Analysis of Impacts to Air Quality, and Public Health from Proposed Gasoline Station and Convenience

Williams, California

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SECTION 1: INTRODUCTION

Environmental Permitting Specialists (EPS) has been retained by the City of Williams to evaluate impacts to air quality and public health from a proposed gasoline station with a convenience store (Project) to be located in Williams (Colusa County), California. This analysis is part of the environmental review by the Planning Department at the City of Williams.

The Project would be located on a 5.87 acre parcel at the corner of Husted Road and Frontage Road in Williams. It has been assigned an Assessor's Parcel Number 016-320-110-00 (Parcel "A"). The convenience store and gas station would occupy 8,852 square feet. A total of 7 dispensers (14 fueling positions) for passenger cars and 5 dispensers for commercial vehicles are planned. A total of 2 million gallons of gasoline and 1 million gallons of diesel are assumed to be dispensed annually.

The project is located adjacent to an existing commercial fuel station (Ramos Oil 1802 Old Highway 99). The current project is not affiliated with the commercial Ramos Oil refueling facility and any emissions associated with that existing facility are outside the scope of the current project.

Figures 1 and 2 illustrate the project location and site map respectively. Construction is assumed to begin in July 1 2023 and finish by December 31, 2023. Occupancy is expected in early 2024.

The objective of the proposed analysis is to evaluate three (3) categories of impacts associated with the construction and operational phase of this Project:

1. Air Quality Impacts
2. Impacts from Greenhouse Gas (GHG) Emissions
3. Impacts to Public Health

The significance of the project's impacts is determined by comparing construction and operational emissions and health risk with thresholds of significance established by the City of Williams. The project is considered to have potentially significant environmental impact if annual emissions exceed these thresholds.

This report is divided into 6 sections. Immediately following this Introduction, the projects metrics are described in Section 2. Next, the methodology for calculating impacts to air quality, including GHG, and public health risks are discussed in Section 3. Project impacts are discussed in Section 4. The report concludes with a discussion of the significance of the project's air quality and public health impacts (Section 5). References, technical details and calculations are provided in Section 6 and in the Appendix.

Figure 1-1
Vicinity Map

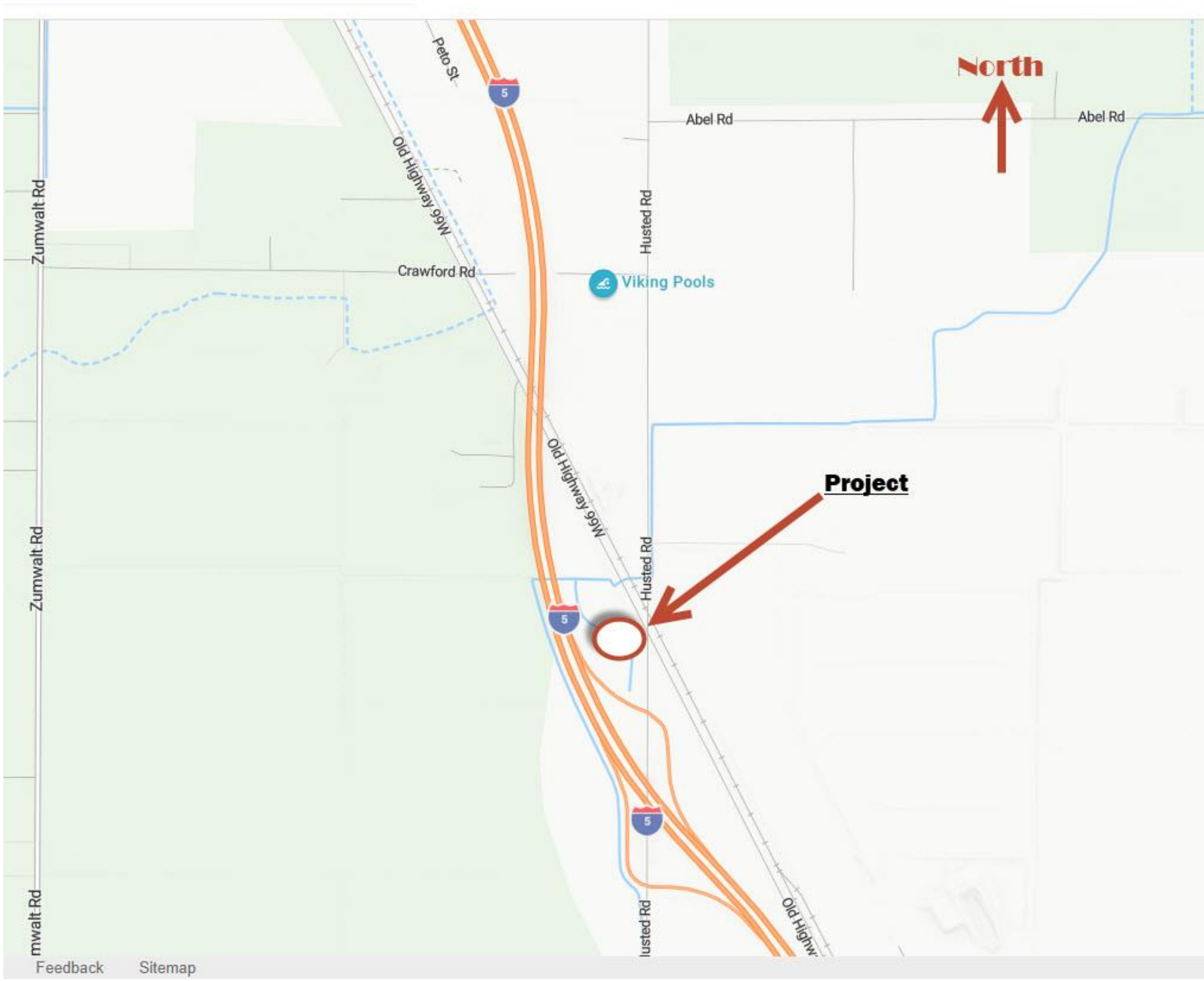
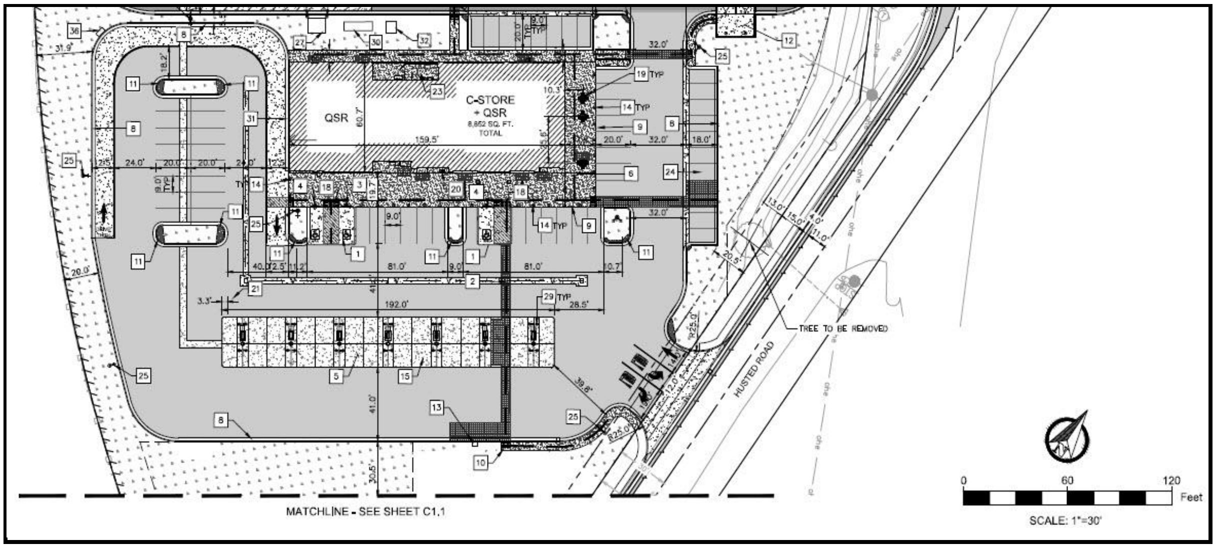


Figure 1-2
Site Map
Source: Maverick, Inc.



SECTION 2: PROJECT DETAILS

As noted in the Introduction, the proposed project would occupy a 5.87 acre site in Williams. The convenience store and gas station would occupy approximately 8,852 square feet. There would be a total of 13 fuel dispensers dispensing 3 million gallons of gasoline and diesel annually. A total of 75 parking spaces are planned.

There are no structures at the site, therefore, no demolition would be required. The site is already graded and level (Figure 1-1), therefore minimal grading will be required and no soil would have to be imported or exported. Electrical and water are available near the site, therefore, minimal infrastructure development will be needed.

The actual building would be constructed with hand tools, portable compressors and a forklift. On-site electrical power is already available at the site so there would be minimal usage of portable gasoline fueled generators. No heavy construction equipment would be used during the actual building and the canopy over the gasoline dispensing stations.

Due to the relatively small size of the project, there are no access roads, trucks transporting soil, or storage piles of soil that may be subject to wind erosion. The project would use water sprays as needed on exposed/disturbed area and limit truck idling to no more than 5 minutes.

A traffic study was completed that determined the project would generate 229 new primary trips per day. Excerpts of the traffic study are provided in Appendix A.

Table 2-1 summarizes all the project metrics based on information from the Project developer.

Table 2-1

Phase		Details	Comments
	Start Date	July 1, 2023	Based on data provided by Maverick, Inc.
	End Date	December 31, 2023	
	Lot Size	5.87 acres	
	Parking Spaces	75	
	Building Area	8,852 square feet	
	Construction Related Traffic	Default Values	Note 1.
Operational	Start Date	January 1, 2024	
	Average Daily Traffic	229 new trips per day	Dec 22, 2022 Traffic Study by W.Trans (Attached)
	Volume of Fuel Dispensed Annually	2 million gallons of gasoline 1 million gallon diesel	Fuel would be delivered in 8,500 gallon tanker trucks. 353 annual fuel deliveries per year
	Trip Length	5 to 10 miles	Note 1
	Energy Usage (Electricity)	CalEEMod Default Value	Note 1
	Energy Usage (Natural Gas)	CalEEMod Default Value	Note 1
	Water Usage	CalEEMod Default Value	Note 1
	Solid Waste	CalEEMod Default Value	Note 1

Note 1. Based on recommended default value for Convenience Store with Gas Pumps located at Climate Zone 6 and Energy Demand Forecast Zone. .Available at: http://caleemod.com/

SECTION 3: CALCULATION METHODOLOGY

The construction and operation of the proposed gas station and convenience store would release a variety of air pollutants, including GHG emissions and emissions of toxic air pollutants (TACs). Project impacts are directly related to short-term and long-term emissions of these pollutants during the construction and operational (occupancy) phases. This section identifies these pollutants and describes how they will be quantified.

3.1 Emissions of Criteria Air Pollutants

Criteria air pollutants refers to those pollutants for which the state and/or the federal government has established ambient (outside) air quality standards. The following criteria air pollutants will be quantified for the current project:

- Oxides of Nitrogen (NOx)
- Reactive Organic Compounds (ROG)
- Particulate Matter (PM-10)
- Fine Particulate Matter (PM-2.5)
- Carbon Monoxide
- Sulfur Dioxide (SO_2)

The maximum Annual emission rates of each of these air pollutants will be quantified using the CalEEMod emissions model Version 2022.1 (April 2022). This model is recommended by the California Air Pollution Control Officers Association (CAPCOA) that represents all the air pollution control districts in the state, including Colusa County Air Pollution Control District.

3.2 Emissions of Toxic Air Contaminants

There are two categories of TACs that would be released from the current project:

1. Diesel Particulate Matter (DPM) from use of construction equipment and idling of fuel delivery trucks.

2. BTEX Compounds (benzene, toluene, xylene) from gasoline dispensing, storage and delivery. This includes spillage of gasoline from fuel dispensing.

Toxic Air Contaminants that may be released and the calculation methodology is summarized in Table 3-1.

Table 3-1 Sources of Toxic Air Contaminants			
Toxic Air Contaminant	Construction Phase	Operational Phase	Calculation Methodology
Diesel Particulate Matter	Use of Diesel fueled Construction Equipment	Idling of Fuel Delivery Truck	For construction phase, use "Exhaust PM-10" emission rates calculated using CalEEMod Emissions Model For Operational Phase – Use idling emission factors for HD Trucks using EMFAC 2021 emissions model. Assume 15 minutes idle time per truck delivery
Benzene	N/A	Storage and Dispensing of Gasoline EVR Phase I and II for Underground Storage Tanks	Recommended emission factors in Appendix A in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Assessment Guidelines*.
Ethyl Benzene	N/A	Storage and Dispensing of Gasoline	Same as Benzene
Toluene	N/A	Storage and Dispensing of Gasoline	Same as Benzene
Xylene	N/A	Storage and Dispensing of Gasoline	Same as Benzene

SECTION 4: PROJECT IMPACTS

This section discusses the air quality, GHG and public health impacts associated with the Project. The significance of the impacts is discussed in Section 5.

4.1 Impacts to Air Quality (Criteria Air Pollutants)

Impacts to air quality were determined by calculating the maximum annual emission rate of each criteria air pollutant identified earlier in Section 3.1.

Based on the use of the CalEEMod emissions model, the annual emission rates are summarized in Table 4-1.

Table 4-1
Summary of Maximum Annual Emissions
Construction Phase
(in Tons per year)

Project Phase	Pollutant			
	ROG/VOC	NOx	PM-10	PM-2.5
Construction	0.15	0.43	0.06	0.04
Operational	0.25	0.29	0.15	0.03

4.2 Impacts to Air Quality (Toxic Air Pollutants)

Construction Phase

Diesel Particulate Matter (DPM)

As noted previously, there are no structures at the site, therefore, no demolition would be required. The site is already graded and level, therefore no grading will be required and no soil would have to be imported or exported. Electrical, water and sewage services are available nearby, therefore, minimal infrastructure development will be needed.

DPM emissions are limited to the site preparation and paving phases. Site preparation would require the limited use of a tractor/loader/backhoe used to prepare the foundation and trenching to install electrical, sewer and water connections. Paving would involve use of a paver and a roller.

The actual building would be constructed with hand tools, portable compressors, a forklift. On-site electrical power is available minimizing the need for electric generators. No diesel fueled heavy construction equipment would be used during the actual building of the store or drive thru.

DPM emissions for the construction phase were calculated using the CalEEMod emissions model. The annual emission rates of "Exhaust PM-10" were used as a surrogate for DPM. The specific quantity is summarized below in Table 4-2

Table 4-2 Summary of On-Site Construction DPM Emissions		
	DPM Emissions (Exhaust PM-10)	
Construction Phase	**(tons/year)**	**(pounds/year)**
Exhaust PM-10	0.02	40
Ref: Annual Emissions Report, CalEEMod Emissions Model. Copy provided in Appendix B.		

Operational Phase

Diesel Particulate Matter (DPM)

The main source of DPM for the operational phase is heavy duty fuel delivery trucks. It is estimated there would be 353 fuel deliveries annually based on 8,500 gallons per delivery. Each truck was assumed to idle for a maximum of 15 minutes. Based on the EMFAC emissions model, annual emissions of DPM are estimated to equal to less than 0.01 pounds per year. In addition to on-site DPM emissions, there would be some off-site DPM emissions associated with truck travel within ¼ mile of the project site. These are estimated to equal 0.04 lbs/year. Detailed calculations are provided in Appendix C.

Toxic Organic Compounds

The dispensing, storage and delivery of gasoline will result in emissions toxic air contaminants. A two-step procedure is used to estimate maximum hourly and annual emissions rates. First, the emission rate of VOCs is calculated based on recommended emission factors by the California Air Pollution Control Officers Association (CAPCOA) *Gasoline Service Station Industrywide Risk Assessment Guidelines (1997)*. VOCs include toxic air contaminants such as benzene, acetaldehyde, etc. The VOCs are then speciated into individual toxic compounds. The speciation data have been compiled by the San Joaquin Valley Air Pollution Control District (2017). This data is incorporated in Table C-3, in Appendix C.

The maximum hourly and annual emissions of TACs is summarized in Table 4-3 and are based on dispensing 2 million gallons of gasoline per year. Dispensing of diesel fuel does not release any toxic air pollutants. Detailed calculations are provided in Appendix C.

Table 4-3
Summary of Maximum Annual TAC Emissions
(Note: 1.10E-06 lbs/hr = 1.10 x 10^{-6} lbs/hr)

	On-Site Truck Idle	Off-Site Truck Travel	On-Site Gasoline Dispensing and Storage	TOTAL (lbs/yr)
	Table C-4	Table C- 5	Table C-3	
Benzene			11.57	11.57
DPM	0.00095	0.0486		0.050
Ethyl Benzene			30.37	30.37
Toluene			151.84	151.84
Xylene			45.55	45.55

These emissions were used to calculate a screening level risk score for each of the 3 types of risks. "Screening Level" refers to a rough estimate of potential risk based on conservative assumptions, such as worst-case exposure, and emissions.

Unlike a detailed health risk assessment that provides a numerical probability of cancer risk, a screening level risk analysis yields a "Risk Score". The objective in preparing a screening level risk analysis is to avoid preparing a detail HRA is the screening level risk scores are below the thresholds of significance.

Table 4-4 Types of Health Risks Evaluated	
Cancer Risk	Calculated as a Cancer Risk Score
Chronic (non-cancer) Risk	Calculated as a Chronic Score
Acute (non-cancer risk)	Calculated as an Acute Score

The screening level risk calculations are based on the Air Toxics "Hot-Spots" Emissions Potency Method under the AB-2588 regulation. The results of the evaluation are summarized in Tables 4-5 and 4-6 for the construction and operational phases respectively for distances up 2,000 meters (1.2 miles) from the Project site. Detailed calculations are provided in Appendix C (Tables C-6 and C-7).

The results of the analysis show that the maximum cancer risk score for the construction phase would equal 1.02 at the nearest home located 600 meters to the Northwest. For the operational phase, the maximum cancer risk at the nearest home would equal 0.036. Non-cancer risks are below 0.1 at all locations for both construction and operational phases. The significance of the risk scores is discussed in the next section. Detailed calculation is provided in Appendix C.

Table 4-5
Summary of Screening Level Risk Evaluation
Construction Phase

Name	Prioritization Calculator						
Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.						
Author or updater	Ray Kapahi	*Last Update*		April 3, 2023			
Facility:	Maverick Inc. Williams						
Location	Screening Level Cancer Risk Evaluation						
Project Phase:	Construction Phase						
Modeler:	R. Kapahi						
Operating Hours hr/yr	8,760.00						
Receptor Proximity and Proximity Factors	Cancer Score	Chronic Score	Acute Score	Max Score	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.		
0< R<100 1.000	9.24E+01	1.37E-01	0.00E+00	9.24E+01			
100≤R<250 0.250	2.31E+01	3.42E-02	0.00E+00	2.31E+01			
250≤R<500 0.040	3.70E+00	5.48E-03	0.00E+00	3.70E+00			
500≤R<1000 0.011	1.02E+00	1.51E-03	0.00E+00	1.02E+00			
1000≤R<1500 0.003	2.77E-01	4.11E-04	0.00E+00	2.77E-01			
1500≤R<2000 0.002	1.85E-01	2.74E-04	0.00E+00	1.85E-01			
2000<R 0.001	9.24E-02	1.37E-04	0.00E+00	9.24E-02			
R. Kapahi	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		
Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Diesel engine exhaust, particulate matter (Diesel PM)	9901	4.00E+01	1.88E-08	4.57E-03	9.24E+01	1.37E-01	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 4-6
Summary of Screening Level Risk Evaluation
Operational Phase

Name	Prioritization Calculator				
Applicability	5-Apr-23				
Author or updater	Ray Kapahi		*Last Update*		
Facility:	Maverick Williams				
Location	Operational Phase Screenng Level Risk Evaluation				
Project Phase:					
Modeler:	R. Kapahi				
Operating Hours hr/yr	8,760.00				
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**	Receptor proxin scores are calcu scores summ factors. Reco receptor distanc unit is longer tha if there are mult worksheets an
0< R<100 1.000	3.28E+00	7.63E-02	1.12E-01	3.28E+00	
100≤R<250 0.250	8.21E-01	1.91E-02	2.80E-02	8.21E-01	
250≤R<500 0.040	1.31E-01	3.05E-03	4.48E-03	1.31E-01	
500≤R<1000 0.011	3.61E-02	8.39E-04	1.23E-03	3.61E-02	
1000≤R<1500 0.003	9.85E-03	2.29E-04	3.36E-04	9.85E-03	
1500≤R<2000 0.002	6.57E-03	1.53E-04	2.24E-04	6.57E-03	
2000<R 0.001	3.28E-03	7.63E-05	1.12E-04	3.28E-03	
	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation generated b
R. Kapahi					
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	5.00E-02		5.71E-06	1.16E-01
Benzene	**71432**	1.16E+01	1.99E-03	1.32E-03	2.58E+00
Ethyl benzene	**100414**	3.04E+01	5.22E-03	3.47E-03	5.85E-01
Toluene	**108883**	1.52E+02	2.61E-02	1.73E-02	0.00E+00
Xylene	**1330207**	4.56E+01	7.82E-03	5.20E-03	0.00E+00
		0.00E+00	0.00E+00	0.00E+00	0.00E+00

4.3 Impacts from Greenhouse Gas Emissions

Table 4-7
Summary of Annual GHG Emissions for CY 2022
(in Metric tons / Yr)

Project Phase	Total CO_2(e)
Construction	107
Operational	2,563

The results of the current analysis for criteria air pollutants are compared with mass emission thresholds established by CCAPCDD. The significance of project impacts for the construction and operational phases is summarized in Table 4-7.

The City of Williams has not formally established any thresholds of significance for GHG emissions. Instead, the City has relied on thresholds used to identify significant sources of GHG emissions in the State's Cap and Trade program [Title 17, Section 95812(c)(1)]. This threshold is set at 25,000 metric tons per year.

California Air Resources Board (CARB) acknowledged that the 25,000 MT/year threshold is used for the mandatory reporting for the Cap and Trade program and not established as a CEQA threshold for GHG emissions. However, the California Air Pollution Control Officers Association (CAPCOA) identified 25,000 MT/yr as a threshold in their January 2008 report *"CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Air Quality Act"*

The issue of threshold of significance has also been reviewed by the Environmental Protection Agency (EPA). The EPA analyzed several thresholds for reporting and rejected lower thresholds of 1,000 and 10,000 metric tons/yr finding that these thresholds would greatly increase the numbered of covered entities without capturing a significant portion of GHG emissions (EPA 2009). The 25,000 MT/yr threshold would capture 94% of GHG emissions from stationary sources in California (CAPCOA 2008, Page 44).

Given the volume of research and resources that have been expended to develop the CARB reporting and the Cap and Trade regulations and the Federal (EPA) GHG reporting rule, the City of Williams has determined that the 25,000 MT/yr threshold is an appropriate threshold of significance to the proposed project.

SECTION 5: SIGNIFICANCE OF PROJECT IMPACTS

The results of the current analysis for criteria air pollutants are compared with mass emission thresholds established by Colusa County APCD. The significance of project impacts for the construction and operational phases is summarized in Table 5-1. These results demonstrate that impacts to air quality are less than significant.

Table 5-1
Summary of Project Level Air Quality Impacts
(tons/year)

Pollutant	Construction Phase	Operational Phase (Includes emissions from Drive Thru)	Significance Threshold	Significant?
NOx	0.43	0.29	25	No
VOC	0.15	0.25	25	No
PM-10	0.06	0.15	25	No
PM-2.5	0.04	0.03	25	No

Table 5-2
Summary of Project Level Health Risks

Risk Metric	Construction Phase	Operational (Occupancy) Phase	Significance Threshold	Significant?
Maximum Cancer Risk Score	1.02	0.036	10	Potentially Significant for Construction Phase
Maximum Chronic Risk Score	N/A	<0.01	1.0	No
Maximum Acute Score	N/A	<0.1	1.0	No

These results indicate that the project would not pose a significant public health risk. By its very nature, a screening level health risk evaluation is very conservative that substantially overstates the actual public health risks. Given the low health risks, a detailed HRA is not necessary.

In addition to the overall project impacts, EPS has prepared a response to common questions that appear in the CEQA Guidelines.

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

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

a) The project conflict with or obstruct implementation of the applicable air quality plan?

Currently, the attainment status for various air quality standards for Colusa County is as follows:

Table 1		
Criteria Air Pollutant	**California**	**Federal**
Ozone (8-hour)		Unclassified/Attainment
Carbon Monoxide (1-hour and 8-hour)		Unclassified/Attainment
Nitrogen Dioxide (1-hour and annual)	Attainment	Unclassified/Attainment
Sulfur dioxide (1, 3, 24-hour and annual)	Attainment	Unclassified
PM-10 (24-hour and annual)	Non-Attainment (24-hour) Attainment (annual)	Unclassified
PM-2.5 (24-hour and annual)	Attainment	Unclassified/Attainment
Lead (30 day and quarterly)	Attainment	Unclassified/Attainment

Ref: CARB (2021). Information available at: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations

With the exception of the state's 24-hour PM-10 standard, Colusa County attains or is unclassified for all the air quality standards. As a result, neither the Colusa County Air Pollution Control District nor the California Air Resources Board has not established any air quality plans. The principal sources of PM-10 emissions in the County are from agriculture and fugitive dust (wind blown dust, paved and unpaved roads). These sources account for 88% of all the PM-10 emissions in Colusa County. These sources are exempt from CCAPCD rules and regulations. Therefore, there are no air quality attainment plans for the County for PM-10.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state standard?

With the exception of the state's 24-hour PM-10 standard, Colusa County attains or is unclassified for all the air quality standards. Project level PM-10 emissions were calculated by Version 2020.4.0 of the California Emissions Estimator Model (CalEMod) and compared with thresholds of significance established by CCAPCD. A summary of these emissions are presented in Table 2. As shown in this Table, project level PM-10 emissions are well below levels considered significant.

Table 2 Summary of Project PM-10 Emissions (tons/year)	
Short-Term Construction Related Emissions	0.06
Long-Term Operational (Occupancy) Emissions	0.15
Threshold of Significance	25
Impacts Significant?	No

c) Expose sensitive receptors to substantial pollutant concentration?

Project emissions were calculated for the various criteria air pollutants and compared with thresholds of significance established by CCAPCD. These emissions are summarized below. Detailed calculations appear in the attached report.

Table 3
Summary of Annual Project Level Emissions

Project Phase	**ROG** (tons/year)	**NOx** (tons/year)	**PM-10** (tons/year)	**PM-2.5** (tons/year)
Short-Term Construction	0.15	0.43	0.06	0.04
Long-Term Operational/Occupancy	0.25	0.29	0.15	0.03
Threshold of Significance	25	25	25	25
Impact Significant?	No	No	No	No

The annual project level emission rates are a small fraction of the thresholds considered significant. Therefore, emissions from the construction and operational phases would not expose receptors to substantial pollutant concentration.

d) Result in other emissions (such as those leading to odors) adversely affecting substantial number of people?

During the construction phase, trace quantities of diesel exhaust would be released from the construction equipment such as graders and backhoes. Such emissions would be intermittent and their impacts would be limited mostly to on-site areas.

Diesel particulate matter (DPM) is also regulated as a carcinogen and therefore, there is a potential for health impacts to nearby homes and businesses. Annual PM-10 emissions from construction equipment exhaust can be used as a surrogate for DPM. Annual average PM-10 from equipment exhaust is estimate to equal 0.01 tons/year (20 pounds/yr) during the construction phase.

Chronic health impacts, such as cancer, typically occur from exposure over 30 or more years. Annual DPM emissions noted above would be limited to a maximum 2 to 3 years primarily during the site-preparation and grading phases. As a result the brief duration of emissions and the relatively small quantity of DPM that would be released, exposure to DMP during the construction phase would not have significant risks to the public. There are no short-term (1-hour) standards for DPM.

The project will not have any stationary sources of odors and/or long-term toxic air pollutants. Therefore, during the occupancy phase, the project would not be a source of odors or toxic air pollutants.

GREENHOUSE GAS EMISSIONS

Would the project:

Question	CEQA Determination
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

a) Generate greenhouse gas emissions, either directly, or indirectly, that may have a significant impact on the environment.?

The annual emissions of GHG emissions is summarized in Table 4 below for the construction and operational phases. The annual GHG for the construction and operational phases is estimated to be 302.95 metric tons/year and 2,876.78 metric tons/yr respectively. Detailed calculations are provided in the attached report.

Table 4
Summary of Annual GHG Emissions for CY 2022
(in Metric tons / Yr)

	Total CO_2(e) in MT/yr
Phase	
Construction	72.4
Operational	771

The results of the current analysis for criteria air pollutants are compared with mass emission thresholds established by CCAPCDD. The significance of project impacts for the construction and operational phases is summarized in Table 5-1.

The City of Williams has not formally established any thresholds of significance for GHG emissions. Instead, the City has relied on thresholds used to identify significant sources of GHG emissions in the State's Cap and Trade program [Title 17, Section 95812(c)(1)]. This threshold is set at 25,000 metric tons per year.

California Air Resources Board (CARB) acknowledged that the 25,000 MT/year threshold is used for the mandatory reporting for the Cap and Trade program and not established as a CEQA threshold for GHG emissions. However, the California Air Pollution Control Officers Association (CAPCOA) identified 25,000 MT/yr as a threshold in their January 2008 report *"CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Air Quality Act"*

The issue of threshold of significance has also been reviewed by the Environmental Protection Agency (EPA). The EPA analyzed several thresholds for reporting and rejected lower thresholds of 1,000 and 10,000 metric tons/yr finding that these thresholds would greatly increase the numbered of covered entities without capturing a significant portion of GHG emissions (EPA 2009). The 25,000 MT/yr threshold would capture 94% of GHG emissions from stationary sources in California (CAPCOA 2008, Page 44).

Given the volume of research and resources that have been expended to develop the CARB reporting and the Cap and Trade regulations and the Federal (EPA) GHG reporting rule, the City of Williams has determined that the 25,000 MT/yr threshold is an appropriate threshold of significance to the proposed project.

b) Conflict with an applicable plan, policy or regulation, adopted for the Purpose of reducing the emissions of greenhouse gases?

Colusa County APCD has not developed or adopted any plan, policy or regulation aimed at controlling GHG emissions. As a result, the applicable plan (by default) is the state's AB-32 which regulated the state's GHG emissions. AB-32 has established a ceiling ("cap") of emissions from the state and has set a goal of reducing GHG emissions to below 80% of the 1990 levels by 2050.

The state's program relies on setting standards for cars and trucks, clean fuels program, energy efficiency from stationary sources. The current project is subject to and would comply with all these requirements mandated by the state.

SECTION 6: REFERENCES

CalEEMod (2022): California Emissions Model Estimator. Available at: https://www.caleemod.com/

CAPCOA (1997) Gasoline Service Station Industrywide Risks Assessment Guidelines. Available at: https://ww2.arb.ca.gov/sites/default/files/classic//ab2588/rrap-iwra/gasiwra.pdf

CARB (2003) HARP User's Guide. Available at: http://www.arb.ca.gov/toxics/harp/harp.htm December 2003.

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Appendices

Appendix A – Traffic Data

Appendix B Summary of Construction and Operational Emissions (CalEEMod Report)

Appendix C Detailed Emissions Calculation

Appendix A – Traffic Data

Memorandum

Date: December 22, 2022

Project: WIM005

To: Mr. Frank Kennedy
City Administrator,
City of Williams

From: Cameron Nye
cnye@w-trans.com
Dalene J. Whitlock
dwhitlock@w-trans.com

Subject: Updated Transportation Impact Study Assumptions for the Maverik Gas Station Project

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As you know, W-Trans has entered a contract with the City to prepare a transportation impact study for the subject project. Based on our conversations with City staff and our understanding of the revised version of the project, we have prepared the following updated memorandum of assumptions (MOA) that outlines our proposed trip generation, trip distribution, and scope of services. To ensure that the resulting analysis will provide adequate information and reflect City policies accurately, it would be appreciated if you or other staff at the City would review the following assumptions that we anticipate applying for our analysis along with our scope of services and provide comments regarding their adequacy at your earliest convenience. It is also requested that you refer this document to Caltrans for review and comment.

Project Description

The proposed Maverik Gas Station would be located on a vacant parcel east of I-5 and west of Husted Road in the City of Williams and would include a convenience market of 5,982 square feet, 14 fueling positions for passenger vehicles (seven dispensers), and six fueling positions for commercial vehicles (five dispensers). The project would operate up to 24 hours a day, seven days a week. Site access is proposed via two new driveways, one each on Frontage Road and Husted Road. As indicated on the preliminary site plan, a left-turn lane is proposed at the Frontage Road driveway.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021 for "Convenience Store/Gas Station – VFP (16-24)" (ITE LU #945). This land use is applicable to sites that have between 16 and 24 vehicle fueling positions and uses the total size of the convenience market as the independent variable.

Diverted Trips

A substantial portion of the trips associated with the project would be drawn from existing traffic on I-5. These vehicle trips, known as either pass-by or diverted trips, are not considered new trips since they consist of drivers who are already traveling on the adjacent or nearby streets and choose to make an interim stop. Data published in the *Trip Generation Manual* indicates pass-by and diverted trip percentages for numerous retail uses such as gas stations. Based on a review of data contained in the Manual and in consideration of local circulation patterns specific to the project, it is suggested that no trip reductions be applied for pass-by trips given the likely low volumes on Husted and Frontage Roads, instead applying the total of pass-by and diverted trips as diverted trips since the vast majority of trips are anticipated to be pulled from I-5.

Data in the *Trip Generation Manual* indicates that an average of 98 percent of the convenience store/gas station trips would be diverted from I-5 during the a.m. peak hour while 97 percent would be diverted during the p.m. peak hour. While pass-by rates for both the a.m. and p.m. peak periods are available, daily pass-by rates are not published in the Manual so the lower p.m. peak hour rate was used for informational purposes. These rates were applied as deductions to the overall estimated trip generation. It should be noted that while diverted trips are not primary trips, they would be considered "new" trips at the study intersections in the case of the proposed project so although they were quantified no deductions are proposed for diverted trips in the operational analysis.

Total Project Trip Generation

The expected trip generation potential for the proposed project is indicated in Table 1. The proposed project is expected to generate an average of 7,676 trips per day at its driveways, including 546 trips during the a.m. peak hour and 472 trips during the p.m. peak hour. After taking into consideration the trips that would be diverted from I-5, it is anticipated that only 229 daily trips would be primary with 10 during the a.m. peak hour and 14 during the p.m. peak hour.

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Gas Station/Market	5.982 ksf	1,283.38	7,676	91.35	546	273	273	78.98	472	236	236
Diverted		*-97%*	*-7,448*	*-98%*	*-536*	*-268*	*-268*	*-97%*	*-458*	*-229*	*-229*
Total New Primary Trips			**229**		**10**	**5**	**5**		**14**	**7**	**7**

Note: ksf = 1,000 square feet

Trip Distribution

The pattern suggested to allocate project trips to the surrounding street network was determined based on familiarity with travel patterns in the area and likely origins and destinations for patrons of the project. It is anticipated that the majority of project trips would be diverted from I-5 so a balanced percentage of trips from both the north and south on I-5 is proposed to reflect the nature in which many patrons will exit from I-5 to visit the project site and then reenter I-5 to continue on in the same direction. The proposed trip distribution assumptions are shown in Table 2.

Table 2 – Trip Distribution Assumptions

Route	Percent
To/from I-5 North of Husted Rd	48
To/from I-5 South of Husted Rd	48
To/from Frontage Rd North of Husted Rd	2
To/from Frontage Rd South of Husted Rd	1
To/from Husted Rd North of Frontage Rd	1
TOTAL	**100**

Scope of Services

Study Area and Periods

The study area for the operational analysis will consist of the following intersections. Additionally, the project driveways on Husted Road and Frontage Road will be evaluated in terms of adequacy of sight distances and need for turn lanes. Conditions during the weekday a.m. and p.m. peak periods will be documented.

1. Husted Road/Frontage Road
2. Husted Road/I-5 North Ramps
3. Husted Road/I-5 South Ramps

Project Initiation

1. A field visit of the project site and study area will be conducted. Specific attention will be paid to sight distance for both exiting and entering movements at the site's proposed driveways and potential conflicts with other driveways and intersections such as the Ramos Oil driveway. Appropriate field notes and photos will be taken.

2. Traffic counts for Frontage Road and Husted Road will be obtained for a period of 24 hours. Turning movement counts will be collected at the study intersections for both peak periods.

3. The preliminary project site plan will be reviewed for any potential circulation issues and feedback provided in an email or at a virtual meeting.

CEQA Issues

4. Like many jurisdictions in California, the City of Williams has not yet adopted any standards of significance related to Vehicle Miles Traveled (VMT) so the project's potential transportation impact on VMT will be assessed based on guidance recommended by the State's Office of Planning and Research (OPR). Under this guidance, the project would screen out from quantitative VMT analysis as a local-serving retail use. The details of this screening criteria will be documented.

5. Collision records for the study intersections will be reviewed for any trends or patterns, and the intersection collision rates calculated.

6. Adequacy of facilities for pedestrians, bicyclists, and transit riders will be evaluated with respect to the rural location of the site and type of vehicle-centric project proposed. The study intersections will be reviewed for any pedestrian-related or bicyclist-related crashes.

7. Adequacy of emergency access will be assessed.

8. Trips from the project will be used to evaluate potential need for improvements at the project driveways to accommodate project-generated traffic, including consideration for large semi-trucks. The need for turn lanes will be evaluated in terms of volume, adequacy of sight distance and safety considerations.

9. Queuing will be evaluated at the study intersections using 95^{th} percentile queue lengths reported from the Vistro software. Consideration will be given to the proximity of the railroad tracks to the Husted Road/Frontage Road intersection, as well as potential for queueing to spill into the mainline of I-5 at the ramp terminals.

Policy Issues

10. Existing operating conditions will be documented based on the counts obtained and observations during the site visit. These results will be presented in text; a Level of Service table; figures showing existing lane geometries, controls, and volumes; and calculation output.

11. A list of projects that have been approved and/or are pending approval in the study area such as the California Renewable Carbon project will be obtained from staff and used to determine short-term Baseline volumes. The results of the analysis of this scenario will be presented in the same detail as indicated for Existing conditions.

12. Future volumes at the study intersections as developed for the General Plan Update or using Caltrans growth factors will be used to project future operating conditions for a horizon year assuming planned future infrastructure improvements.

13. Project trips will be distributed to the roadway network and operating conditions at the study intersections evaluated under Existing plus Project, Baseline plus Project, and Future plus Project conditions.

14. Intersection improvements to accommodate project-generated traffic will be recommended, if necessary. If unacceptable operation is identified at any of the study intersections, appropriate warrants for All-Way Stop Controls (AWSC) or a traffic signal will be evaluated.

15. The project's proposed parking supply will be evaluated to determine if it meets applicable requirements. If appropriate, a comparison will be made to industry standard parking demand rates.

16. Recommendations will be developed to address any impacts or operational deficiencies identified.

Deliverables

17. A draft report that provides details of the analysis and findings, together with tables and figures, will be prepared and submitted for Agency review. It is anticipated that this version of the report will be referred to Caltrans for review and comment.

18. This scope includes one virtual meeting with staff to discuss comments on the draft TIS.

19. Comments from Agency staff will be addressed, and a final report submitted.

DJW/cn/WIM005.MOA

Appendix B Summary of Construction and Operational Emissions (CalEEMod Report)

Maverick Williams Summary Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Maverick Williams
Construction Start Date	7/1/2023
Operational Year	2024
Lead Agency	City of Williams Planning
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.132655934589934, -122.13409770508218
County	Colusa
City	Williams
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	230
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.7

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Convenience Market with Gas Pumps	8.85	1000sqft	5.87	8,852	52,138	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.23	31.0	30.7	0.04	1.42	13.6	15.0	1.31	6.81	8.12	4,609
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	36.2	11.2	14.7	0.02	0.53	0.15	0.69	0.49	0.04	0.53	2,285
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.83	2.37	2.82	< 0.005	0.11	0.23	0.34	0.10	0.11	0.22	437
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.43	0.51	< 0.005	0.02	0.04	0.06	0.02	0.02	0.04	72.4
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	25.0	—	—	25.0	—
Unmit.	No	No	—	—	—	—	No	—	—	No	—

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.52	1.45	11.8	0.03	0.03	0.77	0.80	0.03	0.14	0.17	4,836
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.30	1.68	9.27	0.02	0.03	0.77	0.80	0.03	0.14	0.17	4,603
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.34	1.58	9.46	0.02	0.03	0.77	0.80	0.03	0.14	0.17	4,656
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.29	1.73	< 0.005	0.01	0.14	0.15	0.01	0.03	0.03	771
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	25.0	—	—	25.0	—
Unmit.	No	No	—	—	—	—	No	—	—	No	—

6. Climate Risk Detailed Report

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	44.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

Appendix C Detailed Calculation

Table C-1
Summary of TAC Emissions Operational Phase

	On-Site Truck Idle	Off-Site Truck Travel	On-Site Gasoline Dispensing and Storage	TOTAL (lbs/yr)
	Table C-4	Table C- 5	Table C-3	
Benzene			11.57	11.57
DPM	0.00095	0.0486	0.00	0.050
Ethyl Benzene			30.37	30.37
Toluene			151.84	151.84
Xylene			45.55	45.55

Table C-2
Calculation of VOC Emissions

Gasoline Dispensing Operations VOC Calculator

Applicability	Use this spreadsheet to calculate VOC emissions from gasoline dispensing operations. Entries required in yellow areas, output in grey areas.		
Author or updater	Ray Kapahi	*Last Update*	April 4, 2023
Facility:	Mavrck Gas Station		
ID#:	Williams CA		
Project #:	2 million gallons gasoline/yr		

Inputs	gal/day	gal/yr	**Formula**
	5.00E+03	2.00E+06	
	1,000 gal /hr	1,000 gal /yr	
Gasoline Throughput	2.08E-01	2.00E+03	Enter the **change** in gas station throughput in units of gallons/day and gallons/yr. Select the Phase I and Phase II type using the drop down provided. VOC emissions are calculated by the multiplication of Throughput Rates and Emission Factors.
Application Type	Type #		
EVR Phase I and EVR Phase II Installed Underground Tank	9		

Substances	**lb VOC/ 1,000 gal**	**LB/HR**	**LB/YR**
Vapor Tank Filling Loss VOC	0.08	1.75E-02	1.68E+02
Vehicle Refueling VOC	0.42	8.75E-02	8.40E+02
Breathing Loss VOC	0.03	5.21E-03	5.00E+01
Spillage VOC	0.42	8.75E-02	8.40E+02
Total VOC	0.95	1.98E-01	1.90E+03

References:

* The emission factors are derived from Appendix A in the 1997 CAPCOA Air Toxics "Hot Spots" Program document, *Gasoline Service Station Industrywide Risk Asessment Guidelines* .

Table C-2

Calculation of VOC Emissions

	1	2	3	4	5	6	**7**	**8**	**9**
	Phase 1 and Phase II Exempt Aboveground tank	Non-EVR Phase I and Phase II Exempt Aboveground tank	EVR Phase I and Phase II Exempt Aboveground tank	Non-EVR Phase I and Non-EVR Phase II Installed Aboveground tank	EVR Phase I and Non-EVR Phase II Installed (or Phase II Exempt Due to ORVR) Aboveground tank	EVR Phase I and EVR Phase II (VR-501 only) Installed Aboveground tank	**Phase I and Phase II Exempt Underground Tank**	**EVR Phase I and Phase II Exempt Underground Tank**	**EVR Phase I and EVR Phase II Installed Underground Tank**
Process	lb VOC/1,000 gal								
Tank Filling Loss	8.4	0.42	0.17	0.42	0.17	0.17	8.4	0.084	0.084
Vehicle Refueling	8.4	8.4	8.4	0.42	0.42	0.38	8.4	8.4	0.42
Breathing Loss	2.1	0.053	0.053	0.053	0.053	0.053	0.84	0.025	0.025
Vapor VOC EF	18.90	8.87	8.62	0.89	0.64	0.60	17.64	8.51	0.53
Spillage	0.61	0.42	0.42	0.42	0.42	0.42	0.61	0.61	0.42
Total VOC	19.51	9.29	9.04	1.31	1.06	1.02	18.25	9.12	0.95

Table C-3
Calculation of TACs from Gasoline Storage Tank Filling

	lbs/hr	lbs/yr	
Total Vapor VOCs (Re-Fuel) Less Spillage	1.10E-01	1.06E+03	*(From Table 2)*
Total Liquid VOCs (Spillage)	8.75E-02	8.40E+02	*(From Table 2)*
TOTAL VOCs	0.198	1898	

	Benzene	**Ethyl Benzene**	**Toluene**	**Xylenes**
EF Vapor (lbs/lb VOC)	3.00E-03	1.60E-02	8.00E-02	2.40E-02
Emissions (lbs/hr)	3.31E-04	1.76E-03	8.82E-03	2.65E-03
Emissions (lbs/yr)	3.17E+00	1.69E+01	8.46E+01	2.54E+01
EF Liquid (lb/lb VOC)	1.00E-02	1.60E-02	8.00E-02	2.40E-02
Emissions (lbs/hr)	8.75E-04	1.40E-03	7.00E-03	2.10E-03
Emissions (lbs/yr)	8.40E+00	1.34E+01	6.72E+01	2.02E+01
Total (lbs/hr)	1.21E-03	3.16E-03	1.58E-02	4.75E-03
Total (lbs/yr)	1.16E+01	3.04E+01	1.52E+02	4.56E+01

EFs from SJVAPCD Speciation Guidance March 27, 2017.

Table C-4
Calculation of DPM Emissions from
Idling of Diesel Fuelled Trucks

IDLING EMISSIONS FUEL DELIVERY	**Units**	
Deliveries per year (45 deliveried/month)		353
Idle Time per Truck (min)	*min*	15
Total Annual Idle Time	*min*	5295
	`	88.3
Emission Factor for Truck Idling (Note 1)	*(grams/hr)*	0.00486
Idling Emissions All Trucks	*(grams/yr)*	0.4292
	(lbs/yr)	0.0009
Total (Idling)	*(lbs/yr)*	0.0009

Note 1. From EMFAC 2021 Idle EFs for HD Trucks

	A	B	C	D	E	F	G	H	I	J	K	L	
1	Source: EMFAC2021 (v1.0.2) Emission Rates												
2	Region Type: Air District												
3	Region: San Joaquin Valley Unified APCD												
4	Calendar Year: 2022												
5	Season: Annual												
6	Vehicle Classification: EMFAC2007 Categories												
7	Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOS												
8													
9	Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	NOx_RUNEX	NOx_IDLE	NOx_STRE	PM2.5_RUNEX	PM2.5_IDL	PM2.5_STI	PM
10													
11	San Joaqu	2022	HHDT	Aggregate	Aggregate	Diesel	2.15350955	88.67053	2.514084	0.029376441	0.037223	0	0.(
12	San Joaqu	2022	LHDT1	Aggregate	Aggregate	Gasoline	0.27201771	0.039607	0.705737	0.001750369	0	0.000382	
13													
14													
15													
16													
17			HD Trck										
18			*g/mile*										
19													

Note 2. TRU Emission F
Information a

Table C-5
Calculation of DPM Emissions from
Truck Travel within 0.25 Miles of Truck Stop

Annual Vehicle Count	*(trucks/year)*	353
Emission Factor EMFAC 2021 (Note 1)	*(grams/mile)*	0.0307
Distance Travelled	*(mile/truck)*	0.25
	(total miles)	88
Emissions of DPM	*(grams/yr)*	22.06
	(lbs/yr)	0.0486

Note 1:
Emissions based on EMFAC 2021 for SJ Valley for CY 2022

Table C-6

Construction Phase Health Risk Evaluation

Name **Prioritizatio**

Applicability	Use to provide a Prioritization score based on t in yellow areas, ou		
Author or updater	Ray Kapahi		*Last Update*
Facility:	Maverick Inc. Williams		
Location	Screening Level Cancer Risk Evaluation		
Project Phase:	Construction Phase		
Modeler:	R. Kapahi		
Operating Hours hr/yr	8,760.00		
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**
0< R<100 1.000	9.24E+01	1.37E-01	0.00E+00
100≤R<250 0.250	2.31E+01	3.42E-02	0.00E+00
250≤R<500 0.040	3.70E+00	5.48E-03	0.00E+00
500≤R<1000 0.011	1.02E+00	1.51E-03	0.00E+00
1000≤R<1500 0.003	2.77E-01	4.11E-04	0.00E+00
1500≤R<2000 0.002	1.85E-01	2.74E-04	0.00E+00
2000<R 0.001	9.24E-02	1.37E-04	0.00E+00

R. Kapahi	Enter the unit's CAS# of the substances emit amounts.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	4.00E+01	1.88E-08

Table C-6
Construction Phase Health Risk Evaluation

n Calculator

he emission potency method. Entries required
tput in gray areas.

April 3, 2023

Max Score	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.
9.24E+01	
2.31E+01	
3.70E+00	
1.02E+00	
2.77E-01	
1.85E-01	
9.24E-02	

ted and their

Prioritzation score for each substance generated below. Totals on last row.

Average Hourly (lbs/hr)	Cancer	Chronic	Acute
4.57E-03	9.24E+01	1.37E-01	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals	**9.24E+01**	**1.37E-01**	**0.00E+00**

Use the subs

Table C-7
Operation Health Risk Evaluation

Name **Prioritizatio**

Applicability			5-Ap
Author or updater	Ray Kapahi		*Last Update*
Facility:	Maverick Williams		
Location	Operational Phase Screenng Level Risk Evalua		
Project Phase:	2 million gallons of gasoline/yr dispensed		
Modeler:	R. Kapahi		
Operating Hours hr/yr	8,760.00		
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**
0< R<100 1.000	3.28E+00	7.63E-02	1.12E-01
100≤R<250 0.250	8.21E-01	1.91E-02	2.80E-02
250≤R<500 0.040	1.31E-01	3.05E-03	4.48E-03
500≤R<1000 0.011	3.61E-02	8.39E-04	1.23E-03
1000≤R<1500 0.003	9.85E-03	2.29E-04	3.36E-04
1500≤R<2000 0.002	6.57E-03	1.53E-04	2.24E-04
2000<R 0.001	3.28E-03	7.63E-05	1.12E-04

R. Kapahi	Enter the unit's CAS# of the substances emit amounts.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	5.00E-02	
Benzene	**71432**	1.16E+01	1.99E-03
Ethyl benzene	**100414**	3.04E+01	5.22E-03
Toluene	**108883**	1.52E+02	2.61E-02
Xylene	**1330207**	4.56E+01	7.82E-03

n Calculator

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ation

Max Score
3.28E+00
8.21E-01
1.31E-01
3.61E-02
9.85E-03
6.57E-03
3.28E-03

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Use the subs

ted and their

Prioritzation score for each substance generated below. Totals on last row.

Average Hourly (lbs/hr)	Cancer	Chronic	Acute
5.71E-06	1.16E-01	1.71E-04	0.00E+00
1.32E-03	2.58E+00	6.60E-02	1.10E-01
3.47E-03	5.85E-01	2.60E-04	0.00E+00
1.73E-02	0.00E+00	8.67E-03	1.06E-03
5.20E-03	0.00E+00	1.11E-03	5.33E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals	**3.28E+00**	**7.63E-02**	**1.12E-01**