heading north must ride on the shoulder of State Route 29. All of these efforts to invent a justification for not requiring sufficient VMT reductions to mitigate the Project's increases in VMT are not supported by the cited guidance or facts. These supplemental comments highlight this continued concern and the remaining fair argument that the Project may have significant environmental impacts from its unmitigated increase in VMTs.

**1. GHD's analysis is inconsistent with the NCHRP guidelines it cites.**

GHD claims to base its analysis of VMT reductions attributable to the bike lane connector on National Cooperative Highway Research Program Report 552, "Guidelines for Analysis of Investment in Bicycle Facilities." ("NCHRP Report"). The method set forth in the NCHRP Report for estimating induced bike commutes from a new bike facility relies on bike commuters from three buffer distances from a bike facility who would most likely use the facility. (NCHRP Report, p. 38.) These three buffers are less than 400 meters, 400 to 799 meters and 800 to 1599 meters. (*Id.*, pp. 38, Appendix B, B-6.) As the NCHRP Report explains:

Research for this project uncovered that people are more likely to ride a bicycle if they live within 1,600 m (1 mi) of a facility than if they live outside that distance (Appendix B). The likelihood of bicycling increases even more at 800 m and 400 m. The team therefore estimates existing and induced demand using 400-, 800-, and 1600-m buffers around a facility.

(*Id.*) The analysis identifies the population within each of those buffer areas and estimates the number of bike commuters in each buffer using the project region's "bicycle commute share."  
(*Id.*) The analysis also provides a method to calculate the total adult cyclists in the buffer areas.  
(*Id.*) The NCHRP Report developed "likelihood multipliers" for each of the three buffer zones to account for the fact that "people who live near a facility are more likely to bike than those that do not..." *Id.*, pp. 38-39. A different likelihood multiplier is provided for each of the three NCHRP buffer zones.

Rather than abide by the NCHRP Report's methodology, GHD took the liberty of adding a buffer zone beyond 1600 meters – from 1600 to 2400 meters from the proposed bike lane. (Agenda Packet ("AP"), pp. 302-303.) Substantial evidence includes "facts, reasonable assumptions predicated upon facts, and *expert opinion supported by facts*." (CEQA Guidelines, § 15384(b) (emphasis added).) Because there is no justification based on the NCHRP Report to inflate induced bike commuter use by randomly expanding the buffers to include people living 1600 to 2400 meters away from a proposed bike lane, GHD's analysis is not based on substantial evidence.



The inconsistencies of GHD's analysis with the NCHRP Report do not however end there. In its analysis, GHD does not include the closest buffer zone identified in the NCHRP Report – 0 – 400 meters. Instead, it uses a 0 – 799 meter buffer, an 800 to 1599 meter buffer and its third made-up buffer from 1600 meters to 2400 meters. However, in calculating how many of the residents in each of these areas are induced to use the new bike lane, GHD then applies the NCHRP's "likelihood multipliers" for the original NCHRP buffer distances. GHD references the likelihood multipliers "[e]stablished by NCHRP 552 research; see Appendix B." AP, p. 304. However, the NCHRP Report and its Appendix B do not establish a likelihood multiplier for GHD's newly minted buffer zone from 1600 to 2400 meters from a facility. So, GHD could not have been applying a number from the NCHRP Report to that area. GHD does not explain which likelihood multipliers it applied to the three zones it selected. If GHD applied the three multipliers calculated by NCHRP for the 400, 800 and 1600 buffer zones to GHD's 800, 1600, and 2400 buffer zones, there would be no evidentiary basis for GHD's new, induced bike commuter computation. In any event, GHD provides no evidence supporting its application of a multiplier factor for the fictitious buffer it seeks to add surreptitiously to the NCHRP Report's methodology. GHD also does not provide evidence of which likelihood multipliers it applied to the 800 meter and 1600 meter zones in its analysis. Without this evidence, the analysis is not substantial evidence.

**2. GHD's effort to credit the Project with mitigation for the already completed Bay Trail bike facility adjacent to Wetlands Edge Road is entirely arbitrary and is not supported by evidence that the bike lane gap along 800-feet of Commerce Court is "non-traversable."**

GHD further attempts to inflate the VMTs attributable to the proposed 800 feet bike lane by claiming the VMT analysis should include all bike commuters induced by the 1.7 miles of Bay Trail bike access that was constructed along the western side of Wetlands Edge Road many years ago. (AP, pp. 290, 302.) According to GHD, the 800-foot stretch of Commerce Boulevard where it proposes to add bike lanes currently blocks or limits would-be bike commuters heading north from using the Bay Trail bike lanes to the west of Wetlands Edge Road.

First, there is no evidence that the 800-foot stretch of Commerce Boulevard currently blocks or will block any bike commuters from heading north towards the businesses clustered at the north end of Commerce Boulevard or even further north. The MND does not describe in any way the current condition of that road or, more importantly, the condition that will exist upon the completion of the Napa Junction Elementary School project at the corner of Commerce Boulevard and Eucalyptus. The elementary school is scheduled for occupancy this fall. (AP, p. 101.) Construction of the SDG Warehouse project is expected to be ongoing after the school is completed and open. (*Id.*, p. 124.)

The school project includes reconstructing Commerce Boulevard alongside the school property. (See Napa Junction Elementary School Replacement Project Draft Environmental Impact Report, p. 10-28 [available at <https://drive.google.com/open?id=13Ny2i9F6u2R6NFJBqlifGoNeUqaUoqTk>]; see also *id.*, p.



10-29 (“the proposed project would improve the roadway with asphalt concrete pavement and sidewalk”); Figures 3-5, 3-15 and 3-16 (plans showing bike lanes on Commerce Blvd.) Despite this brand new roadway running from Eucalyptus Avenue north to the existing SDG Commerce 330, GHD contends that this stretch of Commerce Boulevard is a “‘non -traversable’ gap between the residential areas of American Canyon and the employment centers north that precludes viable bicycle commuting choices.” (AP, p. 287.) Only from this premise does GHD then claim that bike commuters cannot get through this stretch of Commerce Boulevard and must instead head to State Route 29 “since the only connection to employment destinations north of Eucalyptus today is along the shoulders of SR 29 – a route navigable the only the most experienced and fearless riders.” (AP, p. 302.) Contrary to GHD’s assertions, a newly constructed stretch of Commerce Boulevard adjacent to the elementary school does not pose any barrier to bike commuters to travel between Eucalyptus Avenue and the bike path across from SDG Commerce 330. As a result, GHD’s and the final MND’s assertions that the proposed new bike lanes will unlock additional potential from the 1.7 miles of existing bikeway along Wetlands Edge Road is not supported by any substantial evidence. Well before the Project is completed, any commuting biker will be able to peddle unobstructed along the brand-new stretch of Commerce Boulevard whether the new bikeway is constructed or not.

Even if the stretch of Commerce Boulevard adjacent to the new elementary school did pose some limited impediment to bikers that required them to slow down for 800 feet does not justify GHD’s random proposal to attribute half of the VMT reductions of an already completed 1.7 mile bikeway to the Project. This blatant effort to inflate the VMT benefits of the Project’s proposed 800-foot bike lane has no basis in fact and is not a mitigation measure attributable to the Project.

Applying the NCHRP buffer zones that are actually included in that methodology (800 and 1600 meters) and the actual length of the bike facility proposed by the Project (800 feet), and assuming the rest of GHD’s calculations are correct, the number of new bike commuters induced by the 800-foot bike lane is at most 22 cyclists. Assuming GHD’s estimate of bike commute distance is reasonable, that amounts to, at most, a VMT reduction of 229 VMTs. As a result, substantial evidence of a fair argument exists that the Project’s VMT increases may have a significant environmental impact.

**3. GHD’s estimate of commuter bike trip lengths does not eliminate the substantial evidence of a fair argument that average bike commute lengths in California are 1.5 miles as published by the California Air Resources Board.**

GHD relies on a study of Portland, Oregon to borrow an estimated bike commute length for American Canyon. (AP, p. 290, citing “Understanding and Measuring Bicycling Behavior: a Focus on Travel Time and Route Choice”, Oregon Transportation Research and Education Consortium, OTREC -RR -08 -03, December 2008.) GHD provides no rationale in its report why Portland bicycle commute lengths would be representative of American Canyon bicycle commute lengths. This is despite a CARB approved distance of 1.5 miles for bike trips used to calculate VMT reductions from bikeways. (AP, p. 684.) There is no substantial evidence to support the use of bike commute distances from a highly urbanized area like Portland versus a

more rural/suburban setting such as American Canyon. Using 1.5 miles as the lower end of a bike commute distance estimates yields a mere 33 VMT reduction from the 800-foot bike lane.

**4. The inclusion of the new VMT calculations and efforts to justify the limited bike lane mitigation require the City to recirculate the MND for public review and comment.**

The law is well-established that even if an EIR is not required, a revised negative declaration must be circulated for full public review if it adds new mitigation measures or identifies new impacts. *Gentry v. Murrieta*, 36 Cal.App.4th 1359, 1392, 1411, 1417. The MND's substantial 'changes to its VMT analysis and new mitigation proposals based on the so-called non-traversability of Commerce Boulevard are significant changes to the MND that should be recirculated to the public for review and comment.

Despite the responses to our earlier comments, substantial evidence of a fair argument still exists in the record that the Project may have significant health risks and impacts on wildlife. For all of these reasons and those discussed in our prior comment, the MND is inadequate and an EIR is required to analyze and mitigate the Project's potentially significant environmental impacts. Thank you for your attention to these supplemental comments.

Sincerely,

A handwritten signature in blue ink that reads "Michael R. Lozeau".

Michael Lozeau  
Lozeau | Drury LLP

#### IV. RESPONSES TO LOZEAU DRURY IS/MND COMMENT LETTER, FEBRUARY 25, 2021

**Comment 1:** GHD's analysis is inconsistent with the NCHRP guidelines it cites.

**Response 1:** The authors of the NCHRP report have issued guidance intended to inform implementation of the NCHRP research. This guidance supports the buffer distances and likelihood multipliers used in GHD's analysis. The guidance is available at the authors' webpage under the title *Translating Demand and Benefits Research into Guidelines* and is available under the methodology section ([https://www.pedbikeinfo.org/bikecost\\_x/methodology.cfm](https://www.pedbikeinfo.org/bikecost_x/methodology.cfm)). The use of the 800, 1,600, and 2,400 meter buffers is consistent with this approach, including the use of the likelihood multipliers based on these 800, 1,600, and 2,400 buffer distances.

**Comment 2:** GHD's effort to credit the Project with mitigation for the already completed Bay Trail bike facility adjacent to Wetlands Edge Road is entirely arbitrary and is not supported by evidence that the bike lane gap along 800-feet of Commerce Court is "non-traversable."

**Response 2:** GHD's analysis does not attempt to credit mitigation for existing infrastructure. GHD's analysis quantifies the anticipated bicycle commute mode shift that could be reasonably expected to occur once the gap in the existing bikeway system is closed. The unpaved gap between Eucalyptus Drive and the existing trail south of Commerce Court is currently composed of rough gravel (aggregate base rock). This area is used for emergency and maintenance access, is not maintained for public use, and is subject to potholes, mud, and puddles after rain events. This area does not meet any applicable design standards for bicycle infrastructure and is not a suitable bicycle commute route.

The conditions that will be in place following completion of the Napa Junction Elementary School construction will not complete the gap in the bicycle network. It is GHD's understanding that the street construction associated with the school will result in a 24-foot paved roadway with no accommodations for bicyclists. GHD's analysis attributes a portion of the existing Wetlands Edge trail "latent" commute demand because its current alignment lacks connection to any employment destinations north of Eucalyptus Drive.

**Comment 3:** GHD's estimate of commuter bike trip lengths does not eliminate the substantial evidence of a fair argument that average bike commute lengths in California are 1.5 miles as published by the California Air Resources Board.

**Response 3:** The CARB report presents conflicting information on bicycle trip distances and does not specifically indicate bicycle commute purpose trip distances. From CARB's *Quantifying Reductions in Vehicle Miles Traveled from New Bike Paths, Lanes, and Cycle Tracks*:

The 2009 National Household Transportation Survey (NHTS)<sup>16</sup> shows a 2.3-mile average one-way bicycle trip length across all trip purposes (Kuzmyak & Dill, 2012). **And more recent data from intercept surveys and Global Positioning System (GPS) tracking show even longer average trips.**

For example, Matute et al. (2016) calculated one-way trip distances for the over 100 cyclists they intercepted riding on newly constructed Class I, Class II or Class IV bicycle facilities in Los Angeles County who provided sufficient origin and destination information. **They reported a mean seven-mile one-way trip distance.**

The 1.5 mile bicycle trip length presented by CARB is based on the 2010-12 California Household Travel Survey (CHTS) by Caltrans. The 1.5 mile bicycle trip distance from the CHTS represents the average distance of all bicycle trips, including commute trips, recreational trips, trips by children, shopping trips, and all other trip purposes. The CHTS does not reveal the average bicycle commute trip distance or provide information enabling such an average trip distance to be derived. The CHTS data and CARB report do not, therefore, provide substantial evidence that the average bicycle commute trip distance is 1.5 miles as the commenter states.

The data utilized by GHD includes findings from the Oregon Transportation Research and Education Consortium (OTREC). The study referenced was based on GPS tracking and reports bicycle trip distance by purpose. The OTREC research found a median bicycle trip length for all purposes to be 2.8 miles, and a mean bicycle trip distance for all purposes to be 4.3 miles. A median trip distance of 3.8, and a mean trip distance of 5.2, reported by work trip purposes supports GHD's assertion that work trip purposes tend to represent longer and further trips than the median or mean distance of all trips combined.

GHD has supplemented the initial analysis with additional bicycle commute trip distance findings from the American Association of State Highway and Transportation Officials (AASHTO). In *Report 14. Bicycling and Walk Commuting of Commuting in America 2013: The National Report on Commuting Patterns and Trends* (AASHTO, 2015), the average bicycle commute trip distance is reported as 3.8 miles.

Since GHD's analysis is focused on bicycle commute mode shift in an urbanized area, use of bicycle commute trip distance data from the OTREC study is appropriate. In order to provide a more conservative estimate of potential bicycle commute mode shift, GHD also applied the AASHTO bicycle commute trip distance to calculations. Both sets of findings are presented in the analysis.