



Planning for Success.

MITIGATED NEGATIVE DECLARATION

SEVEN MEDICAL MARIJUANA FACILITIES

PREPARED FOR

City of Greenfield

May 26, 2017

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

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MITIGATED NEGATIVE DECLARATION

SEVEN MEDICAL MARIJUANA FACILITIES

PREPARED FOR

The City of Greenfield

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May 2017

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City of Greenfield

599 El Camino Real Greenfield CA 93937 831-674-5591
www.ci.greenfield.ca.us

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

In compliance with the California Environmental Quality Act (CEQA), the City of Greenfield has undertaken environmental review for Seven Proposed Medical Marijuana Facilities, and intends to adopt a Mitigated Negative Declaration. The City of Greenfield invites all interested persons and agencies to comment on the proposed Mitigated Negative Declaration.

Lead Agency:	City of Greenfield
Project Names and Locations:	Cannaculture Collective, 802 El Camino Real, Greenfield Kool Gildea, 600 Cypress Avenue, Greenfield Redhunt Corporation, 600 Pine Avenue, Greenfield Zen Brand, 689 El Camino Real, Greenfield Golden State Alternative Care, 799 El Camino Real, Greenfield Emerald Mission, 801 El Camino Real, Greenfield Paper Plane Traders, 851 El Camino Real, Greenfield
Project Description:	Cultivation and manufacturing facilities for medical marijuana
Public Review Period:	Begins-5/31/17 Ends - 6/20/17
Proposed Mitigated Negative Declaration is Available for Public Review at these Locations:	City of Greenfield Website - http://ci.greenfield.ca.us/ City of Greenfield City Hall Community Services Department 599 El Camino Real, Greenfield
Address Where Written Comments May be Sent:	Mic Steinmann, Community Services Director City of Greenfield 599 El Camino Real, Greenfield CA 93927 msteinmann@ci.greenfield.ca.us
Public Hearings:	
Planning Commission	June 6, 2017 at 6:00 PM 599 El Camino Real, Greenfield
City Council	June 27, 2017 at 6:00 PM 599 El Camino Real, Greenfield



City of Greenfield

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MITIGATED NEGATIVE DECLARATION

Project Description

This mitigated negative declaration addresses development of seven medical marijuana cultivation and manufacturing facilities. The project names and locations are as follows:

1. Cannaculture Collective, 802 El Camino Real, Greenfield (APN 109-141-004)
2. Kool Gildea, 600 Cypress Avenue, Greenfield (APNs 109-144-010 and 109-144-009)
3. Redhunt Corporation, 600 Pine Avenue, Greenfield (APN 109-144-007)
4. Zen Brand, 689 El Camino Real, Greenfield (APNs 109-162-012 and -017, and 109-161-011)
5. Golden State Alternative Care, 799 El Camino Real, Greenfield (APNs 109-161-015, -016, -017, and -018)
6. Emerald Mission, 801 El Camino Real, Greenfield (APN 109-151-021)
7. Paper Plane Traders, 851 El Camino Real, Greenfield (APN 109-151-020)

Project Proponents

Canna Culture Collective, Inc.
3591 Charter Park Drive
San Jose, CA 95136

Emerald Mission
30823 Mainmast Drive
Agoura Hills, CA 91301

Golden State Alternative Care, Inc.
11301 W. Olympic Blvd., Suite 542
Los Angeles, CA 90064

Kool Gildea, Inc.
215 W. 7th Street, Suite 909
Los Angeles, CA 90014

Paper Plane Traders
7288 Mulholland Drive
Los Angeles, CA 90068

Red Hunt
Greenfield Prop Owner, LLC
594 Broadway, Suite 1010
New York, NY 10012

Zen Brand Collective, Inc.
845 14th Street, Apt. 5
Santa Monica, CA 90403

Initial Study

An initial study of was undertaken and prepared for the purpose of ascertaining whether these projects might have a significant effect on the environment. A copy of this study is attached.

Findings & Reasons

The initial study identified potentially significant effects on the environment. However, these impacts have been mitigated (see Mitigation Measures below which avoid or mitigate the effects) to a point where no significant effects will occur. On the basis of the whole record, there is no substantial evidence the project will have a significant effect on the environment. The following reasons will support these findings:

- The proposals are a logical component of the existing land use of this area.
- Identified adverse impacts are proposed to be mitigated on-site and a mitigation monitoring and reporting program have been prepared.
- The proposed project is consistent with the adopted goals and policies of the General Plan of the City of Greenfield.
- City staff independently reviewed the Initial Study, and this Mitigated Negative Declaration reflects the independent judgment of the City of Greenfield.
- With the application of the following Mitigation Measures the proposed projects will not have any significant impacts on the environment.
- The Greenfield Community Services Department is the custodian of the documents and other material that constitute the record of proceedings upon which this decision is based.

Mitigation Measures

Air Quality

AQ-1 In order to reduce fugitive dust emissions from grading and construction activities, the following measures shall be included on all grading and construction plans, and implemented during grading and construction when grading area exceeds 2.2 acres or construction area exceeds 8.1 acres:

- Water areas of active disturbed soils at least twice daily or as necessary to prevent visible dust leaving the site, using raw or recycled water when feasible.
- Apply chemical soil stabilizers or dust suppressants on disturbed soils that will not be actively graded for a period of four or more consecutive days.
- As an option to watering active disturbed soils at least twice daily, apply non-toxic binders and/or hydro seed disturbed soils on which grading is completed, but on which more than four days will pass prior to paving, foundation construction, or placement of other permanent cover.
- Cover or otherwise stabilize stockpiles which will not be actively used for a period of four or more consecutive days, or water at least twice daily as necessary to prevent visible dust leaving the site, using raw or recycled water when feasible.
- Maintain at least 2'0" of freeboard and cover all trucks hauling dirt, sand, or loose materials.
- Stop grading and earth moving if winds exceed 15 miles per hour.
- Pave roads, driveways, and parking areas at the earliest point feasible within the construction schedule.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the MBUAPCD shall also be visible to ensure compliance with Rule 402 (Nuisance).

AQ-2 Prior to commencement of construction activities, the contractor shall appoint a construction foreman to act as site monitor to ensure that the dust control measures are implemented. Evidence of implementation shall be submitted to the City of Greenfield Planning Department within three days of commencement of grading, and monthly thereafter as long as grading occurs. In addition, a publicly-visible sign written in English and Spanish with the telephone number and person to contact regarding dust complaints should be posted at the project site. This person shall respond and take corrective action within 48 hours. The phone number of the air district shall also be visible to ensure compliance with rule 402 (nuisance).

AQ-3. The Golden State, Zen Brand, and Redhunt project developers shall reduce nitrogen oxides exhaust and particulate matter emissions by implementing one of the following measures prior to the start of construction:

- Provide a plan, acceptable to the air district, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles and equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent nitrogen oxides reduction and 45 percent particulate matter reduction compared to the most recent CARB fleet average for the time of construction; or
- Provide a plan, acceptable to the air district, that all off-road construction vehicles/equipment greater than 50 horsepower that will be used on site for more than one week shall be manufactured during or after 2001, or equipped with diesel particulate matter filters such that they meet the nitrogen oxides emissions standard of 6.9 grams per brake horsepower hour.
- Prior to the onset of site preparation, grading and construction activities, the project developers shall require in construction contracts that all off-road construction vehicles comply with the detailed specifications required in Mitigation Measure AQ-4 and shall submit evidence demonstrating compliance with this measure to the City of Greenfield Planning Department for review and approval.

AQ-4. The Golden State, Zen Brand, and Redhunt project developers shall reduce NOx and particulate matter exhaust emissions by implementing the following measures prior to the start of construction:

- Contractors shall install temporary electrical service whenever possible to avoid the need for independently-powered equipment (e.g. compressors).
- Signs at the construction site shall be clearly visible to advise that that diesel equipment standing idle for more than two minutes within 200 feet of sensitive receptors shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks may keep their engines running continuously if on-site and staged at least 100 feet away from residential areas.
- Properly tune and maintain equipment for low emissions.
- Stage large diesel powered equipment at least 200 feet from any sensitive land uses (e.g., occupied residences).

Biological Resources

BIO-1 For all projects, if noise generation, ground disturbance, vegetation removal, or other construction activities begin during the bird nesting season (February 1 to August 31), or if construction activities are suspended for at least two weeks and recommence during the bird nesting season, then the project developer will retain a qualified biologist to conduct a pre-construction survey for nesting birds. The survey will be performed within suitable nesting habitat areas on and adjacent to each site to ensure that no active nests would be disturbed during project implementation. The surveys will be conducted no more than two weeks prior to the initiation of disturbance and/or construction activities at each project site. A report documenting survey results and plan for active bird nest avoidance (if needed) will be completed by the qualified biologist and submitted to the City of Greenfield for review and approval prior to disturbance and/or construction activities.

If no active bird nests are detected during the survey, then project activities can proceed as scheduled. However, if an active bird nest of a protected species is detected during the survey, then a plan for active bird nest avoidance will determine and clearly delineate an appropriately sized, temporary protective buffer area around each active nest, depending on the nesting bird species, existing site conditions, and type of proposed disturbance and/or construction activities. The protective buffer area around an active bird nest is typically 75-250 feet, determined at the discretion of the qualified biologist.

To ensure that no inadvertent impacts to an active bird nest will occur, no disturbance and/or construction activities will occur within the protective buffer area(s) until the juvenile birds have fledged (left the nest), and there is no evidence of a second attempt at nesting, as determined by the qualified biologist.

The project developers shall be responsible for implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

BIO-2 For all projects, prior to tree removal each project developer shall retain a qualified biologist to conduct a focused survey for bats and potential roosting sites within trees to be removed and within 250 feet of the proposed development area. These surveys shall be conducted no more than 15 days prior to the start of construction. The surveys can be conducted by visual identification and can assume presence or the bats can be identified to a species-level with the use of a bat echolocation detector such as an "Anabat" unit.

If no roosting sites or bats are found, a letter report confirming absence shall be sent to the City of Greenfield and no further mitigation is required.

If roosting sites are found, a survey letter report and supplemental documents shall be provided to the City of Greenfield prior to demolition permit issuance and the following monitoring and exclusion, and habitat replacement measures shall be implemented:

- a. If bats are found roosting outside of nursery season (May 1st through October 1st), then they shall be evicted as described under (b) below. If bats are found roosting during the nursery season, then they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of

the roost bat pups, if possible, or monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a maternal roost, then the bats shall be evicted as described under (b). Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season.

A 250-foot (or as determined in consultation with the CDFW) buffer zone shall be established around the roosting site within which no construction or tree removal shall occur.

- b. If a non-breeding bat hibernaculum is found in a tree or snag scheduled for removal, the individuals will be safely evicted, under the direction of a qualified bat biologist and in consultation with the CDFW. Methods could include carefully opening the roosting area by hand to expose the cavity. Removal of the tree or snag shall be conducted no earlier than the following day (i.e., at least one night will be provided between initial disturbance and the tree removal). This action will allow bats to leave during dark hours, which increases their chance of finding new roosts with a minimum of potential predation.

The project developers will be responsible for the implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

BIO-3 This measure applies to the following projects: Cannaculture Collective Cultivation, Emerald Mission Cultivation and Manufacturing, Golden State Alternative Care Cultivation, Kool Gildea Cultivation and Manufacturing, Paper Plane Traders Cultivation and Manufacturing, and Redhunt Corporation Cultivation and Manufacturing. To avoid/minimize potential impacts to burrowing owl, the individual developers will retain a qualified biologist to conduct a two-visit (i.e. morning and evening) presence/absence survey at areas of suitable habitat on and adjacent to each project site no less than 14 days prior to the start of construction. Surveys shall be conducted according to methods described in the CDFW 2012 Staff Report on Burrowing Owl Mitigation. If these pre-construction “take avoidance” surveys performed during the breeding season (February through August) or the non-breeding season (September through January) for the species locate occupied burrows in or near a construction area, then consultation with the CDFW would be required to interpret survey results and develop a project-specific avoidance and minimization approach.

The project developers shall be responsible for the implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

BIO-4 For the Golden State Alternative Care Cultivation project, prior to initiation of ground disturbance or construction activities at the project, developer shall consult with the Central Coast Regional Water Quality Control Board to determine if the on-site detention pond and/or ditches are subject to its jurisdiction. If not, the developer shall provide evidence of this determination to the City of Greenfield Planning Department and no further action is required. If the Central Coast Regional Water Quality Control Board determines that these facilities are subject to its regulation, the project developer shall

coordinate with the Central Coast Regional Water Quality Control Board to obtain a Clean Water Act Section 401 Water Quality Certification, or obtain approval through project-specific post-construction requirements to protect water quality.

The project developer shall be responsible for the implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

Greenhouse Gas Emissions

GHG-1 Prior to issuance of a building permit, the Redhunt applicant shall prepare a Greenhouse Gas (GHG) Reduction Plan that identifies all feasible GHG reduction measures that shall be incorporated into the project to reduce annual project operational GHG emissions to below 1,150 MT CO₂e annually. The GHG Reduction Plan shall also identify the value of GHG reductions associated with each measure, and provide evidence to the satisfaction of the Community Services Director that supports the level of reduction assumed. All measures shall be implemented and operational prior to final occupancy.

On-site reduction measures shall be prioritized. If all feasible on-site reduction measures are not sufficient to reduce emissions to below the threshold of significance, the applicant shall identify feasible off-site reduction measures available through projects or programs within the air basin, if any (e.g. energy efficiency retrofit programs, engine replacement programs, etc.) to reduce the balance of emissions to below the threshold. If such programs are not in place or deemed infeasible based on evidence supplied by the applicant and accepted by the Community Services Director, purchase of carbon off-sets that are validated through a recognized source such as the Climate Action Registry may then be considered to meet the balance of the GHG emissions reduction volume required. Evidence of an off-set purchase contract shall be provided prior to approval of an occupancy permit. The GHG Reduction Plan is subject to review and approval of the Community Services Director.

On-site GHG reduction measures that should be considered for inclusion in the GHG Reduction Plan include, but are not limited to the following:

- Design the project to exceed current Title 24 (e.g. solar power) to offset project energy demands;
- Provide on-site renewable energy;
- Install energy efficient (e.g. Energy Star) appliances;
- Include the necessary infrastructure in the project design (e.g. physical design, energy, and fueling) to support the deployment of zero emission technologies now and into the future including zero emission (battery electric or fuel cell electric) to the fullest extent feasible;
- To the fullest extent possible, utilize zero and near-zero technologies including battery electric or fuel cell electric technology;
- Develop strategies to promote telecommuting, reduce transit costs to employees, and to develop innovative ways to encourage and facilitate rideshare, transit, cycling, and walking for employee work trips and/or work breaks;

- Use reclaimed, gray and/or locally sourced water;
- Incorporate indoor water conservation measures, such as use of ultra-low-flow toilets and faucets (bathrooms); and
- Incorporate water efficient irrigation into the project design.

Hazardous Materials

HAZ-1 Prior to the issuance of a permit to remodel, a demolition permit, or a grading permit that involves demolition of existing structures, the developers of the Zen Brand and Paper Plane Traders projects shall contract with a certified asbestos/lead paint consultant to perform an asbestos and lead paint inspection prior to the demolition or renovation of regulated structures. Should the inspection identify the presence of asbestos and/or lead paint, the developers shall contract for material abatement. Removal or disturbance of asbestos and lead paint requires adherence to the California Division of Occupational Safety and Health and California Department of Public Health regulations. Should the asbestos and lead paint inspection indicate the presence of significant levels of asbestos, the developers shall contract a California State registered and licensed asbestos abatement contractor to perform the asbestos work. The asbestos and lead paint inspection and evidence of abatement of any identified lead based paint and regulated asbestos containing materials shall be presented to the City prior to issuance of a permit to remodel or a grading and/or demolition permit.

Date Prepared: May 31, 2017

End of Review Period: June 20, 2017

Date Adopted by City Council:

Mic Steinmann
Community Services Director
msteinmann@ci.greenfield.ca.us

INITIAL STUDY

SEVEN MEDICAL MARIJUANA FACILITIES

PREPARED FOR

The City of Greenfield

599 El Camino Real

P.O. Box 127

Greenfield, CA 93927

Tel 831.674.5591

PREPARED BY

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A. BACKGROUND

Project Title	Seven Medical Marijuana Facilities Use Permits
Lead Agency Contact Person and Phone Number	Mic Steinmann, Community Services Director, City of Greenfield (831) 831.674.5591
Date Prepared	May 25, 2017
Study Prepared by	EMC Planning Group Inc. 301 Lighthouse Avenue, Suite C Monterey, CA 93940 Teri Wissler Adam, Senior Principal Ron Sisseem, MRP, Principal Sally Rideout, EMPA, Principal Planner Polaris Kinison Brown, MS, Principal Planner Rachel Hawkins, JD, Assistant Planner Dana McCarthy, PG, Assistant Planner Andrea Edwards, Senior Biologist Emily Malkauskas, Assistant Biologist
Projects' Locations	Northern portion of the City of Greenfield along El Camino Real
Projects' Sponsors' Names and Addresses	Canna Culture Collective, Inc. 3591 Charter Park Drive San Jose, CA 95136 Emerald Mission 30823 Mainmast Drive Agoura Hills, CA 91301 Golden State Alternative Care, Inc. 11301 W. Olympic Blvd., Suite 542 Los Angeles, CA 90064 Kool Gildea, Inc. 215 W. 7th Street, Suite 909 Los Angeles, CA 90014

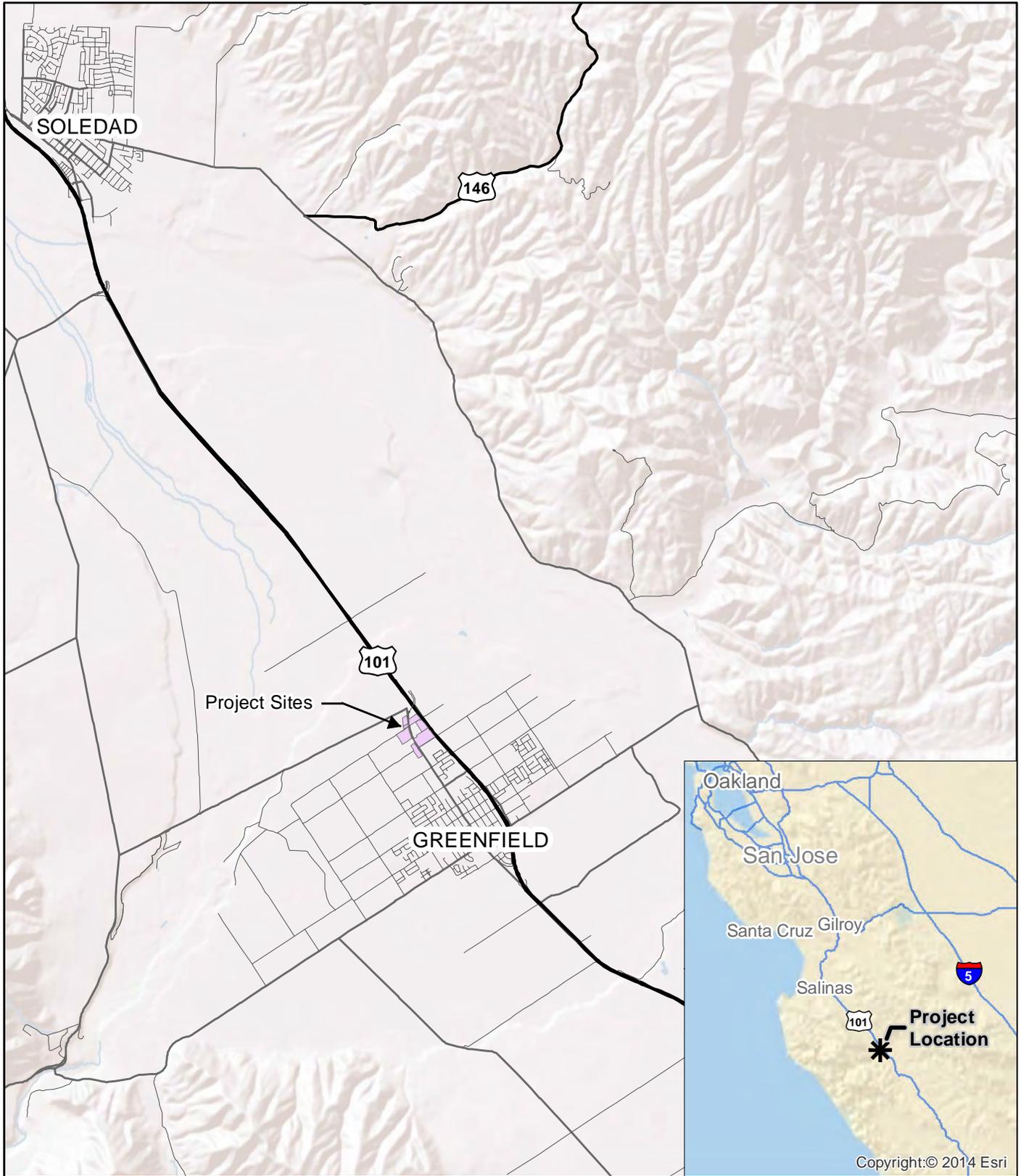
	<p>Paper Plane Traders 7288 Mulholland Drive Los Angeles, CA 90068</p> <p>Red Hunt Greenfield Prop Owner, LLC 594 Broadway, Suite 1010 New York, NY 10012</p> <p>Zen Brand Collective, Inc. 845 14th Street, Apt. 5 Santa Monica, CA 90403</p>
General Plan Designations	Light Industrial with an Industrial Park Overlay, and Highway Commercial with Gateway and Mixed Use Overlays
Zoning	Light Industrial (I-L) with an Industrial Park Overlay (IPO), and Highway Commercial (C-H) with a Gateway and Mixed Use Overlay (GMO)

Setting

The City of Greenfield has received seven use permit applications for medical marijuana facilities, each from different applicants. In order to streamline environmental review of the seven proposed facilities, the city is evaluating all seven projects within one initial study. All of the project sites are located at the northern entrance of Greenfield west of U.S. Highway 101 along El Camino Real. [Figure 1, Location Map](#), illustrates the regional and vicinity location of the project sites and [Figure 2, Aerial Vicinity Map](#), presents the specific location of each site, as well as site and surrounding land uses. Photographs of each of the project sites are presented in [Figures 3 through 6](#).

Description of Projects and Project Sites

The seven proposed projects are presented in Table 1, Project Summaries, and are briefly discussed below. Site plans for each of the projects are presented in [Figures 7 through 13](#).



0 1.5 miles

Project Sites

Source: Monterey County GIS 2016, ESRI 2016

Figure 1

Location Map



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Source: Monterey County 2016

Figure 2
Aerial Vicinity Map

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Paper Plane Traders Site



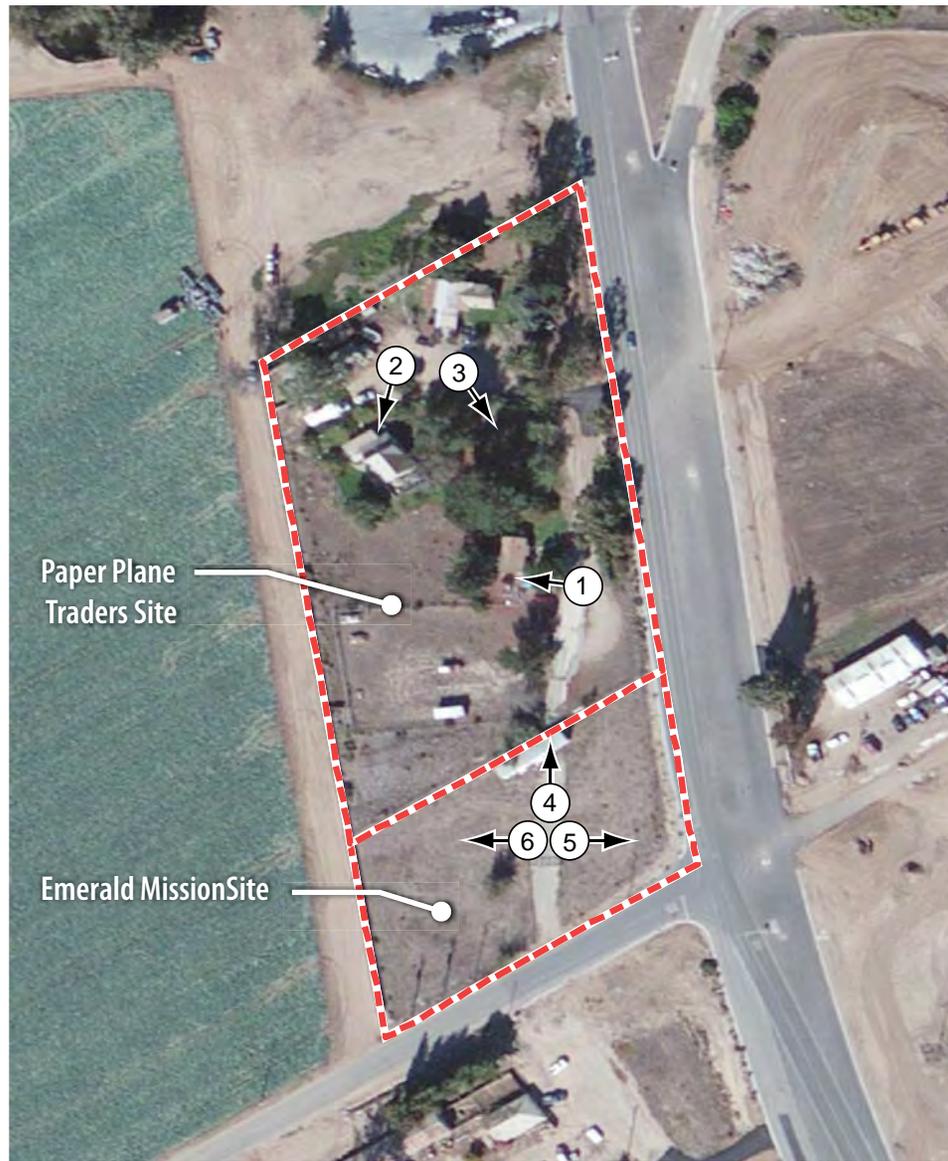
① Existing house on southwestern portion of the site



② Existing out building on northern portion of the site



③ Existing house on northern portion of the site



Project Sites

Source: Google Earth 2016, Monterey County GIS 2016,
Photographs: EMC Planning Group 5/2017

Emerald Mission Site



④ Northern view from the center of the site



⑤ Eastern view from the center of the site



⑥ Western view from the center of the site



Figure 3
Site Photographs 1

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Cannaculture Collective Site



① North western view of the site from the south east



② Southern view of existing metal warehouse



③ North eastern view of the site



① ② ③ ④ ⑤ ⑥
 Project Sites

Source: Google Earth 2016, Monterey County 2016
 Photographs: EMC Planning Group 5/2017

Kool Gildea Site



④ Existing retention pond



⑤ View to the north from the interior of the site



⑥ View to the west from the interior of the site

Figure 4
Site Photographs 2

This side intentionally left blank.

Redhunt Corporation Site



① Existing mobile home on southeastern corner of site



② Northeastern view of the site from the west



③ Southern view of the site from the north



④ Project Sites

Source: Google Earth 2016, Monterey County GIS 2016
Photographs: EMC Planning Group 5/2017

Zen Brand Site



④ View of existing warehouse on the northern parcel of the project site



⑤ View of Pine Ave which bisects the site



⑥ View of existing warehouse on the middle parcel of the project site

Figure 5
Site Photographs 3

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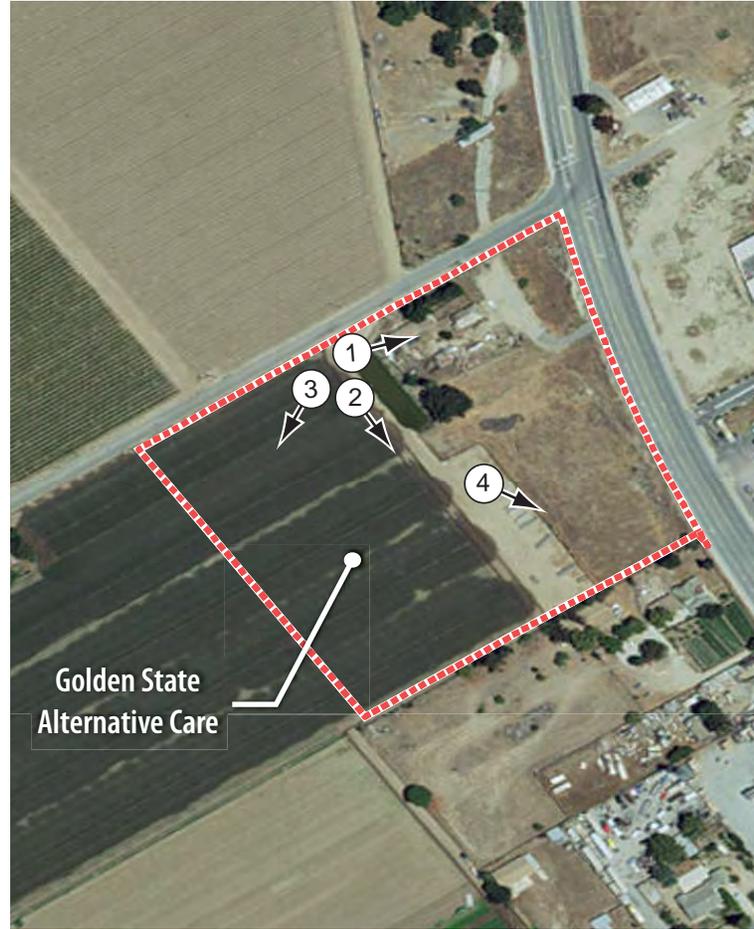
Golden State Alternative Care



① Eastern view from the middle of the northern project boundary



② Existing retention pond



Project Site

Source: Google Earth 2016, Monterey County 2016
Photographs: EMC Planning Group 5/2017

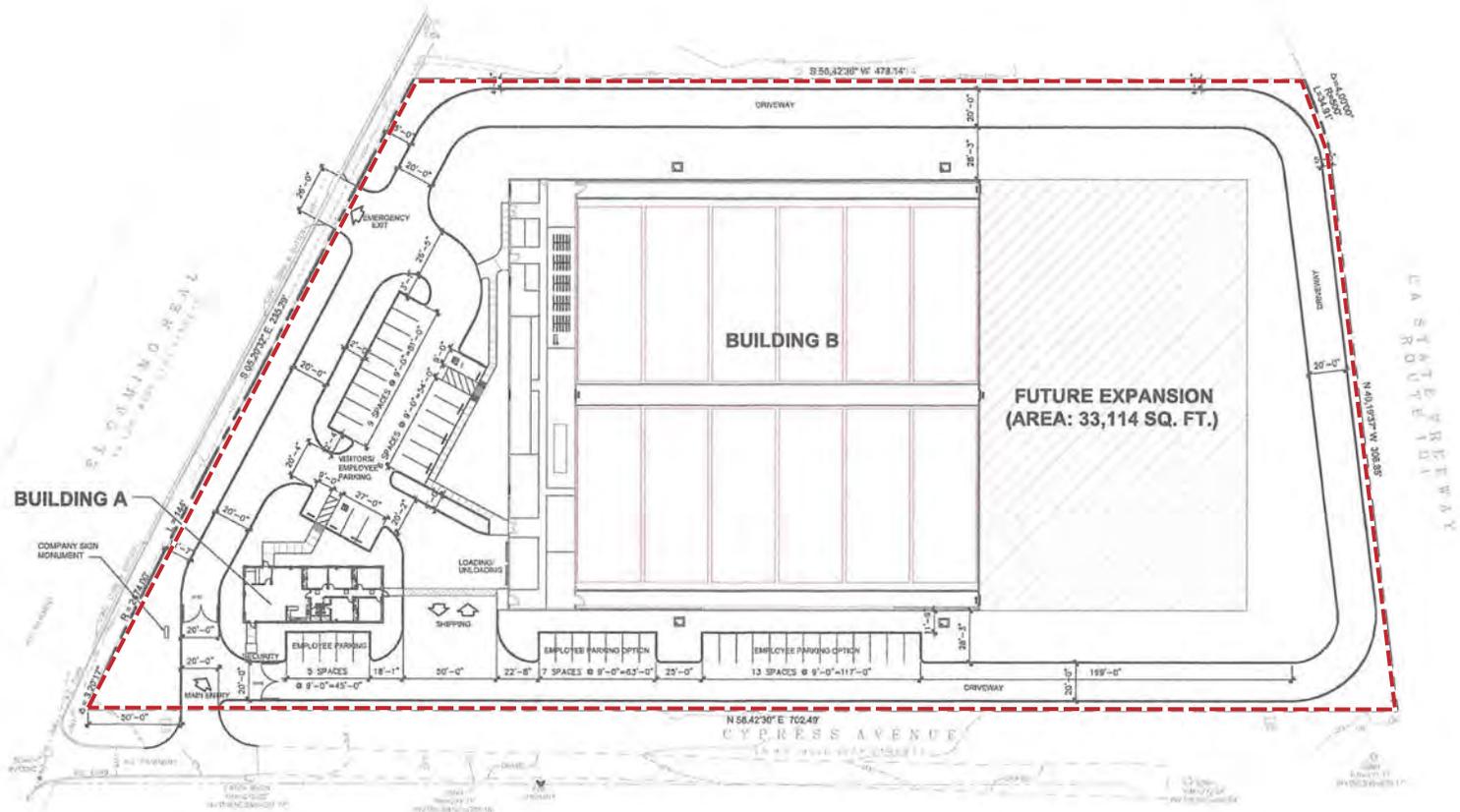


③ Southern views from the middle of the northern project boundary



④ Southeastern view from the interior of the site

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 Project Site

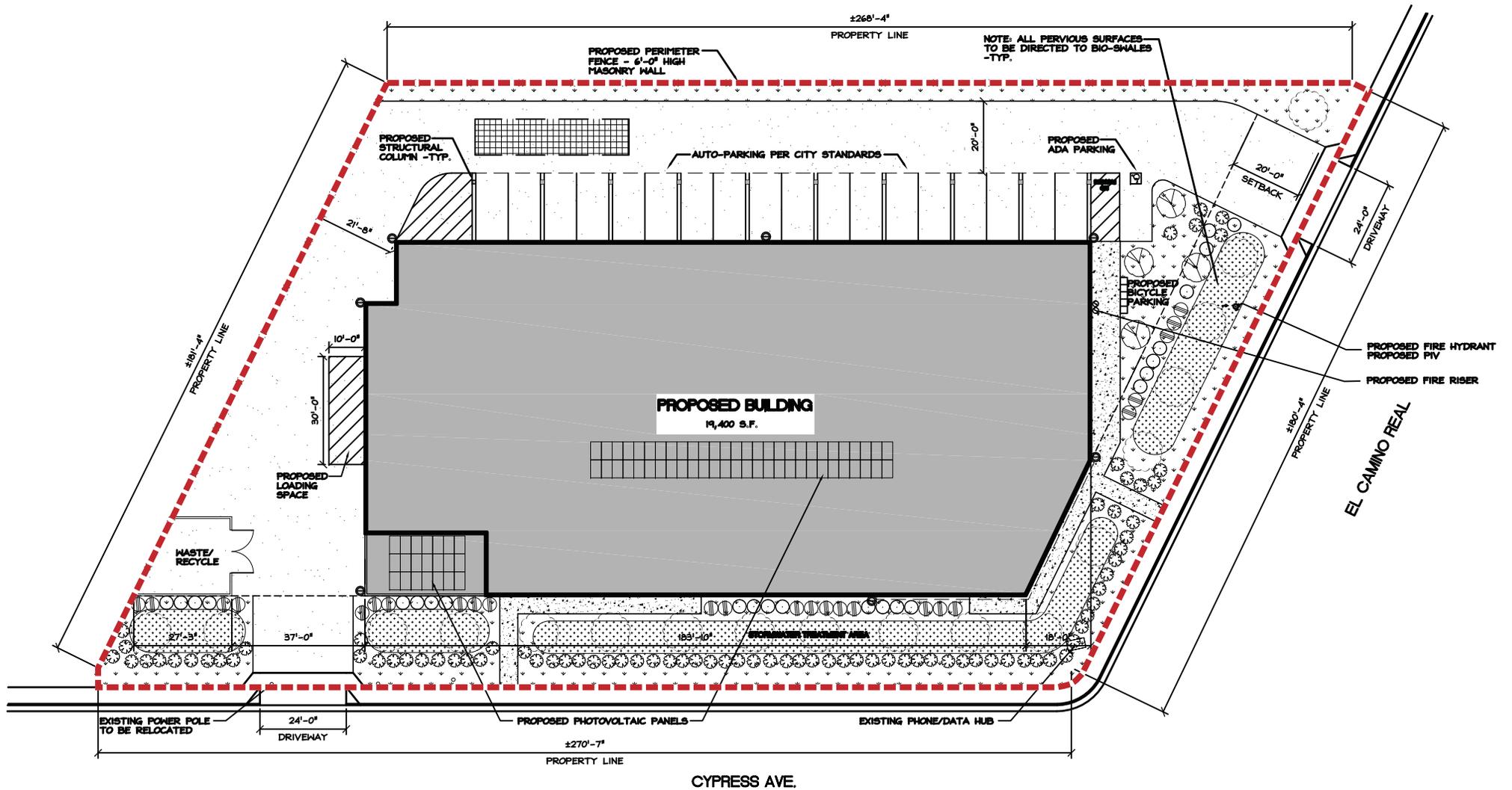
Source: RCUSA Corporation 2016



Figure 7
Site Plan - Cannaculture Collective

Seven Medical Marijuana Facilities Initial Study

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 Project Site

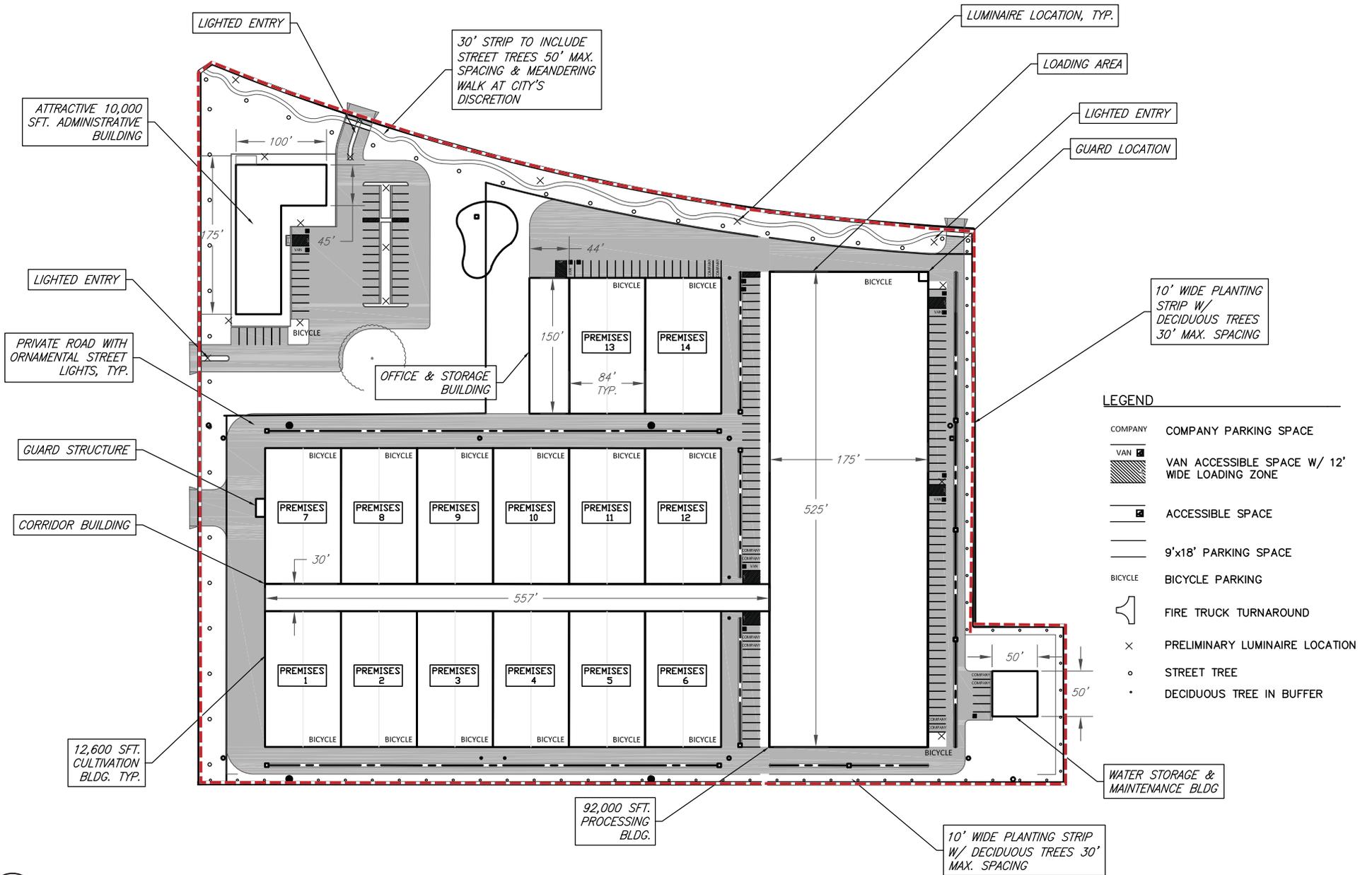
Source: Belli Architectural Group 2017



Figure 8
Site Plan - Emerald Mission

Seven Medical Marijuana Facilities Initial Study

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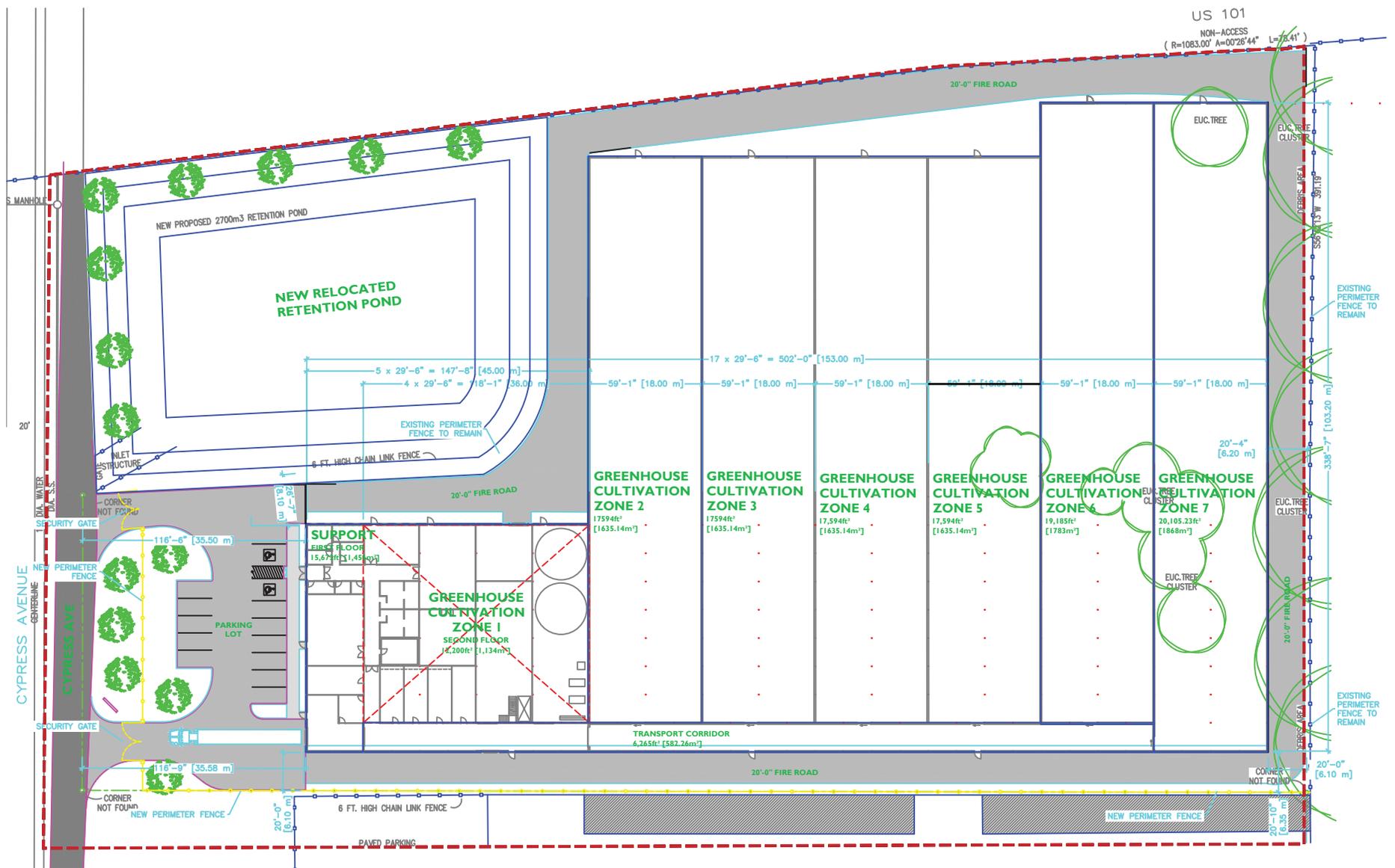
Source: Hogan Land Services 2017



Project Site

Figure 9
Site Plan - Golden State Alternative Care

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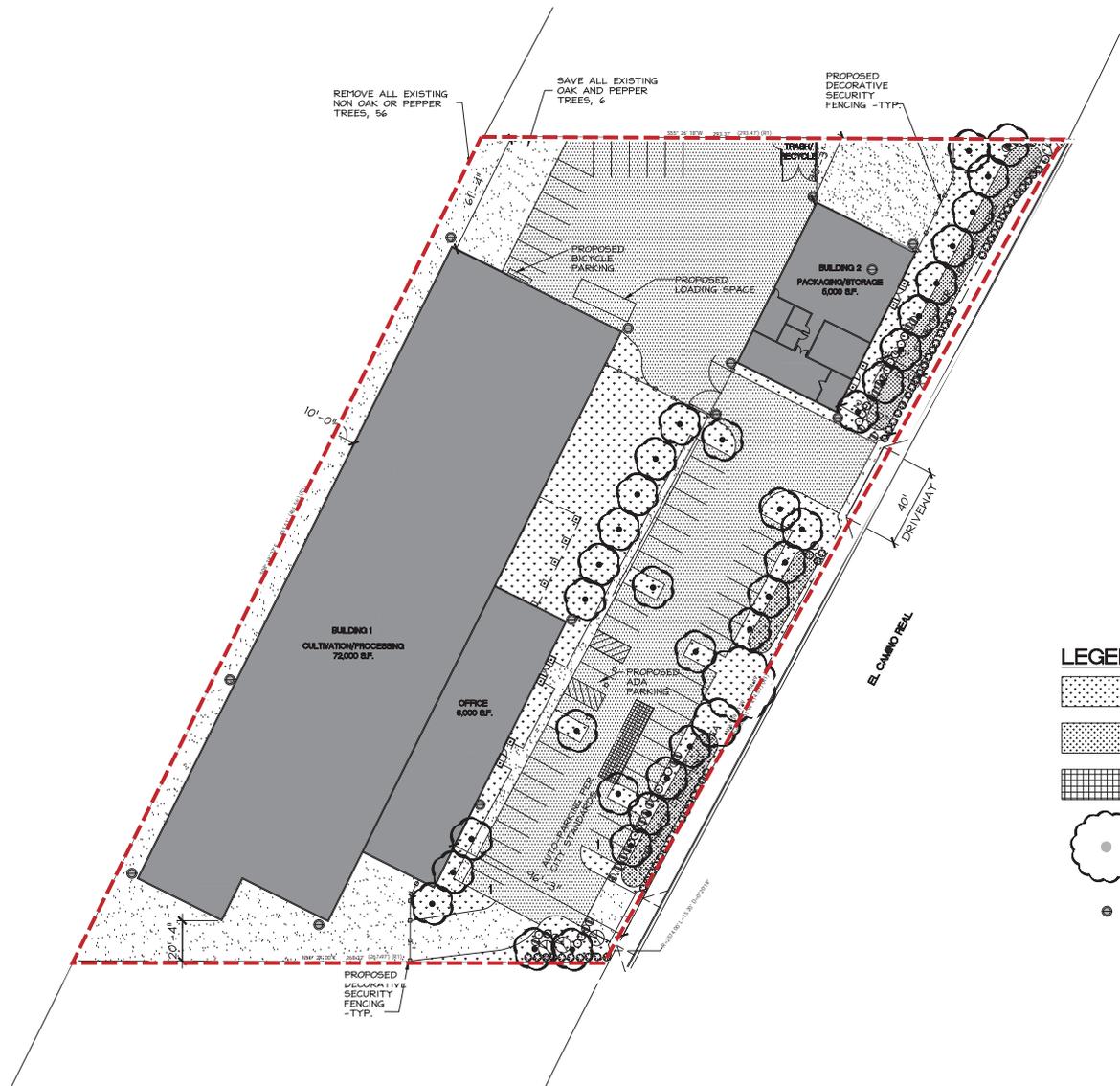
Project Site

Source: Larssen Ltd Greenhouse Engineering 2017



Figure 10
Site Plan - Kool Gildea

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LEGEND

	(N) LANDSCAPE		(N) PERVIOUS PAVEMENT
	(N) BIOSWALE AREA		(N) A.C. PAVEMENT
	(N) STORMWATER MANAGEMENT UNDERGROUND INFILTRATOR CHAMBERS		(N) BUILDING
	(E) TREE TO REMAIN		(E) TO BE DEMOLISHED
	(N) SECURITY CAMERA		NEW TREE
			(E) TREE TO BE REMOVED



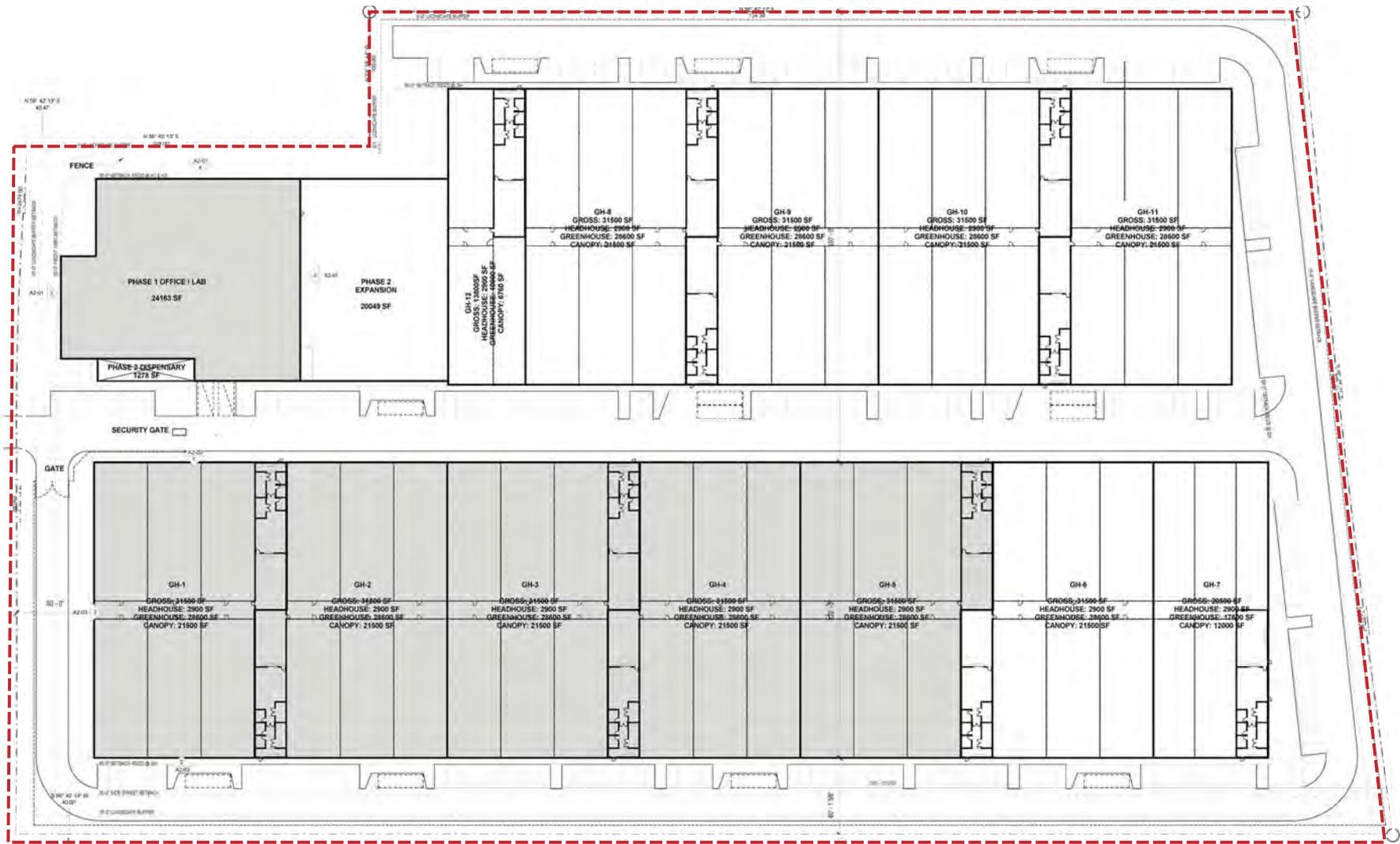
Project Site

Source: Belli Architectural Group 2016



Figure 11
 Site Plan - Paper Plane Traders
 Seven Medical Marijuana Facilities Initial Study

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Project Site

PHASE 1
PHASE 2

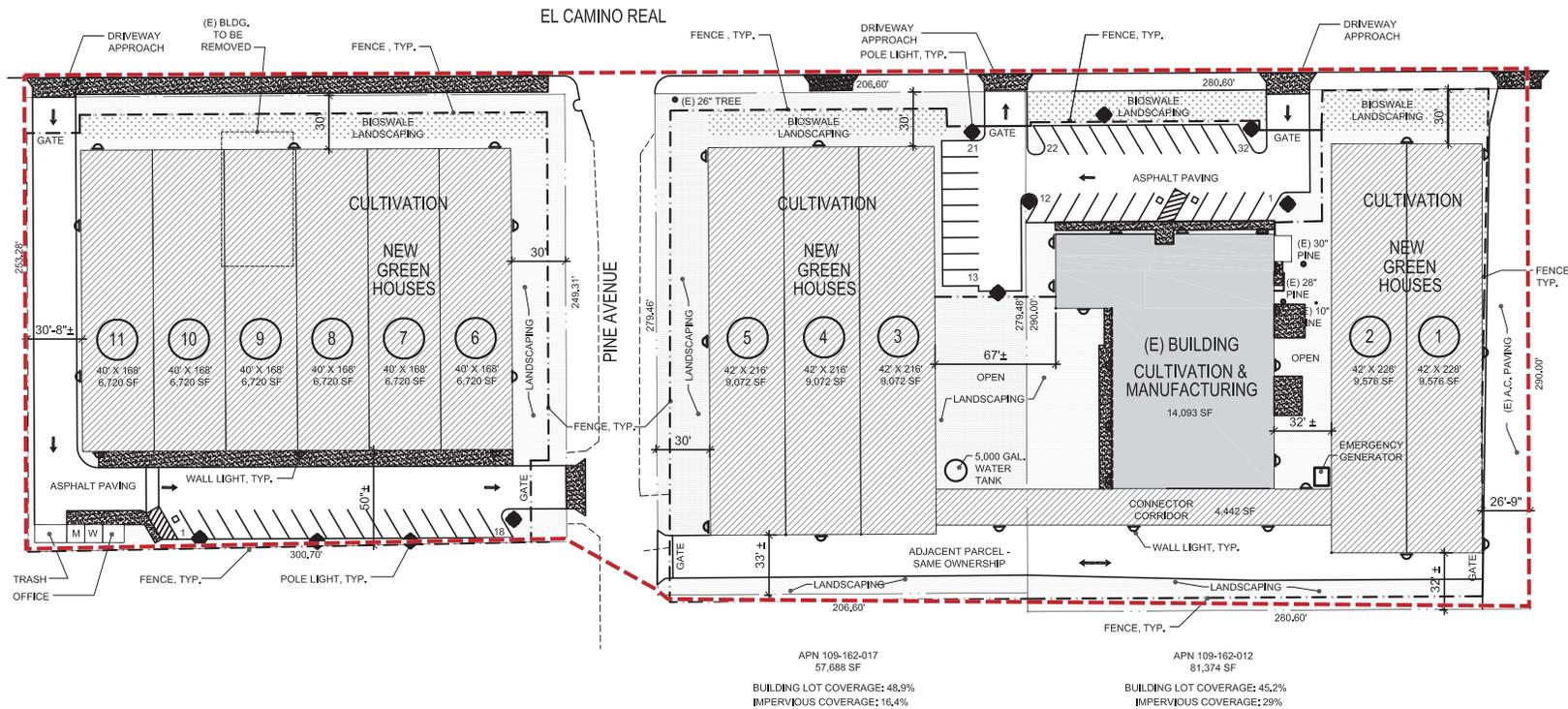
PARKING SPACES : 227
3/1000 SF x OFFICE/LAB 44900 SF
1/3000 SF x GREENHOUSE 335500 SF
LOADING DOCKS : 14

Source: Valerio Dewalt Train Associates, Inc 2016



Figure 12
Site Plan - Redhunt Corporation
Seven Medical Marijuana Facilities Initial Study

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Project Site

Source: Wesley Jay Beebe 2017



Figure 13
 Site Plan - Zen Brand

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Table 1 Project Summaries

Number	Name	Location	Parcel Size (Acres)	Facility Type	Building Square Footage	General Plan and Zoning
1	Cannaculture Collective	802 El Camino Real APN 109-141-004	4.6	Cultivation	96,645	Highway Commercial with Gateway and Mixed Use Overlays (C-H GMO)
2	Kool Gildea	600 Cypress Avenue APN 109-144-010, potential expansion to 109-144-009	3.1 potential expansion to 4.9 total	Cultivation and Manufacturing	143,806	Light Industrial with an Industrial Park Overlay (I-L IPO)
3	Redhunt Corporation	600 Pine Avenue APN 109-144-007	13.0	Cultivation and Manufacturing	366,500	Light Industrial with an Industrial Park Overlay (I-L IPO)
4	Zen Brand	689 El Camino Real APNs 109-162-012 and -017, potential expansion to 109-161-011	3.2 potential expansion to 4.9 total	Cultivation and Manufacturing	105,868	Light Industrial with an Industrial Park Overlay (I-L IPO)
5	Golden State Alternative Care	799 El Camino Real APNs 109-161-015, -016, -017, and -018	10.1	Cultivation (Manufacturing already permitted)	213,145	Light Industrial with an Industrial Park Overlay (I-L IPO)
6	Emerald Mission	801 El Camino Real APN 109-151-021	1.1	Cultivation and Manufacturing	46,075	Highway Commercial with Gateway and Mixed Use Overlays (C-H GMO)
7	Paper Plane Traders	851 El Camino Real APN 109-151-020	2.6	Cultivation and Manufacturing	83,000	Highway Commercial with Gateway and Mixed Use Overlays (C-H GMO)
Totals			41.2		1,055,039	

SOURCE: City of Greenfield

Cannaculture Collective Cultivation

The 4.6-acre Cannaculture Collective project site, APN 109-141-004, is located at 802 El Camino Real north of the extension of Cypress Avenue. The site is mostly vacant land with one 2,250 square foot metal warehouse built in 1985. Cannaculture proposes a cultivation facility on this site with 96,645 square feet of building space. This project proposes renovation of the existing metal warehouse (including removal of the metal cladding). Proposed improvements to the site include greenhouses, a 45-space surface parking lot, and infrastructure improvements such as storm water detention, paved access to and within the site, sidewalks, lighting and landscaping.

Emerald Mission Cultivation and Manufacturing

The Emerald Mission project site is 1.1 acres located at 801 El Camino Real, north of Cypress Avenue. Emerald Mission proposes a cultivation and manufacturing facility, with 42,000 square feet of building space. A mobile home, that will be hauled away, is present on the otherwise vacant site. The proposed facility includes greenhouses, manufacturing areas, warehouse and office uses, and storage areas. Proposed site improvements include a parking lot, driveways, storm water drainage facilities, and landscaping.

Golden State Alternative Care Cultivation

The 10.1-acre Golden State Alternative Care project site, APNs 109-161-015,-016, -017, and -018, is located at 799 El Camino Real, south of Cypress Avenue. This site is vacant fallow/agricultural land. Golden State Alternative Care proposes a cultivation facility with 213,145 square feet of building space. The applicant currently has approvals from the City of Greenfield for a manufacturing facility immediately adjacent to this site; impacts related to the approved manufacturing facility are not discussed in this initial study. The proposed project includes an office building, a processing building, a corridor building and greenhouses, as well as parking and landscaping.

Kool Gildea Cultivation and Manufacturing

The 4.9-acre Kool Gildea project site including APNs 109-144-010 and 109-144-009 is located at 600 Cypress Avenue, which will be extended east of El Camino Real. The site is vacant containing only an existing City-owned retention pond on parcel 109-144-009, a portion of which will be sold to Kool Gildea. Kool Gildea proposes a cultivation and manufacturing facility, with 75,823 square feet of building space including seven cultivation zones, and a 13-space parking lot on parcel 109-144-010.

Paper Plane Traders Cultivation and Manufacturing

Paper Plane Traders proposes a 2.6-acre cultivation and manufacturing facility with 83,000 square feet of building space at 851 El Camino Real, south of the U.S. Highway 101 off-ramp. This project proposes to construct a cultivation/processing building with attached office, a packaging/storage building, a 52-space parking lot, and landscaping. Most of the existing trees on the site would be removed, but a significant number would be replaced with new tree plantings. A number of the existing trees are dead.

Redhunt Corporation Cultivation and Manufacturing

The 13-acre Redhunt Corporation project site, APN 109-144-007, is located at 600 Pine Avenue. The site is mostly vacant and includes a mobile home and outbuildings that will be removed as part of the proposed project. Redhunt proposes a cultivation and manufacturing facility, with 379,712 square feet of building space. This project proposes construction of an office/lab and 11 cultivation units, as well as a 210-space parking lot.

Zen Brand Cultivation and Manufacturing

The 4.9-acre Zen Brand project site, APNs 109-162-012, -017, and 109-161-011 is located at 689 and 701 El Camino Real with Pine Avenue bisecting the site. The site is mostly disturbed/developed with existing gravel parking lots and two existing commercial warehouse buildings, one was built in 1969 and the other in 1989. One will be removed and the other will be renovated and reused as part of the proposed project. Zen Brand proposes a cultivation and manufacturing facility, with 65,700 square feet of building space including cultivation areas, two manufacturing areas, office areas, and a cold/dry storage area.

General Plan Land Use Designation

Golden State Alternative Care, Kool Gildea, Red Hunt, and Zen Brand

The Greenfield General Plan (General Plan) land use designation for these project sites is Light Industrial with an Industrial Park Overlay. The Light Industrial designation allows for uses such as processing, packaging, machining, repair, fabricating, distribution, warehousing and storage, research and development, and similar uses which do not result in significant impacts from noise, odor, vibration, smoke, or pollutants. Standards for the Light Industrial land use designation include 30-foot front building setbacks and maximum building heights of 40 feet. The Industrial Park Overlay includes design, signage, and landscaping guidelines to ensure development of attractive and functional facilities. The proposed projects are all for the manufacturing and/or cultivation of medical marijuana and are consistent with the Light Industrial land use designation as it involves the industrial/commercial growing, processing, packaging, and distribution of finished and raw medicinal products. The proposed projects would conform to the Industrial Park Overlay requirements for design, signage, and landscaping guidelines.

Canna Culture, Emerald Mission, and Paper Plane

The General Plan land use designation for these project sites is Highway Commercial with Mixed Use and Gateway overlays. The General Plan Highway Commercial land use designation allows for a broad range of commercial and service activities that require convenient vehicular access and adequate parking. Uses include regional shopping centers, banquet facilities, gas stations vehicle sales and services, building material supply, warehousing, and similar facilities. This designation is intended primarily for service and retail uses that are not appropriate for the downtown area due to operational needs and characteristics. The purpose of the Mixed Use Overlay is to provide an opportunity for the development of residential units in conjunction with a different underlying land use designation. The Gateway Overlay is for commercial and visitor serving areas that are located at the northern and southern entrances to the community and serve as "gateways" to Greenfield. These areas should be made aesthetically attractive since they provide an

influential visual statement regarding the character of the community. Such areas should be designed to provide visual amenities that are not required for uses designed to serve more local needs. The purpose of the gateway overlay is to require the provision of attractive signage, additional landscaping, and greater attention to building design and lighting.

The proposed projects are all for the manufacturing and/or cultivation of medical marijuana. The proposed projects are consistent with the Highway Commercial land use designation as they involve commercial/industrial processing, packaging, and distribution of finished and raw medicinal products. The projects will conform with the additional design, signage, and landscaping requirements of the mixed use and gateway overlays.

Zoning

Golden State Alternative Care, Kool Gildea, Red Hunt, and Zen Brand

The Greenfield Municipal Code zoning classification for Kool Gildea, Red Hunt, Zen Brand, and Golden State Alternative Care is Light Industrial with an Industrial Park Overlay. Representative allowable uses include pharmaceutical manufacturing, retail, and agricultural processing. Ordinance 515, adopted in January of 2016, added Chapter 5.28 to the Municipal Code which specifically allows for cultivation, dispensing, and manufacturing of medical marijuana in areas zoned for light industrial use.

Canna Culture, Emerald Mission, and Paper Plane

Development in the highway commercial district is expected to be grouped near U.S. Highway 101. Uses in this district should be designed to serve primarily city residents but have regional draw. Chapter 5.28.160 contains regulations that allow medical marijuana facilities within the Highway Commercial zoning district. The City Council determined that medical marijuana facilities were an appropriate use for these project sites consistent with the Highway Commercial classification and approved regulatory permits for Paper Plane, Canna Culture, and Emerald Mission.

CEQA Methodology

This initial study has been prepared using the “tiering” provisions of CEQA as identified in CEQA Guidelines section 15152, wherein lead agencies are encouraged to use the analysis contained in EIRs for broader projects (i.e., a general plan EIR) as part of the analysis for subsequent specific projects. Section 15152(e) notes that tiering must be limited to situations where a project is consistent with the general plan and zoning. As discussed above, the individual proposed projects are consistent with the General Plan Light Industrial and Highway Commercial land use designation and with the applicable Light Industrial Zoning development standards. This enables the application of tiering provisions. The 2005 City of

Greenfield General Plan Final EIR (General Plan EIR) examined potential impacts of the 2005 General Plan, including future development of the project sites with Light Industrial and Highway Commercial uses. Consequently, where prudent and applicable, information contained in this initial study is tiered from the General Plan EIR to avoid redundancy and streamline the analysis process for the proposed projects.

The analysis methodology in this initial study also considers the streamlining provisions contained in section 15183 of the CEQA Guidelines, which addresses projects that are consistent with an established density for the site. CEQA mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This initial study focuses on evaluating whether there are project-specific impacts that are peculiar to the individual projects or their sites. As previously discussed, the proposed projects are consistent with the Light Industrial or Highway Commercial land use designations and consistent with applicable Light Industrial or Highway Commercial zoning development standards. Therefore, where appropriate, the discussion of impacts has been limited as mandated in CEQA Guidelines section 15183.

Section 15183 is particularly relevant for assessment of the incremental combined cumulative impacts of the seven proposed projects, especially where such impacts were found to be significant and unavoidable in the General Plan EIR. The General Plan EIR identified several significant and unavoidable impacts for which the City Council adopted a Statement of Overriding Consideration. In these cases, the analysis in this initial study concludes that the contribution of the seven proposed projects to these significant and unavoidable cumulative impacts was already identified and addressed in the General Plan EIR. This approach is consistent with CEQA Guidelines section 15183(c) which states, "if an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, as contemplated by subdivision (e) below, then an additional EIR need not be prepared for the project solely on the basis of that impact."

Other Public Agencies Whose Approval is Required

None

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

On April 12, 2017, the City of Greenfield sent a notification to the Ohlone/Coastanoan-Esselen Nation tribal representative regarding the proposed projects and offered early consultation to the tribe. On May 15, 2017, the tribe responded with a request for consultation. As stated in the request for consultation, the tribe is interested in receiving reports, establishing a procedure for disturbance of unknown sites, and a procedure for unknown sites. On May 19, 2017, city staff attempted to contact the tribe by phone to schedule a consultation, but was only able to leave a voicemail. As of the date of this initial study, the tribe had not responded to the city's phone call.

B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

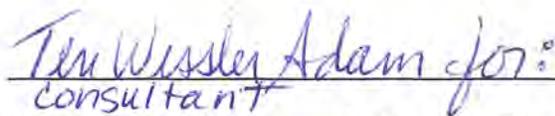
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|-------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Noise | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Mandatory Findings of Significance | | |

C. 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 will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will 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.
- 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 (1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (2) 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.


consultant

Mic Steinmann, Community Services Director

May 30, 2017

D. EVALUATION OF ENVIRONMENTAL IMPACTS

Notes

1. A brief explanation is provided for all answers except “No Impact” answers that are adequately supported by the information sources cited in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer is explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once it has been determined that a particular physical impact may occur, then the checklist answers indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less-Than-Significant Impact with Mitigation Measures Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less-Than-Significant Impact.” The mitigation measures are described, along with a brief explanation of how they reduce the effect to a less-than-significant level (mitigation measures from section XVII, “Earlier Analyses,” may be cross-referenced).
5. Earlier analyses are used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier document or negative declaration. [Section 15063(c)(3)(D)] In this case, a brief discussion would identify the following:
 - a. “Earlier Analysis Used” identifies and states where such document is available for review.
 - b. “Impact Adequately Addressed” identifies which effects from the checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and states whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. “Mitigation Measures” — For effects that are “Less-Than-Significant Impact with Mitigation Measures Incorporated,” mitigation measures are described which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances, etc.) are incorporated. Each reference to a previously prepared or outside document, where appropriate, includes a reference to the page or pages where the statement is substantiated.
7. “Supporting Information Sources” — A source list is attached, and other sources used or individuals contacted are cited in the discussion.
8. This is the format recommended in the CEQA Guidelines as amended January 2011.
9. The explanation of each issue identifies:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any to reduce the impact to less than significant.

1. AESTHETICS

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista? (1, 2, 3, 4, 5, 6, 7, 8, 9, 36)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway? (1, 2, 3, 4, 5, 6, 7, 8, 9, 12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings? (1, 2, 3, 4, 5, 6, 7, 8, 9, 16, 36)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (1, 2, 3, 4, 5, 6, 7, 8, 9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

- a. **Scenic Vista.** According to the General Plan, scenic vistas within Greenfield include rural landscapes, including vineyards and agricultural fields, and views of the Gabilan Mountain Range to the east and Santa Lucia Mountain range and Arroyo Seco to the west (General Plan Policy 7.9). Views through each of the project sites do include views of the mountain ranges to the east and west. Development of the seven project sites has the potential to partially block views of the Gabilan and Santa Lucia mountain ranges and surrounding agricultural fields from nearby public roads.

The General Plan EIR found that implementation of the General Plan, including the assumption that the project sites would be developed with Light Industrial and Highway Commercial uses, would have a significant and unavoidable impact on scenic vistas. General Plan Policy 7.9.2 requires that development is designed to take advantage of view opportunities and minimize visual impacts to the Gabilan and Santa Lucia mountains. General Plan Land Use Policies 2.1.1 and 2.1.7 require new development to be consistent with the scale, appearance, and rural community character of Greenfield’s neighborhoods and require agricultural buffers on developments adjacent to agricultural land consistent with the Local Agency Formation Commission’s (LAFCO) requirements. The General Plan EIR determined that compliance with General Plan Conservation, Recreation and Open Space

Element policies 7.9.2 and related programs and Land Use policies 2.1.1 and 2.1.7 and related programs would partially mitigate the impacts. The proposed projects will be required to comply with the above policies as well as the additional overlay design guidelines.

There are no project-specific impacts of scenic vistas that are peculiar to the projects or their sites, having already been identified in the General Plan EIR as noted above. CEQA Guidelines section 15183(c) state that if an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, then an additional EIR need not be prepared for the project solely on the basis of that impact. The proposed projects would be consistent with General Plan policies and with Municipal Code development standards.

The City Council adopted a Statement of Overriding Considerations for this unavoidable impact. No further analysis is needed.

- b. **Scenic Resources within State Scenic Highways.** U.S. Highway 101 is the only highway passing through Greenfield. This highway is not listed as either a designated or eligible scenic highway. Thus, the projects would not have any impact on scenic resources within a state scenic highway.
- c. **Degradation of Visual Character.** Implementation of the General Plan, including development of the project sites, would result in increased conversion of mostly vacant, fallow, or agricultural land to developed land, which would alter the visual setting or character of the city. The alteration of the visual character of the city as a result of General Plan implementation, including development of the project sites with industrial/commercial uses was considered in the General Plan EIR.

Excluding the Zen Brand Facility project site, which is mostly developed/disturbed with several warehouse buildings, the project sites are either vacant fallow fields or contain limited residential development. These project sites would be converted from mostly undeveloped residential/vacant uses to a developed Light Industrial/Highway Commercial uses, which would considerably alter the visual character of the sites.

Golden State Alternative Care, Kool Gildea, Red Hunt, and Zen Brand. The General Plan's land use designation for Golden State Alternative Care, Kool Gildea, Red Hunt, and Zen Brand is Light Industrial with an Industrial Park Overlay. The Industrial Park Overlay includes design, signage, and landscaping guidelines. These projects would comply with these guidelines to ensure development of attractive and functional facilities on these project sites.

Canna Culture, Emerald Mission, and Paper Plane Traders. The General Plan land use designation for Canna Culture, Emerald Mission, and Paper Plane Traders is Highway Commercial with Mixed Use and Gateway overlays. These project sites are part of Greenfield's northern gateway, which is defined as the area along El Camino Real at the city's northern entrance, from Thorne Road south to Cypress Avenue. The General Plan states that creating an attractive entry to the city will enhance the city's sense of place, provide a transition between the surrounding fields and vineyards and the city, and provide an influential visual statement regarding the character of the community. To that end, development within this northern gateway area must provide a greater attention to aesthetics, architectural design, landscaping, lighting, site development, and enhanced streetscape design. To truly present an appropriate visual statement, the El Camino Real streetscape needs to reflect a uniform design theme from Thorne Avenue to Memorial Hall. It is the intent of the Community Services Director that all approved applicants along the El Camino Real corridor work together to develop a master planned streetscape treatment, including security fencing along El Camino Real for each property, landscaping, street lighting, sidewalks, and bike lanes. The beginning point is the Paper Plane Traders property.

The farmhouse design, tree replanting, and landscaping along El Camino Real that are proposed as part of the Paper Plane Traders project will contribute to creating an attractive entrance to Greenfield that reflects, enhances, and celebrates the community's agricultural roots. Paper Plane, Cannaculture, and Emerald Mission all provide an aesthetic softening transition between the surrounding fields and vineyards and the city.

All Projects. All projects will be required to undergo design review by the Planning Commission and design approval by the City Council, which will ensure that aesthetically pleasing project designs are implemented that adhere to General Plan policies and goals. The General Plan EIR found that implementing the General Plan, including the assumption that the sites would be developed with light industrial/highway commercial uses, would result in a significant and unavoidable impact due to changes in visual character. While development of each individual site would not likely result in significant impacts related to the visual change from vacant to developed land, the cumulative development of seven project sites may contribute to the visual degradation identified in the General Plan EIR. According to the General Plan EIR, implementation of Land Use policies 2.1.1, 2.1.7, 2.5.6 and related programs, which address visual resources and urban design, would partially reduce the impact, but not to less than significant. The proposed projects must comply with these policies which would serve to lessen their potential visual impacts.

The project-specific impact from change in visual character is not peculiar to the projects or their sites, having already been identified in the General Plan EIR as noted above. CEQA Guidelines section 15183(c) states that if an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, then an additional EIR need not be prepared for the project solely on the basis of that impact.”

The City Council adopted a Statement of Overriding Considerations for this unavoidable impact. No further analysis is needed.

- d. **Light and Glare.** The proposed projects would introduce new sources of light and glare that are typical of cultivation and manufacturing facilities. The main sources of daytime glare are sunlight reflecting from structures and other reflective surfaces and materials. The main sources of nighttime light include street lighting, parking lot lights, and security related lighting. The General Plan EIR considered impacts related to light and glare from implementation of the General Plan including development of the project sites with Light Industrial and Highway Commercial uses. The General Plan EIR found that development consistent with the General Plan could result in the introduction of a significant amount of new daytime light and glare and nighttime lighting to the planning area. These new light sources could result in adverse effects to adjacent land uses through the “spilling over” of light into these areas and “sky glow” conditions. The General Plan EIR found that implementation of Land Use policy 2.8.8 and program 2.8.D will reduce day and nighttime lighting impacts to a less-than-significant level. Required compliance with this policy and with Greenfield Municipal Code Section 17.56, which defines outdoor lighting standards, would ensure that lighting effects related to development of the seven proposed projects would be less than significant.

2. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts on agricultural resources are significant environmental effects and in assessing impacts on agriculture and farmland, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	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 nonagricultural use? (1, 2, 13)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? (1, 2, 14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

- a. **Conversion of Important Farmland.** According to the 2014 Important Farmland Map, all of the project sites, excluding a portion of the Golden State Alternative Care property, are either designated as “Urban and Built-Up Land” or “Other Land” and are not identified as containing Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Golden State property located at 799 El Camino Real, contains 6.47 acres of Prime Farmland that would be converted to an urban use upon development of the proposed project.

The General Plan EIR contemplated loss of important farmland, including the Prime Farmland on the project site, and found that no feasible mitigation measures are available to reduce the impacts related to this loss due to the implementation of the proposed General Plan. Although the city has incorporated a series of planning measures into the General Plan itself that recognize agriculture as an important resource, this impact was considered a significant and unavoidable impact of implementation of the General Plan.

There are no project-specific impacts related to the conversion of important farmland that are peculiar to the Golden State Alternative Care project or its site, those impacts have already been identified in the General Plan EIR as noted above. CEQA Guidelines section 15183(c) state that if an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, then an additional EIR need not be prepared for the project solely on the basis of that impact.” The proposed projects must be consistent with General Plan policies and with Municipal Code development standards.

The City Council adopted a Statement of Overriding Considerations for this unavoidable impact. No further analysis is needed.

- b-d. **Williamson Act/Zoning Conflict/Conversion of Forestland.** The project sites are not under Williamson Act contact and are not zoned for agricultural, forestland, or timberland uses. Therefore, the proposed projects would not conflict with agricultural, forestry timberland production, or forest land zoning or uses.
- e. **Conflicts with Agricultural Land.** The proposed projects are directly adjacent or within proximity to active agricultural lands. Nuisance conflicts are typically associated with locating sensitive residential uses adjacent to existing agricultural operations. The proposed uses would not be uniquely sensitive to nuisances for

adjacent agricultural operations, and in fact, include cultivation and/or manufacturing of medicinal plant products, activities that are similar to other agricultural production activities. For these reasons, the potential for land use conflicts leading to conversion of the adjacent agricultural land would be nominal and the impact is less than significant.

3. 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:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan? (1, 2, 10, 34, 38-41)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (1, 2, 10, 34, 38-41)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? (1, 2, 10, 34, 38-41)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations? (1, 2, 10, 34, 38-41)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people? (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

This section is based primarily on Monterey Bay Air Resources District (formerly Monterey Bay Unified Air Pollution Control District, hereinafter “air district”) guidance and methodologies for preparation of environmental documents, and the results of emissions modeling using the CalEEMod emissions modeling software. CalEEMod results are included in Appendix A.

- a,c. **Consistency with the Air Quality Management Plan.** The air district recently adopted the 2016 Air Quality Management Plan. The 2016 Air Quality Management Plan is an update to the 2012-2015 and 2008 Air Quality Management Plans and incorporates portions of these plans by reference. Projects related directly to population growth generate population-related emissions (e.g., motor vehicles, residential heating and cooling emissions). Population-related emissions have been estimated in the Air Quality Management Plan; population-related projects that are

consistent with these forecasts are consistent with the Air Quality Management Plan. Projects not related directly to population growth are considered to be consistent with the Air Quality Management Plan. Because the proposed projects are not population related, they would not conflict with the Air Quality Management Plan.

Cumulative. For cumulative impacts, the air district recommends that projects be assessed for consistency with the Air Quality Management Plan. The proposed projects are not population generating projects. Therefore, the projects would not conflict with or obstruct implementation of the Air Quality Management Plan, and would have a less-than-cumulatively considerable impact on air quality.

- b. **Air Quality Standards.** The project sites are located in the North Central Coast Air Basin, which is currently in non-attainment status with state standards for ozone and suspended particulate matter particulate matter (PM₁₀). State standards are promulgated by the California Air Resources Board as mandated by the California Clean Air Act. The air district has developed criteria pollutant emissions thresholds, which are used to determine whether or not a proposed project would violate an air quality standard or contribute to an existing violation during operations and/or construction. Based on the air district's CEQA guidelines, a project would have a significant air quality impact if it would:

- Emit 137 pounds per day or more of an ozone precursor air pollutant (volatile organic compounds or nitrogen oxides);
- Directly emit 550 pounds per day or more of carbon monoxide;
- Generate traffic that significantly affects levels of service (result in a significant localized source of emission of carbon monoxide);
- Emit 82 pounds per day or more of suspended particulate matter on-site, which is equivalent to general construction activity over an area of at least 8.1 acres per day, or grading/excavation over an area of at least 2.2 acres per day; or
- Emit 82 pounds per day or more of suspended particulate matter on-site, which is equivalent to general construction activity over an area of at least 8.1 acres per day, or grading/excavation over an area of at least 2.2 acres per day; or
- Emit 82 pounds per day or more of suspended particulate matter from vehicle travel on unpaved roads.

Operational Impacts. The proposed projects would not exceed air district thresholds of significance for operational emissions. Per Table 5-4 of the air district 2012 CEQA Guidelines, industrial developments of 1,040,000 square feet or more in size would create indirect emission sources with potentially significant impacts related to ozone and ozone precursors. None of the individual projects exceed this threshold.

The California Emissions Estimator Model was used to estimate greenhouse gas emissions from the proposed projects as described in Section 7, Greenhouse Gas Emissions. The model also produces results for criteria air emissions. For informational purposes, the criteria air emissions results are provided in Table 2, Operation Criteria Air Pollutant Modeling Results (Pounds per Day). As can be seen from the table, criteria air emissions from each project are below the air district thresholds of significance. Detailed emissions modeling results are presented in Appendix A.

Table 2 Operational Criteria Air Pollutant Modeling Results (Pounds per Day)

Project	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide
Air District Thresholds	137	137	82	550
Canna Culture	6.25	18.12	1.19	13.29
Kool Gildea	4.19	3.55	0.73	5.22
Redhunt	10.62	7.17	1.66	11.69
Zen Brand	5.98	14.57	1.21	13.11
Golden State Alternative Care	7.08	11.66	1.90	16.37
Emerald Mission	1.62	2.63	0.55	5.79
Paper Plane Traders	2.93	5.17	0.86	6.90
Cumulative Total	38.67	62.87	8.1	72.37

SOURCE: CalEEMod Results in Appendix A, EMC Planning Group 2017
 NOTE: all numbers are pounds per day.

Short-term Construction Emissions. Emissions produced during grading and construction activities are considered short-term as they occur only during the construction phase of the project. Construction emissions include mobile source exhaust emissions, emissions generated during the application of asphalt paving material and architectural coatings, as well as emissions of fugitive dust associated with earthmoving equipment. Short-term emissions include the on- and off-site generation of fugitive dust, on-site generation of exhaust emissions from construction equipment, and the off-site generation of mobile source emissions during the construction phase of the project.

Worst case construction phase emissions typically occur during initial site preparation, including grading and excavation, due to the increased amount of

surface disturbance that can generate dust and due to construction equipment emissions with the use of heavier equipment used at this phase. Table 5-2 of the air district CEQA guidelines identifies the level of construction activity that could result in significant temporary fugitive dust impacts if not mitigated. The threshold of significance for construction activities is rough grading and disturbance of at least 2.2 acres per day, or fine grading or general construction activity of at least 8.1 acres per day. At 1.1-acres, Emerald Mission would not meet either threshold for daily ground disturbance during grading. However, if any of the other six sites commence grading on the same day, the threshold could be met cumulatively. The remaining sites have the potential to disturb more than 2.2 acres per day through rough grading both individually and cumulatively.

The air district has identified the following feasible measures, that when implemented, reduce the impacts of construction dust emissions to a less-than-significant level, and should be applied at all sites to ensure cumulative dust emissions are less than significant.

Mitigation Measures

- AQ-1 In order to reduce fugitive dust emissions from grading and construction activities, the following measures shall be included on all grading and construction plans, and implemented during grading and construction when grading area exceeds 2.2 acres or construction area exceeds 8.1 acres:
- Water areas of active disturbed soils at least twice daily or as necessary to prevent visible dust leaving the site, using raw or recycled water when feasible.
 - Apply chemical soil stabilizers or dust suppressants on disturbed soils that will not be actively graded for a period of four or more consecutive days.
 - As an option to watering active disturbed soils at least twice daily, apply non-toxic binders and/or hydro seed disturbed soils on which grading is completed, but on which more than four days will pass prior to paving, foundation construction, or placement of other permanent cover.
 - Cover or otherwise stabilize stockpiles which will not be actively used for a period of four or more consecutive days, or water at least twice daily as necessary to prevent visible dust leaving the site, using raw or recycled water when feasible.
 - Maintain at least 2'0" of freeboard and cover all trucks hauling dirt, sand, or loose materials.

- Stop grading and earth moving if winds exceed 15 miles per hour.
- Pave roads, driveways, and parking areas at the earliest point feasible within the construction schedule.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the MBUAPCD shall also be visible to ensure compliance with Rule 402 (Nuisance).

AQ-2 Prior to commencement of construction activities, the contractor shall appoint a construction foreman to act as site monitor to ensure that the dust control measures are implemented. Evidence of implementation shall be submitted to the City of Greenfield Planning Department within three days of commencement of grading, and monthly thereafter as long as grading occurs. In addition, a publicly-visible sign written in English and Spanish with the telephone number and person to contact regarding dust complaints should be posted at the project site. This person shall respond and take corrective action within 48 hours. The phone number of the air district shall also be visible to ensure compliance with rule 402 (nuisance).

Implementation of mitigation measures AQ-1 and AQ-2 would reduce potential construction-related PM₁₀ air quality impacts to a less-than-significant level by incorporating the air district's basic construction mitigation measures during construction activities

- d. **Sensitive Receptors.** According to the air district's CEQA guidelines, a sensitive receptor is generally defined as a location where human populations, especially children, seniors, and sick persons, are located where there is reasonable expectation of continuous human exposure. These typically include residences, hospitals, and schools.

One single-family home borders the Golden State site on the north and the Zen Brand site borders two homes, one on the south and one on the west. Zen Brand also sits approximately 800 feet to the northwest of a residential community. Redhunt's southern border is adjacent to a single family home and is approximately 900 feet to the north of the residential community. The single family homes and residential community are sensitive receptors.

Construction activities associated with each of these three projects could expose sensitive receptors to construction equipment emissions including diesel exhaust. Diesel engines emit a complex mix of pollutants including nitrogen oxides,

particulate matter, and toxic air contaminants. Diesel exhaust is the predominant toxic air contaminant in urban air and is estimated to represent about two-thirds of the cancer risk from toxic air contaminants. Diesel exhaust is especially common during the grading stage of construction (when most of the heavy equipment is used), and adjacent to heavily trafficked roadways where diesel trucks are common. The most visible constituents of diesel exhaust are very small carbon particles or "soot," known as diesel particulate matter. Short-term exposure to diesel particulate matter is associated with variable irritation and inflammatory symptoms (Office of Environmental Health Hazard Assessment 2015).

Diesel-powered construction equipment is regulated by both the EPA and CARB. Beginning in 1996, new diesel equipment engines were required to meet emission standards. EPA Tier 2 diesel engine standards were implemented from 2001 and 2006, Tier 3 standards from 2006-2008, Engines are now in Tier 4 designs, reducing emissions of NO_x and PM₁₀ significantly since the first requirements were introduced. CARB requires that equipment fleets' average emissions meet increasingly stringent standards, and requires the phase-in of diesel particulate matter filters on older equipment. With exemptions for some specialized equipment, CARB restricts engine idling time to five minutes.

California's Regulation for In-use Off-road Diesel Vehicles establishes a state program to reduce nitrogen oxides and particulate emissions from older construction equipment. Several provisions of the regulation are in force (idling restrictions and reporting), and other provisions are being phased in from 2014 to 2029 (fleet composition).

Construction activities associated with the proposed projects would likely involve use of the heavy-duty off-road equipment and large trucks that use diesel fuel and emissions of diesel particulate matter. CARB's Regulation for In-use Off-road Diesel Vehicles establishes a state program to reduce emissions from older construction equipment. Equipment built to EPA Tier 4 diesel engine standards and utilizing ultralow sulfur fuel would result in diesel emissions that are substantially lower than older equipment. However, older equipment not meeting the Tier 4 standards would result in greater emissions and increased risks of exposure to them, which is a potentially significant air quality impact.

Implementation of the following mitigation measures would reduce construction equipment exhaust emissions from older vehicles (NO_x and diesel particulate matter) that may be used in the construction process for the Golden State, Zen Brand, and Redhunt projects to less than significant.

Mitigation Measures

AQ-3. The Golden State, Zen Brand, and Redhunt project developers shall reduce nitrogen oxides exhaust and particulate matter emissions by implementing one of the following measures prior to the start of construction:

- Provide a plan, acceptable to the air district, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles and equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent nitrogen oxides reduction and 45 percent particulate matter reduction compared to the most recent CARB fleet average for the time of construction; or
- Provide a plan, acceptable to the air district, that all off-road construction vehicles/equipment greater than 50 horsepower that will be used on site for more than one week shall be manufactured during or after 2001, or equipped with diesel particulate matter filters such that they meet the nitrogen oxides emissions standard of 6.9 grams per brake horsepower hour.

Prior to the onset of site preparation, grading and construction activities, the project developers shall require in construction contracts that all off-road construction vehicles comply with the detailed specifications required in Mitigation Measure AQ-4 and shall submit evidence demonstrating compliance with this measure to the City of Greenfield Planning Department for review and approval.

AQ-4. The Golden State, Zen Brand, and Redhunt project developers shall reduce NOx and particulate matter exhaust emissions by implementing the following measures prior to the start of construction:

- Contractors shall install temporary electrical service whenever possible to avoid the need for independently-powered equipment (e.g. compressors).
- Signs at the construction site shall be clearly visible to advise that that diesel equipment standing idle for more than two minutes within 200 feet of sensitive receptors shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks may keep their engines running continuously if on-site and staged at least 100 feet away from residential areas.
- Properly tune and maintain equipment for low emissions.

- Stage large diesel powered equipment at least 200 feet from any sensitive land uses (e.g., occupied residences).

These mitigation measures are consistent with the measures recommended in the air district's air quality guidelines (Table 8-3) that limit the number of vehicles, type of fuel used, hours of daily operation and duration of use. Implementation of these measures would reduce and subsequently limit exposure to construction exhaust emissions.

Implementation of Mitigation Measures AQ-3 – AQ-4, would ensure that construction emissions are reduced to a less than significant level.

- e. **Odors.** Operational nuisance odors are commonly associated with refineries, landfills, sewage treatment, agriculture, etc. The cultivation and manufacture of marijuana plants could result in pungent odors emanating from medical marijuana plants and medical marijuana products that could be a nuisance to nearby receptors.

All manufacture and cultivation of medical marijuana plants and products will occur indoors. Per Chapter 5.28 Section 4(i), Medical Marijuana Facilities Regulatory Permit, each of the applicants would be required to prepare an odor management plan detailing steps that will be taken to ensure that the odor of medical marijuana will not emanate beyond the exterior walls of the facility, including as necessary, the installation and use of air purification systems and/or air scrubbers. Therefore, with implementation of standard conditions, this impact would be less than significant.

4. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	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, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service? (3-9, 24, 25, 26, 27)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 US Fish and Wildlife Service? (3-9, 24, 25)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. 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? (3-9, 24, 28, 43)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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? (3-9, 24)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (1, 3-9, 10, 24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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? (3-9, 24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

A reconnaissance-level field survey of the project sites was completed by EMC Planning Group biologists Andrea Edwards and Emily Malkauskas on May 3, 2017; biological resource database searches for the project vicinity were conducted prior to the survey. The biological field survey included observing and photographing habitat conditions, noting surrounding land uses, and recording plant and wildlife species in field notes. The project sites range in elevation from approximately 255 to 280 feet. The table below presents existing habitats and land uses present on the seven sites.

Table 3 Existing Habitats and Land Uses

Project Site	Habitats and Land Uses
Cannaculture Collective Cultivation	Non-native grassland Developed, disturbed, and ornamental areas
Emerald Mission Cultivation and Manufacturing	Non-native grassland Ornamental areas
Golden State Alternative Care Cultivation	Water detention basin and irrigation ditches Non-native grassland Fallow agricultural areas Developed and disturbed areas
Kool Gildea Cultivation and Manufacturing	Water detention basin Non-native grassland Ornamental areas
Paper Plane Traders Cultivation and Manufacturing	Non-native grassland Developed, disturbed, and ornamental areas
Redhunt Corporation Cultivation and Manufacturing	Non-native grassland Developed and ornamental areas
Zen Brand Cultivation and Manufacturing	Non-native grassland Developed, disturbed, and ornamental areas

SOURCE: EMC Planning Group 2017

Undeveloped areas present on the project sites consist mainly of non-native grassland that has been mechanically disturbed. This habitat is dominated by non-native ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), slender wild oat (*Avena barbata*), barley (*Hordeum murinum*), and rye grass (*Festuca perennis*). Other prevalent non-native species present include cheeseweed (*Malva parviflora*), shortpod mustard (*Hirschfeldia incana*), oriental mustard (*Sisymbrium orientale*), red-stemmed filaree (*Erodium cicutarium*), and white-stemmed filaree (*Erodium moschatum*). Some of the project site grasslands contain a few native coyote brush (*Baccharis pilularis*) shrubs.

Common wildlife species likely to occur on the project sites include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), brush rabbit (*Sylvilagus bachmani*), and California ground squirrel (*Spermophilus beecheyi*). Species of small rodents including mice (*Mus musculus*, *Reithrodontomys megalotis*, and *Peromyscus maniculatus*) and California vole (*Microtus californicus*) are likely to occur. Common bats such as California myotis (*Myotis californicus*), little brown myotis (*Myotis lucifugus*), and hoary bat (*Lasiurus cinereus*) could roost in structures or trees, and forage in the fields and non-native grasslands. Common reptiles, such as western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis* sp.) are also likely to occur. Several birds were observed flying near or over the project sites and perching in trees in the vicinity. Eurasian collared-dove (*Streptopelia decaocto*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), Anna's hummingbird (*Calypte anna*), and European starling (*Sturnus vulgaris*) are common avian species occurring in the project vicinity. Numerous non-native American bullfrog (*Lithobates catesbeianus*) tadpoles were observed within a water detention basin located on the Golden State Alternative Care Cultivation project site.

- a. **Special-Status Species.** A search of the California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* was conducted for the Paraiso Springs and surrounding eight U.S. Geological Survey (USGS) quadrangles in order to generate a list of potentially occurring special-status species for the project vicinity. Records of occurrence for special-status plants were reviewed for those quadrangles in the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants*. An U.S. Fish and Wildlife Service (USFWS) *Endangered Species Program* threatened and endangered species list was also generated for Monterey County. Special-status species in this report are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the USFWS and/or CDFW; as Species of Special Concern or Fully Protected species by the CDFW; or as Rare Plant Rank 1B or 2B species by the CNPS.

Most special-status plant and wildlife species known to occur in the region are not expected to occur on the project sites due to lack of suitable habitats. Special-status wildlife species with potential to occur on or adjacent to the project sites are discussed below, including nesting birds/raptors, bats, and burrowing owl.

Nesting Birds. Construction activities, including vegetation removal and ground disturbance, have potential to impact nesting birds protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, should such nesting birds be present during construction. The project sites and adjacent residential and agricultural areas contain trees and/or other suitable habitats with potential to support nesting birds. If protected species are nesting in or adjacent to any of the project sites during the bird nesting season (February through August), then noise-

generating construction activities and/or vegetation removal could result in the loss of fertile eggs or nestlings, or otherwise lead to the abandonment of nests. Implementation of the following mitigation measure would reduce significant potential impacts to nesting birds to a less-than-significant level.

Mitigation Measure

BIO-1 For all projects, if noise generation, ground disturbance, vegetation removal, or other construction activities begin during the bird nesting season (February 1 to August 31), or if construction activities are suspended for at least two weeks and recommence during the bird nesting season, then the project developer will retain a qualified biologist to conduct a pre-construction survey for nesting birds. The survey will be performed within suitable nesting habitat areas on and adjacent to each site to ensure that no active nests would be disturbed during project implementation. The surveys will be conducted no more than two weeks prior to the initiation of disturbance and/or construction activities at each project site. A report documenting survey results and plan for active bird nest avoidance (if needed) will be completed by the qualified biologist and submitted to the City of Greenfield for review and approval prior to disturbance and/or construction activities.

If no active bird nests are detected during the survey, then project activities can proceed as scheduled. However, if an active bird nest of a protected species is detected during the survey, then a plan for active bird nest avoidance will determine and clearly delineate an appropriately sized, temporary protective buffer area around each active nest, depending on the nesting bird species, existing site conditions, and type of proposed disturbance and/or construction activities. The protective buffer area around an active bird nest is typically 75-250 feet, determined at the discretion of the qualified biologist.

To ensure that no inadvertent impacts to an active bird nest will occur, no disturbance and/or construction activities will occur within the protective buffer area(s) until the juvenile birds have fledged (left the nest), and there is no evidence of a second attempt at nesting, as determined by the qualified biologist.

The project developers shall be responsible for implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

Implementation of mitigation measure BIO-1 would ensure impacts to nesting birds are less than significant by requiring a pre-construction survey for bird nests (should construction be scheduled during the nesting season) and implementation of avoidance measures should any active nest(s) be found.

Special-Status Bats. The following California Species of Special Concern have low potential to occur on the site: western mastiff bat (*Eumops perotis californicus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and Townsend's big-eared bat (*Corynorhinus townsendii*). These four bat species utilize a wide variety of habitats, including grasslands, scrublands, woodlands, and forests; all are known to occur in the Salinas Valley. These species either roost in tree bark or tree hollows, in tree foliage, or in buildings. Pallid bat and Townsend's big-eared bat also roost in bridges, caves, and mines.

Potential habitat for these special-status bat species occurs within each of the seven project sites. The Canna Culture Collective, Paper Plane Traders, and Zen Brand project sites provide potential habitat within buildings that will be demolished. All seven project sites provide potential habitat in tree foliage that will be removed. Potential impacts to special-status bats are significant. If individuals are present on the project sites, construction activities could result in the direct loss (mortality) of individual animals. Implementation of the following mitigation measure will reduce these potential impacts to a less-than-significant level.

Mitigation Measure

BIO-2 For all projects, prior to tree removal each project developer shall retain a qualified biologist to conduct a focused survey for bats and potential roosting sites within trees to be removed and within 250 feet of the proposed development area. These surveys shall be conducted no more than 15 days prior to the start of construction. The surveys can be conducted by visual identification and can assume presence or the bats can be identified to a species-level with the use of a bat echolocation detector such as an "Anabat" unit.

If no roosting sites or bats are found, a letter report confirming absence shall be sent to the City of Greenfield and no further mitigation is required.

If roosting sites are found, a survey letter report and supplemental documents shall be provided to the City of Greenfield prior to demolition permit issuance and the following monitoring and exclusion, and habitat replacement measures shall be implemented:

- a. If bats are found roosting outside of nursery season (May 1st through October 1st), then they shall be evicted as described under (b) below. If bats are found roosting during the nursery season, then they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is

determined to not be a maternal roost, then the bats shall be evicted as described under (b). Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season.

A 250-foot (or as determined in consultation with the CDFW) buffer zone shall be established around the roosting site within which no construction or tree removal shall occur.

- b. If a non-breeding bat hibernaculum is found in a tree or snag scheduled for removal, the individuals will be safely evicted, under the direction of a qualified bat biologist and in consultation with the CDFW. Methods could include carefully opening the roosting area by hand to expose the cavity. Removal of the tree or snag shall be conducted no earlier than the following day (i.e., at least one night will be provided between initial disturbance and the tree removal). This action will allow bats to leave during dark hours, which increases their chance of finding new roosts with a minimum of potential predation.

The project developers will be responsible for the implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

Implementation of mitigation measure BIO-2 would reduce significant potential impacts to special-status bats to a less-than-significant level by requiring pre-construction surveys and incorporation of appropriate avoidance and minimization measures should evidence of roosting bats be found on a project site.

Burrowing Owl. Burrowing owl (*Athene cunicularia*) is a California Species of Special Concern with low potential to occur on and adjacent to most of the project sites. Burrowing owls live and breed in burrows in the ground. Optimal habitat conditions include large, open, dry, and nearly level grasslands or prairies with short to moderate vegetation height and cover, areas of bare ground, and populations of burrowing mammals. This species occurs in open, dry grasslands, deserts, and shrub-lands with low-growing vegetation; it usually occupies natural burrows excavated by other fossorial species such as the California ground squirrel. Burrowing owls have also been known to utilize man-made areas such as culverts, concrete rubble piles, and artificial dens for breeding sites. In open habitats, they prefer flat, open areas where the vegetation is relatively short, affording a vantage point from which to evade potential predators.

A concentration of small mammal burrows is present on six of the seven project sites, excluding Zen Brand Cultivation and Manufacturing. Marginally suitable

habitat for this species is present in open fields within and adjacent to the six project sites. Potential impacts to burrowing owl are significant. If individuals are present on or adjacent to the sites, construction activities could result in indirect disturbance or direct loss (mortality) of individual animals. Implementation of the following mitigation measure will reduce these potential impacts to a less-than-significant level.

Mitigation Measure

BIO-3 This measure applies to the following projects: Cannaculture Collective Cultivation, Emerald Mission Cultivation and Manufacturing, Golden State Alternative Care Cultivation, Kool Gildea Cultivation and Manufacturing, Paper Plane Traders Cultivation and Manufacturing, and Redhunt Corporation Cultivation and Manufacturing. To avoid/minimize potential impacts to burrowing owl, the individual developers will retain a qualified biologist to conduct a two-visit (i.e. morning and evening) presence/absence survey at areas of suitable habitat on and adjacent to each project site no less than 14 days prior to the start of construction. Surveys shall be conducted according to methods described in the CDFW 2012 *Staff Report on Burrowing Owl Mitigation*. If these pre-construction “take avoidance” surveys performed during the breeding season (February through August) or the non-breeding season (September through January) for the species locate occupied burrows in or near a construction area, then consultation with the CDFW would be required to interpret survey results and develop a project-specific avoidance and minimization approach.

The project developers shall be responsible for the implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

Implementation of mitigation measure BIO-3 would reduce significant potential impacts to burrowing owl to a less-than-significant level by requiring pre-construction surveys and incorporation of appropriate avoidance and minimization measures should burrowing owl be found on or adjacent to the project sites.

- b. **Sensitive Natural Communities.** No sensitive natural communities or riparian habitats occur on the project sites. Therefore, no impacts to sensitive natural communities associated with the proposed projects are anticipated.
- c. **Wetlands and Waterways.** Man-made wetland/waterway features are present on two of the project sites. The Kool Gildea Cultivation and Manufacturing project site contains a fenced man-made water detention basin (dry at time of survey) that is part of the City’s storm water drainage system. About 40 percent of; this will be filled in and sold to Kook Gildea and on which a portion of the project will be constructed. The remaining 60 percent will be retained as a detention basin.

The Golden State Alternative Care Cultivation project site contains a small water detention basin and two shallow agricultural irrigation ditches (all holding water at time of survey). These features were built to support agricultural row crop production on the western portion of the site. The ditch positioned along the southern edge of Cypress Avenue is a Clark Colony water line that consists of an open ditch along the western portion of the site, and becomes an underground pipe along the eastern portion of the site; the water is then piped beneath U.S. Highway 101 to irrigate agricultural fields east of the highway. On the project site, a diversion pipe from this water line flows into the small water detention basin, and continues through a short pipe into the second irrigation ditch.

The irrigation basin and two open ditches would be removed by the proposed project, and the Clark Colony water line would be confined to an underground pipe along Cypress Avenue at the northern edge of the project site. These features are a small part of an existing agricultural irrigation system. Because they are not connected to a natural drainage (or Waters of the State or U.S.) and do not support wetland or riparian vegetation, they are likely not under the jurisdiction of the U.S. Army Corps of Engineers or the CDFW.

A new proposed on-site detention pond would capture post-construction increases in storm water for this project site consistent with Clean Water Act requirements and the requirements of the Regional Water Quality Control Board (RWQCB). However, development of the Golden State Alternative Care Cultivation project site will result in the filling of the existing detention basin and two irrigation ditches. While the City does not believe that the basin or ditches fall under the jurisdiction of the RWQCB, it is possible that the RWQCB may conclude otherwise. If so, a RWQCB permit or other project approval may be necessary prior to the onset of construction activities and improvements that will affect these three features. Fill of a potentially jurisdictional wetland or waterway is a potentially significant impact. Implementation of the following mitigation measure will reduce this potential impact to a less-than-significant level.

Mitigation Measure

- BIO-4 For the Golden State Alternative Care Cultivation project, prior to initiation of ground disturbance or construction activities at the project, developer shall consult with the Central Coast Regional Water Quality Control Board to determine if the on-site detention pond and/or ditches are subject to its jurisdiction. If not, the developer shall provide evidence of this determination to the City of Greenfield Planning Department and no further action is required. If the Central Coast Regional Water Quality Control Board determines that these

facilities are subject to its regulation, the project developer shall coordinate with the Central Coast Regional Water Quality Control Board to obtain a Clean Water Act Section 401 Water Quality Certification, or obtain approval through project-specific post-construction requirements to protect water quality.

The project developer shall be responsible for the implementation of this mitigation measure, subject to monitoring by the City of Greenfield.

Implementation of mitigation measure BIO-4 would reduce significant impacts to potentially jurisdictional wetlands/waterways to a less-than-significant level by determining whether Central Coast Regional Water Quality Control Board permitting is required, and if so, ensuring that a permit is obtained prior to initiation of ground disturbance that affects the subject features.

- d. **Wildlife Movement.** Wildlife movement corridors provide connectivity between habitat areas, enhancing species richness and diversity, and usually also provide cover, water, food, and breeding sites. The on-site open fields/non-native grasslands may allow limited movement opportunities for common, urban-adapted wildlife species to access neighboring open fields. However, wildlife movement in the project vicinity is already limited by U.S. Highway 101 and existing development, and alternate routes exist for wildlife movement to the west and northwest of the project sites. Therefore, the proposed projects would have a less than significant impact on wildlife movement and would not impede the use of native wildlife nursery sites.
- e. **Local Biological Resource Policies/Ordinances.** The proposed projects would not conflict with biological resource policies contained in the General Plan. However, the municipal code regulates all trees that overhang public streets, and requires a permit prior to removal of public street trees.

Though a few native coast live oaks (*Quercus agrifolia*) are present on the project sites, none overhang public streets. Trees likely qualifying as city-regulated street trees are present on some of the project sites including Cannaculture Collective Cultivation (gum [*Eucalyptus* sp.] trees), Emerald Mission Cultivation and Manufacturing (English walnut [*Juglans regia*] tree), Paper Plane Traders Cultivation and Manufacturing (gum and pepper [*Schinus molle*] trees), and Redhunt Corporation Cultivation and Manufacturing (pepper trees).

City-regulated street trees will likely be removed by the proposed projects and the project developers will be required to obtain a tree removal permit prior to taking such action. Given the municipal code requirements, these proposed projects will not conflict with the city's regulations related to biological resources.

- f. **Conservation Plans.** There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans applicable to the proposed project sites.

5. CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5? (1, 2, 10, 18)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of dedicated cemeteries? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

- a. **Historic Resources.** According to the Greenfield General Plan EIR, the city contains buildings and structures that may be considered historic on a local or state level. Where such structures are located within a proposed development area, the removal, alteration or destruction of that resource may cause a direct impact. While no known historic resources exist within any of the project sites, Paper Plane Traders: APN 109-151-020 contains a house built in 1959 and Zen Brand: APN 109-162-012 contains a commercial warehouse built in 1964. These buildings are more than 50 years old and thus could be eligible for listing on the historic registry.

The City of Greenfield determined that the house and warehouse are not historically significant due to the lack of unique architecture or history of these structures. Specifically, the city determined that these structures are not reflective of a historical period or type of architecture that is of any significance and they have not been used by a business or family that is of particular importance or significance to Greenfield, nor is either associated with significant events or a significant person. Thus, none of the project sites contain buildings of historic significance and there would be no impacts to historic resources.

- b-d. **Cultural Resources.** According to the Greenfield General Plan EIR, there are no known previously recorded archeological or paleontological resources in Greenfield

and the archeological sensitivity of the Greenfield area is generally low. A database search conducted for the General Plan EIR did not identify any paleontological resources within the project site and the topographically flat project sites do not contain unique geologic features. However, discovery of unknown and unanticipated buried archaeological and paleontological resources and human remains during site preparation and construction activities remains possible. Damage to significant archaeological resources, paleontological resources, or human remains would be considered a significant adverse environmental impact.

Greenfield General Plan Program 7.6 A requires that the Planning Department be notified immediately if any prehistoric, archaeological, or paleontological artifact is uncovered during construction. All construction must stop and an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology must be retained to evaluate the finds and recommend appropriate action. Additionally, all construction must stop and the County Coroner must be notified according to Section 7050.5 of California's Health and Safety Code if any human remains are uncovered. If the remains are determined to be Native American, the procedures outlined in CEQA Section 15064.5 (d) and (e) must be followed. General Plan Program 7.6.A would be a condition of approval for all seven of the projects and would ensure that cultural resources are adequately protected should unanticipated and unknown resources be uncovered during construction activities. Implementation of this condition will ensure potential impacts would be less than significant.

6. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	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:				
(1) 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? (1, 2, 15)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Strong seismic ground shaking? (1, 2, 15)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Seismic-related ground failure, including liquefaction? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(4) Landslides? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic 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? (1, 2, 15)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

a,c. Potential impacts from exposure to geologic risks are as follows:

1. **Fault Rupture.** The project sites are not located in an Alquist-Priolo Earthquake Fault Zone or in a County of Monterey Earthquake Fault Zone. Because no active or potentially active faults cross the sites, there is no risk of fault rupture and impacts are less than significant.
2. **Seismic Ground Shaking.** According to U.S. Geological Survey maps and the General Plan EIR, the nearest fault line to the city is the Reliz/Rinconada Fault system which is approximately five miles west of Greenfield. The San Andreas Fault is located approximately 14 miles northeast. An earthquake of moderate to high magnitude along these faults could cause considerable seismic ground shaking at any of the project sites and potential damage to project improvements and risk to public safety if improvements are not constructed consistent with seismic safety standards.

According to the General Plan EIR, all new development within the city must be constructed to comply with seismic safety code requirements and seismic and geologic standards of the California Building Code. Implementation of this regulatory requirement would ensure that seismic hazards risks are less than significant.

3. **Liquefaction.** The Estimated Liquefaction Potential Map in the Greenfield General Plan identifies the project sites as areas of low liquefaction potential. However, the General Plan EIR found that Soils Engineering Reports for a number of development projects in Greenfield indicated that subsurface soil conditions in some locations of Greenfield could be susceptible to liquefaction hazards. General Plan Safety Element Goal 8.1 and its implementing policies and programs require future development to comply with all codes and development standards addressing seismic safety which will reduce the potential impacts of liquefaction due to seismic ground shaking to a less-than-significant level.
 4. **Landslide.** Because of the location and flat topography of the project sites and its surrounding vicinity, there are no risk of landslides at the project site and no associated impacts.
- b. **Soil erosion/loss of topsoil.** The proposed projects include grading activities that will result in disruption, displacement, compaction, and over covering of the soil. According to the General Plan soils map, all of the project sites largely consist of Arroyo Seco Gravelly Sandy Loam which is permeable at a moderately rapid rate with slow runoff and slight erosion hazards and Elder Sandy Loam soils which are permeable at a moderate rate, with slow runoff and slight erosion hazards.

The General Plan Relative Soil Erosion Hazards Map classifies all of the project sites as areas with low risk of erosion.

The General Plan EIR found that erosion resulting from a project can be successfully controlled and prevented using a variety of methods including implementation of all policies and programs of the General Plan Growth Element Goal 4.12, Drainage Facilities. These policies and programs require that drainage and erosion control plans are submitted for future development proposals and are reviewed by the city building inspection and engineering staff for compliance with all state codes and regulations. The policies require implementation of all recommendations within engineering reports and implementation of best management practices by future construction contractors on the site. All development must comply with Section 3316 of the California Building Code and Greenfield Municipal Code, which specify measures to avoid impacts from erosion, runoff, loss of topsoil, winter operations, and maintenance. Implementation of these measures will reduce potential impacts related to soil erosion and loss of topsoil to less than significant.

- d. **Expansive Soils.** The General Plan EIR determined that implementation of the proposed General Plan could expose buildings, pavements, and utilities to significant damage as a result of underlying expansive or unstable soil properties which is a potentially significant impact. Programs under General Plan Health and Safety Goal 8.1 would require adherence to the seismic safety code requirements, which would minimize impacts related to expansive soils or unstable soils to less than significant.
- e. **Septic.** The proposed projects would be connected to the city's sewer system and would not utilize septic systems. Thus, there would be no impacts related to soil inadequacy for septic use.

7. GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (31, 32, 33, 34)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (31, 32, 33, 34)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- a-b. Greenhouse gas (GHG) emissions would be generated by each proposed project from sources that include vehicle trips, on-site electricity consumption, on-site natural gas combustion, water use (electricity consumption from pumping and treatment), wastewater generation (electricity consumption from pumping and treatment), and solid waste disposal (decomposition of solid waste disposed in a landfill).

Neither the city nor the air district has adopted thresholds of significance for non-stationary source GHG emissions. However, in the past, the air district has recommended that local lead agencies consider using the GHG analysis methodology and the thresholds of significance for operational emissions adopted by the San Luis Obispo County Air Pollution Control District (SLOAPCD). These are described in its CEQA Air Quality Handbook, *A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review* (San Luis Obispo Air Pollution Control District 2012).

Construction and operational phase GHG emissions projections for each project were quantified and compared to the SLOAPCD mass emissions threshold of 1,150 metric tons (MT) of carbon dioxide equivalent (CO₂e) per year. Projects whose sum of operational and construction emissions (the latter are amortized over a 30-year period to identify annual construction emissions) exceed this threshold would have a significant impact from generation of a significant volume of GHG emissions. Since the threshold of significance derives from a plan for reducing GHGs, such projects would also be inconsistent with the GHG reduction plan.

Construction and operational GHG emissions for each project were modeled using CalEEMod, the California Emissions Estimator Model. Memos describing model inputs, assumptions, and results for each project, and the modeling results for each

project are included in Appendix A. Total construction emissions results are shown in Table 2.1, Overall Construction (Unmitigated) of each CalEEMod results printout. Operational emissions are summarized in Table 2.2, Overall Operational (Unmitigated) of each CalEEMod results printout.

For several of the projects, existing activities on their respective sites are currently sources of GHG emissions. These “baseline” emissions are also calculated in CalEEMod and deducted from the sum of the operational and amortized construction emissions of these projects. Additional deductions are taken for individual proposed projects that include tree plantings. Trees absorb carbon dioxide. The volume of emissions that can be absorbed can be calculated in CalEEMod.

Less than Significant Impact - Canna Culture, Kool Gildea, Zen Brand, Golden State Alternative Care, Emerald Mission and Paper Plane Traders

Table 4, *GHG Emissions Inventories*, shows net GHG emissions for each of the proposed projects. Based on the methodology for quantifying GHG emissions from individual projects described above, the Canna Culture, Kool Gildea, Zen Brand, Emerald Mission and Paper Plane Traders projects would have less than significant impacts, as net GHG emissions for each are below the 1,150 MT CO_{2e} threshold. No mitigation measures are required. Opportunities for reducing the GHG emissions volumes for these projects were not explored because no GHG reductions are required for the impacts of each project to be less than significant.

Table 4 GHG Emissions Inventories (Annual Emissions, MT CO_{2e})¹

Project	Operations	Amortized Construction	Annual Carbon Offset ²	Baseline	Net
Canna Culture	768.93	12.59	<1.68>	<10.74>	769.10
Kool Gildea	722.09	13.27	-	-	735.36
Redhunt	1,555.27 ³	21.21	<0.43>	<20.02>	1,556.03
Zen Brand	656.52	18.30	-	<120.28>	554.02
Golden State Alternative Care	1,166.74 ³	24.7	<1.58>	<19.62>	1,170.24
Emerald Mission	337.75	9.13	-	<20.02>	326.86
Paper Plane Traders	522.37	9.74	-	<58.86>	473.25

SOURCE: CalEEMod Results in Appendix A, EMC Planning Group 2017

NOTES:

1. Results may vary due to rounding.
2. <Brackets> indicate deductions.
3. Includes energy emissions savings that would be gained through compliance with the 2016 Title 24 standards

GHG Emissions Reductions from State Legislative Acts and Regulations

Table 4, [GHG Emissions Inventories](#), shows that net GHG emissions for the Redhunt and Golden State projects would exceed the significance threshold of 1,150 MT CO_{2e}. These projects would have a significant impact. Consequently, options for GHG emissions reductions for these projects are needed with the goal to reduce their emissions to below the threshold of significance. One such option is to consider GHG reductions related to state legislation and regulations. As tools for achieving statewide GHG reduction goals identified in Assembly 32 and Senate Bill 32, the state has passed a multitude of legislative acts and regulations that will reduce GHG emissions from sources that are not within the control of local agencies or individual project developers. GHG reductions that would accrue from many of these actions are not automatically accounted for in CalEEMod. For example, as of January 1, 2017, revised (2016) Title 24 building efficiency standards are in effect for all new buildings. The California Energy Commission estimates that buildings constructed to the 2016 standards will use 28 percent less energy than those constructed per the 2013 standards (California Energy Commission 2017) which became effective January 1, 2014. The updated Title 24 standards are not reflected in CalEEMod defaults, which are based on the 2013 Title 24 standards. However, the model can be adjusted to quantify energy emissions savings that would be gained through compliance with the 2016 Title 24 standards. For the Redhunt and Golden State projects, the model was adjusted to include compliance with 2016 Title 24 standards. The annual operations emissions for these as reported in [Table 4, GHG Emissions Inventories](#) includes emissions savings that would be gained through compliance with 2016 standard. Emissions reductions from the updated Title 24 standards were not taken for the remaining five projects as their emissions are already below the threshold of significance.

The Advanced Clean Car standards program is another example of a state regulatory program that would reduce GHG emissions from land use projects where the reduction opportunity is not included in CalEEMod. By 2025, these standards will result in a 34 percent reduction in GHG emissions from on-road passenger cars and light- to medium-duty trucks. Emissions reductions from this regulation can be calculated outside of CalEEMod. Since the vast majority of vehicle trips associated the Redhunt and Golden State projects would be comprised of vehicles within these vehicle classes, the reduction can be taken from the total mobile source emissions volumes shown in the "Mobile" line in Table 2.2, Overall Operational (Unmitigated) of the CalEEMod results printouts for each of these respective projects.

Table 5, *Net Emissions for the Redhunt and Golden State Projects with Advanced Clean Car Reductions*, shows how total annual emissions volumes for that project are reduced through implementation of the Advanced Clean Cars regulation. As can be seen from the table, the Redhunt project emissions are reduced to 1,453.28 MT CO₂e and the Golden State emissions fall to 1,084.96 MT CO₂e.

Table 5 Net Emissions for the Redhunt and Golden State Projects with Advanced Clean Car Reductions (Annual Emissions, MT CO₂e)¹

Project	Annual Total Emissions ²	Mobile Source Volume ³	Advanced Clean Car Reduction ⁴	New Net Emissions
Redhunt	1,556.03	302.22	<102.75>	1,453.28
Golden State Alternative Care	1,170.24	304.57	<85.28>	1,084.96

SOURCE: CalEEMod Results in Appendix A, EMC Planning Group 2017

NOTES:

1. Results may vary due to rounding.
2. Includes energy emissions savings that would be gained through compliance with the 2016 Title 24 standards
3. Portion of annual project emissions attributable to mobile sources
4. <brackets> indicate deductions.

Less than Significant Impact - Golden State Alternative Care

GHG emissions from the Golden State project would drop below the threshold of significance of 1,150 MT CO₂e when reductions from the Advanced Clean Cars program are deducted. Therefore, GHG impacts from this project would be less than significant. No mitigation measures are required.

Significant Impact - Redhunt

With the application of 2016 Title 24 compliance and Advance Clean Car regulatory reductions, the Redhunt project emissions of 1,453.28 MT CO₂e exceed the significance threshold of 1,150 MT CO₂e. Therefore, this project would have a significant impact and mitigation is required. Emissions must be reduced by 303.28 MT CO₂e for its GHG impacts to be less than significant. A number of on-site reduction measures may be feasible for the project and on-site reductions shall be prioritized. Implementation of the following mitigation is required:

Mitigation Measure

- GHG-1 Prior to issuance of a building permit, the Redhunt applicant shall prepare a Greenhouse Gas (GHG) Reduction Plan that identifies all feasible GHG reduction measures that shall be incorporated into the project to reduce annual project operational GHG emissions to below 1,150 MT CO₂e annually. The GHG

Reduction Plan shall also identify the value of GHG reductions associated with each measure, and provide evidence to the satisfaction of the Community Services Director that supports the level of reduction assumed. All measures shall be implemented and operational prior to final occupancy.

On-site reduction measures shall be prioritized. If all feasible on-site reduction measures are not sufficient to reduce emissions to below the threshold of significance, the applicant shall identify feasible off-site reduction measures available through projects or programs within the air basin, if any (e.g. energy efficiency retrofit programs, engine replacement programs, etc.) to reduce the balance of emissions to below the threshold. If such programs are not in place or deemed infeasible based on evidence supplied by the applicant and accepted by the Community Services Director, purchase of carbon off-sets that are validated through a recognized source such as the Climate Action Registry may then be considered to meet the balance of the GHG emissions reduction volume required. Evidence of an off-set purchase contract shall be provided prior to approval of an occupancy permit. The GHG Reduction Plan is subject to review and approval of the Community Services Director.

On-site GHG reduction measures that should be considered for inclusion in the GHG Reduction Plan include, but are not limited to the following:

- Design the project to exceed current Title 24 (e.g. solar power) to offset project energy demands;
- Provide on-site renewable energy;
- Install energy efficient (e.g. Energy Star) appliances;
- Include the necessary infrastructure in the project design (e.g. physical design, energy, and fueling) to support the deployment of zero emission technologies now and into the future including zero emission (battery electric or fuel cell electric) to the fullest extent feasible;
- To the fullest extent possible, utilize zero and near-zero technologies including battery electric or fuel cell electric technology;
- Develop strategies to promote telecommuting, reduce transit costs to employees, and to develop innovative ways to encourage and facilitate rideshare, transit, cycling, and walking for employee work trips and/or work breaks;
- Use reclaimed, gray and/or locally sourced water;

- Incorporate indoor water conservation measures, such as use of ultra-low-flow toilets and faucets (bathrooms); and
- Incorporate water efficient irrigation into the project design.

Implementation of mitigation measure GHG-1 would reduce the impact of the Redhunt project to less than significant by assuring that its GHG emissions will be reduced to below the threshold of significance.

Note: On April 28, 2017 the California Department of Food and Agriculture released a set of proposed regulations to establish cannabis cultivation licensing and a track-and-trace system, collectively referred to as CalCannabis Cultivation Licensing. Section 8315 (Additional Environmental Protection Measure for Indoor Licenses) of the regulations included several environmental protection measures intended to reduce energy use including:

Indoor license types of all sizes shall ensure that electrical power used for commercial cannabis activity shall be provided by any combination of the following:

- (a) On-grid power with 42 percent renewable source.
- (b) Onsite zero net energy renewable source providing 42 percent of power.
- (c) Purchase of carbon offsets for any portion of power above 58 percent not from renewable sources.
- (d) Demonstration that the equipment to be used would be 42 percent more energy efficient than standard equipment, using 2014 as the baseline year for such standard equipment. (California Department of Food and Agriculture 2017).

Since the regulations are not yet adopted, they were not included as a source of regulatory emissions reductions for any of the proposed projects. Should these regulations be adopted prior to the Redhunt developer obtaining building permits for the project, the developer may be required to incorporate the measures into the project design. This would further reduce GHG emissions from energy use.

8. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	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? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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? (1,2,10, 11)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (1, 2, 10, 11)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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, create a significant hazard to the public or the environment? (1, 2, 10, 11, 20, 21)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 a public-use airport, result in a safety hazard for people residing or working in the project area? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area? (1, 2, 10, 11, 22)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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| h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (1, 2, 10, 11, 17) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
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Comments:

- a. **Transport, Use, or Disposal of Hazardous Materials.** The proposed projects all consist of the development of medical marijuana facilities for the cultivation and/or manufacturing of medical marijuana. The cultivation and manufacturing of medical marijuana may require the use and storage of nominal amounts of potentially hazardous materials. Transportation, storage, use and disposal of hazardous materials during operation of the projects would be required to comply with applicable federal, state, and local statutes and regulations which would ensure impacts would be less than significant.

Development of these sites may involve the use and transport of hazardous materials during project construction such as fuels, oils, mechanical fluids, and other chemicals typically 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. Further, all construction activities would be subject to the National Pollutant Discharge Elimination System (NPDES) permit process that requires the preparation of a storm water pollution prevention plan (SWPPP), which would be reviewed and approved by the Regional Water Quality Control Board to ensure that risks to water quality from handling and storage of hazardous materials are reduced to an acceptable level. Compliance with the above regulations would ensure impacts would be less than significant during construction activities.

- b. **Release of Hazardous Materials.** Structures built prior to the 1980's have a potential to contain lead and asbestos; demolition of these buildings during site preparation activities could result in release of these hazardous materials and pose risks to public and construction worker health and safety. Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos has been demonstrated. Asbestos abatement must be conducted in accordance with Cal-OSHA's asbestos standard, 8 CCR 1529, and the requirements of the air district's Rule 424. The demolition of any structure containing asbestos requires the submittal of a notification to the air district ten business days prior to demolition.

Emerald Mission, Golden State Alternative Care, Redhunt Corporation, Canna Culture, Kool Gildea

These project sites are either vacant fallow land, contain mobile homes that will be hauled off of the property, or contain buildings constructed after 1980's and thus would not result in environmental impacts related to the potential release of asbestos and lead paint.

Zen Brand and Paper Plane Traders

One of the Zen Brand parcels, APN 109-162-012, contains a commercial warehouse built in 1964 and one of Paper Plan Traders' parcels, APN 109-151-020, contains a house that was constructed in 1959. Because these buildings were constructed prior to the 1980's there is the potential that asbestos and lead paint were used. Thus, demolition or renovation of these buildings could result in release of these hazardous materials and pose risks to public and construction worker health and safety. Zen Brand proposes improvements to the existing warehouse built in 1964 to be used for cultivation and manufacturing and Paper Plane Traders proposes demolition of the house that was constructed in 1959. Thus, these projects could result in significant impacts related to the release of hazardous materials.

Implementation of the following mitigation measure would reduce potential impacts to public and the environment from exposure to asbestos and lead based paint to less than significant:

Mitigation Measure

- HAZ-1 Prior to the issuance of a permit to remodel, a demolition permit, or a grading permit that involves demolition of existing structures, the developers of the Zen Brand and Paper Plane Traders projects shall contract with a certified asbestos/lead paint consultant to perform an asbestos and lead paint inspection prior to the demolition or renovation of regulated structures. Should the inspection identify the presence of asbestos and/or lead paint, the developers shall contract for material abatement. Removal or disturbance of asbestos and lead paint requires adherence to the California Division of Occupational Safety and Health and California Department of Public Health regulations. Should the asbestos and lead paint inspection indicate the presence of significant levels of asbestos, the developers shall contract a California State registered and licensed asbestos abatement contractor to perform the asbestos work. The asbestos and lead paint inspection and evidence of abatement of any identified lead based paint and regulated asbestos containing materials shall be presented to the City prior to issuance of a permit to remodel or a grading and/or demolition permit.

Implementation of mitigation measure HAZ-1 would ensure potential impacts associated with release and exposure of people to asbestos and lead paint are reduced to a less-than-significant level by requiring asbestos and lead paint inspection and abatement or removal (if required) prior to the disturbance of buildings that may contain lead paint or asbestos.

- c. **Hazardous Emissions, Materials, Substances, or Waste within One-Quarter Mile of a School.** The closest school to any of the project sites is Greenfield Elementary School which is 0.4 miles from the Zen Brand project site. All projects, including Zen Brand, would comply with existing federal, state and local laws regulate the use and disposal of hazardous or potentially hazardous materials. Thus, impacts related to the emission of or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of a school would be less than significant.
- d. **Hazardous Site.** Government Code Section 65962.5 requires that the Department of Toxic Substances Control compile and regularly update a list of hazardous waste facilities and sites. A search of the Envirostor website revealed that none of the project sites are located on a site which is included on a list of hazardous facilities and sites and will not result in impacts associated with exposure of the public to related hazards.
- e-f. **Airport/Airstrip Hazard.** There are no existing commercial airports or air strips within two miles of the project site. However, the private Yanks Air Museum project, for which a subdivision map application is pending with Monterey County Resources Management Agency, will include a private air strip at some point in the future. The Yanks Air Museum project is located to the north and east of U.S. Highway 101 and Thorne Avenue, approximately one mile from the project sites. The General Plan and EIR considered the future construction of this project and determined that because flights would be infrequent, the potential safety impacts would be less than significant.
- g. **Emergency Response Plan.** Greenfield's 2016 Emergency Operations Plan contains procedures for responding to various types of large-scale emergencies within Greenfield and defines emergency response and management roles for county and city officials. The proposed projects are consistent with the General Plan designation, and were anticipated for light industrial/highway commercial development. The proposed projects will comply with the Municipal Code and Fire Department standards for emergency vehicle access and would not conflict with the approved Emergency Operations Plan. Thus, impacts would be less than significant.

- h. The Monterey County Fire Hazard Severity Zone Map designates the City of Greenfield as a Non Very High Fire Hazard Severity Area within an Incorporated Local Responsibility Area. Thus, potential for wildfires are low and the potential risk of loss, injury, or death involving wildland fires is less than significant.

9. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements? (1, 2, 23, 42)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., would the production rate of preexisting nearby wells drop to a level which would not support existing land uses or planned uses for which permits have been granted? (1, 2, 19, 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in <i>substantial erosion or siltation on- or off-site</i> ? (1, 2, 19, 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface run-off in a manner which would result in <i>flooding on- or off-site</i> ? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute run-off water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted run-off? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality? (1, 2, 23)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
j. Be subject to inundation by seiche, tsunami, or mudflow? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓

Comments:

a,f. **Water Quality Standards/Waste Discharge Requirements.** Development of the project sites could result in the discharge non-point source automobile-related waste products from driveways and streets and from construction activities into the storm water system. Additionally, environmental impacts often associated with medical marijuana cultivation include erosion and sedimentation, improper storage or application of potting soil and mulch, amendments, fertilizers, and pesticides that are mobilized by runoff and discharged into surface waters. All projects would be required to comply with General Plan goals 4.10 and 8.2 that address drainage facilities. Consistent with the policies and programs that implement these goals, drainage and erosion control plans must be developed that identify Best Management Practices demonstrating control of erosion and water quality impacts during construction, for approval by the city.

The State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) Program was adopted to control and enforce storm water pollutant discharge reduction per the Clean Water Act. The Central Coast Regional Water Quality Control Board (RWQCB) issues and enforces the NPDES permits for discharges to waterbodies in Monterey County, including Greenfield.

The State NPDES General Construction Permit requires development and implementation of a storm water pollution prevention plan (SWPPP) that uses storm water Best Management Practices to control runoff, erosion and sedimentation from the site both during and after construction. The SWPPP has two major objectives: (1) to help identify the sources of sediments and other pollutants that affect the quality of storm water discharges; and (2) to describe and ensure the implementation of practices to reduce sediment and other pollutants in storm water discharges. If any of the projects intend on disturbing more than one acre of land during construction the developer will be required to file a notice of intent to be covered under the NPDES

General Permit for Storm Water Discharges Associated with Construction Activity for discharges of storm water from construction activities. These developers must propose control measures that are consistent with this permit and consistent with recommendations and policies of the local agency and the regional board.

Future development of the sites must also comply with Resolution No. R3-2013-003, Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast (California Regional Water Quality Control Board Central Coast Region 2013) as mandated by the regional board.

The State Water Resources Control Board is developing a policy for water quality control to establish interim principles and guidelines for cannabis cultivation. The principles and guidelines will include measures to protect springs, wetlands, and aquatic habitats from negative impacts of cannabis cultivation. Principles and guidelines may include instream flow objectives, limits on diversions, and requirements for screening of diversions and elimination of barriers to fish passage. The principles and guidelines may include requirements that apply to groundwater extractions.

The draft policy is anticipated to be released for public comment in June 2017, and the final policy is anticipated to be brought to the State Water Board for adoption in October of 2017. At this time the focus is on the development of interim principles and guidelines. The State Water Board may update interim principles and guidelines as reasonably necessary, pending development of long-term principles and guidelines.

Potential principles and guidelines include minimum instream flows, forbearance periods, off-stream storage requirements, riparian buffers, maximum diversion rates, irrigation conservation measures, and other best management practices. Minimum instream flows and the forbearance periods help maintain natural flow variability and minimize the effects of cannabis cultivation on fisheries and wildlife by protecting water quantity during critical life stages. The riparian buffers, best management practices, and other operational guidelines help maintain healthy riparian corridors and minimize the water quality impacts resulting from cannabis cultivation.

Because the city will require development of the project sites to comply with local and state requirements for construction and storm water discharge the proposed projects would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality during construction or during project operations. Impacts would be less than significant.

- b. **Groundwater Supplies.** The city obtains all of its water supply from the Salinas Valley Groundwater Basin. Continuing extractions of groundwater from the basin, especially the lower reaches of the basin in the Salinas area, are at issue due to chronic overdraft and its contribution to seawater intrusion near the Monterey Bay.

The Salinas Valley Groundwater Basin consists of one large hydrologic unit comprised of four subareas: Upper Valley Subarea, Forebay Subarea, 180-Foot/400-Foot Subarea, and East Side Subarea. These subareas consist of three main vertically divided aquifers: 180-foot aquifer, the 400-foot aquifer, and the Deep Zone, which extends approximately 2,000 feet below land surface (County of Monterey 2010 page 4.3-32). Greenfield is located in the Forebay Subarea. The subareas have different hydrogeologic and recharge characteristics, but barriers to horizontal flow do not separate the subareas and allow water to move between them. Therefore, extraction of water in the Greenfield area for agricultural and urban use can affect overdraft and seawater intrusion conditions within the overall basin, including in the subareas nearest the Monterey Bay where seawater intrusion and overdraft are of significant concern. While this is the case, groundwater overdraft within the Forebay Subarea from which the city obtains its water supply has not historically been a problem (Price Consulting 2013).

Many local and regional agencies and interests have been collaborating to address overdraft conditions in the lower portion of the Basin. The Castroville Seawater Intrusion Project and the Salinas Valley Water Project have been implemented for this purpose. With full implementation of the Salinas Valley Water Project, participating agencies have determined that groundwater depletion would be substantially improved from its baseline conditions and additional overdraft would be avoided or reduced. Additionally, the City of Greenfield Water Shortage Contingency Plan outlines additional water reduction measures in compliance with California Water Code Section 10632.

According to the City of Greenfield Water Management Plan, the water demand factor for light industrial uses is 1,000 gallons per day per acre. The following table demonstrates the water demand for each project site as well as the cumulative demand. Cumulative would be approximately 46.3 acre feet per year. The Water Management Plan determined the City's water supply capacity to be 6,500 acre-feet annually with expansion of its system and found that the City's water supply could accommodate General Plan buildout including new light industrial/highway commercial uses such as those proposed for the project sites.

Table 6 Water Demand

Number	Name	Parcel Size (Acres)	Building Square Footage	Acre Feet Per Year
1	Cannaculture Collective	4.6	96,645	5.2
2	Kool Gildea	3.1 potential expansion to 4.9 total	143,806	5.5
3	Redhunt Corporation	13.0	366,500	14.6
4	Zen Brand	3.2 potential expansion to 4.9 total	105,868	5.5
5	Golden State Alternative Care	10.1	213,145	11.3
6	Emerald Mission	1.1	46,075	1.2
7	Paper Plane Traders	2.6	83,000	3.0
Totals		41.2	1,055,039	46.3

SOURCE: City of Greenfield

The General Plan EIR states that residential and non-residential development resulting from buildout of the General Plan would increase annual water demand from 1,811 acre-feet annually (current as of 2003) to an estimated 5,937 acre-feet annually at buildout. The General Plan EIR, which anticipated development of the sites with light industrial/highway commercial uses, concluded that this change, including the incremental increase in demand from development of the project sites, would not have a significant impact relating to groundwater overdraft.

For the reasons described above, the proposed projects would not individually or cumulatively contribute to substantial depletion of groundwater that adversely impacts groundwater supply or that results in a substantial lowering of the groundwater table.

- c. **Erosion and Siltation.** Development activities associated with future development of the project site may lead to significant erosion and/or siltation.

The General Plan EIR determined that erosion resulting from buildout of the General Plan can be successfully mitigated through implementation of policies and programs of the General Plan including the Growth Element Goal 4.12. Goal 4.2's related policies and programs require that drainage and erosion control plans are submitted for projects that are reviewed by the city building inspection and engineering staff for compliance with all state codes and regulations. These policies require implementation of all recommendations within engineering reports and implementation of best management practices by future construction contractors on the site. Additionally, all development must comply with Section 3316 of the

California Building Code and Greenfield Municipal Code, which specify measures to avoid impacts from erosion, runoff, loss of topsoil, winter operations, and maintenance. Implementation of these measures will reduce potential impacts from soil erosion and siltation to less than significant.

- d. **Off/On-site Flooding.** The conversion of the project sites from largely vacant undeveloped land to the proposed uses would increase the amount of surface area impervious to water, such as pavement, roofing and walkways, and would therefore increase storm water runoff and alter existing drainage patterns. Further, grading activities may alter existing drainage patterns that could lead to localized flooding.

In accordance with city standards, the design of new development projects in Greenfield are required to store and percolate 100 percent of the storm water runoff from a 25-year storm event. General Plan policies 4.12.1 through 4.12.7 encourage design, development, and maintenance of appropriate drainage facilities. As part of the project design and development review process, the applicants will be required to prepare storm drainage improvement plans for the project. The plans must meet city standards for the location, type, and sizing of improvements needed to integrate the project into the city's storm drainage infrastructure system. The system must be sized and designed to convey and dispose of storm water to avoid localized or regional flooding. A grading permit will not be approved until the applicant has demonstrated compliance with storm water improvements standards. Potential impacts from localized flooding due to alteration of site conditions and inadequate capture and disposal of post-development storm water runoff would be less than significant.

- g-h. **100-Year Flood Hazard.** In accordance with the Federal Flood Insurance Administration flood hazard boundary maps, the General Plan FEMA 100-year flood hazard zone map shows that none of the project sites are within the 100-year flood hazard zone. Thus there would be no potential impacts related to flood inundation from natural drainage in the project sites.
- i. **Dam Failure.** The General Plan identifies the failure of either the Nacimiento Reservoir Dam located 40 miles to the southwest, or the San Antonio Reservoir Dam located 30 miles to the southwest, as a low risk hazard. This is due mainly to the city's distance from the reservoirs and the opportunity for the largest volume of water to dissipate on the intervening lands before reaching the city. Both dams are regularly inspected by the state to ensure that their integrity and safety is maintained. Thus, the impacts related to flooding due to the failure of a dam are less than significant.

- j. **Seiche, tsunami, or mudflow.** According to the General Plan, Greenfield is not located in a coastal area or near a large inland body of water and is therefore not subject to tsunami or seiche and it is relatively flat and is not subject to mudflow. Thus, development of the project sites would not result in associated impacts.

10. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
c. Conflict with any applicable habitat conservation plan or natural community conservation plan? (1, 2, 3-9, 24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓

Comments:

- a. **Division of an Established Community.** The proposed project sites are all located within Light Industrial and Highway Commercial designated areas and within proximity to one another. Refer to Figure 2, Aerial Vicinity Map. The sites are generally surrounded or intervened by existing industrial/commercial development, agricultural uses, or fallow land. The proposed projects would continue the transition from fallow land to developed sites within the city as identified in the General Plan. The closest residential community to the project sites is approximately 800 feet to the east of the Zen Brand project site. El Camino Real is located in between this community and the Zen Brand project site and would not divide this community. Three additional single family residences are within the proximity of the project sites. One sits in between the Golden State and Zen Brand sites, another is adjacent to the Zen Brand site, and the third is adjacent to the Redhunt property boundary. However, these residences are bordered by existing industrial development and fallow land and are not part of an established community. Thus, there would be no associated impacts.
- b. **Plan Consistency.** As discussed in this initial study, the proposed projects are consistent with the use of the project sites for light industrial and highway commercial uses as identified in the General Plan. The projects are being designed consistent with development standards contained in the zoning ordinance. The

proposed cultivation and manufacturing uses would not conflict with the current land use designation for the project site or those nearby, and would not conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

- c. **Conservation Plans.** There are no habitat conservation plans or natural community conservation plans adopted for the project area. Therefore, the proposed projects would not conflict with any applicable habitat conservation plan or natural community conservation plan.

11. MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Result in loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated in a local general plan, specific plan, or other land-use plan? (1, 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

- a-b. **Mineral Resources.** The project site is not located in an area containing mineral resources. Therefore, the project would not result in impacts to known mineral resources or result in the loss of availability of a locally important resource recovery site.

12. NOISE

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in applicable standards of other agencies? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
b. Result in exposure of persons to or generation of excessive ground-borne vibration or ground borne noise levels? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (1, 2, 10, 11)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
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, expose people residing or working in the project area to excessive noise levels? (1, 2, 10, 11, 30)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
f. For a project located within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels? (1, 2, 10, 11, 30)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>

Comments:

a,c-d. **Construction Noise Exposure.** Development of proposed projects will result in construction noise that could affect existing adjacent uses during the short-term construction process.

Cannaculture, Kool Gildea, Paper Plane Traders. These three project sites are surrounded by other proposed medical marijuana facilities, agricultural land, vacant

fallow land, or industrial uses, none of which is sensitive to construction noise. Thus, noise impacts related to construction of these projects would be less than significant.

Golden State, Redhunt, Zen Brand. Golden State border one single family home. Zen Brand borders two single-family homes. Zen Brand also sits approximately 800 feet to the northwest of a residential community. Redhunt's southern border is adjacent to another single family home and is approximately 900 feet to the north of the residential community. The two single family homes and residential community are considered sensitive noise receptors.

The General Plan EIR considered potential construction noise impacts of future development, including development of the project sites with light industrial uses. The General Plan EIR determined that development of light industrial projects will result in potentially significant noise impacts due to their construction but found that the policies and programs of the General Plan Noise Element (General Plan Chapter 9.0) mitigate construction-related noise through enforcement of the city's noise ordinance (Greenfield Municipal Code Chapter 17.60, Performance Standards). This Ordinance specifies limitations on construction hours and other measures to reduce such noise to acceptable levels. Continued implementation of General Plan policy and enforcement of the noise ordinance will reduce impacts to a less-than-significant level.

Operational Noise. The proposed projects involve cultivation and/or manufacturing of medical marijuana. These activities would not produce significant temporary or continuous operational noise that would significantly raise existing ambient noise levels. The proposed projects do not include point sources of high intensity noise or sources that are unique or excessive relative to other types of light industrial/highway commercial uses. Cannaculture, Kool Gildea, and Paper Plane Traders are not within proximity to any noise sensitive uses. As discussed above, Golden State, Zen Brand and Redhunt are adjacent to or within proximity of residences that are sensitive uses. However, not only are the proposed uses not the type of use that would significantly raise ambient noise levels at the sensitive receptors, compliance with the General Plan Noise Element policies and programs and with standards contained in the Municipal Code would ensure that on-site operations do not generate noise with an intensity that exceeds city standards at the noise sensitive land uses. Thus, operational noise impacts would be less than significant.

Traffic Noise. Increases in traffic generation as a result of construction and operation of the proposed projects will result in elevated noise levels along local roadways. The General Plan EIR includes evaluation of transportation noise impacts from buildout of the General Plan, including development of the project sites with light industrial

and highway commercial uses. The General Plan EIR concluded that the General Plan Noise Element provides sufficient analysis thresholds and recommendations for noise attenuation to effectively mitigate transportation noise impacts to less than significant. The proposed projects must be consistent with Noise Element policies. Therefore, its contribution to transportation noise will be less than significant.

- b. **Vibration.** Vibration levels generated during project construction activities may at times be perceptible at neighboring land uses, but vibration levels would not be excessive. Further, the projects do not involve operations that would be a source of significant ground vibration. Thus, impacts would be less than significant.

- e-f. **Airport/Airstrip Noise Exposure.** The Yanks Air Museum project will be located at the north end of the city. The project will contain an active airstrip; however, the airfield and museum are not proposed as a public general aviation facility. As such, flights into and out of the facility are expected to be infrequent. The Federal Aviation Administration promulgates regulations for the development and function of airports. Included in the regulations are rules for noise exposure and airport safety. Residential or similar noise sensitive land uses are to be excluded from areas around an airstrip where noise levels from aircraft operations would exceed 65 dB CNEL. Land uses less sensitive to noise can be located within higher intensity noise contours. The noise contours for operations of the airstrip were calculated and mapped on Figure 12 in the Final Environmental Impact Report for the Yanks Air Museum and Visitor-Serving Project. All project sites fall outside of the 65 dB CNEL contour. Consequently, airport operations would not adversely affect people working at the project sites and noise impacts from airport operations would be less than significant.

13. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

- a. **Population Growth.** The proposed projects are all for the cultivation and/or manufacture of medical marijuana and will not result in direct population growth. Jobs generated by the projects are likely to be filled primarily by residents in the city or from nearby cities; substantial indirect new population growth is not expected. The proposed projects would not extend infrastructure or foster growth beyond that planned in the General Plan. Thus, there would be no impacts related to construction of infrastructure as a result of population growth.
- b-c. **Displacement of Housing or People.** The projects would result in the demolition of several vacant dilapidated houses/warehouses and removal of mobile homes. This would not displace a substantial number of people or housing such that it would necessitate the construction of replacement housing elsewhere. Thus, there would be no impacts related to the construction of replacement housing.

14. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of or 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:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
b. Police protection? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
c. Schools? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
d. Parks? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
e. Other public facilities? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓

Comments:

a-b. **Fire Protection Services.** The Greenfield Fire Protection District provides service to the City of Greenfield and outlying rural areas. The district currently has one station, the Greenfield Volunteer Fire Department, which is located near the corner of Oak Avenue and 4th Street. The Greenfield Fire Protection District has a mutual aid agreement for emergency response from area fire departments and, when necessary, receives assistance from the South Monterey County Fire Protection District, the California Department of Forestry and Fire Protection, and other community fire departments within the Salinas Valley, including the Gonzales Volunteer Fire Department.

Law Enforcement Services. The Greenfield Police Department is located at 599 El Camino Real, downtown Greenfield. The police department participates in a Mutual Aid Agreement with County of Monterey Sheriff's Department, which is responsible for patrolling areas around the Greenfield city limits. This program provides for the sharing of resources to respond to significant public safety events.

The applicants are each required to provide a security plan detailing lighting, alarms, fencing, and video cameras, to ensure the safety of persons, and to protect the premises from theft, vandalism, and fire, for approval by the city. According to Chapter 5.28 of the municipal code, the city manager, police chief, or their designees would have the right to enter all medical marijuana facilities from time to time

unannounced during the facility's hours of operation for the purpose of making reasonable inspections to observe and enforce compliance with this chapter, to inspect and copy records required to be maintained under this chapter, or to inspect, view, and copy recordings made by security cameras, all without requirement for a search warrant, subpoena, or court order.

Additional police department staffing will be required during the initial project review period to ensure the security plans are adequately developed and the background checks for all facility staff are completed before final permission to operate the facilities is provided. Once the facilities are operational, staffing will be necessary to continue background checks for new employees, provide for periodic inspections and ongoing law enforcement oversight. In January of 2016 the City Council adopted a fee schedule that will be applied to each project that will mitigate any impacts related to the need for additional law enforcement staff.

Additionally, according to the General Plan EIR, implementing policies and programs of Goals 4.4. and 4.5 outline a number of methods by which police and fire service providers will continue to maintain acceptable service levels at buildout of the General Plan. As with other public services, policies call for fair share financing through new development to offset the cost of additional service needs with which the projects will comply. Implementation of General Plan policies and programs will maintain performance standards for police and fire facilities, and therefore, there would be no environmental impacts.

- c-e. **Parks and Other Public Facilities.** The proposed projects are not population generating and would not individually or cumulatively result in the need for the construction of new facilities. Thus, there would be no impacts associated with construction of new parks or other public facilities.

15. RECREATION

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	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 substantial physical deterioration of the facility would occur or be accelerated? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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? (1-10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓

Comments:

- a-b. **Recreational Facilities.** The proposed projects are not population generating and would not result in an increase in the use of neighborhood or regional parks such that substantial physical deterioration of the facility would occur or that construction or expansion of new facilities would be required. Consequently, no significant change in the demand for use of recreation facilities is expected. Thus, there would be no associated environmental impacts.

16. TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (1, 2-10, 16, 31)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? (1, 2-10, 31)	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (1, 2, 30)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (1, 2, 10, 16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
e. Result in inadequate emergency access? (1, 2-10, 16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreased the performance or safety of such facilities? (1, 2-10, 16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓

Comments:

- a-b. **Conflicts with Applicable Plans.** The City and the Transportation Agency for Monterey County use Level of Service (LOS) as the measure of performance of the roadway network in the city and on the regional circulation network (primarily U.S.

Highway 101 through the city). The General Plan EIR concluded that with implementation of roadway network improvements identified in the General Plan, at city buildout, including development of the project sites with light industrial and highway commercial uses, the performance of the local circulation network would remain at or above acceptable LOS standards.

The following table shows the approximate number of daily trips that would be added to the road network as a result of the proposed projects.

Table 7 Trip Volumes

Facility	ITE Land Use	Number of Employees ¹	ITE Employee Rate Per Day	Daily Trips ²
Cannaculture	Manufacturing	40	2.13	85.20
Kool Gildea	Manufacturing	40	2.13	85.00
Redhunt	Manufacturing	100	2.13	213.00
Zen Brand	Manufacturing	45	2.13	96.00
Golden State	Manufacturing	100	2.13	213.00
Emerald Mission	Manufacturing	30	2.13	63.90
Paper Plane Traders	Manufacturing	47	2.13	100.11
Total		402		856.20

SOURCE: ITE 9th Edition, EMC Planning Group 2017

NOTES:

1. Provided by applicants.
2. Weekday volumes.

The projects would cumulatively add approximately 856 trips per day which could impact the LOS at local roadways. Project developers will be required to pay TAMC’s Regional Development Impact Fee program regional fee to fund their fair share of improvements to the regional transportation network that serves the City. Project developers will also be required to pay the City’s traffic impact fee to fund their share of improvements to the City’s circulation network. Government Code Section 65995(h) provides that payment of development impact fees in accordance with its provisions constitutes “full and complete mitigation of the impacts” of new development. Thus, impacts of the proposed projects on the regional and local circulation network would be less than significant and their contribution to cumulative impacts would be less than cumulatively considerable.

- c. **Change in Air Traffic Patterns.** The proposed project does not include uses that generate air traffic or that have potential to affect air traffic patterns.

- d-e. **Emergency Access/Hazardous Design.** In order to ensure that development of the proposed projects does not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) the proposed projects would be required to adhere to City roadway design standards and guidelines when designing pedestrian facilities, roadway widths, turning radii and intersections where the on-site roadways intersect with existing roadways, and emergency access. All seven project designs must reviewed by the Planning Commission and approved by the City Council as being consistent with the design standards. Thus, the proposed projects would have no impact related to emergency access or hazardous circulation design.

- f. **Transit, Bicycle, or Pedestrian Facilities.** The proposed projects will all include site frontage improvements and circulation facility improvements that are consistent with city standards and circulation plans to accommodate transit, bicycle, and pedestrian facility needs. Through its design review and approval processes, the City will ensure that related improvements are provided consistent with City policies, plans, and programs regarding public transit, bicycle, or pedestrian facilities. Thus, there would be no conflicts with such plans.

17. TRIBAL CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. 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, or 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:				
(1) 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 (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) 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. (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

- a. **Tribal Cultural Resources.** The CEQA statute as amended by Assembly Bill (AB) 52 (Public Resources Code Sections 21073 and 21074) define “California Native American tribe” and “tribal cultural resources.” A California Native American tribe is defined as a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission. “Public Resources Code Section 21080.3.1 outlines procedures for tribal consultation as part of the environmental review process. According to city staff, one California Native American tribe has requested consultation per AB 52.

On April 12, 2017, the City sent a notification to the Ohlone/Coastanoan-Esselen Nation tribal representative regarding the proposed projects and offered early consultation to the tribe. On May 15, 2017, the tribe responded with a request for consultation. As stated in the request for consultation, the tribe is interested in

receiving reports, establishing a procedure for disturbance of unknown sites, and a procedure for unknown sites. On May 19, 2017, City staff attempted to contact the tribe by phone to schedule a consultation, but was only able to leave a voicemail. As of the date of this initial study, the tribe had not responded to the City's phone call. As described in the Cultural Resources section, none of the project sites are known to be a tribal resource or contain features that may constitute a tribal resource.

18. UTILITIES AND SERVICES SYSTEMS

Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (1, 2, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid-waste disposal needs? (1, 2, 10, 35)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste? (1, 2, 10, 35)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

- a. **Wastewater Treatment Requirements.** The Greenfield Wastewater Treatment Plant adheres to wastewater standards set forth by Central Coast Regional Water Quality Control Board (CCRWQCB). Current discharge standards to regulate the system's treatment process require monitoring of effluent pH, total dissolved solids, heavy metals, and biological oxygen. The proposed projects will connect to the municipal sewer so are not subject Regional Water Quality Control Board Waste Discharge

Requirements. The proposed projects would not affect the city's ability to continue to operate the treatment plant in compliance with those requirements. Thus, the impacts related to exceedance of wastewater treatment requirements would be less than significant.

- b,e. **Water Treatment Facilities** The City obtains 100 percent of its raw water supply from groundwater extracted from the Lower Aquifer sub-basin. Raw water receives only light chlorinating at each well site. In 2003, groundwater wells supplied 518 million gallons of water (1,589 Acre Feet) to Greenfield's 17,500 residents. The City currently operates three deep-water wells to supply all municipal water. We have three wells, 1, 6, and 7. Wells 1 and 6 feed the 1,000,000 gallon capacity Oak Avenue reservoir. The pumps meet system demands by continually filling the reservoir. Well 1, located on 14th Street between Walnut Avenue and Cherry Avenue, is the City's primary water well and has operating capacity to produce 1,800 gallons per minute (GPM). Well 6 is located adjacent to Well 1 and has the capacity to produce 1,800 GPM. Well 7 feeds a 1,500,000 gallon storage tank. Both are located at the City's Public Works maintenance yard site adjacent to the Civic Center.

According to the Capital Improvement Plan Update, the water distribution system consists of over 17 miles of transmission and distribution mains made of cast iron, asbestos cement, plastic (C-900), and in a few instances, steel. The distribution system has and will continue to be expanded on an as-needed basis.

Each new residential, commercial or industrial development, including development of the project sites, contributes to the cumulative need for water system expansion. Impact fees are collected and used for improvements required to serve individual projects. Government Code Section 65995(h) provides that payment of development impact fees in accordance with its provisions constitutes "full and complete mitigation of the impacts" of new development. Thus, impacts of the proposed projects would be less than significant and their contribution to cumulative impacts would be less than considerable.

Wastewater Treatment Facilities. The City of Greenfield provides wastewater service to Greenfield and to the Yanks RV Park located in adjacent unincorporated Monterey County. The wastewater services involve the transmission of wastewater from residential, commercial, and industrial areas to the wastewater treatment plant, located at the end of Walnut Avenue, east of Second Street. The wastewater system is composed of collection, treatment, and effluent recycling facilities. At the time of the adoption of General Plan update, the daily flow through the wastewater system was approximately 0.88 million gallons per day (MGD), as compared with the allowable daily flow of 2.0 MGD.

The General Plan EIR found that while collection structures are sufficient to serve the City's current and future needs, treatment, storage, and effluent and sludge recycling facilities must be expanded to meet future requirements. Goal 4.9 and its implementing policies and programs in Chapter 4.0 of the General Plan require coordination of development activity with monitoring capacity within the wastewater system. The policies and programs require developer financing of improvements and assurance of capacity prior to development to ensure that development demand does not outpace system capacity. Policies are also provided to encourage use of reclaimed water in order to delay the need for future expansions of the treatment plant. These measures, together with currently permitted capacity and capacity improvements that are underway, will reduce potential impacts to a less-than-significant level.

- c. **Adequate Storm Drainage Facilities.** Construction of storm drainage infrastructure generally involves excavation, placement of storm drainage conveyance mains or subsurface vaults, installation of LID facilities/features, and backfilling excavations with engineered fill. The construction process does not involve unique equipment or processes that would result in significant environmental impacts that are not addressed as part of the overall project impact analyses included in other sections of this initial study.
- d. **Sufficient Water Supply.** Refer to item "b" in Section 9, Hydrology and Water Quality. The project can be served by existing entitlements.
- f. **Solid Waste.** Solid waste produced in the city is sent to the Johnson Canyon landfill, about 15 miles northwest of Greenfield. Johnson Canyon Landfill is a Class III facility that accepts municipal solid waste from areas within both Monterey and Santa Clara counties. Based on its design capacity and permitted maximum tonnage per day, the landfill has capacity to the year 2040, its estimated closure date. The General Plan EIR determined that adherence to the general plan policies that promote the reduction in solid waste generation such as solid waste resource recovery, composting, recycling, together with available land fill capacity, will ensure that solid waste impacts remain less than significant. Development of the project sites with light industrial and highway commercial uses were contemplated in the General Plan. Thus, impacts would be less than significant.
- g. **Federal, State and Local Requirements.** The Salinas Valley Solid Waste Authority is obligated to comply with the state's solid waste diversion regulations. The state's current goal is 75 percent of waste intake diverted from landfills. At present, the

Salinas Valley Solid Waste Authority is diverting an average of 72 percent of the solid waste it receives. Future development would be required to comply with all applicable solid waste regulations and therefore, would have no impact associated with compliance with federal, state, and local statutes and regulations related to solid waste.

19. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Measures Incorporated	Less-Than-Significant Impact	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? (1-10, 18)	<input type="checkbox"/>	✓	<input type="checkbox"/>	<input type="checkbox"/>
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) (1-10, 24, 25, 26, 27, 28, 31-34)	<input type="checkbox"/>	✓	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly? (1, 2-10, 11, 31-34)	<input type="checkbox"/>	✓	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- a. As discussed in the Biological Resources section, most special-status plant and wildlife species known to occur in the region are not expected to occur on the project sites due to lack of suitable habitats. However, the following special-status wildlife species have the potential to occur on or adjacent to the project sites: nesting birds/raptors, bats, and burrowing owl. Mitigation measures BIO-1 through BIO-3 would reduce the potential impacts to these species to a less-than-significant level. There are no historic resources located within any of the project sites.
- b. The proposed projects are consistent with the General Plan land use designations and zoning standards for the project sites. They represent the City’s continued implementation of the General Plan. The cumulative impacts of implementing the General Plan, including potential impacts on human beings, are identified in the General Plan EIR. Most of the impacts would be reduced to less than significant

through implementation of General Plan policies and programs. Some of the impacts would contribute to significant and unavoidable impacts identified in the General Plan EIR; however, the City adopted a statement of overriding considerations for those impacts excluding GHG impacts which were not analyzed in the General Plan EIR. The proposed projects would contribute to all cumulative impacts that were identified by the General Plan. However, given the characteristics of the proposed projects and their consistency with the General Plan and zoning, their contribution to the cumulative impacts would not be considerable.

With the application of 2016 Title 24 compliance and Advance Clean Car regulatory reductions, the Redhunt project emissions of 1,453.28 MT CO₂e exceed the significance threshold of 1,150 MT CO₂e. Therefore, this project would have a significant impact. Implementation of mitigation measure GHG-1 would reduce this impact to less than significant.

- c. Several of the projects have potential to result in short-term air quality impacts, GHG impacts, and/or hazards impacts to adjacent residents associated with construction/demolition activity. However, with implementation of mitigation measures AQ-1, AQ-2, GHG-1, and HAZ-1 presented in this initial study, these individual projects will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.

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All documents indicated with bold numbers are available for review at the **City of Greenfield, 599 El Camino Real, Greenfield CA 93927, 831.674.5591** during normal business hours.

All documents listed above are available for review at EMC Planning Group Inc., 301 Lighthouse Avenue, Suite C, Monterey, California 93940, (831) 649-1799 during normal business hours.

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APPENDIX A

CALEEMOD RESULTS



EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

301 Lighthouse Avenue Suite C Monterey California 93940
Tel 831-649-1799 Fax 831-649-8399 www.emcplanning.com

To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner; Dana McCarthy, Assistant Planner
Cc: File (ENV-719)
Date: May 17, 2017

Re: Canna Culture Collective – Air Quality and Greenhouse Gases (GHG)
Emissions Assessment

Project Description

The proposed project is the development of a medical marijuana cultivation facility in two phases on a 4.6-acre site in Greenfield California. At full buildout the proposed facility would include greenhouses, storage/warehouse areas, loading docks, and office space and would provide 25-40 jobs. Proposed improvements to the site include surface parking lots, and infrastructure improvements such as storm water detention, paved access to and within the site, sidewalks, lighting and landscaping. The historic use of the site is agricultural production and the site is improved with a 2,250 square foot metal building that is used for storage ancillary to the agricultural use. The proposed project would improve this structure for use as an office for the facility. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's existing and proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the

California Air Resources Board and accepted by the air district. Model results are attached to this memorandum. For modeling purposes, data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics and other project information provided by the applicants.

Project Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources](#).

Table 1 Project Characteristics¹

Existing and Proposed Uses	CalEEMod Land Use Category	Size ²	
		Existing	Proposed
Dry Storage/Warehouse	Unrefrigerated Warehouse – No Rail	2,250	5,400
Greenhouses/R&D/Processing/Internal Offices ³	Manufacturing ⁴	0	91,145
Parking	Surface Parking Lot	0	45
Other Pavement	Other Asphalt Surfaces	0	58,311
Sidewalks, patios, etc.	Other Non-Asphalt Surfaces	0	10,000 ⁵
Landscaping ⁵ /Detention Pond ⁶	Other Non-Asphalt Surfaces	0	31,709

Source: RCUSA Corporation 2017, Google Earth 2016, BREEZE Software 2016, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. In Square feet unless otherwise noted.
3. Includes detached office building and future greenhouse expansion area 36,275 square feet (RCUSA 2017 Sheet A2.2)
4. Manufacturing facilities are areas where the primary activity is the conversion of raw materials into finished products. This use generally also has some office, warehouse, and R&D functions at the site.
5. Size inferred from site plans
6. The proposed detention pond and landscaping would not be substantial sources of operational emissions but are included in the model to enable estimation of construction emissions across the entire site.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Output Rating ¹
Emergency Generator ²	1	diesel	4023HP (3,000KW)
Forklifts ²	1	diesel	Default ³
Pallet Movers/Jacks ²	1	electric	Default ³

Source: RCUSA Corporation 2017,

Notes:

1. Horsepower (HP), Kilowatt (KW), or Boiler Rating (MMBtu).
2. Assumed based on experience with similar projects (One forklift and pallet mover/jack per 100 ksf).
3. CalEEMod default.

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and also calculates a potential carbon “offset” from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB, and use of the default construction parameters is accepted by the air district.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational mobile-source and area-source emissions from the proposed project were captured using the following CalEEMod default land use subtypes:
 - a. Emissions from the existing use of the site are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Unrefrigerated Warehouse – No Rail”, which typically consists of warehouse facilities that are not accessible by rail.
 - b. Emissions generated by greenhouses, processing, research and development (R&D), dry storage and related office uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Manufacturing”, which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.
 - c. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Parking Lot”, which is a single surface parking lot typically covered with asphalt.
 - d. Emissions from driveway access and internal roadways are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Other Asphalt Surfaces”, which is described as an asphalt area not used as a parking lot.
 - e. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes equipment pads, loading dock areas, etc.
3. The model’s default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019 and the anticipated intensity factor for project’s operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric’s energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric’s Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.

The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses, and applied to the proposed warehouse/manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees. The adjusted trip rates are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips	Adjusted Trip Rate (per ksf per day) ^{4,5}
Manufacturing	2.13	40	85.2	0.88

Sources: ITE 9th Edition, EMC Planning Group 2017)

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily trips are divided by Manufacturing and Unrefrigerated Warehouse ksf (96,545) to yield adjusted trip rate for all phases of the project.
5. This is a conservative estimate of trip rates as it assumes 40 employees would be on site each day.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing the proposed project GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project's contribution to GHG emissions.

Operational Emissions Data Inputs

Other than the land use characteristic information identified above, model defaults were used for operational stationary source, area source and mobile source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with the air district's guidance, the model defaults were utilized for all construction data inputs.

Carbon Offsets and Sequestration Inputs

CalEEMod also estimates a one-time only change in sequestration potential resulting from changes in natural communities, and also calculates a carbon "offset" based upon the number of net new trees proposed, averaged over a 20-year growth cycle. Due to the size of the project site and comparison of existing and proposed activities, changes in vegetation would not provide measureable results that would affect the outcome of the emissions modeling. According to the proposed landscape plan, at least 71 new trees would be planted on site, with no trees removed; therefore, a carbon offset calculation was conducted for this assessment.

Results

GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO₂e). Criteria air pollutant emissions are reported in pounds per day. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 3, Operational Criteria Pollutant Emissions \(Pounds per Day\)](#). Criteria pollutant concentrations are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported.

Table 3 Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Suspended Particulate Matter (PM₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)	6.25	18.12	1.19	13.29

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Existing Operational GHG Emissions

Existing operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO_{2e}). According to the CalEEMod modeling results unmitigated operational GHG emissions under existing conditions are an estimated 10.74 MT CO_{2e} per year.

Unmitigated Construction Emissions

The proposed project would generate an estimated 377.55 MT CO_{2e} unmitigated emissions during construction. With unmitigated construction emissions averaged over a 30-year operational lifetime, the annual amortized emissions equal 12.59 MT CO_{2e}.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 4, Unmitigated Operational GHG Emissions \(MT CO_{2e} per year\)](#).

Table 4 Unmitigated Operational GHG Emissions (MT CO₂e per year)¹

Emissions Source	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO ₂ e
Area	0.00	<0.01	<0.01	0.00	<0.01
Energy	0.00	240.38	0.01	<0.01	242.06
Mobile	0.00	120.62	<0.01	0.00	120.80
Off-road Equipment	0.00	17.85	<0.01	0.00	17.99
Stationary	0.00	280.35	0.00	0.00	281.33
Waste	23.98	0.00	1.42	0.00	59.40
Water	7.08	16.82	0.73	0.02	47.35
Total	31.06	707.08	2.21	0.02	768.93

Source: CalEEMod Results, EMC Planning Group 2017
 Note: Results may vary due to rounding.

Carbon Offset

Tree planting proposed by the project would generate a carbon offset of 50.27 MT CO₂e over a 20-year active life cycle for new trees. For reporting purposes this amount is averaged over a thirty year lifetime of the project to yield an annual carbon offset. The annual carbon sequestration offset for the proposed project is 1.68 MT CO₂e per year. This amount is deducted from the total annual unmitigated GHG emissions generated by the proposed project.

GHG Emissions Attributable to the Proposed Project

The total unmitigated GHG emissions attributable to the proposed project are determined by comparing existing emissions with proposed unmitigated construction and operational emissions, and any carbon offsets applicable to the project. A summary of the unmitigated GHG emissions attributable to the proposed project are presented in [Table 5, Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 5 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction	Annual Carbon Offset	Project Emissions ²	Existing Emissions	Project Net Emissions
768.93	12.59	<1.68> ³	779.84	<10.74> ³	769.10

Source: CalEEMod Results, EMC Planning Group 2017
 Notes:

1. Results may vary due to rounding.
2. Project emissions result is the sum of operational and amortized construction emissions less the annual carbon offset.
3. <brackets> indicate deductions.

Sources

1. RCUSA Corporation. 2016. Project Plans: *Cannaculture Greenfield/Green Acres 802 El Camino Real, Greenfield CA*.
2. BREEZE Software. A Division of Trinity Consultants. *California Emissions Estimator (CalEEMod) Version 2016.3.1*. September 2016. Available online at:
<http://www.aqmd.gov/caleemod.htm>
3. BREEZE Software. A Division of Trinity Consultants. *CalEEMod User's Guide (Version 2016.3.1)*. September 2016. Available online at:
<http://www.aqmd.gov/caleemod/guide.htm>
4. MBARD. CEQA Air Quality Guidelines. 2008.
[http://mbard.org/pdf/CEQA_full%20\(1\).pdf](http://mbard.org/pdf/CEQA_full%20(1).pdf)

802 El Camino Real, Greenfield (Existing Conditions) - Monterey County, Annual

**802 El Camino Real, Greenfield (Existing Conditions)
Monterey County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.25	1000sqft	4.60	2,250.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4	Operational Year		2018	
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
 Land Use - Actual lot acreage
 Construction Phase - No construction

2.0 Emissions Summary

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	0.0104	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Energy	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	2.7754	2.7754	1.1000e-004	3.0000e-005	2.7872
Mobile	2.1800e-003	9.2500e-003	0.0267	6.0000e-005	4.1400e-003	9.0000e-005	4.2300e-003	1.1100e-003	8.0000e-005	1.2000e-003	0.0000	5.3557	5.3557	3.3000e-004	0.0000	5.3640
Waste						0.0000	0.0000		0.0000	0.0000	0.4283	0.0000	0.4283	0.0253	0.0000	1.0611
Water						0.0000	0.0000		0.0000	0.0000	0.1651	0.8190	0.9841	0.0170	4.1000e-004	1.5305
Total	0.0126	9.6300e-003	0.0270	6.0000e-005	4.1400e-003	1.2000e-004	4.2600e-003	1.1100e-003	1.1000e-004	1.2300e-003	0.5934	8.9502	9.5436	0.0427	4.4000e-004	10.7428

4.0 Operational Detail - 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					
Unmitigated	2.1800e-003	9.2500e-003	0.0267	6.0000e-005	4.1400e-003	9.0000e-005	4.2300e-003	1.1100e-003	8.0000e-005	1.2000e-003	0.0000	5.3557	5.3557	3.3000e-004	0.0000	5.3640

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.78	3.78	3.78	11,036	11,036
Total	3.78	3.78	3.78	11,036	11,036

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.519098	0.034062	0.199476	0.151864	0.028389	0.006635	0.017892	0.024867	0.004163	0.003186	0.008055	0.001292	0.001019

5.0 Energy Detail

Historical Energy Use: N

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.3564	2.3564	1.1000e-004	2.0000e-005	2.3656
NaturalGas Unmitigated	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4190	0.4190	1.0000e-005	1.0000e-005	0.4215

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas 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					
Unrefrigerated Warehouse-No Rail	7852.5	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4190	0.4190	1.0000e-005	1.0000e-005	0.4215
Total		4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4190	0.4190	1.0000e-005	1.0000e-005	0.4215

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	8100	2.3564	1.1000e-004	2.0000e-005	2.3656
Total		2.3564	1.1000e-004	2.0000e-005	2.3656

6.0 Area Detail

	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					
Unmitigated	0.0104	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005

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	1.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Total	0.0104	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.9841	0.0170	4.1000e-004	1.5305

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.520312/0	0.9841	0.0170	4.1000e-004	1.5305
Total		0.9841	0.0170	4.1000e-004	1.5305

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	0.4283	0.0253	0.0000	1.0611

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No	2.11	0.4283	0.0253	0.0000	1.0611
Total		0.4283	0.0253	0.0000	1.0611

CannaCulture Project Greenfield CA
Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	91.15	1000sqft	2.09	91,150.00	0
Unrefrigerated Warehouse-No Rail	5.40	1000sqft	0.12	5,400.00	0
Other Asphalt Surfaces	58.31	1000sqft	1.34	58,310.00	0
Other Non-Asphalt Surfaces	10.00	1000sqft	0.23	10,000.00	0
Other Non-Asphalt Surfaces	31.71	1000sqft	0.73	31,710.00	0
Parking Lot	45.00	Space	0.41	8,100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	307	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2019 Projected CO2 Intensity factor

Land Use - Site information from Site Plans

Construction Phase - Assume 10 months construction duration

Vehicle Trips - Converted from ITE 9th Ed. employee-based trip rates.

Sequestration - Based on Landscape Plan

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Operational Off-Road Equipment - Assumed one per 100ksf

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3,000kwh

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	250.00
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Parking	150	0
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	18.00	15.00
tblConstructionPhase	NumDays	230.00	150.00
tblConstructionPhase	NumDays	18.00	15.00
tblFleetMix	FleetMixLandUseSubType	Unrefrigerated Warehouse-No Rail	Other Asphalt Surfaces
tblFleetMix	FleetMixLandUseSubType	Other Asphalt Surfaces	Other Non-Asphalt Surfaces
tblFleetMix	FleetMixLandUseSubType	Other Non-Asphalt Surfaces	Parking Lot
tblFleetMix	FleetMixLandUseSubType	Parking Lot	Unrefrigerated Warehouse-No Rail
tblLandUse	BuildingSpaceSquareFeet	18,000.00	8,100.00
tblLandUse	LandUseSquareFeet	18,000.00	8,100.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	168.00	11.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0.00	71.00

tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	4,023.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.50
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	182.50
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.17
tblVehicleTrips	ST_TR	1.68	0.17
tblVehicleTrips	SU_TR	0.62	0.15
tblVehicleTrips	SU_TR	1.68	0.15
tblVehicleTrips	WD_TR	3.82	0.88
tblVehicleTrips	WD_TR	1.68	0.88

2.0 Emissions Summary

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	2.4746	2.3000e-004	0.0249	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0529	0.0529	1.4000e-004		0.0565
Energy	0.0719	0.6534	0.5488	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.0445	784.0445	0.0150	0.0144	788.7037
Mobile	0.2460	1.2749	3.1033	7.1900e-003	0.5290	0.0106	0.5396	0.1418	0.0100	0.1518		725.6800	725.6800	0.0443		726.7884
Offroad	0.1600	1.4283	1.1942	1.5300e-003		0.1107	0.1107		0.1018	0.1018		151.3204	151.3204	0.0479		152.5173
Stationary	3.3006	14.7619	8.4169	0.0159		0.4856	0.4856		0.4856	0.4856		1,688.6827	1,688.6827	0.2368		1,694.6015
Total	6.2530	18.1187	13.2881	0.0285	0.5290	0.6566	1.1856	0.1418	0.6472	0.7889		3,349.7804	3,349.7804	0.3441	0.0144	3,362.6674

4.0 Operational Detail - 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					
Unmitigated	0.2460	1.2749	3.1033	7.1900e-003	0.5290	0.0106	0.5396	0.1418	0.0100	0.1518		725.6800	725.6800	0.0443		726.7884

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	80.21	15.50	13.67	179,436	179,436
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	4.75	0.92	0.81	10,630	10,630
Total	84.96	16.41	14.48	190,067	190,067

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

	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 Unmitigated	0.0719	0.6534	0.5488	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.0445	784.0445	0.0150	0.0144	788.7037

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							
Manufacturing	6612.75	0.0713	0.6483	0.5446	3.8900e-003		0.0493	0.0493		0.0493	0.0493		777.9700	777.9700	0.0149	0.0143	782.5931
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Unrefrigerated Warehouse-No Fuel	51.6329	5.6000e-004	5.0600e-003	4.2500e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004		6.0745	6.0745	1.2000e-004	1.1000e-004	6.1106
Total		0.0719	0.6534	0.5488	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.0445	784.0445	0.0150	0.0144	788.7037

6.0 Area Detail

	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							
Unmitigated	2.4746	2.3000e-004	0.0249	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0529	0.0529	1.4000e-004		0.0565

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	0.3678					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1045					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	2.3600e-003	2.3000e-004	0.0249	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0529	0.0529	1.4000e-004		0.0565
Total	2.4747	2.3000e-004	0.0249	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0529	0.0529	1.4000e-004		0.0565

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	8.00	260	89	0.20	Diesel
Other Material Handling Equipment	1	8.00	260	11	0.40	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	0.1600	1.4283	1.1942	1.5300e-003		0.1107	0.1107		0.1018	0.1018		151.3204	151.3204	0.0479		152.5173
Total	0.1600	1.4283	1.1942	1.5300e-003		0.1107	0.1107		0.1018	0.1018		151.3204	151.3204	0.0479		152.5173

**CannaCulture Project Greenfield CA
Monterey Bay Unified APCD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	91.15	1000sqft	2.09	91,150.00	0
Unrefrigerated Warehouse-No Rail	5.40	1000sqft	0.12	5,400.00	0
Other Asphalt Surfaces	58.31	1000sqft	1.34	58,310.00	0
Other Non-Asphalt Surfaces	10.00	1000sqft	0.23	10,000.00	0
Other Non-Asphalt Surfaces	31.71	1000sqft	0.73	31,710.00	0
Parking Lot	45.00	Space	0.41	8,100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2019 Projected CO2 Intensity factor

Land Use - Site information from Site Plans

Construction Phase - Assume 10 months construction duration

Vehicle Trips - Converted from ITE 9th Ed. employee-based trip rates.

Sequestration - Based on Landscape Plan

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Operational Off-Road Equipment - Assumed one per 100ksf

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3,000kwh

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	250.00
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_EF_Parking	150	0
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	18.00	15.00
tblConstructionPhase	NumDays	230.00	150.00
tblConstructionPhase	NumDays	18.00	15.00
tblFleetMix	FleetMixLandUseSubType	Unrefrigerated Warehouse-No Rail	Other Asphalt Surfaces
tblFleetMix	FleetMixLandUseSubType	Other Asphalt Surfaces	Other Non-Asphalt Surfaces
tblFleetMix	FleetMixLandUseSubType	Other Non-Asphalt Surfaces	Parking Lot
tblFleetMix	FleetMixLandUseSubType	Parking Lot	Unrefrigerated Warehouse-No Rail
tblLandUse	BuildingSpaceSquareFeet	18,000.00	8,100.00
tblLandUse	LandUseSquareFeet	18,000.00	8,100.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	168.00	11.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0.00	71.00

tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	4,023.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.50
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	183.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.88
tblVehicleTrips	ST_TR	1.68	0.88
tblVehicleTrips	SU_TR	0.62	0.88
tblVehicleTrips	SU_TR	1.68	0.88
tblVehicleTrips	WD_TR	3.82	0.88
tblVehicleTrips	WD_TR	1.68	0.88

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2579	2.2784	1.5603	2.8000e-003	0.1179	0.1270	0.2449	0.0509	0.1188	0.1698	0.0000	255.2107	255.2107	0.0499	0.0000	256.4590
2018	1.2228	0.8735	0.7152	1.3400e-003	0.0258	0.0478	0.0736	7.0000e-003	0.0449	0.0519	0.0000	120.5491	120.5491	0.0217	0.0000	121.0910
Total	1.4807	3.1518	2.2755	4.1400e-003	0.1437	0.1748	0.3185	0.0579	0.1637	0.2217	0.0000	375.7597	375.7597	0.0716	0.0000	377.5500

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
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Consumer Products	0.3841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Landscaping	3.0000e-004	3.0000e-005	3.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0000e-003	6.0000e-003	2.0000e-005	0.0000	6.4000e-003
Total	0.4515	3.0000e-005	3.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0000e-003	6.0000e-003	2.0000e-005	0.0000	6.4000e-003

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	23.9069	0.7291	0.0175	47.3521

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	21.0784 / 0	22.5698	0.6883	0.0165	44.7037
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	1.24875 / 0	1.3371	0.0408	9.8000e-004	2.6484
Total		23.9069	0.7291	0.0175	47.3521

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Unmitigated	23.9753	1.4169	0.0000	59.3977
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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	113.03	22.9441	1.3560	0.0000	56.8430
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	5.08	1.0312	0.0609	0.0000	2.5547
Total		23.9753	1.4169	0.0000	59.3977

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	113.03	22.9441	1.3560	0.0000	56.8430
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No	5.08	1.0312	0.0609	0.0000	2.5547
Total		23.9753	1.4169	0.0000	59.3977

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Forklifts	1	8.00	260	89	0.20	Diesel
Other Material Handling Equipment	1	8.00	260	11	0.40	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	tons/yr										MT/yr					
Forklifts	0.0208	0.1857	0.1552	2.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	17.8458	17.8458	5.6500e-003	0.0000	17.9870
Total	0.0208	0.1857	0.1552	2.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	17.8458	17.8458	5.6500e-003	0.0000	17.9870

10.0 Vegetation



EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

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To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner, Dana McCarthy, Assistant Planner
Cc: File (ENV-719)
Date: May 17, 2017

Re: Kool Gildea – Air Quality and Greenhouse Gases (GHG) Emissions Assessment

Project Description

The proposed project is the development of medical marijuana cultivation and manufacturing facility on a vacant 5.81-acre site in Greenfield California. The proposed facility includes greenhouses, and offices. Improvements to the site would include a 13-space paved parking lot, paved access routes, and a relocated storm water retention pond. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of proposed area- and mobile-source criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the air district. Model results for proposed conditions are attached to this memorandum.

Project Emissions Sources

Proposed sources of criteria air pollutant and GHG emissions, and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources and Off-road Equipment](#).

Table 1 Project Characteristics

Proposed Uses	CalEEMod Land Use Category	Size ^{1,2}
Greenhouses (includes second floor greenhouse)	Manufacturing ³	121,869
Manufacturing/Processing/Office Space		11,705
Support Facilities (irrigation/equipment/boiler rooms, maintenance shop), Interior Corridors		10,232
Total Manufacturing		143,806
Parking Spaces	Surface Parking Lot	13
Other Pavement	Other Asphalt Surfaces	36,645
Landscaping and Storm Water Retention Pond ⁴	Other Non-Asphalt Surfaces	61,307
Sidewalks, patios, loading docks, etc. ⁵	Other Non-asphalt Surfaces	7,840

Source: LarssenLtd Greenhouse Engineering 2017, Breeze Software 2016

Notes:

1. Amounts may vary due to rounding.
2. Expressed in square feet, except for parking, which is expressed by number of spaces.
3. Manufacturing facilities are areas where the primary activity is the conversion of raw materials into finished products. It generally also has office, warehouse, and R&D functions at the site.
4. The storm water retention basin and landscaping would not be substantial sources of operational emissions and are included in the model only to enable estimation of construction emissions across the entire site.
5. Estimated square footage from site plan.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Input Rating ¹
Emergency Generator	1	Diesel	2,682 HP
Fire Pump	1	Electric	11 HP
Forklifts	1	Electric	89 HP

Source: Larssen Ltd Greenhouse Engineering 2017; Victor Krahn, Pers. Com. 2017.

Note: 1. Horsepower (HP)

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and also calculates a potential carbon “offset” from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB, and use of the default construction parameters is accepted by the air district.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational emissions were captured using the following CalEEMod default land use subtypes:
 - a. Emissions generated by the proposed greenhouses, warehouse, processing/R&D/storage, and office space use are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype

“Manufacturing”, which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.

- b. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Parking Lot” which is a single surface parking lot typically covered with asphalt.
 - c. Emissions from driveway access and internal roadways are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Other Asphalt Surfaces”, which is described as an asphalt area not used as a parking lot.
 - d. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes equipment pads, loading dock areas, etc.
 - e. Proposed landscaping are categorized by the CalEEMod default land use subtype “Other Non-Asphalt Surfaces” to enable construction emissions estimates.
3. The model’s default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019, which is the anticipated intensity factor for project’s operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric’s energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric’s Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.
 4. The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site.

Operational Emissions Data Inputs

Other than the land use characteristic information identified above, model defaults were used for operational stationary source and area source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum. Mobile-source emissions are based on the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees. The adjusted trip rates are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips	Adjusted Trip Rate (per ksf per day) ^{4,5}
Manufacturing	2.13	40	85.2	0.59

Sources: ITE 9th Edition, EMC Planning Group 2017)

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily trips are divided by the total proposed 143.8 ksf for manufacturing uses to yield adjusted trip rate per thousand square feet.
5. This is a conservative estimate of trip rates as it assumes 40 employees would be on site each day.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, based on guidance from the air district, the model defaults were utilized for all construction data inputs.

Results

Construction and operational GHG emissions are reported on an annual basis in metric tons of carbon dioxide equivalent (CO₂e). Criteria air pollutant emissions are reported in pounds per day. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Winter emissions of criteria pollutants are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported. Operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 4, Operational Criteria Pollutant Emissions \(Pounds per Day\)](#).

Table 4 Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)	4.19	3.55	0.73	5.22

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Unmitigated Construction Emissions

The proposed project would generate an estimated 397.97 MT CO₂e unmitigated emissions during construction. With unmitigated construction emissions averaged over a 30-year operational lifetime, annual amortized emissions equal 13.27 MT CO₂e. For ease of reporting, these are added to the annual operational emissions generated by the proposed project.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 5, Unmitigated Operational GHG Emissions \(MT CO₂e per year\)](#).

Table 5 Unmitigated Operational GHG Emissions (MT CO₂e per year)

Emissions	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO ₂ e
Area Source	0.00	<0.01	<0.01	0.00	<0.01
Energy	0.00	372.47	0.02	<0.01	375.06
Mobile	0.00	117.41	<0.01	0.00	117.58
Offroad	0.00	17.85	<0.01	0.00	17.99
Stationary	0.00	51.07	<0.01	0.00	51.25
Waste	36.20	0.00	2.14	0.00	89.68
Water	10.55	25.06	1.09	0.03	70.53
Total	46.75	583.85	3.25	0.03	722.09

Source: CalEEMod Results, EMC Planning Group 2017
 Note: Results may vary due to rounding.

GHG Emissions Attributable to the Proposed Project

The unmitigated GHG emissions attributable to the proposed project are presented in [Table 6, Summary of Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 6 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction ²	Total
722.09	13.27	735.36

Source: CalEEMod Results, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. Total project emissions result is reported as sum of annual operations and amortized construction.

The total unmitigated operational GHG emissions volume attributable to the proposed project is 735.36 MT CO₂e per year.

Sources

1. Larssen LTD Greenhouse Engineering. 2017. Project Plans: Kool Gildea, 600 Cypress, Greenfield, CA 93927.
2. Rubicon California LLC. 2017. Project Information: Kool Gildea, 600 Cypress Avenue, Greenfield, CA 93927.

3. Krahn, Victor. Kool Gildea. Email messages to Mic Steinman. Subject: Kool Gildea clarifications, dated April 12, 2017 and April 13, 2017.
4. Pacific Gas & Electric. Greenhouse Gas Factors: Guidance for PG&E Customers. November 2015. Accessed online September 29, 2016 at:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
5. BREEZE Software. A Division of Trinity Consultants. *California Emissions Estimator (CalEEMod) Version 2016.3.1*. September 2016. Available online at:
<http://www.aqmd.gov/caleemod.htm>
6. BREEZE Software. A Division of Trinity Consultants. *CalEEMod User's Guide (Version 2016.3.1)*. September 2016. Available online at:
<http://www.aqmd.gov/caleemod/guide.htm>
7. MBARD. CEQA Air Quality Guidelines. 2008.
[http://mbard.org/pdf/CEQA_full%20\(1\).pdf](http://mbard.org/pdf/CEQA_full%20(1).pdf)

Kool Gildea (Proposed Conditions) - Monterey County, Winter

Kool Gildea (Proposed Conditions)
Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	143.81	1000sqft	3.30	143,806.00	0
Parking Lot	13.00	Space	0.08	3,592.54	0
Other Asphalt Surfaces	36.65	1000sqft	0.84	36,645.00	0
Other Non-Asphalt Surfaces	61.31	1000sqft	1.41	61,307.00	0
Other Non-Asphalt Surfaces	7.84	1000sqft	0.18	7,840.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	307	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor adjusted to 2019 projections (PG&E 2015)

Land Use - Parking lot area provided by applicant.

Vehicle Trips - Adjusted to reflect ITE (9th Ed) per employee trip rates.

Energy Use - PG&E CO2 intensity factor adjusted to 2019 projections (see Project Characteristics tab)

Operational Off-Road Equipment - Information provided by applicant

Stationary Sources - Emergency Generators and Fire Pumps - Information provided by applicant

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblLandUse	BuildingSpaceSquareFeet	143,810.00	143,806.00
tblLandUse	BuildingSpaceSquareFeet	5,200.00	3,592.54
tblLandUse	BuildingSpaceSquareFeet	36,650.00	36,645.00
tblLandUse	BuildingSpaceSquareFeet	61,310.00	61,307.00
tblLandUse	LandUseSquareFeet	143,810.00	143,806.00
tblLandUse	LandUseSquareFeet	5,200.00	3,592.54
tblLandUse	LandUseSquareFeet	36,650.00	36,645.00
tblLandUse	LandUseSquareFeet	61,310.00	61,307.00
tblLandUse	LotAcreage	0.12	0.08
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	2,682.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	11.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.11

tblVehicleTrips	SU_TR	0.62	0.10
tblVehicleTrips	WD_TR	3.82	0.59

2.0 Emissions Summary

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	3.6791	2.5000e-004	0.0271	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0575	0.0575	1.6000e-004		0.0614
Energy	0.1125	1.0228	0.8592	6.1400e-003		0.0777	0.0777		0.0777	0.0777		1,227.3917	1,227.3917	0.0235	0.0225	1,234.6855
Mobile	0.2459	1.0960	3.1312	7.0200e-003	0.5277	9.6400e-003	0.5373	0.1414	9.0900e-003	0.1505		706.7266	706.7266	0.0422		707.7818
Offroad	0.1608	1.4355	1.2002	1.5300e-003		0.1112	0.1112		0.1023	0.1023		152.0770	152.0770	0.0481		153.2799
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	4.1983	3.5546	5.2176	0.0147	0.5277	0.1987	0.7263	0.1414	0.1892	0.3306		2,086.2528	2,086.2528	0.1140	0.0225	2,095.8086

4.0 Operational Detail - 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					
Unmitigated	0.2459	1.0960	3.1312	7.0200e-003	0.5277	9.6400e-003	0.5373	0.1414	9.0900e-003	0.1505		706.7266	706.7266	0.0422		707.7818

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		

Manufacturing	84.85	15.82	14.38	189,534	189,534
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	84.85	15.82	14.38	189,534	189,534

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961
Parking Lot	0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961
Other Asphalt Surfaces	0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961
Other Non-Asphalt Surfaces	0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961
Other Non-Asphalt Surfaces	0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961

5.0 Energy Detail

Historical Energy Use: N

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day											lb/day					
NaturalGas Unmitigated	0.1125	1.0228	0.8592	6.1400e-003		0.0777	0.0777		0.0777	0.0777		1,227.3917	1,227.3917	0.0235	0.0225	1,234.6855

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas 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					
Manufacturing	10432.8	0.1125	1.0228	0.8592	6.1400e-003		0.0777	0.0777		0.0777	0.0777		1,227.3917	1,227.3917	0.0235	0.0225	1,234.6855
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Total		0.1125	1.0228	0.8592	6.1400e-003		0.0777	0.0777		0.0777	0.0777		1,227.3917	1,227.3917	0.0235	0.0225	1,234.6855

6.0 Area Detail

	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					
Unmitigated	3.6791	2.5000e-004	0.0271	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0575	0.0575	1.6000e-004		0.0614

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	0.5603					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1162					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5700e-003	2.5000e-004	0.0271	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0575	0.0575	1.6000e-004		0.0614
Total	3.6791	2.5000e-004	0.0271	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0575	0.0575	1.6000e-004		0.0614

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	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	0.1608	1.4355	1.2002	1.5300e-003		0.1112	0.1112		0.1023	0.1023		152.0770	152.0770	0.0481		153.2799
Total	0.1608	1.4355	1.2002	1.5300e-003		0.1112	0.1112		0.1023	0.1023		152.0770	152.0770	0.0481		153.2799

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	50	2682	0.73	Diesel
Fire Pump	1	0	1	11	0.73	Diesel

10.1 Stationary Sources

	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					
Emergency Generator - Diesel (750 - 9999 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Fire Pump - Diesel (11 - 25 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000



Kool Gildea (Proposed Conditions) Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	143.81	1000sqft	3.30	143,810.00	0
Other Asphalt Surfaces	36.65	1000sqft	0.84	36,650.00	0
Other Non-Asphalt Surfaces	61.31	1000sqft	1.41	61,310.00	0
Other Non-Asphalt Surfaces	7.84	1000sqft	0.18	7,840.00	0
Parking Lot	13.00	Space	0.12	5,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4	Operational Year	2019		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor adjusted to 2019 projections (PG&E 2015)

Land Use - Parking lot area provided by applicant.

Vehicle Trips - Adjusted to reflect ITE (9th Ed) per employee trip rates.

Energy Use - PG&E CO2 intensity factor adjusted to 2019 projections (see Project Characteristics tab)

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Operational Off-Road Equipment - Information provided by applicant

Stationary Sources - Emergency Generators and Fire Pumps - Information provided by applicant

Construction Phase - Assume 8- 10 month construction duration

Grading -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	230.00	150.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	8/22/2018	3/7/2018
tblConstructionPhase	PhaseEndDate	6/27/2018	2/7/2018
tblConstructionPhase	PhaseEndDate	6/28/2017	6/14/2017
tblConstructionPhase	PhaseEndDate	8/9/2017	7/12/2017
tblConstructionPhase	PhaseEndDate	7/25/2018	2/21/2018
tblConstructionPhase	PhaseEndDate	7/12/2017	6/28/2017
tblConstructionPhase	PhaseStartDate	7/26/2018	2/22/2018
tblConstructionPhase	PhaseStartDate	8/10/2017	7/13/2017
tblConstructionPhase	PhaseStartDate	7/13/2017	6/29/2017
tblConstructionPhase	PhaseStartDate	6/28/2018	2/8/2018
tblConstructionPhase	PhaseStartDate	6/29/2017	6/15/2017
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003

tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	2,682.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	11.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.59
tblVehicleTrips	SU_TR	0.62	0.59
tblVehicleTrips	WD_TR	3.82	0.59

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3111	2.6957	1.9173	3.5300e-003	0.1937	0.1480	0.3417	0.0857	0.1385	0.2242	0.0000	321.7001	321.7001	0.0579	0.0000	323.1470
2018	1.0843	0.5184	0.4335	8.2000e-004	0.0172	0.0274	0.0446	4.6600e-003	0.0257	0.0304	0.0000	74.4978	74.4978	0.0131	0.0000	74.8246
Total	1.3954	3.2141	2.3508	4.3500e-003	0.2109	0.1754	0.3863	0.0903	0.1643	0.2546	0.0000	396.1978	396.1978	0.0710	0.0000	397.9716

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
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Category	tons/yr										MT/yr					
	Area	0.6714	3.0000e-005	3.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.5200e-003	6.5200e-003	2.0000e-005	0.0000
Energy	0.0205	0.1867	0.1568	1.1200e-003		0.0142	0.0142		0.0142	0.0142	0.0000	372.4699	372.4699	0.0199	7.0300e-003	375.0629
Mobile	0.0444	0.1933	0.5399	1.2800e-003	0.0930	1.7400e-003	0.0947	0.0250	1.6400e-003	0.0266	0.0000	117.4046	117.4046	6.8300e-003	0.0000	117.5753
Offroad	0.0208	0.1857	0.1552	2.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	17.8458	17.8458	5.6500e-003	0.0000	17.9870
Stationary	0.1100	0.4921	0.2806	5.3000e-004		0.0162	0.0162		0.0162	0.0162	0.0000	51.0691	51.0691	7.1600e-003	0.0000	51.2481
Waste						0.0000	0.0000		0.0000	0.0000	36.1974	0.0000	36.1974	2.1392	0.0000	89.6774
Water						0.0000	0.0000		0.0000	0.0000	10.5506	25.0584	35.6090	1.0860	0.0261	70.5303
Total	0.8672	1.0578	1.1359	3.1300e-003	0.0930	0.0465	0.1395	0.0250	0.0453	0.0702	46.7480	583.8543	630.6022	3.2648	0.0331	722.0880

4.0 Operational Detail - Mobile

Category	tons/yr										MT/yr					
	Unmitigated	0.0444	0.1933	0.5399	1.2800e-003	0.0930	1.7400e-003	0.0947	0.0250	1.6400e-003	0.0266	0.0000	117.4046	117.4046	6.8300e-003	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	84.85	84.85	84.85	247,714	247,714
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	84.85	84.85	84.85	247,714	247,714

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961

5.0 Energy Detail

Historical Energy Use: N

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	169.2558	169.2558	0.0160	3.3100e-003	170.6412
Natural Gas Unmitigated	0.0205	0.1867	0.1568	1.1200e-003		0.0142	0.0142		0.0142	0.0142	0.0000	203.2141	203.2141	3.8900e-003	3.7300e-003	204.4217

5.2 Energy by Land Use - Natural Gas

Unmitigated

Land Use	Natural Gas 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
	kBTU/yr	tons/yr										MT/yr					
Manufacturing	3.80809e+006	0.0205	0.1867	0.1568	1.1200e-003		0.0142	0.0142		0.0142	0.0142	0.0000	203.2141	203.2141	3.8900e-003	3.7300e-003	204.4217
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0205	0.1867	0.1568	1.1200e-003		0.0142	0.0142		0.0142	0.0142	0.0000	203.2141	203.2141	3.8900e-003	3.7300e-003	204.4217

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	1.21088e+006	168.6185	0.0159	3.3000e-003	169.9988
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4576	0.6372	6.0000e-005	1.0000e-005	0.6424
Total		169.2558	0.0160	3.3100e-003	170.6412

6.0 Area Detail

	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					
Unmitigated	0.6714	3.0000e-005	3.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.5200e-003	6.5200e-003	2.0000e-005	0.0000	6.9600e-003

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	0.1023					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5688					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.2000e-004	3.0000e-005	3.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.5200e-003	6.5200e-003	2.0000e-005	0.0000	6.9600e-003
Total	0.6715	3.0000e-005	3.3800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.5200e-003	6.5200e-003	2.0000e-005	0.0000	6.9600e-003

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	35.6090	1.0860	0.0261	70.5303

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	33.2561 / 0	35.6090	1.0860	0.0261	70.5303
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		35.6090	1.0860	0.0261	70.5303

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	36.1974	2.1392	0.0000	89.6774

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Manufacturing	178.32	36.1974	2.1392	0.0000	89.6774
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		36.1974	2.1392	0.0000	89.6774

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	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	tons/yr										MT/yr					
Forklifts	0.0208	0.1857	0.1552	2.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	17.8458	17.8458	5.6500e-003	0.0000	17.9870
Total	0.0208	0.1857	0.1552	2.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	17.8458	17.8458	5.6500e-003	0.0000	17.9870



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To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner; Dana McCarthy, Assistant Planner
Cc: File (ENV-719)
Date: May16, 2017

Re: Redhunt Corporation Project – Air Quality and Greenhouse Gas (GHG) Emissions Assessment

Project Description

The proposed project is the development of a medical marijuana cultivation facility in two phases on a 15.2-acre site in Greenfield California. The site is vacant with the exception of mobile home and several small ancillary structures near the south east corner of the site. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). The proposed facility would include greenhouses, dry and cold storage/warehouse areas, loading docks, office space, maintenance buildings and a retail/dispensary use. The proposed project would provide 80-100 jobs. Proposed improvements include surface parking lots, and infrastructure improvements such as storm water detention, paved access to and within the site, sidewalks, lighting and landscaping. An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's existing and proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the air district. Model results are attached to

this memorandum. For modeling purposes, data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics and other project information provided by the applicants.

Project Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources](#).

Table 1 Project Characteristics¹

Existing and Proposed Uses	CalEEMod Land Use Category	Size ²	
		Existing	Proposed
Single-family Residence (mobile home)	Single-family Housing	1 unit	0
Greenhouses/R&D/Processing/Internal Offices	Manufacturing ³	0	365,800
Cold Storage	Unrefrigerated Warehouse	0	700
Parking	Surface Parking Lot	0	210
Other Pavement	Other Asphalt Surfaces	0	110,900
Sidewalks, patios, etc.	Other Non-Asphalt Surfaces	0	26,600
Landscaping ⁴	Other Non-Asphalt Surfaces	0	91,300

Source: Valerio Dewalt Train Associates 2017, Google Earth 2016, BREEZE Software 2016, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. In Square feet unless otherwise noted.
3. Manufacturing facilities are areas where the primary activity is the conversion of raw materials into finished products. This use generally also has some office, warehouse, and R&D functions at the site.
4. Landscaped areas would not be substantial sources of operational emissions and are included in the model only to enable estimation of construction emissions across the entire site.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Output Rating ¹
Emergency Generator	2	Plumbed Natural Gas	402 HP
Forklifts	4 ²	Battery/electric ³	89 ⁴
Pallet Movers/Jacks	4 ²	Battery/electric ³	11 ⁴

Source: Valerio Dewalt Train Associates 2017, Christine Rosenberg 2017, EMC Planning Group 2017

Note:

1. Horsepower (HP) or Boiler Rating (MMBtu if using CNG)
2. Assumed based on one forklift, one pallet mover per 100,000 square feet or fraction thereof.
3. Assumed based on experience with similar projects.
4. CalEEMod default ratings.

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. Version 2016.3.1 utilizes 2014 Title 24 building energy efficiency standards. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod can also be used to estimate GHG emissions from changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and to calculate a potential carbon “offset” in GHG emissions from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by

CARB. Due to the size of the project site and comparison of existing and proposed activities, changes in vegetation would not provide measureable results that would affect the outcome of the emissions modeling. Therefore, a loss of carbon sequestration potential was not calculated for this project. The proposed project includes planting 18 new trees.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational mobile-source and area-source emissions from the proposed project were captured using the following CalEEMod default land use subtypes:
 - a. Emissions from the existing use of the site are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Single-family House”.
 - b. Emissions from the proposed cold storage area are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Refrigerated Warehouse – No Rail”, which typically consists of cold-storage warehouses not accessible by rail.
 - c. Emissions generated by greenhouses, processing, research and development (R&D), dry storage and related office uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Manufacturing”, which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.
 - d. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Parking Lot”, which is a single surface parking lot typically covered with asphalt.
 - e. Emissions from driveway access and internal roadways are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Other Asphalt Surfaces”, which is described as an asphalt area not used as a parking lot.
 - f. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that

would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes equipment pads, loading dock surfaces, etc. This use category is also applied to landscaping and drainage improvements to capture construction emissions.

3. The model’s default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019 to reflect anticipated intensity factor for project’s operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric’s energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric’s Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.
4. The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees.
5. Offroad equipment is assumed to be fueled by battery or electric power.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions are derived by comparing the proposed project GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project’s contribution to GHG emissions.

Operational Emissions Data Inputs

The model default for building energy efficiencies (2014 Title 24) was adjusted to reflect an increase in energy efficiency that will be achieved through compliance with 2016 Title 24 building energy efficiency standards. Other than the land use characteristic information identified above, model defaults were used for operational stationary source, area source and mobile source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum. Mobile-source emissions are based on the Institute of Traffic Engineers (ITE) 9th Edition, employee-based trip generation for manufacturing uses, and based on ITE trip rates

(trips per ksf) for specialty retail for the dispensary/retail uses. The adjusted trip rates for the manufacturing use are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips	Adjusted Trip Rate (per ksf per day) ^{4,5}
Manufacturing	2.13	100	213	0.58

Sources: ITE 9th Edition, EMC Planning Group 2017)

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily employee-based trips are divided by proposed Manufacturing and Cold Storage (366.5 ksf combined) to yield the adjusted trip rates per thousand square feet.
5. This is a conservative estimate of trip rates as it assumes 100 employees would be on site each day.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with the air district's guidance, the model defaults were utilized for all construction data inputs.

Results

GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO_{2e}). Criteria air pollutant emissions are reported in pounds per day. Winter emissions of criteria pollutants are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 3, Operational Criteria Pollutant Emissions \(Pounds per Day\)](#).

Table 3 Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)	10.62	7.17	1.66	11.69

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Existing Operational GHG Emissions

Existing operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO_{2e}). According to the CalEEMod modeling results unmitigated operational GHG emissions under existing conditions are an estimated 20.02 MT CO_{2e} per year.

Unmitigated Construction Emissions

The proposed project would generate an estimated 636.35 MT CO_{2e} unmitigated emissions during construction. With unmitigated construction emissions averaged over a 30-year operational lifetime, the annual amortized emissions equal 21.21 MT CO_{2e}.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 4, Unmitigated Operational GHG Emissions \(MT CO_{2e} per year\)](#).

Table 4 Unmitigated Operational GHG Emissions (MT CO₂e per year)¹

Emissions Source	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO ₂ e
Area	0.00	0.02	<0.01	0.00	0.02
Energy ²	0.00	821.02	0.05	0.02	826.82
Mobile	0.00	301.78	0.02	0.00	302.22
Off-road Equipment	0.00	17.88	<0.01	0.00	18.02
Waste	92.21	0.00	5.45	0.00	228.44
Water	26.89	63.86	2.77	0.07	179.75
Total	119.10	1,204.55	8.29	0.09	1,555.27

Source: CalEEMod Results, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. Compliant with 2016 Title 24 Building Energy Efficiency Standards and Includes stationary plumbed natural gas emergency generator energy demand.

Carbon Sequestration Offset

The carbon sequestration offset from planting 18 new trees is 12.74 MT CO₂e over a 20-year life cycle. For ease of reporting this amount is averaged over thirty-years to yield an annual carbon sequestration offset, with the result deducted from the annual project emissions.

Unmitigated GHG Emissions Attributable to the Proposed Project

The total unmitigated GHG emissions attributable to the proposed project are determined by comparing existing emissions with proposed unmitigated construction and operational emissions, and any carbon offsets applicable to the project. The net unmitigated GHG emissions attributable to the proposed project are presented in [Table 5, Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 5 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction ²	Carbon Offset	Project Emissions ²	Existing Emissions	Net Annual Emissions
1,555.27	21.21	<0.43>	1576.05	<20.02>	1556.03

Source: CalEEMod Results, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. Project emissions result is reported as sum of operational and amortized construction.

Sources

1. Valerio Dewalt Train Associates. 2017. Project Plans: *600 Pine*.
2. Rosenberg, Christine. Email message to Mic Steinman. 13 April 2017
3. BREEZE Software. A Division of Trinity Consultants. *California Emissions Estimator (CalEEMod) Version 2016.3.1*. September 2016. Available online at:
<http://www.aqmd.gov/caleemod.htm>
4. BREEZE Software. A Division of Trinity Consultants. *CalEEMod User's Guide (Version 2016.3.1)*. September 2016. Available online at:
<http://www.aqmd.gov/caleemod/guide.htm>
5. MBARD. CEQA Air Quality Guidelines. 2008.
[http://mbard.org/pdf/CEQA_full%20\(1\).pdf](http://mbard.org/pdf/CEQA_full%20(1).pdf)
6. Pacific Gas & Electric. *Greenhouse Gas Factors: Guidance for PG&E Customers*. November 2015. Accessed online April 12, 2017 at:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

**Redhunt Corp 600 Pine Ave Greenfield, Proposed
Monterey Bay Unified APCD Air District, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	365.80	1000sqft	8.40	365,800.00	0
Refrigerated Warehouse-No Rail	0.70	1000sqft	0.02	700.00	0
Other Asphalt Surfaces	110.90	1000sqft	2.55	110,900.00	0
Other Non-Asphalt Surfaces	26.60	1000sqft	0.61	26,600.00	0
Other Non-Asphalt Surfaces	91.30	1000sqft	2.10	91,300.00	0
Parking Lot	210.00	Space	0.85	36,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E projected 2019 Carbon Intensity Factor

Land Use - Information Provided by Applicant

Construction Phase - 10 month construction estimate

Grading -

Vehicle Trips - Manufacturing and storage trips converted based on ITE 9th Ed employee-based trip rates

Energy Use - 0

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Number, and type provided by applicant

Stationary Sources - Emergency Generators and Fire Pumps -

Sequestration -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	BuildingSpaceSquareFeet	84,000.00	36,800.00
tblLandUse	LandUseSquareFeet	84,000.00	36,800.00
tblLandUse	LotAcreage	1.89	0.85
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	89.00	40.00
tblOperationalOffRoadEquipment	OperHorsePower	168.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0.00	18.00
tblVehicleTrips	ST_TR	1.49	0.11
tblVehicleTrips	ST_TR	1.68	0.11
tblVehicleTrips	SU_TR	0.62	0.10
tblVehicleTrips	SU_TR	1.68	0.10
tblVehicleTrips	WD_TR	3.82	0.58
tblVehicleTrips	WD_TR	1.68	0.58

2.0 Emissions Summary

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	9.3716	7.7000e-004	0.0830	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1762	0.1762	4.8000e-004		0.1882
Energy	0.2863	2.6025	2.1861	0.0156		0.1978	0.1978		0.1978	0.1978		3,122.9795	3,122.9795	0.0599	0.0573	3,141.5378
Mobile	0.6154	3.1898	7.7642	0.0180	1.3235	0.0266	1.3501	0.3547	0.0251	0.3798		1,815.5666	1,815.5666	0.1109		1,818.3397
Offroad	0.3510	1.3720	1.6594	1.5200e-003		0.1131	0.1131		0.1041	0.1041		151.5823	151.5823	0.0480		152.7813
Total	10.6242	7.1650	11.6927	0.0351	1.3235	0.3378	1.6613	0.3547	0.3273	0.6819		5,090.3047	5,090.3047	0.2192	0.0573	5,112.8470

4.0 Operational Detail - 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					
Unmitigated	0.6154	3.1898	7.7642	0.0180	1.3235	0.0266	1.3501	0.3547	0.0251	0.3798		1,815.5666	1,815.5666	0.1109		1,818.3397

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	212.16	40.24	36.58	474,478	474,478
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	0.41	0.08	0.07	908	908
Total	212.57	40.32	36.65	475,386	475,386

4.3 Trip Type Information

Miles	Trip %	Trip Purpose %
-------	--------	----------------

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by			
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3			
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3			
LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

	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 Unmitigated	0.2863	2.6025	2.1861	0.0156		0.1978	0.1978		0.1978	0.1978		3,122.9795	3,122.9795	0.0599	0.0573	3,141.5378

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					
Manufacturing	26538	0.2862	2.6018	2.1855	0.0156		0.1977	0.1977		0.1977	0.1977		3,122.1222	3,122.1222	0.0598	0.0572	3,140.6754
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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	7.28767	8.0000e-005	7.1000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.8574	0.8574	2.0000e-005	2.0000e-005	0.8625
Total		0.2863	2.6025	2.1861	0.0156		0.1978	0.1978		0.1978	0.1978		3,122.9795	3,122.9795	0.0599	0.0573	3,141.5378

6.0 Area Detail

	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					
Unmitigated	9.3716	7.7000e-004	0.0830	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1762	0.1762	4.8000e-004		0.1882

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	1.4266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.9372					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.8700e-003	7.7000e-004	0.0830	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1762	0.1762	4.8000e-004		0.1882
Total	9.3716	7.7000e-004	0.0830	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		0.1762	0.1762	4.8000e-004		0.1882

8.0 Waste Detail

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	260	40	0.20	Electrical
Other Material Handling Equipment	8	8.00	260	5	0.40	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	0.3510	1.3720	1.6594	1.5200e-003		0.1131	0.1131		0.1041	0.1041		151.5823	151.5823	0.0480		152.7813
Total	0.3510	1.3720	1.6594	1.5200e-003		0.1131	0.1131		0.1041	0.1041		151.5823	151.5823	0.0480		152.7813

**Redhunt Corp 600 Pine Ave Greenfield, Proposed
Monterey Bay Unified APCD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	365.80	1000sqft	8.40	365,800.00	0
Refrigerated Warehouse-No Rail	0.70	1000sqft	0.02	700.00	0
Other Asphalt Surfaces	110.90	1000sqft	2.55	110,900.00	0
Other Non-Asphalt Surfaces	26.60	1000sqft	0.61	26,600.00	0
Other Non-Asphalt Surfaces	91.30	1000sqft	2.10	91,300.00	0
Parking Lot	210.00	Space	0.85	36,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E projected 2019 Carbon Intensity Factor

Land Use - Information Provided by Applicant

Construction Phase - 10 month construction estimate

Grading -

Vehicle Trips - Manufacturing and storage trips converted based on ITE 9th Ed employee-based trip rates

Energy Use - 0

Sequestration -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2016 Title 24 compliant

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Number, and type provided by applicant, fuel type assumed

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	150.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	30.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblFleetMix	FleetMixLandUseSubType	Refrigerated Warehouse-No Rail	Other Asphalt Surfaces
tblFleetMix	FleetMixLandUseSubType	Other Asphalt Surfaces	Other Non-Asphalt Surfaces
tblFleetMix	FleetMixLandUseSubType	Other Non-Asphalt Surfaces	Parking Lot
tblFleetMix	FleetMixLandUseSubType	Parking Lot	Refrigerated Warehouse-No Rail
tblGrading	AcresOfGrading	25.00	75.00
tblLandUse	BuildingSpaceSquareFeet	84,000.00	36,800.00
tblLandUse	LandUseSquareFeet	84,000.00	36,800.00
tblLandUse	LotAcreage	1.89	0.85
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	89.00	40.00
tblOperationalOffRoadEquipment	OperHorsePower	168.00	11.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019

tblSequestration	NumberOfNewTrees	0.00	18.00
tblVehicleTrips	ST_TR	1.49	0.58
tblVehicleTrips	ST_TR	1.68	0.58
tblVehicleTrips	SU_TR	0.62	0.58
tblVehicleTrips	SU_TR	1.68	0.58
tblVehicleTrips	WD_TR	3.82	0.58
tblVehicleTrips	WD_TR	1.68	0.58

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3533	3.0469	2.3056	4.8000e-003	0.3034	0.1408	0.4443	0.1094	0.1318	0.2411	0.0000	440.3698	440.3698	0.0648	0.0000	441.9905
2018	2.7362	1.0761	0.9304	2.1200e-003	0.0712	0.0462	0.1174	0.0193	0.0435	0.0628	0.0000	193.7398	193.7398	0.0247	0.0000	194.3560
Total	3.0896	4.1230	3.2359	6.9200e-003	0.3746	0.1871	0.5616	0.1287	0.1752	0.3039	0.0000	634.1095	634.1095	0.0895	0.0000	636.3465

2.2 Overall Operational

Unmitigated Operational 2016 Title 24 Compliant

	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					
Offroad	0.0456	0.1784	0.2157	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	17.8767	17.8767	5.6600e-003	0.0000	18.0181
Area	1.7099	1.0000e-004	0.0104	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0200	0.0200	5.0000e-005	0.0000	0.0213
Energy	0.0413	0.3755	0.3154	2.2500e-003		0.0285	0.0285		0.0285	0.0285	0.0000	821.0175	821.0175	0.0468	0.0156	826.8212
Mobile	0.1108	0.5665	1.3341	3.3000e-003	0.2334	4.7900e-003	0.2382	0.0627	4.5300e-003	0.0673	0.0000	301.7750	301.7750	0.0178	0.0000	302.2205

Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

2016 Title 24 Compliant

	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 UnMitigated						0.0000	0.0000		0.0000	0.0000	0.0000	412.2572	412.2572	0.0389	8.0600e-003	415.6318
NaturalGas UnMitigated	0.0413	0.3755	0.3154	2.2500e-003		0.0285	0.0285		0.0285	0.0285	0.0000	408.7603	408.7603	7.8300e-003	7.4900e-003	411.1894

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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	2514.96	1.0000e-005	1.2000e-004	1.0000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1350

Landscaping	9.8000e-004	1.0000e-004	0.0104	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0200	0.0200	5.0000e-005	0.0000	0.0213
Total	1.7099	1.0000e-004	0.0104	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0200	0.0200	5.0000e-005	0.0000	0.0213

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	90.7495	2.7677	0.0665	179.7467

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	84.5913 / 0	90.5762	2.7624	0.0663	179.4034
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No	0.161875 / 0	0.1733	5.2900e-003	1.3000e-004	0.3433
Total		90.7495	2.7677	0.0665	179.7467

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Unmitigated	92.2086	5.4494	0.0000	228.4430
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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	453.59	92.0747	5.4415	0.0000	228.1111
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-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	0.66	0.1340	7.9200e-003	0.0000	0.3319
Total		92.2086	5.4494	0.0000	228.4430

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	260	40	0.20	Electrical
Other Material Handling Equipment	8	8.00	260	11	0.40	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	tons/yr										MT/yr					
Forklifts	0.0456	0.1784	0.2157	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	17.8767	17.8767	5.6600e-003	0.0000	18.0181
Total	0.0456	0.1784	0.2157	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	17.8767	17.8767	5.6600e-003	0.0000	18.0181



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To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner; Dana McCarthy, Assistant Planner
Cc: File (ENV-719)
Date: May 17, 2017

Re: Zen Brand Medical Marijuana Project – Air quality and Greenhouse Gas (GHG) Emissions Assessment

Project Description

The proposed project is the development of a medical marijuana cultivation and manufacturing facility on a 4.96-acre site consisting of three parcels in Greenfield California. Two of the parcels are separated by Pine Avenue. The proposed facility includes greenhouses, manufacturing areas, warehouse and office uses, and storage areas. Proposed site improvements include construction of a surface parking lot, paved access routes, storm drainage facilities and landscaping. The site is occupied by a vegetable packing supply facility and the site is improved with several storage buildings (approximately 16,800 square feet) and outdoor storage areas. The proposed project would provide 45 jobs. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's existing and proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the air district. Model results are attached to

this memorandum. For modeling purposes, data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics provided by the applicants.

Project Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources and Off-road Equipment](#).

Table 1 Project Characteristics¹

Existing and Proposed Uses	CalEEMod Land Use Category	Size ²	
		Existing	Proposed
Dry Storage/Warehouse	Unrefrigerated Warehouse – No Rail	16,800	0
Greenhouses/R&D/Processing/Internal Offices ³	Manufacturing ⁴	0	105,868
Parking	Surface Parking Lot	0	49
Other Pavement	Other Asphalt Surfaces	0	37,719
Sidewalks, patios, loading docks, etc.	Other Non-Asphalt Surfaces	0	4,462
Landscaping and Bio-swales ⁵	Other Non-Asphalt Surfaces	0	57,845

Sources: Wesley Jay Beebe Architect. April 2017, Justin Pearson, CEQ ZenBrands Pers. Com. 2017, Google Earth 2016, BREEZE Software 2016, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. In Square feet unless otherwise noted.
3. Includes detached office building and future greenhouse expansion area 36,275 square feet (RCUSA 2017 Sheet A2.2)
4. Manufacturing Facilities are areas where the primary activity is the conversion of raw materials into finished products. This use generally also has some office, warehouse, and R&D functions at the site.
5. The proposed bioswales and landscaping would not be substantial sources of operational emissions and are included in the model only to enable estimation of construction emissions across the entire site.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Output Rating ¹
Emergency Generator	1	Diesel	1,341 HP
Forklifts	4	Propane ²	40 HP
Pallet Movers/Jacks	4	Battery/Electric	2.6 HP

Source: Wesley Jay Beebe Architect. April 2017, Justin Pearson, CEQ ZenBrands Pers. Com. 2017.

Notes:

1. Horsepower (HP)
2. Model substitutes CNG fuel for propane

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and also calculates a potential carbon “offset” from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB, and use of the default construction parameters is accepted by MBARD. Information regarding actual construction activity phases and the number and type of construction equipment by phase was not yet available in detail sufficient to utilize in the model, therefore the model defaults were utilized for construction emissions. Due to the size of the project site

and comparison of existing and proposed activities, changes in vegetation would not provide measureable results that would affect the outcome of the emissions modeling. At the time of the modeling, a landscaping plan had not yet been provided. Therefore carbon sequestration estimates are not included in this assessment.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational mobile-source and area-source emissions from the proposed project were captured using the following CalEEMod default land use subtypes:
 - a. Emissions from the existing use of the site are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Unrefrigerated Warehouse – No Rail”, which typically consists of warehouse facilities that are not accessible by rail.
 - b. Emissions generated by greenhouses, processing, research and development (R&D), dry storage and related office uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Manufacturing”, which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.
 - c. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Parking Lot”, which is a single surface parking lot typically covered with asphalt.
 - d. Emissions from driveway access and internal roadways are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Other Asphalt Surfaces”, which is described as an asphalt area not used as a parking lot.
 - e. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes equipment pads, loading dock areas, etc. This category

was also applied to landscaping and drainage improvements to enable construction emissions estimates.

3. The model's default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019 and the anticipated intensity factor for project's operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric's energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric's Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.
4. The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing the proposed project GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project's contribution to GHG emissions.

Operational Emissions Data Inputs

Other than the land use characteristic information identified above, model defaults were used for operational stationary source and area source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum. Mobile-source emissions are based on the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees. The adjusted trip rates are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips	Adjusted Trip Rate (per ksf per day) ^{4,5}
Manufacturing	2.13	45	96	0.90

Sources: ITE 9th Edition, EMC Planning Group 2017)

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily employee-based trips are divided by proposed Manufacturing (105.87 ksf) to yield the adjusted trip rates per thousand square feet.
5. This is a conservative estimate of trip rates as it assumes 45 employees would be on site each day.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with the air district's guidance, the model defaults were utilized for all construction data inputs.

Results

GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO₂e). Criteria air pollutant emissions are reported in pounds per day. Winter emissions of criteria pollutants are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported in this assessment. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 4, Operational Criteria Pollutant Emissions \(Pounds per Day\)](#).

Table 4 Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)	5.98	14.57	1.21	13.11

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Existing Operational GHG Emissions

Existing operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO_{2e}). According to the CalEEMod modeling results unmitigated operational GHG emissions under existing conditions are an estimated 120.28 MT CO_{2e} per year.

Unmitigated Construction Emissions

The proposed project would generate an estimated 549.10 MT CO_{2e} unmitigated emissions during construction. With unmitigated construction emissions averaged over a thirty-year operational lifetime, the annual amortized emissions equal 18.30 MT CO_{2e}.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 5, Unmitigated Operational GHG Emissions \(MT CO_{2e} per year\)](#).

Table 5 Unmitigated Operational GHG Emissions (MT CO₂e per year)

Emissions Sources	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO ₂ e
Area	0.00	<0.01	<0.01	0.00	<0.01
Energy	0.00	274.81	0.01	<0.01	276.72
Mobile	0.00	131.84	<0.01	0.00	132.04
Off-road	0.00	35.75	0.01	0.00	36.04
Stationary	0.00	93.45	0.01	0.00	93.78
Waste	26.65	0.00	1.58	0.00	66.02
Water	7.77	18.45	0.80	0.02	51.92
Total	34.42	554.31	2.41	0.02	656.52

Source: CalEEMod Results, EMC Planning Group 2017
 Note: Results may vary due to rounding.

GHG Emissions Attributable to the Proposed Project

The total unmitigated GHG emissions attributable to the proposed project are determined by comparing the existing emissions with proposed unmitigated construction and operational emissions. The net unmitigated GHG emissions attributable to the proposed project are presented in [Table 6, Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 4 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction	Project Emissions ²	Existing Emissions	Project Net Emissions ³
656.52	18.30	674.82	<120.28>	554.02

Source: CalEEMod Results, EMC Planning Group 2017
 Notes:

1. Results may vary due to rounding.
2. Unmitigated annual construction and operational emissions.
3. <Brackets> indicate deductions.
4. Net unmitigated emissions is the difference between existing and project emissions.

The net unmitigated operational GHG emissions volume attributable to the proposed project is 554.02 MT CO₂e per year.

Sources

1. Wesley Jay Beebe. 2017. Project Plans. *Medical Marijuana Facility: Cultivation and Manufacturing 689 El Camino Real, Greenfield CA.*
2. Pearson, Justin. CEO, ZenBrands. Email messages to Mic Steinman. Subject: ZenBrands, dated April 11, 2017 and April 12, 2017.
3. Pacific Gas & Electric. Greenhouse Gas Factors: Guidance for PG&E Customers. November 2015. Accessed online April 12, 2017 at:
https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
4. BREEZE Software. A Division of Trinity Consultants. *California Emissions Estimator (CalEEMod) Version 2016.3.1.* September 2016. Available online at:
<http://www.aqmd.gov/caleemod.htm>
5. BREEZE Software. A Division of Trinity Consultants. *CalEEMod User's Guide (Version 2016.3.1).* September 2016. Available online at:
<http://www.aqmd.gov/caleemod/guide.htm>
6. MBARD. CEQA Air Quality Guidelines. 2008.
[http://mbard.org/pdf/CEQA_full%20\(1\).pdf](http://mbard.org/pdf/CEQA_full%20(1).pdf)

ZenBrand, Greenfield (Existing Conditions) - Monterey County, Annual

**ZenBrand, Greenfield (Existing Conditions)
Monterey County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.80	1000sqft	3.20	13,800.00	0
Unrefrigerated Warehouse-No Rail	3.00	1000sqft	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4	Operational Year	2018		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
 Land Use - Actual lot acreage.
 Construction Phase - No Construction
 Off-road Equipment -

2.0 Emissions Summary

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	0.0773	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004
Energy	3.2000e-004	2.8700e-003	2.4100e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	20.7232	20.7232	8.6000e-004	2.2000e-004	20.8107
Mobile	0.0326	0.1381	0.3982	8.8000e-004	0.0357	1.3000e-003	0.0370	0.0102	1.2300e-003	0.0114	0.0000	79.9781	79.9781	4.9500e-003	0.0000	80.1018
Waste						0.0000	0.0000		0.0000	0.0000	3.2052	0.0000	3.2052	0.1894	0.0000	7.9408
Water						0.0000	0.0000		0.0000	0.0000	1.2325	6.1155	7.3480	0.1269	3.0500e-003	11.4275
Total	0.1102	0.1409	0.4008	9.0000e-004	0.0357	1.5200e-003	0.0372	0.0102	1.4500e-003	0.0116	4.4378	106.8172	111.2549	0.3221	3.2700e-003	120.2813

ZenBrand Greenfield (Proposed Conditions)
Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	105.87	1000sqft	2.43	105,870.00	0
Other Asphalt Surfaces	37.72	1000sqft	0.87	37,720.00	0
Other Non-Asphalt Surfaces	4.46	1000sqft	0.10	4,460.00	0
Parking Lot	49.00	Space	0.20	8,733.00	0
Other Non-Asphalt Surfaces	57.85	1000sqft	1.33	57,850.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor adjusted to 2019 projections (PG&E 2015)

Land Use - Parking Lot size based on site plan information provided by applicant

Grading -

Vehicle Trips - Adjusted to Reflect ITE (9th Ed) per employee trip rates.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Information provided by Applicant

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Phase - Assume 10 month construction

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	PhaseEndDate	8/22/2018	4/11/2018
tblConstructionPhase	PhaseEndDate	7/3/2018	2/28/2018
tblConstructionPhase	PhaseEndDate	7/27/2017	7/13/2017
tblConstructionPhase	PhaseEndDate	8/15/2017	8/2/2017
tblConstructionPhase	PhaseEndDate	7/27/2018	3/21/2018
tblConstructionPhase	PhaseEndDate	8/3/2017	7/20/2017
tblConstructionPhase	PhaseStartDate	7/28/2018	3/22/2018
tblConstructionPhase	PhaseStartDate	8/16/2017	8/3/2017
tblConstructionPhase	PhaseStartDate	8/4/2017	7/20/2017
tblConstructionPhase	PhaseStartDate	7/4/2018	3/1/2018
tblConstructionPhase	PhaseStartDate	7/28/2017	7/14/2017
tblLandUse	BuildingSpaceSquareFeet	19,600.00	8,733.00
tblLandUse	LandUseSquareFeet	19,600.00	8,733.00
tblLandUse	LotAcreage	0.44	0.20
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	89.00	40.00
tblOperationalOffRoadEquipment	OperHorsePower	168.00	3.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00

tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	182.50
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.17
tblVehicleTrips	SU_TR	0.62	0.15
tblVehicleTrips	WD_TR	3.82	0.90

2.0 Emissions Summary

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					
2017	8.2544	86.3800	42.4059	0.0707	24.8897	4.6587	29.5484	13.3701	4.2860	17.6561	0.0000	7,230.7170	7,230.7170	2.1423	0.0000	7,284.2733
2018	139.2340	28.9351	23.6080	0.0448	0.9760	1.5529	2.5289	0.2642	1.4604	1.7246	0.0000	4,449.4053	4,449.4053	0.7426	0.0000	4,467.9698
Total	147.4883	115.3150	66.0139	0.1155	25.8657	6.2116	32.0773	13.6343	5.7464	19.3807	0.0000	11,680.1223	11,680.1223	2.8849	0.0000	11,752.2431

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	2.7224	2.4000e-004	0.0263	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0558	0.0558	1.5000e-004		0.0596
Energy	0.0828	0.7530	0.6325	4.5200e-003		0.0572	0.0572		0.0572	0.0572		903.6060	903.6060	0.0173	0.0166	908.9757
Mobile	0.2762	1.2308	3.5162	7.8800e-003	0.5926	0.0108	0.6034	0.1588	0.0102	0.1690		793.6441	793.6441	0.0474		794.8290
Offroad	0.7019	2.7440	3.3188	3.0500e-003		0.2263	0.2263		0.2082	0.2082		303.1646	303.1646	0.0959		305.5626
Stationary	2.2004	9.8413	5.6113	0.0106		0.3237	0.3237		0.3237	0.3237		1,125.7884	1,125.7884	0.1578		1,129.7344
Total	5.9837	14.5693	13.1051	0.0260	0.5926	0.6182	1.2107	0.1588	0.5994	0.7582		3,126.2589	3,126.2589	0.3186	0.0166	3,139.1612

4.0 Operational Detail - 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	0.2762	1.2308	3.5162	7.8800e-003	0.5926	0.0108	0.6034	0.1588	0.0102	0.1690		793.6441	793.6441	0.0474		794.8290
Unmitigated	0.2762	1.2308	3.5162	7.8800e-003	0.5926	0.0108	0.6034	0.1588	0.0102	0.1690		793.6441	793.6441	0.0474		794.8290

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Manufacturing	95.28	18.00	15.88	212,830	212,830
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		

Parking Lot	0.00	0.00	0.00		
Total	95.28	18.00	15.88	212,830	212,830

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961

5.0 Energy Detail

Historical Energy Use: N

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Unmitigated	0.0828	0.7530	0.6325	4.5200e-003		0.0572	0.0572		0.0572	0.0572		903.6060	903.6060	0.0173	0.0166	908.9757

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas 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					
Manufacturing	7680.65	0.0828	0.7530	0.6325	4.5200e-003		0.0572	0.0572		0.0572	0.0572		903.6060	903.6060	0.0173	0.0166	908.9757
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Total		0.0828	0.7530	0.6325	4.5200e-003		0.0572	0.0572		0.0572	0.0572		903.6060	903.6060	0.0173	0.0166	908.9757

6.0 Area Detail

	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					
Unmitigated	2.7224	2.4000e-004	0.0263	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0558	0.0558	1.5000e-004		0.0596

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	0.4158					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.3041					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4900e-003	2.4000e-004	0.0263	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0558	0.0558	1.5000e-004		0.0596
Total	2.7224	2.4000e-004	0.0263	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0558	0.0558	1.5000e-004		0.0596

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	4	8.00	260	40	0.20	CNG
Other Material Handling Equipment	4	8.00	260	3	0.40	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	0.7019	2.7440	3.3188	3.0500e-003		0.2263	0.2263		0.2082	0.2082		303.1646	303.1646	0.0959		305.5626
Total	0.7019	2.7440	3.3188	3.0500e-003		0.2263	0.2263		0.2082	0.2082		303.1646	303.1646	0.0959		305.5626

ZenBrand Greenfield (Proposed Conditions) Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	105.87	1000sqft	2.43	105,870.00	0
Other Asphalt Surfaces	37.72	1000sqft	0.87	37,720.00	0
Other Non-Asphalt Surfaces	4.46	1000sqft	0.10	4,460.00	0
Other Non-Asphalt Surfaces	57.85	1000sqft	1.33	57,850.00	0
Parking Lot	49.00	Space	0.20	8,733.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor adjusted to 2019 projections (PG&E 2015)

Land Use - Parking Lot size based on site plan information provided by applicant

Construction Phase - Assume 10 month construction

Grading -

Vehicle Trips - Adjusted to Reflect ITE (9th Ed) per employee trip rates.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Information provided by Applicant

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblLandUse	BuildingSpaceSquareFeet	19,600.00	8,733.00
tblLandUse	LandUseSquareFeet	19,600.00	8,733.00
tblLandUse	LotAcreage	0.44	0.20
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	89.00	40.00
tblOperationalOffRoadEquipment	OperHorsePower	168.00	3.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	183.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.90
tblVehicleTrips	SU_TR	0.62	0.90
tblVehicleTrips	WD_TR	3.82	0.90

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2596	2.2844	1.5835	2.8400e-003	0.1197	0.1270	0.2467	0.0514	0.1189	0.1703	0.0000	258.5911	258.5911	0.0498	0.0000	259.8351
2018	1.4919	2.0572	1.6836	3.1900e-003	0.0651	0.1114	0.1765	0.0177	0.1047	0.1224	0.0000	288.0277	288.0277	0.0493	0.0000	289.2598
Total	1.7515	4.3417	3.2671	6.0300e-003	0.1849	0.2384	0.4232	0.0691	0.2235	0.2926	0.0000	546.6188	546.6188	0.0991	0.0000	549.0949

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	0.4967	3.0000e-005	3.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.3300e-003	6.3300e-003	2.0000e-005	0.0000	6.7500e-003
Energy	0.0151	0.1374	0.1154	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	274.8058	274.8058	0.0147	5.1900e-003	276.7197
Mobile	0.0498	0.2171	0.6063	1.4400e-003	0.1044	1.9600e-003	0.1063	0.0281	1.8400e-003	0.0299	0.0000	131.8437	131.8437	7.6700e-003	0.0000	132.0354
Offroad	0.0913	0.3567	0.4314	4.0000e-004		0.0294	0.0294		0.0271	0.0271	0.0000	35.7534	35.7534	0.0113	0.0000	36.0362
Stationary	0.2014	0.9005	0.5134	9.7000e-004		0.0296	0.0296		0.0296	0.0296	0.0000	93.4488	93.4488	0.0131	0.0000	93.7763
Waste						0.0000	0.0000		0.0000	0.0000	26.6487	0.0000	26.6487	1.5749	0.0000	66.0209
Water						0.0000	0.0000		0.0000	0.0000	7.7672	18.4475	26.2146	0.7995	0.0192	51.9230
Total	0.8543	1.6118	1.6699	3.6300e-003	0.1044	0.0715	0.1758	0.0281	0.0690	0.0970	34.4158	554.3055	588.7213	2.4212	0.0244	656.5183

4.0 Operational Detail - 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					
Unmitigated	0.0498	0.2171	0.6063	1.4400e-003	0.1044	1.9600e-003	0.1063	0.0281	1.8400e-003	0.0299	0.0000	131.8437	131.8437	7.6700e-003	0.0000	132.0354

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	95.28	95.28	95.28	278,180	278,180
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	95.28	95.28	95.28	278,180	278,180

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961

5.0 Energy Detail

Historical Energy Use: N

	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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	125.2037	125.2037	0.0118	2.4500e-003	126.2286

NaturalGas Unmitigated	0.0151	0.1374	0.1154	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	149.6021	149.6021	2.8700e-003	2.7400e-003	150.4911
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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					
Manufacturing	2.80344e+006	0.0151	0.1374	0.1154	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	149.6021	149.6021	2.8700e-003	2.7400e-003	150.4911
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0151	0.1374	0.1154	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	149.6021	149.6021	2.8700e-003	2.7400e-003	150.4911

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	891425	124.1335	0.0117	2.4300e-003	125.1497
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	7685.04	1.0702	1.0000e-004	2.0000e-005	1.0789
Total		125.2037	0.0118	2.4500e-003	126.2286

6.0 Area Detail

	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
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Category	tons/yr										MT/yr				
Unmitigated	0.4967	3.0000e-005	3.2800e-003	0.0000		1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	6.3300e-003	6.3300e-003	2.0000e-005	0.0000	6.7500e-003

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	0.0759					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4205					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.1000e-004	3.0000e-005	3.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.3300e-003	6.3300e-003	2.0000e-005	0.0000	6.7500e-003
Total	0.4967	3.0000e-005	3.2800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.3300e-003	6.3300e-003	2.0000e-005	0.0000	6.7500e-003

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	26.2146	0.7995	0.0192	51.9230

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	24.4824 / 0	26.2146	0.7995	0.0192	51.9230
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		26.2146	0.7995	0.0192	51.9230
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8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	26.6487	1.5749	0.0000	66.0209

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	131.28	26.6487	1.5749	0.0000	66.0209
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		26.6487	1.5749	0.0000	66.0209

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	4	8.00	260	40	0.20	CNG
Other Material Handling Equipment	4	8.00	260	3	0.40	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	tons/yr										MT/yr					

Forklifts	0.0913	0.3567	0.4314	4.0000e-004		0.0294	0.0294		0.0271	0.0271	0.0000	35.7534	35.7534	0.0113	0.0000	36.0362
Total	0.0913	0.3567	0.4314	4.0000e-004		0.0294	0.0294		0.0271	0.0271	0.0000	35.7534	35.7534	0.0113	0.0000	36.0362

10.0 Vegetation



EMC PLANNING GROUP INC.
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To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner
Cc: File (ENV-719)
Date: May 24, 2017

Re: Golden State Alternative Care Inc. – Air Quality and Greenhouse Gas (GHG) Emissions Assessment

Project Description

The proposed project is the development of a medical marijuana cultivation facility on an approximately eight-acre site in Greenfield California. The historic use of the site is agricultural production and the site is improved with a single-family residence and outbuildings used for storage ancillary to the agricultural use. The proposed facility would include greenhouses, storage/warehouse areas, loading docks, office space, and maintenance buildings. The proposed project would provide 100 jobs. Proposed improvements to the site include surface parking lots, and infrastructure improvements such as storm water detention, paved access to and within the site, sidewalks, lighting and landscaping. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's existing and proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the air district. Model results are attached to

this memorandum. For modeling purposes, data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics and other project information provided by the applicants.

Project Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources](#).

Table 1 Project Characteristics¹

Existing and Proposed Uses	CalEEMod Land Use Category	Size ²	
		Existing	Proposed
Single-family Residential	Single-family Housing	1 unit	0
Greenhouses/R&D/Processing/Internal Offices	Manufacturing ³	0	223,145
Parking	Surface Parking Lot	0	115 spaces
Other Pavement	Other Asphalt Surfaces	0	59,700 ³
Sidewalks, patios, etc.	Other Non-Asphalt Surfaces	0	6,940
Landscaping/bioswales ⁴	Other Non-Asphalt Surfaces	0	85,330

Source: Hogan Land Services 2017, Mark Hansen 2017, Luis Osorio 2017, Google Earth 2016, BREEZE Software 2016, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. In Square feet unless otherwise noted.
3. Parking access routes included in CalEEMod defaults for surface parking lot.
4. Landscaped areas would not be substantial sources of operational emissions and are included in the model only to enable estimation of construction emissions across the entire site.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Output Rating ¹
Emergency Generator	1	Diesel	13,410 HP
Forklifts	1	Electric	89 HP
Pallet Movers/Jacks	1	Electric	89 HP
Other Materials-handling Equipment ²	1	Diesel	168 HP

Source: Luis Osorio 2017, Breeze Software 2016,

Note:

1. CalEEMod default.
2. Conveyor (Luis Osorio email correspondence, May 11 and May 23, 2017).

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. Version 2016.3.1 utilizes 2014 Title 24 building energy efficiency standards. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and also calculates a potential carbon “offset” from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB, and use of the default construction parameters is accepted by the air district.

Assumptions

Data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational mobile-source and area-source emissions from the proposed project were captured using the following CalEEMod default land use subtypes:
 - a. Emissions from the existing use of the site are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Unrefrigerated Warehouse – No Rail”, which typically consists of warehouse facilities that are not accessible by rail.

- b. Emissions generated by greenhouses, processing, research and development (R&D), dry storage and related office uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Manufacturing", which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.
 - c. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Parking Lot", which is a single surface parking lot typically covered with asphalt.
 - d. Emissions from internal roadways are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Other Asphalt Surfaces", which is described as an asphalt area not used as a parking lot.
 - e. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Non-Asphalt Surfaces" which includes equipment pads, loading dock areas, etc. Landscaped areas, although not a significant source of operational emissions, are included in this category to capture emissions from their construction/installation.
3. The model's default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019 and the anticipated intensity factor for project's operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric's energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric's Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.
 4. The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new

development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing the proposed project GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project's contribution to GHG emissions.

Operational Emissions Data Inputs

The model default for building energy efficiencies (2014 Title 24) was adjusted to reflect an increase in energy efficiency that will be achieved through compliance with 2016 Title 24 building energy efficiency standards. Other than the land use characteristic information identified above, model defaults were used for operational stationary source, area source and mobile source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum. Mobile-source emissions are based on the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. The adjusted trip rates are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates for Manufacturing Land Use¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips ⁴	Adjusted Trip Rate (per ksf per day) ²
Manufacturing	2.13	100	213	0.96

Sources: ITE 9th Edition, Second Sun LLC 2017, EMC Planning Group 2017

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily trips are divided by proposed Manufacturing (223.15 ksf) to yield adjusted trip rate.
5. This is a conservative estimate of trip rates as it assumes 100 employees would be on site each day.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term

GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with the air district's guidance, the model defaults were utilized for all construction data inputs.

Carbon Offsets and Sequestration Inputs

CalEEMod also estimates a one-time only change in sequestration potential resulting from changes in natural communities, and also calculates a carbon "offset" based upon the number of net new trees proposed, averaged over a 20-year growth cycle. Due to the size of the project site and comparison of existing and proposed activities, changes in vegetation would not provide measureable results that would affect the outcome of the emissions modeling. Calculations for carbon sequestration potential off-sets provided by new tree plantings in numbers greater than trees to be removed are included in this assessment. According to information provided by the applicant (Mark Hansen email, May 11, 2017, the proposed project includes the removal of 35 trees, and at least 67 net new trees would be planted on site; therefore, a carbon sequestration offset calculation was conducted for this assessment.

Results

GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO_{2e}). Criteria air pollutant emissions are reported in pounds per day. Winter emissions of criteria pollutants are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Unmitigated operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 3, Unmitigated Operational Criteria Pollutant Emissions \(Pounds per Day\)](#).

Table 3 Unmitigated Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_x)	Suspended Particulate Matter (PM₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)	7.08	11.66	1.9	16.37

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Existing Operational GHG Emissions

Existing operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO_{2e}). According to the CalEEMod modeling results unmitigated operational GHG emissions under existing conditions are an estimated 19.62 MT CO_{2e} per year.

Unmitigated Construction Emissions

The proposed project would generate an estimated 740.88 MT CO_{2e} unmitigated emissions during construction. With unmitigated construction emissions averaged over a 30-year operational lifetime, the annual amortized construction emissions equal 24.70 MT CO_{2e}.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 4, Unmitigated Operational GHG Emissions \(MT CO_{2e} per year\)](#).

Table 4 Unmitigated Operational GHG Emissions (MT CO₂e per year)¹

Emissions Source	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO ₂ e
Area	0.00	0.01	<0.01	0.00	0.01
Energy ²	0.00	489.11	0.03	<0.01	492.56
Mobile	0.00	304.12	0.02	0.00	304.57
Offroad	0.00	120.04	0.04	0.00	120.99
Waste	56.17	0.00	3.32	0.00	139.16
Water	16.37	38.88	1.68	0.04	109.44
Total	72.54	952.17	5.09	0.05	1,166.74

Source: CalEEMod Results. EMC Planning Group 2017

Note:

1. Results may vary due to rounding.
2. Compliant with 2016 Title 24 Building Energy Efficiency Standards.

Carbon Offset

Tree planting proposed by the project would generate a carbon offset of 47.44 MT CO₂e, over a 20-year active life cycle for new trees. This equates to approximately 1.58 MT CO₂e per year when averaged over a 30 year lifespan of the project. For reporting purposes the calculated annual carbon offset is deducted from the total annual unmitigated GHG emissions generated by the proposed project.

GHG Emissions Attributable to the Proposed Project

The total unmitigated GHG emissions attributable to the proposed project are determined by comparing existing emissions with proposed unmitigated construction and operational emissions, and any carbon offsets applicable to the project. The net unmitigated GHG emissions attributable to the proposed project are presented in [Table 5, Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 5 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction ²	Annual Carbon Offset	Project Emissions ²	Existing Emissions	Project Net Emissions
1,166.74	24.70	<1.58> ³	1189.86	<19.62>	1,170.24

Source: CalEEMod Results, EMC Planning Group 2017

Notes: Amounts may vary due to rounding.

1. Results may vary due to rounding.
 2. Project emissions result is the sum of annual operational and amortized construction, less the annual carbon offset.
 3. <Brackets> indicate deductions.
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Sources

1. Hogan Land Services. May 2017. Project Plans: *Second Sun Grow Development Plans for Medical Cannabis Cultivation and Packaging Site*.
2. Hansen, Mark. Email message to Consultant, 11 May 2017.
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Golden State Alternative Care (Existing Conditions) - Monterey County, Annual

**Golden State Alternative Care (Existing Conditions)
Monterey County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	10.33	1,788.00	3

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage provided by applicant. Housing square footage estimated from Google Earth aerial.

Construction Phase - No construction

tblLandUse	LotAcreage	0.32	10.33
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2.0 Emissions Summary

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	0.0359	9.5000e-004	0.0458	7.0000e-005		5.0700e-003	5.0700e-003		5.0700e-003	5.0700e-003	0.4858	0.5131	0.9989	6.1000e-004	4.0000e-005	1.0264
Energy	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	4.4373	4.4373	1.5000e-004	6.0000e-005	4.4586
Mobile	5.4200e-003	0.0229	0.0660	1.4000e-004	0.0102	2.1000e-004	0.0104	2.7500e-003	2.0000e-004	2.9500e-003	0.0000	13.2179	13.2179	8.2000e-004	0.0000	13.2384
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.1444	0.1651	2.1300e-003	5.0000e-005	0.2336
Total	0.0415	0.0255	0.1125	2.2000e-004	0.0102	5.4100e-003	0.0156	2.7500e-003	5.4000e-003	8.1500e-003	0.7744	18.3127	19.0871	0.0196	1.5000e-004	19.6208

**Golden State Alternative Care MM Greenfield CA
Monterey Bay Unified APCD Air District, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	223.15	1000sqft	5.01	218,150.00	0
Parking Lot	115.00	Space	0.53	23,000.00	0
Other Asphalt Surfaces	59.70	1000sqft	1.37	59,700.00	0
Other Non-Asphalt Surfaces	92.27	1000sqft	2.12	92,270.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	307	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

- Project Characteristics - CO2 intensity factor adjusted per PG&E 2019 projections
- Land Use - 5 ksf second story (assumed)
- Vehicle Trips - Adjusted per ITE 9th Edition Employee-based trips
- Operational Off-Road Equipment - Conveyor, one forklift, one pallet jack (per applicant emails 5/11 and 5/23 2017)
- Stationary Sources - Emergency Generators and Fire Pumps -
- Sequestration - Applicant Email 5/11/17
- Energy Mitigation - 2016 Title 24 compliant and generation of at least 5% renewable energy on-site

Table Name	Column Name	Default Value	New Value
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tblLandUse	LandUseSquareFeet	223,150.00	218,150.00
tblLandUse	LandUseSquareFeet	46,000.00	23,000.00
tblLandUse	LotAcreage	5.12	5.01
tblLandUse	LotAcreage	1.03	0.53
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	168.00	89.00
tblOperationalOffRoadEquipment	OperLoadFactor	0.40	0.40
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperLoadFactor	0.40	0.40
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0.00	67.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	13,410.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.73
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	58.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.96
tblVehicleTrips	SU_TR	0.62	0.96
tblVehicleTrips	WD_TR	3.82	0.96

2.0 Emissions Summary

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
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Category	lb/day										lb/day					
Area	5.5862	4.7000e-004	0.0505	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1073	0.1073	2.9000e-004		0.1145
Energy	0.1707	1.5516	1.3034	9.3100e-003		0.1179	0.1179		0.1179	0.1179		1,861.9217	1,861.9217	0.0357	0.0341	1,872.9862
Mobile	0.6202	3.2146	7.8246	0.0181	1.3338	0.0268	1.3606	0.3574	0.0253	0.3827		1,829.6935	1,829.6935	0.1118		1,832.4881
Offroad	0.7118	6.8968	7.1873	0.0103		0.4169	0.4169		0.3836	0.3836		1,017.8601	1,017.8601	0.3220		1,025.9111
Total	7.0889	11.6634	16.3657	0.0377	1.3338	0.5618	1.8956	0.3574	0.5270	0.8844		4,709.5825	4,709.5825	0.4698	0.0341	4,731.4999

4.0 Operational Detail - 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	0.6202	3.2146	7.8246	0.0181	1.3338	0.0268	1.3606	0.3574	0.0253	0.3827		1,829.6935	1,829.6935	0.1118		1,832.4881
Unmitigated	0.6202	3.2146	7.8246	0.0181	1.3338	0.0268	1.3606	0.3574	0.0253	0.3827		1,829.6935	1,829.6935	0.1118		1,832.4881

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	214.22	214.22	214.22	625,429	625,429
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	214.22	214.22	214.22	625,429	625,429

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
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1349	1.2266	1.0303	7.3600e-003		0.0932	0.0932		0.0932	0.0932		1,471.9025	1,471.9025	0.0282	0.0270	1,480.6493
NaturalGas Unmitigated	0.1707	1.5516	1.3034	9.3100e-003		0.1179	0.1179		0.1179	0.1179		1,861.9217	1,861.9217	0.0357	0.0341	1,872.9862

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					
Manufacturing	15826.3	0.1707	1.5516	1.3034	9.3100e-003		0.1179	0.1179		0.1179	0.1179		1,861.9217	1,861.9217	0.0357	0.0341	1,872.9862
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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
Total		0.1707	1.5516	1.3034	9.3100e-003		0.1179	0.1179		0.1179	0.1179		1,861.9217	1,861.9217	0.0357	0.0341	1,872.9862

Mitigated

	Natural Gas 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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Manufacturing	12.5112	0.1349	1.2266	1.0303	7.3600e-003		0.0932	0.0932		0.0932	0.0932		1,471.9025	1,471.9025	0.0282	0.0270	1,480.6493
Total		0.1349	1.2266	1.0303	7.3600e-003		0.0932	0.0932		0.0932	0.0932		1,471.9025	1,471.9025	0.0282	0.0270	1,480.6493

6.0 Area Detail

	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					
Unmitigated	5.5862	4.7000e-004	0.0505	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1073	0.1073	2.9000e-004		0.1145

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	0.8511					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Consumer Products	4.7304					0.0000	0.0000		0.0000	0.0000			0.0000		0.0000
Landscaping	4.7900e-003	4.7000e-004	0.0505	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1073	0.1073	2.9000e-004	0.1145
Total	5.5862	4.7000e-004	0.0505	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1073	0.1073	2.9000e-004	0.1145

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Other Material Handling Equipment	1	8.00	260	168	0.40	Diesel
Forklifts	1	8.00	260	89	0.20	Electrical
Other Material Handling Equipment	1	8.00	260	89	0.40	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	0.1608	1.4355	1.2002	1.5300e-003		0.1112	0.1112		0.1023	0.1023		152.0770	152.0770	0.0481		153.2799
Other Material Handling	0.5510	5.4613	5.9871	8.7500e-003		0.3057	0.3057		0.2813	0.2813		865.7830	865.7830	0.2739		872.6312
Total	0.7118	6.8967	7.1873	0.0103		0.4169	0.4169		0.3836	0.3836		1,017.8601	1,017.8601	0.3220		1,025.9111

**Golden State Alternative Care MM Greenfield CA GHG Emissions (2016 Title 24 Compliant)
Monterey Bay Unified APCD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	223.15	1000sqft	5.01	218,150.00	0
Parking Lot	115.00	Space	0.53	23,000.00	0
Other Asphalt Surfaces	59.70	1000sqft	1.37	59,700.00	0
Other Non-Asphalt Surfaces	92.27	1000sqft	2.12	92,270.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	307	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E 2019 projections
 Land Use - 5 ksf second story (assumed)
 Vehicle Trips - Adjusted per ITE 9th Edition Employee-based trips
 Operational Off-Road Equipment - Conveyor, one forklift, one pallet jack (per applicant emails 5/11 and 5/23 2017)
 Stationary Sources - Emergency Generators and Fire Pumps -
 Sequestration - Applicant Email 5/11/17
 Energy - 2016 Title 24 compliant

Table Name	Column Name	Default Value	New Value
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tblLandUse	LandUseSquareFeet	223,150.00	218,150.00
tblLandUse	LandUseSquareFeet	46,000.00	23,000.00
tblLandUse	LotAcreage	5.12	5.01
tblLandUse	LotAcreage	1.03	0.53
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	168.00	89.00
tblOperationalOffRoadEquipment	OperLoadFactor	0.40	0.40
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperLoadFactor	0.40	0.40
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0.00	67.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	13,410.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.73
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	58.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	0.96
tblVehicleTrips	SU_TR	0.62	0.96
tblVehicleTrips	WD_TR	3.82	0.96

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Year	tons/yr										MT/yr					
2017	0.2275	2.0774	1.3739	2.6000e-003	0.2075	0.1075	0.3151	0.0973	0.1003	0.1976	0.0000	237.9056	237.9056	0.0457	0.0000	239.0491
2018	1.9234	3.1157	2.6016	5.5000e-003	0.1547	0.1502	0.3049	0.0420	0.1412	0.1832	0.0000	500.0149	500.0149	0.0727	0.0000	501.8322
Total	2.1509	5.1930	3.9755	8.1000e-003	0.3623	0.2577	0.6200	0.1393	0.2414	0.3808	0.0000	737.9205	737.9205	0.1184	0.0000	740.8813

2.2 Overall 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					
Offroad	0.0925	0.8966	0.9343	1.3400e-003		0.0542	0.0542		0.0499	0.0499	0.0000	120.0403	120.0403	0.0380	0.0000	120.9898
Area	1.0192	6.0000e-005	6.3200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0122	0.0122	3.0000e-005	0.0000	0.0130
Energy	0.0246	0.2239	0.1880	1.3400e-003		0.0170	0.0170		0.0170	0.0170	0.0000	489.1072	489.1072	0.0279	9.2600e-003	492.5643
Mobile	0.1117	0.5709	1.3444	3.3200e-003	0.2352	4.8300e-003	0.2401	0.0632	4.5600e-003	0.0678	0.0000	304.1231	304.1231	0.0180	0.0000	304.5721
Waste						0.0000	0.0000		0.0000	0.0000	56.1696	0.0000	56.1696	3.3195	0.0000	139.1579
Water						0.0000	0.0000		0.0000	0.0000	16.3714	38.8831	55.2544	1.6852	0.0405	109.4419
Total	1.2480	1.6914	2.4731	6.0000e-003	0.2352	0.0761	0.3113	0.0632	0.0715	0.1347	72.5410	952.1659	1,024.7069	5.0885	0.0497	1,166.7390

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	47.4360
Total	47.4360

4.0 Operational Detail - 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					
Unmitigated	0.1117	0.5709	1.3444	3.3200e-003	0.2352	4.8300e-003	0.2401	0.0632	4.5600e-003	0.0678	0.0000	304.1231	304.1231	0.0180	0.0000	304.5721

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	214.22	214.22	214.22	625,429	625,429
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	214.22	214.22	214.22	625,429	625,429

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

2016 Title 24 compliant

	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 Compliant							0.0000	0.0000		0.0000	0.0000	0.0000	245.4173	245.4173	0.0232	4.8000e-003	247.4262
Natural Gas Compliant	0.0246	0.2239	0.1880	1.3400e-003			0.0170	0.0170		0.0170	0.0170	0.0000	243.6900	243.6900	4.6700e-003	4.4700e-003	245.1381

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas 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						
Manufacturing	4.56658e+006	0.0246	0.2239	0.1880	1.3400e-003			0.0170	0.0170		0.0170	0.0170	0.0000	243.6900	243.6900	4.6700e-003	4.4700e-003	245.1381
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0246	0.2239	0.1880	1.3400e-003			0.0170	0.0170		0.0170	0.0170	0.0000	243.6900	243.6900	4.6700e-003	4.4700e-003	245.1381

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	1.74215e+006	242.5988	0.0229	4.7400e-003	244.5846
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	20240	2.8185	2.7000e-004	6.0000e-005	2.8416
Total		245.4173	0.0232	4.8000e-003	247.4262

6.0 Area Detail

	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					
Unmitigated	1.0192	6.0000e-005	6.3200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0122	0.0122	3.0000e-005	0.0000	0.0130

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	0.1553					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0122	0.0122	3.0000e-005	0.0000	0.0130
Total	1.0192	6.0000e-005	6.3200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0122	0.0122	3.0000e-005	0.0000	0.0130

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	55.2544	1.6852	0.0405	109.4419

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	51.6034 / 0	55.2544	1.6852	0.0405	109.4419

Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		55.2544	1.6852	0.0405	109.4419

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	56.1696	3.3195	0.0000	139.1579

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	276.71	56.1696	3.3195	0.0000	139.1579
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		56.1696	3.3195	0.0000	139.1579

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Other Material Handling Equipment	1	8.00	260	168	0.40	Diesel
Forklifts	1	8.00	260	89	0.20	Electrical

Other Material Handling Equipment	1	8.00	260	89	0.40	Electrical
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Conveyor and assumed forklift and pallet movers

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	0.0209	0.1866	0.1560	2.0000e-004		0.0145	0.0145		0.0133	0.0133	0.0000	17.9351	17.9351	5.6700e-003	0.0000	18.0769
Other Material Handling Equipment	0.0716	0.7100	0.7783	1.1400e-003		0.0398	0.0398		0.0366	0.0366	0.0000	102.1053	102.1053	0.0323	0.0000	102.9129
Total	0.0925	0.8966	0.9343	1.3400e-003		0.0542	0.0542		0.0499	0.0499	0.0000	120.0403	120.0403	0.0380	0.0000	120.9898



EMC PLANNING GROUP INC.
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To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner; Dana McCarthy, Assistant Planner
Cc: File (ENV-719)
Date: May 17, 2017

Re: Paper Plane Traders Medical Marijuana Project – Air quality and Greenhouse Gas (GHG) Emissions Assessment

Project Description

The proposed project is the development of medical marijuana cultivation and manufacturing facility on a 2.6-acre site in Greenfield California. The site is developed with three houses, two barns and a small shed. The proposed facility includes manufacturing and storage areas, warehouse and office uses. Proposed site improvements include construction of a surface parking lot, paved access routes, storm drainage facilities and landscaping. The proposed project would provide 47 jobs. Greenhouses are not proposed. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's existing and proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the Monterey Bay Air Resources District (MBARD). Model results are attached to this memorandum. For modeling purposes, data

inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics provided by the applicants.

Project Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources and Off-road Equipment](#).

Table 1 Project Characteristics¹

Existing and Proposed Uses	CalEEMod Land Use Category	Size ²	
		Existing	Proposed
Single-family Dwelling	Single-family	3 units	0
Greenhouses/R&D/Processing/Internal Offices	Manufacturing ³	0	19,500
Parking	Surface Parking Lot	0	34 Spaces
Other Pavement	Other Asphalt Surfaces	0	47,100
Sidewalks, patios, loading docks, etc.	Other Non-Asphalt Surfaces	0	5,243
Landscaping and Bio-swales ⁴	Other Non-Asphalt Surfaces	0	11,769

Sources: Belli Architectural Group 2017, Google Earth 2016, BREEZE Software 2016, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. In Square feet unless otherwise noted.
3. Manufacturing Facilities are areas where the primary activity is the conversion of raw materials into finished products. This use generally also has some office, warehouse, and R&D functions at the site.
4. Storm water facilities and landscaping would not be substantial sources of operational emissions and are included in the model only to enable estimation of construction emissions across the entire site.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Output Rating ¹
Emergency Generator	1	Diesel	700
Forklifts	1	Battery/Electric	89
Pallet Movers/Jacks	1	Battery/Electric	89

Source: EMC Planning Group, CalEEMod default ratings.

Note: Horsepower (HP)

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and also calculates a potential carbon “offset” from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB, and use of the default construction parameters is accepted by MBARD. Information regarding actual construction activity phases and the number and type of construction equipment by phase was not yet available in detail sufficient to utilize in the model, therefore the model defaults were utilized for construction emissions. Due to the size of the project site and comparison of existing and proposed activities, changes in vegetation would not provide measureable results that would affect the outcome of the emissions modeling. At the time of the modeling, a landscaping plan had not yet been provided. Therefore carbon sequestration estimates are not included in this assessment.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational mobile-source and area-source emissions from the proposed project were captured using the following CalEEMod default land use subtypes:
 - a. Emissions from the existing use of the site are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Single-family Housing”.
 - b. Emissions generated by, processing, research and development (R&D), dry storage and related office uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Manufacturing”, which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.
 - c. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Parking Lot”, which is a single surface parking lot typically covered with asphalt.
 - d. Emissions from internal paved roadways and access routes are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Other Asphalt Surfaces”, which is described as an asphalt area not used as a parking lot.
 - e. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes equipment pads, loading dock areas, etc. Landscaped areas, although not significant sources of GHG emissions, are also included in this category to capture construction GHG emissions.
3. The model’s default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019 and the anticipated intensity factor for project’s operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric’s energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric’s Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.
4. The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for

manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing the proposed project GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project's contribution to GHG emissions.

Operational Emissions Data Inputs

Other than the land use characteristic information identified above, model defaults were used for operational stationary source and area source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum. Mobile-source emissions are based on the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees. The adjusted trip rates are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips	Adjusted Trip Rate (per ksf per day) ^{4,5}
Manufacturing	2.13	47	100.11	5.13

Sources: ITE 9th Edition, EMC Planning Group 2017)

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily employee-based trips are divided by manufacturing use (19.5 ksf) to yield the adjusted trip rates per thousand square feet.
5. This is a conservative estimate of trip rates as it assumes 47 employees would be on site each day.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with the air district's guidance, the model defaults were utilized for all construction data inputs.

Results

GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO_{2e}). Criteria air pollutant emissions are reported in pounds per day. Winter emissions of criteria pollutants are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported in this assessment. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 4, Operational Criteria Pollutant Emissions \(Pounds per Day\)](#).

Table 4 Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)	1.40	5.82	0.93	7.73

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Existing Operational GHG Emissions

Existing operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO₂e). According to the CalEEMod modeling results unmitigated operational GHG emissions under existing conditions are an estimated 58.86 MT CO₂e per year.

Unmitigated Construction Emissions

The proposed project would generate an estimated 249.77 MT CO₂e unmitigated emissions during construction. With unmitigated construction emissions averaged over a thirty-year operational lifetime, the annual amortized emissions equal 8.33 MT CO₂e.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 5, Unmitigated Operational GHG Emissions \(MT CO₂e per year\)](#).

Table 5 Unmitigated Operational GHG Emissions (MT CO₂e per year)

Emissions Sources	Bio CO₂	NBio CO₂	CH₄	N₂O	CO₂e
Area	0.00	<0.01	<0.01	0.00	<0.01
Energy	0.00	52.09	<0.01	<0.01	52.45
Mobile	0.00	142.01	<0.01	0.00	142.22
Offroad	0.00	53.69	0.02	0.00	54.12
Stationary	0.00	15.46	<0.01	0.00	15.52
Waste	4.91	0.00	0.29	0.00	12.16
Water	1.43	3.40	0.15	<0.01	9.56
Total	6.34	266.66	0.47	<0.01	286.03

Source: CalEEMod Results, EMC Planning Group 2017
 Note: Results may vary due to rounding.

GHG Emissions Attributable to the Proposed Project

The total unmitigated GHG emissions attributable to the proposed project are determined by comparing the existing emissions with proposed unmitigated construction and operational

emissions. The net unmitigated GHG emissions attributable to the proposed project are presented in [Table 6, Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 4 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction	Annual Project Emissions ²	Existing Emissions	Project Net Emissions ³
286.03	8.33	294.36	<58.86>	235.50

Source: CalEEMod Results, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. Unmitigated annual construction and operational emissions.
3. Net unmitigated emissions is the difference between existing and project emissions.

The net unmitigated operational GHG emissions volume attributable to the proposed project is 235.50 MT CO₂e per year.

Sources

1. Belli Architectural Group. 2016. Project Plans: *Cannabis Growing and Processing Facility for: Paper Plane Traders Inc.*
2. Belli Architectural Group 2017. Project Rendering: Design Option 1.
3. Pacific Gas & Electric. Greenhouse Gas Factors: Guidance for PG&E Customers. November 2015. Accessed online September 29, 2016 at: https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
4. BREEZE Software. A Division of Trinity Consultants. *California Emissions Estimator (CalEEMod) Version 2016.3.1*. September 2016. Available online at: <http://www.aqmd.gov/caleemod.htm>
5. BREEZE Software. A Division of Trinity Consultants. *CalEEMod User's Guide (Version 2016.3.1)*. September 2016. Available online at: <http://www.aqmd.gov/caleemod/guide.htm>
6. MBARD. CEQA Air Quality Guidelines. 2008. [http://mbard.org/pdf/CEQA_full%20\(1\).pdf](http://mbard.org/pdf/CEQA_full%20(1).pdf)

Emerald Mission - Monterey County, Annual

**Emerald Mission
Monterey County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Mobile Home Park	1.00	Dwelling Unit	1.13	722.00	3

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
 Land Use - Actual lot acreage and estimated square footage of dwelling
 Construction Phase - No construction
 Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	200.00	1.00
tblConstructionPhase	NumDays	20.00	1.00

tblConstructionPhase	NumDays	4.00	1.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	2.00	1.00
tblGrading	AcresOfGrading	0.38	1.50
tblGrading	AcresOfGrading	0.50	1.00
tblLandUse	LandUseSquareFeet	1,200.00	722.00
tblLandUse	LotAcreage	0.13	1.13

2.0 Emissions Summary

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	3.5900e-003	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173
Energy	1.1000e-004	9.5000e-004	4.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	2.7667	2.7667	1.0000e-004	4.0000e-005	2.7798
Mobile	2.8100e-003	0.0119	0.0342	8.0000e-005	5.3000e-003	1.1000e-004	5.4100e-003	1.4200e-003	1.1000e-004	1.5300e-003	0.0000	6.8578	6.8578	4.2000e-004	0.0000	6.8684
Waste						0.0000	0.0000		0.0000	0.0000	0.0934	0.0000	0.0934	5.5200e-003	0.0000	0.2313
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.1444	0.1651	2.1300e-003	5.0000e-005	0.2336
Total	6.5100e-003	0.0130	0.0450	9.0000e-005	5.3000e-003	2.5000e-004	5.5500e-003	1.4200e-003	2.5000e-004	1.6700e-003	0.1141	9.7858	9.8998	8.1900e-003	9.0000e-005	10.1305

4.0 Operational Detail - 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					
Unmitigated	2.8100e-003	0.0119	0.0342	8.0000e-005	5.3000e-003	1.1000e-004	5.4100e-003	1.4200e-003	1.1000e-004	1.5300e-003	0.0000	6.8578	6.8578	4.2000e-004	0.0000	6.8684

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Mobile Home Park	4.99	5.00	4.36	14,120	14,120
Total	4.99	5.00	4.36	14,120	14,120

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Mobile Home Park	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Mobile Home Park	0.519098	0.034062	0.199476	0.151864	0.028389	0.006635	0.017892	0.024867	0.004163	0.003186	0.008055	0.001292	0.001019

5.0 Energy Detail

Historical Energy Use: N

	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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.6636	1.6636	8.0000e-005	2.0000e-005	1.6701
NaturalGas Unmitigated	1.1000e-004	9.5000e-004	4.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1032	1.1032	2.0000e-005	2.0000e-005	1.1097

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					
Mobile Home Park	20672.5	1.1000e-004	9.5000e-004	4.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1032	1.1032	2.0000e-005	2.0000e-005	1.1097
Total		1.1000e-004	9.5000e-004	4.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1032	1.1032	2.0000e-005	2.0000e-005	1.1097

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Mobile Home Park	5718.46	1.6636	8.0000e-005	2.0000e-005	1.6701

Total		1.6636	8.0000e-005	2.0000e-005	1.6701
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6.0 Area Detail

	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					
Unmitigated	3.5900e-003	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173

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	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.2000e-004	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173
Total	3.5900e-003	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.1651	2.1300e-003	5.0000e-005	0.2336

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Mobile Home Park	0.065154 / 0.0410754	0.1651	2.1300e-003	5.0000e-005	0.2336
Total		0.1651	2.1300e-003	5.0000e-005	0.2336

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	0.0934	5.5200e-003	0.0000	0.2313

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Mobile Home Park	0.46	0.0934	5.5200e-003	0.0000	0.2313
Total		0.0934	5.5200e-003	0.0000	0.2313

Emerald Mission (Proposed Conditions) Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	38.35	1000sqft	0.88	38,350.00	0
Manufacturing	2.33	1000sqft	0.05	2,325.00	0
Other Asphalt Surfaces	9.66	1000sqft	0.22	9,663.00	0
Other Non-Asphalt Surfaces	1.70	1000sqft	0.04	1,702.00	0
Other Non-Asphalt Surfaces	8.71	1000sqft	0.20	8,712.00	0
Parking Lot	19.00	Space	0.10	4,198.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor adjusted to 2019 projections (PG&E 2015)

Land Use - Parking lot area provided by applicant.

Construction Phase -

Off-road Equipment -

Vehicle Trips - Adjusted to reflect ITE (9th Ed) per employee trip rates.

Energy Use - PG&E CO2 intensity factor adjusted to 2019 projections (see Project Characteristics tab)

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Operational Off-Road Equipment - Information provided by applicant. HP based on experience with similar uses

Stationary Sources - Emergency Generators and Fire Pumps - Information provided by applicant.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblLandUse	BuildingSpaceSquareFeet	2,330.00	2,325.00
tblLandUse	BuildingSpaceSquareFeet	9,660.00	9,663.00
tblLandUse	BuildingSpaceSquareFeet	1,700.00	1,702.00
tblLandUse	BuildingSpaceSquareFeet	8,710.00	8,712.00
tblLandUse	BuildingSpaceSquareFeet	7,600.00	4,198.00
tblLandUse	LandUseSquareFeet	2,330.00	2,325.00
tblLandUse	LandUseSquareFeet	9,660.00	9,663.00
tblLandUse	LandUseSquareFeet	1,700.00	1,702.00
tblLandUse	LandUseSquareFeet	8,710.00	8,712.00
tblLandUse	LandUseSquareFeet	7,600.00	4,198.00
tblLandUse	LotAcreage	0.17	0.10
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	89.00	40.00
tblOperationalOffRoadEquipment	OperHorsePower	168.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	ST_TR	1.49	0.30
tblVehicleTrips	SU_TR	0.62	0.27
tblVehicleTrips	WD_TR	3.82	1.57

2.0 Emissions Summary

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	1.0376	8.0000e-005	8.2200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0318	0.2893	0.2430	1.7400e-003		0.0220	0.0220		0.0220	0.0220		347.1633	347.1633	6.6500e-003	6.3600e-003	349.2263
Mobile	0.3702	1.6500	4.7138	0.0106	0.4557	0.0145	0.4703	0.1297	0.0137	0.1434		1,063.9493	1,063.9493	0.0635		1,065.5379
Offroad	0.1755	0.6860	0.8297	7.6000e-004		0.0566	0.0566		0.0520	0.0520		75.7912	75.7912	0.0240		76.3906
Total	1.6151	2.6254	5.7948	0.0131	0.4557	0.0931	0.5488	0.1297	0.0878	0.2175		1,486.9212	1,486.9212	0.0942	6.3600e-003	1,491.1734

4.0 Operational Detail - 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					
Unmitigated	0.3702	1.6500	4.7138	0.0106	0.4557	0.0145	0.4703	0.1297	0.0137	0.1434		1,063.9493	1,063.9493	0.0635		1,065.5379

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	60.21	11.51	10.35	134,676	134,676
Manufacturing	3.66	0.70	0.63	8,182	8,182
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	63.87	12.20	10.98	142,858	142,858

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
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961

5.0 Energy Detail

Historical Energy Use: N

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
NaturalGas Unmitigated	0.0318	0.2893	0.2430	1.7400e-003		0.0220	0.0220		0.0220	0.0220		347.1633	347.1633	6.6500e-003	6.3600e-003	349.2263

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use kBTU/yr	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	
Manufacturing	168.674	1.8200e-003	0.0165	0.0139	1.0000e-004		1.2600e-003	1.2600e-003		1.2600e-003	1.2600e-003			19.8440	19.8440	3.8000e-004	3.6000e-004	19.9619
Manufacturing	2782.21	0.0300	0.2728	0.2291	1.6400e-003		0.0207	0.0207		0.0207	0.0207			327.3193	327.3193	6.2700e-003	6.0000e-003	329.2644
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000

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
Total		0.0318	0.2893	0.2430	1.7400e-003		0.0220	0.0220		0.0220	0.0220		347.1633	347.1633	6.6500e-003	6.3600e-003	349.2263

6.0 Area Detail

	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					
Unmitigated	1.0376	8.0000e-005	8.2200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186

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	0.1577					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8790					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.8000e-004	8.0000e-005	8.2200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	1.0376	8.0000e-005	8.2200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	8.00	260	40	0.20	CNG
Other Material Handling Equipment	1	8.00	260	5	0.40	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
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Equipment Type	lb/day										lb/day					
Forklifts	0.1755	0.6860	0.8297	7.6000e-004		0.0566	0.0566		0.0520	0.0520		75.7912	75.7912	0.0240		76.3906
Total	0.1755	0.6860	0.8297	7.6000e-004		0.0566	0.0566		0.0520	0.0520		75.7912	75.7912	0.0240		76.3906

Emerald Mission (Proposed Conditions) Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	38.35	1000sqft	0.88	38,350.00	0
Manufacturing	2.33	1000sqft	0.05	2,325.00	0
Other Asphalt Surfaces	9.66	1000sqft	0.22	9,663.00	0
Other Non-Asphalt Surfaces	1.70	1000sqft	0.04	1,702.00	0
Other Non-Asphalt Surfaces	8.71	1000sqft	0.20	8,712.00	0
Parking Lot	19.00	Space	0.10	4,198.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor adjusted to 2019 projections (PG&E 2015)

Land Use - Parking lot area provided by applicant.

Construction Phase -

Off-road Equipment -

Vehicle Trips - Adjusted to reflect ITE (9th Ed) per employee trip rates.

Energy Use - PG&E CO2 intensity factor adjusted to 2019 projections (see Project Characteristics tab)

Construction Off-road Equipment Mitigation -

Area Mitigation -

Water Mitigation -

Operational Off-Road Equipment - Information provided by applicant. HP based on experience with similar uses

Stationary Sources - Emergency Generators and Fire Pumps - Information provided by applicant.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblLandUse	BuildingSpaceSquareFeet	2,330.00	2,325.00
tblLandUse	BuildingSpaceSquareFeet	9,660.00	9,663.00
tblLandUse	BuildingSpaceSquareFeet	1,700.00	1,702.00
tblLandUse	BuildingSpaceSquareFeet	8,710.00	8,712.00
tblLandUse	BuildingSpaceSquareFeet	7,600.00	4,198.00
tblLandUse	LandUseSquareFeet	2,330.00	2,325.00
tblLandUse	LandUseSquareFeet	9,660.00	9,663.00
tblLandUse	LandUseSquareFeet	1,700.00	1,702.00
tblLandUse	LandUseSquareFeet	8,710.00	8,712.00
tblLandUse	LandUseSquareFeet	7,600.00	4,198.00
tblLandUse	LotAcreage	0.17	0.10
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	89.00	40.00
tblOperationalOffRoadEquipment	OperHorsePower	168.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	ST_TR	1.49	1.57
tblVehicleTrips	SU_TR	0.62	1.57
tblVehicleTrips	WD_TR	3.82	1.57

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2361	1.6551	1.2165	2.0400e-003	0.0349	0.0981	0.1330	0.0132	0.0940	0.1072	0.0000	177.2185	177.2185	0.0334	0.0000	178.0530
2018	0.3993	0.7713	0.6364	1.1100e-003	0.0113	0.0436	0.0549	3.0800e-003	0.0419	0.0450	0.0000	95.4080	95.4080	0.0168	0.0000	95.8269
Total	0.6353	2.4264	1.8528	3.1500e-003	0.0463	0.1417	0.1879	0.0163	0.1359	0.1523	0.0000	272.6264	272.6264	0.0501	0.0000	273.8799

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	0.1893	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9800e-003	1.9800e-003	1.0000e-005	0.0000	2.1100e-003
Energy	5.8100e-003	0.0528	0.0444	3.2000e-004		4.0100e-003	4.0100e-003		4.0100e-003	4.0100e-003	0.0000	105.6830	105.6830	5.6600e-003	2.0000e-003	106.4192
Mobile	0.0668	0.2911	0.8127	1.9300e-003	0.0806	2.6200e-003	0.0833	0.0230	2.4700e-003	0.0255	0.0000	176.7480	176.7480	0.0103	0.0000	177.0050
Offroad	0.0228	0.0892	0.1079	1.0000e-004		7.3500e-003	7.3500e-003		6.7700e-003	6.7700e-003	0.0000	8.9384	8.9384	2.8300e-003	0.0000	9.0091
Waste						0.0000	0.0000		0.0000	0.0000	10.2389	0.0000	10.2389	0.6051	0.0000	25.3664
Water						0.0000	0.0000		0.0000	0.0000	2.9845	7.0883	10.0728	0.3072	7.3800e-003	19.9511
Total	0.2847	0.4331	0.9660	2.3500e-003	0.0806	0.0140	0.0946	0.0230	0.0133	0.0363	13.2234	298.4597	311.6831	0.9311	9.3800e-003	337.7528

4.0 Operational Detail - 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					
Unmitigated	0.0668	0.2911	0.8127	1.9300e-003	0.0806	2.6200e-003	0.0833	0.0230	2.4700e-003	0.0255	0.0000	176.7480	176.7480	0.0103	0.0000	177.0050

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	60.21	60.21	60.21	175,782	175,782
Manufacturing	3.66	3.66	3.66	10,680	10,680
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	63.87	63.87	63.87	186,462	186,462

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526395	0.032321	0.201107	0.146365	0.026644	0.006320	0.017996	0.025422	0.004154	0.003072	0.007973	0.001269	0.000961

5.0 Energy Detail

Historical Energy Use: N

	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
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Category	tons/yr										MT/yr						
Electricity Unmitigated						0.0000	0.0000			0.0000	0.0000	0.0000	48.2062	48.2062	4.5500e-003	9.4000e-004	48.6008
Natural Gas Unmitigated	5.8100e-003	0.0528	0.0444	3.2000e-004		4.0100e-003	4.0100e-003			4.0100e-003	4.0100e-003	0.0000	57.4768	57.4768	1.1000e-003	1.0500e-003	57.8183

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas 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					
Manufacturing	61566	3.3000e-004	3.0200e-003	2.5400e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2854	3.2854	6.0000e-005	6.0000e-005	3.3049
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manufacturing	1.01551e+006	5.4800e-003	0.0498	0.0418	3.0000e-004		3.7800e-003	3.7800e-003		3.7800e-003	3.7800e-003	0.0000	54.1914	54.1914	1.0400e-003	9.9000e-004	54.5134
Total		5.8100e-003	0.0528	0.0444	3.2000e-004		4.0100e-003	4.0100e-003		4.0100e-003	4.0100e-003	0.0000	57.4768	57.4768	1.1000e-003	1.0500e-003	57.8183

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	19576.5	2.7261	2.6000e-004	5.0000e-005	2.7484
Manufacturing	322907	44.9657	4.2500e-003	8.8000e-004	45.3338
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3694.24	0.5144	5.0000e-005	1.0000e-005	0.5186
Total		48.2062	4.5600e-003	9.4000e-004	48.6008

6.0 Area Detail

	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					
Unmitigated	0.1893	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9800e-003	1.9800e-003	1.0000e-005	0.0000	2.1100e-003

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	0.0288					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1604					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9800e-003	1.9800e-003	1.0000e-005	0.0000	2.1100e-003
Total	0.1893	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9800e-003	1.9800e-003	1.0000e-005	0.0000	2.1100e-003

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	10.0728	0.3072	7.3800e-003	19.9511

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	9.40725 / 0	10.0728	0.3072	7.3800e-003	19.9511

Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		10.0728	0.3072	7.3800e-003	19.9511

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	10.2389	0.6051	0.0000	25.3664

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	50.44	10.2389	0.6051	0.0000	25.3664
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		10.2389	0.6051	0.0000	25.3664

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	8.00	260	40	0.20	CNG
Other Material Handling Equipment	1	8.00	260	5	0.40	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	tons/yr										MT/yr					
Forklifts	0.0228	0.0892	0.1079	1.0000e-004		7.3500e-003	7.3500e-003		6.7700e-003	6.7700e-003	0.0000	8.9384	8.9384	2.8300e-003	0.0000	9.0091
Total	0.0228	0.0892	0.1079	1.0000e-004		7.3500e-003	7.3500e-003		6.7700e-003	6.7700e-003	0.0000	8.9384	8.9384	2.8300e-003	0.0000	9.0091

10.0 Vegetation



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To: Teri Wissler Adam, Project Manager
From: Sally Rideout, Principal Planner; Dana McCarthy, Assistant Planner
Cc: File (ENV-719)
Date: May 23, 2017

Re: Paper Plane Traders Medical Marijuana Project – Air quality and Greenhouse Gas (GHG) Emissions Assessment

Project Description

The proposed project is the development of medical marijuana cultivation and manufacturing facility on a 2.6-acre site in Greenfield California. The site is developed with three houses, two barns and a small shed. The proposed facility includes manufacturing and storage areas, warehouse and office uses. Proposed site improvements include construction of a surface parking lot, paved access routes, storm drainage facilities and landscaping. The proposed project would provide 47 jobs. The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study pursuant to the California Environmental Quality Act (CEQA) is being prepared by the City of Greenfield to identify any potentially significant environmental impacts that would result from development of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's existing and proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the Monterey Bay Air Resources District (MBARD). Model results are attached to this memorandum. For modeling purposes, data

inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics provided by the applicants.

Project Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#) and [Table 2, Operational Stationary Sources and Off-road Equipment](#).

Table 1 Project Characteristics¹

Existing and Proposed Uses	CalEEMod Land Use Category	Size ²	
		Existing	Proposed
Single-family Dwelling	Single-family	3 units	0
1 st floor Greenhouses/R&D/Processing/Offices	Manufacturing ³	0	47,000
2 nd floor R&D/Processing/Offices	Manufacturing ³	0	25,000
Parking	Surface Parking Lot	0	53 Spaces
Other Pavement	Other Asphalt Surfaces	0	20,182
Sidewalks, patios, loading docks, etc.	Other Non-Asphalt Surfaces	0	16,684
Landscaping and Bio-swales ⁴	Other Non-Asphalt Surfaces	0	19,127

Sources: Belli Architectural Group 2017, Luis Osorio 2017, Google Earth 2016, BREEZE Software 2016, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. In Square feet unless otherwise noted.
3. Manufacturing Facilities are areas where the primary activity is the conversion of raw materials into finished products. This use generally also has some office, warehouse, and R&D functions at the site.
4. Storm water facilities and landscaping would not be substantial sources of operational emissions and are included in the model only to enable estimation of construction emissions across the entire site.

Table 2 Operational Stationary Sources and Off-road Equipment

Equipment Type	Number	Fuel Type	Output Rating ¹
Emergency Generator	1	Diesel	700HP
Forklifts	1	Battery/Electric	89HP
Pallet Movers/Jacks	1	Battery/Electric	89HP

Source: EMC Planning Group, CalEEMod default ratings.

Note: Horsepower (HP)

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. In certain instances the model can be used to estimate emissions for related stationary sources such as on-site generators, boilers and fire pump equipment, and operational off-road equipment such as forklifts and other materials handling equipment. The model also calculates indirect emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and also calculates a potential carbon “offset” from planting new trees.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding proposed activities and greenhouse and other facility operational equipment. The CalEEMod program also models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and construction equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB, and use of the default construction parameters is accepted by MBARD. Information regarding actual construction activity phases and the number and type of construction equipment by phase was not yet available in detail sufficient to utilize in the model, therefore the model defaults were utilized for construction emissions. Due to the size of the project site and comparison of existing and proposed activities, changes in vegetation would not provide measureable results that would affect the outcome of the emissions modeling. The proposed project includes removal of 56 trees with 36 proposed replacements. Since fewer trees would be planted than removed, a carbon sequestration estimate is not included in this assessment.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2019.
2. Operational mobile-source and area-source emissions from the proposed project were captured using the following CalEEMod default land use subtypes:
 - a. Emissions from the existing use of the site are assumed to be generally similar to those that would be generated by the CalEEMod default land use subtype “Single-family Housing”.
 - b. Emissions generated by, processing, research and development (R&D), dry storage and related office uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Manufacturing”, which consists of areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.
 - c. Emissions from the proposed parking lot are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Parking Lot”, which is a single surface parking lot typically covered with asphalt.
 - d. Emissions from internal paved roadways and access routes are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Other Asphalt Surfaces”, which is described as an asphalt area not used as a parking lot.
 - e. Emissions from sidewalks, loading docks, patios, equipment pads, or other non-asphalt impervious surfaces are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes equipment pads, loading dock areas, etc. Landscaped areas, although not significant sources of GHG emissions, are also included in this category to capture construction GHG emissions.
3. The model’s default CO₂ intensity factor of 641 pounds/megawatt hour was reduced to 307 pounds/megawatt hour to reflect Pacific Gas & Electric energy projections for 2019 and the anticipated intensity factor for project’s operational year. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric’s energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric’s Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.
4. The default vehicle trip generation value for manufacturing uses was adjusted using the Institute of Traffic Engineers 9th Edition employee-based trip generation for

manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees.

Model Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing the proposed project GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project's contribution to GHG emissions.

Operational Emissions Data Inputs

Other than the land use characteristic information identified above, model defaults were used for operational stationary source and area source emissions estimates, for the existing and proposed uses identified in Table 1 and Table 2. Project-specific data inputs for the project are listed in the model results attached to this memorandum. Mobile-source emissions are based on the Institute of Traffic Engineers 9th Edition employee-based trip generation for manufacturing uses. This rate better reflects the nature of the project where much of the internal building space is planned for a passive activity (e.g. greenhouses) that is managed by a relatively small number of employees. The adjusted trip rates are presented in [Table 3, Adjusted Vehicle Trip Rates](#).

Table 3 Adjusted Vehicle Trip Rates¹

Use	ITE Employee Rate Per Day ²	Number of Employees ³	Daily Trips	Adjusted Trip Rate (per ksf per day) ^{4,5}
Manufacturing	2.13	47	100.11	1.21

Sources: ITE 9th Edition, EMC Planning Group 2017)

Notes:

1. Amounts may vary due to rounding.
2. Weekday
3. Provided by applicant.
4. Daily employee-based trips are divided by manufacturing use (83.0 ksf) to yield the adjusted trip rates per thousand square feet.
5. This is a conservative estimate of trip rates as it assumes 47 employees would be on site each day.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by CARB. The air district recommends using default construction emissions data if construction information is not yet available and amortizing the short term GHG construction emissions over a 30-year time period to yield an annual result. Information regarding actual construction activity phases and the number and type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with the air district's guidance, the model defaults were utilized for all construction data inputs.

Results

GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO_{2e}). Criteria air pollutant emissions are reported in pounds per day. Winter emissions of criteria pollutants are greater during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported in this assessment. Detailed model results for criteria pollutant winter and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Operational criteria pollutant emissions resulting from the proposed project's operations are summarized in [Table 4, Operational Criteria Pollutant Emissions \(Pounds per Day\)](#).

Table 4 Operational Criteria Pollutant Emissions (Pounds per Day)

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide (CO)
Winter (unmitigated)				

SOURCE: CalEEMod Results, EMC Planning Group 2017

NOTE: Results may vary due to rounding.

GHG Emissions

Existing Operational GHG Emissions

Existing operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO_{2e}). According to the CalEEMod modeling results unmitigated operational GHG emissions under existing conditions are an estimated 58.86 MT CO_{2e} per year.

Unmitigated Construction Emissions

The proposed project would generate an estimated 292.28 MT CO_{2e} unmitigated emissions during construction. With unmitigated construction emissions averaged over a thirty-year operational lifetime, the annual amortized emissions equal 9.74 MT CO_{2e}.

Unmitigated Operational Emissions

Unmitigated operational GHG emissions model results for the proposed project are reported in [Table 5, Unmitigated Operational GHG Emissions \(MT CO_{2e} per year\)](#).

Table 5 Unmitigated Operational GHG Emissions (MT CO_{2e} per year)

Emissions Sources	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO _{2e}
Area	0.00	<0.01	<0.01	0.00	<0.01
Energy	0.00	215.98	0.01	<0.01	217.49
Mobile	0.00	142.58	<0.01	0.00	142.79
Offroad	0.00	53.69	0.02	0.00	54.12
Stationary	0.00	15.46	<0.01	0.00	15.52
Waste	20.89	0.00	1.24	0.00	51.76
Water	6.09	14.46	0.63	0.02	40.71
Total	26.98	442.18	1.90	0.02	522.37

Source: CalEEMod Results, EMC Planning Group 2017
Note: Results may vary due to rounding.

GHG Emissions Attributable to the Proposed Project

The total unmitigated GHG emissions attributable to the proposed project are determined by comparing the existing emissions with proposed unmitigated construction and operational

emissions. The net unmitigated GHG emissions attributable to the proposed project are presented in [Table 6, Unmitigated GHG Emissions \(MT CO₂e per Year\)](#).

Table 6 Summary of Unmitigated GHG Emissions (MT CO₂e per Year)¹

Annual Operations	Amortized Construction	Annual Project Emissions ²	Existing Emissions	Project Net Emissions ³
522.37	9.74	532.11	<58.86>	473.25

Source: CalEEMod Results, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. Unmitigated annual construction and operational emissions.
3. Net unmitigated emissions is the difference between existing and project emissions.

The net unmitigated operational GHG emissions volume attributable to the proposed project is 473.25 MT CO₂e per year.

Sources

1. Belli Architectural Group. 2017. Project Plans: *Cannabis Growing and Processing Facility for: Paper Plane Traders Inc.*
2. Belli, Lino. Email to Mic Steinman. 19, May 2017.
3. Pacific Gas & Electric. Greenhouse Gas Factors: Guidance for PG&E Customers. November 2015. Accessed online September 29, 2016 at: https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
4. BREEZE Software. A Division of Trinity Consultants. *California Emissions Estimator (CalEEMod) Version 2016.3.1*. September 2016. Available online at: <http://www.aqmd.gov/caleemod.htm>
5. BREEZE Software. A Division of Trinity Consultants. *CalEEMod User's Guide (Version 2016.3.1)*. September 2016. Available online at: <http://www.aqmd.gov/caleemod/guide.htm>
6. MBARD. CEQA Air Quality Guidelines. 2008. [http://mbard.org/pdf/CEQA_full%20\(1\).pdf](http://mbard.org/pdf/CEQA_full%20(1).pdf)

Paper Plane Traders (Existing Conditions) - Monterey County, Annual

**Paper Plane Traders (Existing Conditions)
Monterey County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	2.84	3,876.00	9

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.6	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
 Land Use - Actual lot acreage and estimated square footage for single family homes on property
 Construction Phase - No construction
 Off-road Equipment -

2.0 Emissions Summary

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	0.1009	2.8400e-003	0.1375	2.1000e-004		0.0152	0.0152		0.0152	0.0152	1.4574	1.5392	2.9966	1.8400e-003	1.2000e-004	3.0791
Energy	5.8000e-004	4.9700e-003	2.1100e-003	3.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	13.3120	13.3120	4.5000e-004	1.8000e-004	13.3758
Mobile	0.0163	0.0687	0.1979	4.3000e-004	0.0307	6.4000e-004	0.0313	8.2400e-003	6.1000e-004	8.8500e-003	0.0000	39.6538	39.6538	2.4600e-003	0.0000	39.7152
Waste						0.0000	0.0000		0.0000	0.0000	0.8038	0.0000	0.8038	0.0475	0.0000	1.9915
Water						0.0000	0.0000		0.0000	0.0000	0.0620	0.4332	0.4952	6.3900e-003	1.5000e-004	0.7009
Total	0.1177	0.0765	0.3375	6.7000e-004	0.0307	0.0163	0.0469	8.2400e-003	0.0162	0.0245	2.3233	54.9381	57.2614	0.0587	4.5000e-004	58.8625

4.0 Operational Detail - 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					
Unmitigated	0.0163	0.0687	0.1979	4.3000e-004	0.0307	6.4000e-004	0.0313	8.2400e-003	6.1000e-004	8.8500e-003	0.0000	39.6538	39.6538	2.4600e-003	0.0000	39.7152

4.2 Trip Summary Information

	Average Daily Trip Rate	Unmitigated	Mitigated
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Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	28.56	29.73	25.86	81,649	81,649
Total	28.56	29.73	25.86	81,649	81,649

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.519098	0.034062	0.199476	0.151864	0.028389	0.006635	0.017892	0.024867	0.004163	0.003186	0.008055	0.001292	0.001019

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.5563	7.5563	3.4000e-004	7.0000e-005	7.5859
NaturalGas Unmitigated	5.8000e-004	4.9700e-003	2.1100e-003	3.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7557	5.7557	1.1000e-004	1.1000e-004	5.7899

5.2 Energy by Land Use - NaturalGas Unmitigated

	Natural Gas 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					
Single Family Housing	107858	5.8000e-004	4.9700e-003	2.1100e-003	3.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7557	5.7557	1.1000e-004	1.1000e-004	5.7899
Total		5.8000e-004	4.9700e-003	2.1100e-003	3.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.7557	5.7557	1.1000e-004	1.1000e-004	5.7899

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	25974.5	7.5563	3.4000e-004	7.0000e-005	7.5859
Total		7.5563	3.4000e-004	7.0000e-005	7.5859

6.0 Area Detail

	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
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Category	tons/yr										MT/yr					
Unmitigated	0.1009	2.8400e-003	0.1375	2.1000e-004		0.0152	0.0152		0.0152	0.0152	1.4574	1.5392	2.9966	1.8400e-003	1.2000e-004	3.0791

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	2.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0823	2.4800e-003	0.1063	2.0000e-004		0.0150	0.0150		0.0150	0.0150	1.4574	1.4887	2.9461	1.7900e-003	1.2000e-004	3.0273
Landscaping	9.6000e-004	3.6000e-004	0.0312	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0505	0.0505	5.0000e-005	0.0000	0.0518
Total	0.1009	2.8400e-003	0.1375	2.0000e-004		0.0152	0.0152		0.0152	0.0152	1.4574	1.5392	2.9966	1.8400e-003	1.2000e-004	3.0791

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.4952	6.3900e-003	1.5000e-004	0.7009

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.195462/ 0.123226	0.4952	6.3900e-003	1.5000e-004	0.7009
Total		0.4952	6.3900e-003	1.5000e-004	0.7009

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	0.8038	0.0475	0.0000	1.9915

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	3.96	0.8038	0.0475	0.0000	1.9915
Total		0.8038	0.0475	0.0000	1.9915

Paper Plane Traders MM Greenfield Proposed Project
Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	83.00	1000sqft	1.08	83,000.00	0
Other Asphalt Surfaces	20.18	1000sqft	0.46	20,180.00	0
Other Non-Asphalt Surfaces	16.68	1000sqft	0.38	16,680.00	0
Other Non-Asphalt Surfaces	19.13	1000sqft	0.44	19,130.00	0
Parking Lot	53.00	Space	0.26	11,241.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4	Operational Year	2019		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	307	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted to reflect PG&E projections for 2019

Land Use - 2_story construction

Applicant provides parking area

Construction Phase - Assume a 9-10 month construction schedule

Vehicle Trips - Adjusted per ITE 9th edition employee-based rate.

Operational Off-Road Equipment - Assumed

Stationary Sources - Emergency Generators and Fire Pumps - Assumed

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	150.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	PhaseEndDate	8/15/2018	5/10/2018
tblConstructionPhase	PhaseEndDate	7/18/2018	4/12/2018
tblConstructionPhase	PhaseEndDate	8/31/2017	8/17/2017
tblConstructionPhase	PhaseEndDate	9/13/2017	9/14/2017
tblConstructionPhase	PhaseEndDate	8/1/2018	4/26/2018
tblConstructionPhase	PhaseEndDate	9/5/2017	8/31/2017
tblConstructionPhase	PhaseStartDate	8/2/2018	4/27/2018
tblConstructionPhase	PhaseStartDate	9/14/2017	9/15/2017
tblConstructionPhase	PhaseStartDate	9/6/2017	9/1/2017
tblConstructionPhase	PhaseStartDate	7/19/2018	4/13/2018
tblConstructionPhase	PhaseStartDate	9/1/2017	8/18/2017
tblGrading	AcresOfGrading	5.00	3.00
tblGrading	AcresOfGrading	15.00	4.50
tblLandUse	BuildingSpaceSquareFeet	21,200.00	11,241.00
tblLandUse	LandUseSquareFeet	21,200.00	11,241.00
tblLandUse	LotAcreage	1.91	1.08
tblLandUse	LotAcreage	0.48	0.26
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	168.00	89.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07

tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	700.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.16
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	58.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	1.21
tblVehicleTrips	SU_TR	0.62	1.21
tblVehicleTrips	WD_TR	3.82	1.21

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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	2.1258	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0420	0.0420	1.1000e-004		0.0449
Energy	0.0649	0.5903	0.4959	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.4094	708.4094	0.0136	0.0130	712.6191
Mobile	0.2908	1.5070	3.6682	8.5000e-003	0.6253	0.0126	0.6378	0.1676	0.0119	0.1794		857.7756	857.7756	0.0524		859.0857
Offroad	0.3861	3.6672	3.4774	4.6000e-003		0.2555	0.2555		0.2351	0.2351		455.2834	455.2834	0.1441		458.8845
Stationary	0.1838	0.5137	0.4687	8.8000e-004		0.0270	0.0270		0.0270	0.0270		94.0256	94.0256	0.0132		94.3551
Total	3.0514	6.2784	8.1299	0.0175	0.6253	0.3401	0.9653	0.1676	0.3189	0.4865		2,115.5359	2,115.5359	0.2233	0.0130	2,124.9893

4.0 Operational Detail - 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
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Category	lb/day										lb/day			
Unmitigated	0.2908	1.5070	3.6682	8.5000e-003	0.6253	0.0126	0.6378	0.1676	0.0119	0.1794	857.7756	857.7756	0.0524	859.0857

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	100.43	100.43	100.43	293,207	293,207
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	100.43	100.43	100.43	293,207	293,207

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
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
NaturalGas Unmitigated	0.0649	0.5903	0.4959	3.5400e-003		0.0449	0.0449		0.0449	0.0449			708.4094	708.4094	0.0136	0.0130	712.6191

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas 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					
Manufacturing	6021.48	0.0649	0.5903	0.4959	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.4094	708.4094	0.0136	0.0130	712.6191
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Total		0.0649	0.5903	0.4959	3.5400e-003		0.0449	0.0449		0.0449	0.0449		708.4094	708.4094	0.0136	0.0130	712.6191

6.0 Area Detail

	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					
Unmitigated	2.1258	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0420	0.0420	1.1000e-004		0.0449

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	0.3239					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8800e-003	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0420	0.0420	1.1000e-004		0.0449
Total	2.1258	1.8000e-004	0.0198	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0420	0.0420	1.1000e-004		0.0449

7.0 Water Detail

8.0 Waste Detail

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	8.00	260	89	0.20	Electrical
Other Material Handling Equipment	1	8.00	260	89	0.40	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	0.1600	1.4283	1.1942	1.5300e-003		0.1107	0.1107		0.1018	0.1018		151.3204	151.3204	0.0479		152.5173
Other Material Handling Equipment	0.2262	2.2388	2.2832	3.0700e-003		0.1449	0.1449		0.1333	0.1333		303.9629	303.9629	0.0962		306.3672
Total	0.3861	3.6672	3.4774	4.6000e-003		0.2555	0.2555		0.2351	0.2351		455.2833	455.2833	0.1441		458.8845

**Paper Plane Traders MM Greenfield Proposed Project
Monterey Bay Unified APCD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	83.00	1000sqft	1.08	83,000.00	0
Other Asphalt Surfaces	20.18	1000sqft	0.46	20,180.00	0
Other Non-Asphalt Surfaces	16.68	1000sqft	0.38	16,680.00	0
Other Non-Asphalt Surfaces	19.13	1000sqft	0.44	19,130.00	0
Parking Lot	53.00	Space	0.26	11,241.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4	Operational Year	2019		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted to reflect PG&E projections for 2019

Land Use - 2_story construction

Construction Phase - Assume a 9-10 month construction schedule

Vehicle Trips - Adjusted per ITE 9th edition employee-based rate.

Operational Off-Road Equipment - Assumed

Stationary Sources - Emergency Generators and Fire Pumps - Assumed

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	220.00	150.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	PhaseEndDate	8/15/2018	5/10/2018
tblConstructionPhase	PhaseEndDate	7/18/2018	4/12/2018
tblConstructionPhase	PhaseEndDate	8/31/2017	8/17/2017
tblConstructionPhase	PhaseEndDate	9/13/2017	9/14/2017
tblConstructionPhase	PhaseEndDate	8/1/2018	4/26/2018
tblConstructionPhase	PhaseEndDate	9/5/2017	8/31/2017
tblConstructionPhase	PhaseStartDate	8/2/2018	4/27/2018
tblConstructionPhase	PhaseStartDate	9/14/2017	9/15/2017
tblConstructionPhase	PhaseStartDate	9/6/2017	9/1/2017
tblConstructionPhase	PhaseStartDate	7/19/2018	4/13/2018
tblConstructionPhase	PhaseStartDate	9/1/2017	8/18/2017
tblGrading	AcresOfGrading	5.00	3.00
tblGrading	AcresOfGrading	15.00	4.50
tblLandUse	BuildingSpaceSquareFeet	21,200.00	11,241.00
tblLandUse	LandUseSquareFeet	21,200.00	11,241.00
tblLandUse	LotAcreage	1.91	1.08
tblLandUse	LotAcreage	0.48	0.26
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperFuelType	Diesel	Electrical
tblOperationalOffRoadEquipment	OperHorsePower	168.00	89.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003

tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	700.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.16
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	58.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	1.49	1.21
tblVehicleTrips	SU_TR	0.62	1.21
tblVehicleTrips	WD_TR	3.82	1.21

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1856	1.4350	1.0016	1.8000e-003	0.0606	0.0779	0.1385	0.0242	0.0739	0.0981	0.0000	159.5850	159.5850	0.0301	0.0000	160.3380
2018	0.7275	0.9946	0.8015	1.5100e-003	0.0258	0.0530	0.0787	6.9900e-003	0.0506	0.0576	0.0000	132.3963	132.3963	0.0220	0.0000	132.9455
Total	0.9131	2.4296	1.8031	3.3100e-003	0.0864	0.1309	0.2173	0.0312	0.1246	0.1557	0.0000	291.9813	291.9813	0.0521	0.0000	293.2835

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	0.3878	2.0000e-005	2.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7600e-003	4.7600e-003	1.0000e-005	0.0000	5.0900e-003
Energy	0.0119	0.1077	0.0905	6.5000e-004		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	215.9809	215.9809	0.0116	4.0800e-003	217.4857
Mobile	0.0524	0.2677	0.6303	1.5600e-003	0.1103	2.2600e-003	0.1126	0.0296	2.1400e-003	0.0318	0.0000	142.5755	142.5755	8.4200e-003	0.0000	142.7859
Offroad	0.0502	0.4767	0.4521	6.0000e-004		0.0332	0.0332		0.0306	0.0306	0.0000	53.6934	53.6934	0.0170	0.0000	54.1181

Stationary	0.0333	0.0931	0.0849	1.6000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003	0.0000	15.4604	15.4604	2.1700e-003	0.0000	15.5146
Waste						0.0000	0.0000		0.0000	0.0000	20.8918	0.0000	20.8918	1.2347	0.0000	51.7586
Water						0.0000	0.0000		0.0000	0.0000	6.0893	14.4624	20.5517	0.6268	0.0151	40.7066
Total	0.5356	0.9453	1.2603	2.9700e-003	0.1103	0.0486	0.1589	0.0296	0.0458	0.0754	26.9811	442.1773	469.1584	1.9006	0.0191	522.3746

4.0 Operational Detail - 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					
Unmitigated	0.0524	0.2677	0.6303	1.5600e-003	0.1103	2.2600e-003	0.1126	0.0296	2.1400e-003	0.0318	0.0000	142.5755	142.5755	8.4200e-003	0.0000	142.7859

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	100.43	100.43	100.43	293,207	293,207
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	100.43	100.43	100.43	293,207	293,207

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

	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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	98.6958	98.6958	9.3200e-003	1.9300e-003	99.5036
NaturalGas Unmitigated	0.0119	0.1077	0.0905	6.5000e-004		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	117.2851	117.2851	2.2500e-003	2.1500e-003	117.9821

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					
Manufacturing	2.19784e+006	0.0119	0.1077	0.0905	6.5000e-004		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	117.2851	117.2851	2.2500e-003	2.1500e-003	117.9821
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0119	0.1077	0.0905	6.5000e-004		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	117.2851	117.2851	2.2500e-003	2.1500e-003	117.9821

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	698860	97.3183	9.1900e-003	1.9000e-003	98.1149
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	9892.08	1.3775	1.3000e-004	3.0000e-005	1.3888
Total		98.6958	9.3200e-003	1.9300e-003	99.5037

6.0 Area Detail

	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					
Unmitigated	0.3878	2.0000e-005	2.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7600e-003	4.7600e-003	1.0000e-005	0.0000	5.0900e-003

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	0.0591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7600e-003	4.7600e-003	1.0000e-005	0.0000	5.0900e-003
Total	0.3878	2.0000e-005	2.4700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.7600e-003	4.7600e-003	1.0000e-005	0.0000	5.0900e-003

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	20.5517	0.6268	0.0151	40.7066

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	19.1938 / 0	20.5517	0.6268	0.0151	40.7066
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		20.5517	0.6268	0.0151	40.7066

8.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	20.8918	1.2347	0.0000	51.7586

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	102.92	20.8918	1.2347	0.0000	51.7586
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		20.8918	1.2347	0.0000	51.7586

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	8.00	260	89	0.20	Electrical
Other Material Handling Equipment	1	8.00	260	89	0.40	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	tons/yr										MT/yr					
Forklifts	0.0208	0.1857	0.1552	2.0000e-004		0.0144	0.0144		0.0132	0.0132	0.0000	17.8458	17.8458	5.6500e-003	0.0000	17.9870
Other Material Handling Equipment	0.0294	0.2911	0.2968	4.0000e-004		0.0188	0.0188		0.0173	0.0173	0.0000	35.8476	35.8476	0.0113	0.0000	36.1311
Total	0.0502	0.4767	0.4521	6.0000e-004		0.0332	0.0332		0.0306	0.0306	0.0000	53.6934	53.6934	0.0170	0.0000	54.1181