Appendix R

The Exchange Focused Air Quality and Greenhouse Gas Memorandum

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July 27, 2018

Mr. Jim Guthrie
AFG, LLC
6879 Airport Drive
Riverside, CA 92504

SUBJECT: THE EXCHANGE FOCUSED AIR QUALITY AND GREENHOUSE GAS MEMORANDUM

Dear Mr. Jim Guthrie:

The purpose of this air quality assessment is to identify if the inclusion of the recreational vehicle (RV) parking use would result in a significant increase in air quality and greenhouse gas emissions evaluated for The Exchange development (referred to as "Project") located on the southeast corner of Orange Avenue and Strong Street in the City of Riverside.

SUMMARY OF FINDINGS

The addition of the RV parking use is not anticipated to result in a significant increase in air quality and greenhouse gas emissions evaluated in *The Exchange Center Air Quality Impact Analysis* (2018 Air Study) and *The Exchange Greenhouse Gas Analysis* (2018 Greenhouse Gas Study) (1) (2). As such, the inclusion of the RV parking use is not anticipated to result in any additional significant impacts from those currently identified in the 2018 Air and Greenhouse Gas Studies.

PROJECT DESCRIPTION

The Project, as evaluated in the 2018 Air and Greenhouse Gas Studies, is proposed to consist of up to 482 apartments, two hotels totaling 229 rooms, 18,500 square feet (sf) of shopping center use, 22,000 sf of high turnover sit-down restaurant use, 4,000 sf of fast-food restaurant with drive-through window use, and a 16-vehicle fueling position gas station with convenience market and car wash.

It is our understanding that the Project is currently proposing to include 12-vehicle fueling positions for the gas station as opposed to the 16-vehicle fueling positions evaluated in the 2018 Air and Greenhouse Gas Studies. There is also evening entertainment proposed at the restaurants. However, these evening entertainment events would not occur daily and would likely be limited to Friday evenings and the weekends. A farmer's market is also proposed; however, the farmer's market is not anticipated to be a daily event and would likely be a handful a days a week and limited to the Spring and Summer months. Lastly, RV parking is proposed providing 23 RV parking stalls and 12 RV car parking spaces.

Consistent with the Project's air quality and greenhouse gas studies, the purpose of this air quality and greenhouse gas assessment is to demonstrate that the addition of the RV parking would not exceed the air quality and greenhouse gas emissions evaluated in the 2018 Air Study. In light of the limited

operations of the farmer's market and the evening entertainment proposed as part of the restaurant uses, these two operations have not been considered as part of this memorandum.

PROJECT-RELATED AIR QUALITY AND GREENHOUSE GASES

Land uses such as the Project affect air quality through construction-source and operational-source emissions.

On October 17, 2017, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model™ (CalEEMod™) v2016.3.2. The purpose of this model is to more accurately calculate construction-source and operational-source criteria pollutant (NO_x, VOC, PM_{10}, $PM_{2.5}$, SO_x, and CO) and greenhouse gas (GHG) emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures. Accordingly, the latest version of CalEEMod™ has been used for this Project to determine construction and operational impacts. Air Quality outputs from the model runs are provided in Attachment "A".

AIR QUALITY

OPERATIONAL EMISSIONS

Operational activities associated with the Project would result in emissions of CO, VOCs, NO_x, SO_x, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, and mobile source emissions.

Project mobile source emissions impacts are dependent on both overall daily vehicle trip generation and the effect of the Project on peak hour traffic volumes and traffic operations in the vicinity of the Project. The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Project trip characteristics available from the report, *The Exchange Trip Generation Assessment* (Urban Crossroads) 2018 were utilized in this analysis.

The estimated operational-source emissions for the Project are summarized on Table 1. Detailed operational model outputs are presented in Attachment A. As shown at Table 1, Project operational-source emissions would not exceed applicable SCAQMD regional thresholds. Additionally, inclusion of the RV parking would not result in any new impacts.

TABLE 1: REGIONAL OPERATIONAL EMISSIONS SUMMARY

Operational Activities	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Emissions from 2018 Air Study						
Project (16 VFP)	3.99	27.65	21.77	0.08	4.09	1.13
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Operational Activities	**Emissions (pounds per day)**					
	VOC	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emissions from Proposed 12 VFP and RV Parking						
Project (12 VFP & RV Parking)	3.01	20.85	16.55	0.06	3.15	0.87
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Variance	**-0.98**	**-6.80**	**-5.23**	**-0.02**	**-0.94**	**-0.26**
New Impacts?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

GREENHOUSE GAS

GREENHOUSE GAS EMISSIONS SUMMARY

The City of Riverside has not adopted its own numeric threshold of significance for determining impacts with respect to greenhouse gas (GHG) emissions. A screening threshold of 3,000 $MTCO_2e$ per year to determine if additional analysis is required is an acceptable approach for small projects. This approach is a widely accepted screening threshold used by the City of Riverside (3) and numerous cities in the South Coast Air Basin and is based on the South Coast Air Quality Management District (SCAQMD) staff's proposed GHG screening threshold for stationary source emissions for non-industrial projects, as described in the SCAQMD's *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* ("SCAQMD Interim GHG Threshold"). The SCAQMD Interim GHG Threshold identifies a screening threshold to determine whether additional analysis is required (4).

The annual GHG emissions associated with the operation of the Project are estimated to be 1,024.53 $MTCO_2e$ per year as summarized in Table 2. Alternatively, GHG emissions associated with the operations of 12-vehicle fueling positions and RV parking are estimated to be 779.66 $MTCO_2e$ per year. Detailed operational model outputs are presented in Attachment "B". As such, inclusion of the RV parking would not result in any new impacts.

TABLE 12: OPERATIONAL GREENHOUSE GAS EMISSIONS SUMMARY (ANNUAL)

Emission Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total CO_2E
Emissions from 2018 Greenhouse Gas Study				
Operational Emissions	1,021.59	0.12	2.20E-04	1,024.53
Total CO_2E – Project (All Sources)	**1,024.53**			
Emissions from Proposed 12 VFP and RV Parking				
Operational Emissions	777.43	0.09	1.80E-04	779.66
Total CO_2E – Project (All Sources)	**779.66**			
Net Difference CO2E (Previous – Proposed)	**-244.87**			

Based on the preceding, the inclusion of the RV parking use is not anticipated to result in any additional significant impacts from those currently identified in the 2018 Air and Greenhouse Gas Studies.

If you have any questions, please contact me directly at (949) 336-5987.

Respectfully submitted,

URBAN CROSSROADS, INC.

Haseeb Qureshi,
Senior Associate

REFERENCES

1. **Urban Crossroads, Inc.** *The Exchange Air Quality Impact Analysis.* Costa Mesa : s.n., 2018.

2. —. *The Exchange Greenhouse Gas Analysis.* Costa Mesa : s.n., 2018.

3. **County of Riverside.** *Greenhouse Gas Emissions Screening Tables.* San Bernardino : Atkins, 2012.

4. **South Coast Air Quality Management District.** Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. [Online] http://www.aqmd.gov/hb/2008/December/081231a.htm.

Northgate Center (16 Vehicle Fueling Stations)

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	16.00	Pump	0.37	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is based on Site Plan.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate based on information provided in the Northgate Center Trip Generation Assessment.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/15/2020	6/1/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/1/2020
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.05	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	WD_TR	542.60	198.16

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					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370
Total	**3.5917**	**27.2786**	**21.9241**	**0.0763**	**4.0357**	**0.0535**	**4.0893**	**1.0797**	**0.0501**	**1.1298**		**7,855.7554**	**7,855.7554**	**0.9441**	**3.0000e-005**	**7,879.3666**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370
Total	**3.5917**	**27.2786**	**21.9241**	**0.0763**	**4.0357**	**0.0535**	**4.0893**	**1.0797**	**0.0501**	**1.1298**		**7,855.7554**	**7,855.7554**	**0.9441**	**3.0000e-005**	**7,879.3666**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	6/1/2020	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370
Unmitigated	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	3,170.56	308.48	308.48	1,404,340	1,404,340
Total	3,170.56	308.48	308.48	1,404,340	1,404,340

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
NaturalGas Unmitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259

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					
Convenience Market With Gas Pumps	13.7385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0137385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Unmitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-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	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (16 Vehicle Fueling Stations)

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	16.00	Pump	0.37	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is based on Site Plan.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate based on information provided in the Northgate Center Trip Generation Assessment.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/15/2020	6/1/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/1/2020
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.05	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	WD_TR	542.60	198.16

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					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763
Total	**4.3879**	**28.0235**	**21.6240**	**0.0839**	**4.0357**	**0.0516**	**4.0873**	**1.0797**	**0.0482**	**1.1279**		**8,642.9774**	**8,642.9774**	**0.8528**	**3.0000e-005**	**8,664.3059**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763
Total	**4.3879**	**28.0235**	**21.6240**	**0.0839**	**4.0357**	**0.0516**	**4.0873**	**1.0797**	**0.0482**	**1.1279**		**8,642.9774**	**8,642.9774**	**0.8528**	**3.0000e-005**	**8,664.3059**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	6/1/2020	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763
Unmitigated	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	3,170.56	308.48	308.48	1,404,340	1,404,340
Total	3,170.56	308.48	308.48	1,404,340	1,404,340

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
NaturalGas Unmitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259

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					
Convenience Market With Gas Pumps	13.7385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0137385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Unmitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-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	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (12 Vehicle Fueling Stations & RV Park)

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	35.00	Space	0.09	14,000.00	0
Convenience Market With Gas Pumps	12.00	Pump	0.28	1,694.10	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 0.02 acres per VFP.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate from the Northgate Center Trip Generation Assessment.

Northgate Center (12 Vehicle Fueling Stations & RV Park) - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.32	0.09
tblLandUse	LotAcreage	0.04	0.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	ST_TR	0.00	0.18
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	SU_TR	0.00	0.18
tblVehicleTrips	WD_TR	542.60	198.16
tblVehicleTrips	WD_TR	0.00	0.18

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					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897
Total	**2.7130**	**20.5730**	**16.6419**	**0.0582**	**3.1080**	**0.0409**	**3.1488**	**0.8315**	**0.0382**	**0.8697**		**5,989.4094**	**5,989.4094**	**0.7122**	**2.0000e-005**	**6,007.2201**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897
Total	**2.7130**	**20.5730**	**16.6419**	**0.0582**	**3.1080**	**0.0409**	**3.1488**	**0.8315**	**0.0382**	**0.8697**		**5,989.4094**	**5,989.4094**	**0.7122**	**2.0000e-005**	**6,007.2201**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/25/2018	7/25/2018	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.09

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897
Unmitigated	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,377.92	231.36	231.36	1,053,255	1,053,255
Parking Lot	6.30	6.30	6.30	38,067	38,067
Total	2,384.22	237.66	237.66	1,091,322	1,091,322

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Parking Lot	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
NaturalGas Unmitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194

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					
Convenience Market With Gas Pumps	10.3038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0103038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Unmitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

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	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (12 Vehicle Fueling Stations & RV Park)

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	35.00	Space	0.09	14,000.00	0
Convenience Market With Gas Pumps	12.00	Pump	0.28	1,694.10	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 0.02 acres per VFP.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate from the Northgate Center Trip Generation Assessment.

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.32	0.09
tblLandUse	LotAcreage	0.04	0.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	ST_TR	0.00	0.18
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	SU_TR	0.00	0.18
tblVehicleTrips	WD_TR	542.60	198.16
tblVehicleTrips	WD_TR	0.00	0.18

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					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642
Total	**3.3121**	**21.1303**	**16.4545**	**0.0640**	**3.1080**	**0.0394**	**3.1473**	**0.8315**	**0.0368**	**0.8683**		**6,587.5963**	**6,587.5963**	**0.6437**	**2.0000e-005**	**6,603.6945**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642
Total	**3.3121**	**21.1303**	**16.4545**	**0.0640**	**3.1080**	**0.0394**	**3.1473**	**0.8315**	**0.0368**	**0.8683**		**6,587.5963**	**6,587.5963**	**0.6437**	**2.0000e-005**	**6,603.6945**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/25/2018	7/25/2018	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.09

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642
Unmitigated	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,377.92	231.36	231.36	1,053,255	1,053,255
Parking Lot	6.30	6.30	6.30	38,067	38,067
Total	2,384.22	237.66	237.66	1,091,322	1,091,322

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Parking Lot	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
NaturalGas Unmitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194

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					
Convenience Market With Gas Pumps	10.3038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0103038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Unmitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

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	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT "A"

Northgate Center (16 Vehicle Fueling Stations)

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	16.00	Pump	0.37	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is based on Site Plan.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate based on information provided in the Northgate Center Trip Generation Assessment.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/15/2020	6/1/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/1/2020
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.05	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	WD_TR	542.60	198.16

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					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370
Total	**3.5917**	**27.2786**	**21.9241**	**0.0763**	**4.0357**	**0.0535**	**4.0893**	**1.0797**	**0.0501**	**1.1298**		**7,855.7554**	**7,855.7554**	**0.9441**	**3.0000e-005**	**7,879.3666**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370
Total	**3.5917**	**27.2786**	**21.9241**	**0.0763**	**4.0357**	**0.0535**	**4.0893**	**1.0797**	**0.0501**	**1.1298**		**7,855.7554**	**7,855.7554**	**0.9441**	**3.0000e-005**	**7,879.3666**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	6/1/2020	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370
Unmitigated	3.5410	27.2773	21.9213	0.0763	4.0357	0.0534	4.0892	1.0797	0.0500	1.1297		7,854.1356	7,854.1356	0.9441		7,877.7370

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	3,170.56	308.48	308.48	1,404,340	1,404,340
Total	3,170.56	308.48	308.48	1,404,340	1,404,340

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
NaturalGas Unmitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259

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					
Convenience Market With Gas Pumps	13.7385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0137385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Unmitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-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	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (16 Vehicle Fueling Stations)

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	16.00	Pump	0.37	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is based on Site Plan.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate based on information provided in the Northgate Center Trip Generation Assessment.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/15/2020	6/1/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/1/2020
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.05	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	WD_TR	542.60	198.16

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					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763
Total	**4.3879**	**28.0235**	**21.6240**	**0.0839**	**4.0357**	**0.0516**	**4.0873**	**1.0797**	**0.0482**	**1.1279**		**8,642.9774**	**8,642.9774**	**0.8528**	**3.0000e-005**	**8,664.3059**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Energy	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Mobile	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763
Total	**4.3879**	**28.0235**	**21.6240**	**0.0839**	**4.0357**	**0.0516**	**4.0873**	**1.0797**	**0.0482**	**1.1279**		**8,642.9774**	**8,642.9774**	**0.8528**	**3.0000e-005**	**8,664.3059**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	6/1/2020	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763
Unmitigated	4.3371	28.0222	21.6212	0.0839	4.0357	0.0514	4.0872	1.0797	0.0481	1.1278		8,641.3576	8,641.3576	0.8528		8,662.6763

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	3,170.56	308.48	308.48	1,404,340	1,404,340
Total	3,170.56	308.48	308.48	1,404,340	1,404,340

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
NaturalGas Unmitigated	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259

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					
Convenience Market With Gas Pumps	13.7385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0137385	1.5000e-004	1.3500e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6163	1.6163	3.0000e-005	3.0000e-005	1.6259
Total		**1.5000e-004**	**1.3500e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6163**	**1.6163**	**3.0000e-005**	**3.0000e-005**	**1.6259**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Unmitigated	0.0506	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-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	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.5000e-003	3.5000e-003	1.0000e-005		3.7300e-003
Total	**0.0506**	**1.0000e-005**	**1.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.5000e-003**	**3.5000e-003**	**1.0000e-005**		**3.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (12 Vehicle Fueling Stations & RV Park)

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	35.00	Space	0.09	14,000.00	0
Convenience Market With Gas Pumps	12.00	Pump	0.28	1,694.10	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 0.02 acres per VFP.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate from the Northgate Center Trip Generation Assessment.

Northgate Center (12 Vehicle Fueling Stations & RV Park) - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.32	0.09
tblLandUse	LotAcreage	0.04	0.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	ST_TR	0.00	0.18
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	SU_TR	0.00	0.18
tblVehicleTrips	WD_TR	542.60	198.16
tblVehicleTrips	WD_TR	0.00	0.18

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					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897
Total	**2.7130**	**20.5730**	**16.6419**	**0.0582**	**3.1080**	**0.0409**	**3.1488**	**0.8315**	**0.0382**	**0.8697**		**5,989.4094**	**5,989.4094**	**0.7122**	**2.0000e-005**	**6,007.2201**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897
Total	**2.7130**	**20.5730**	**16.6419**	**0.0582**	**3.1080**	**0.0409**	**3.1488**	**0.8315**	**0.0382**	**0.8697**		**5,989.4094**	**5,989.4094**	**0.7122**	**2.0000e-005**	**6,007.2201**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/25/2018	7/25/2018	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.09

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897
Unmitigated	2.6686	20.5719	16.6363	0.0582	3.1080	0.0408	3.1487	0.8315	0.0381	0.8696		5,988.1869	5,988.1869	0.7121		6,005.9897

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,377.92	231.36	231.36	1,053,255	1,053,255
Parking Lot	6.30	6.30	6.30	38,067	38,067
Total	2,384.22	237.66	237.66	1,091,322	1,091,322

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Parking Lot	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
NaturalGas Unmitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194

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					
Convenience Market With Gas Pumps	10.3038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0103038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Unmitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

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	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (12 Vehicle Fueling Stations & RV Park)

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	35.00	Space	0.09	14,000.00	0
Convenience Market With Gas Pumps	12.00	Pump	0.28	1,694.10	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 0.02 acres per VFP.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate from the Northgate Center Trip Generation Assessment.

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.32	0.09
tblLandUse	LotAcreage	0.04	0.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	ST_TR	0.00	0.18
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	SU_TR	0.00	0.18
tblVehicleTrips	WD_TR	542.60	198.16
tblVehicleTrips	WD_TR	0.00	0.18

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					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.5303	0.0000	0.5303	0.0573	0.0000	0.0573	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642
Total	**3.3121**	**21.1303**	**16.4545**	**0.0640**	**3.1080**	**0.0394**	**3.1473**	**0.8315**	**0.0368**	**0.8683**		**6,587.5963**	**6,587.5963**	**0.6437**	**2.0000e-005**	**6,603.6945**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Energy	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
Mobile	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642
Total	**3.3121**	**21.1303**	**16.4545**	**0.0640**	**3.1080**	**0.0394**	**3.1473**	**0.8315**	**0.0368**	**0.8683**		**6,587.5963**	**6,587.5963**	**0.6437**	**2.0000e-005**	**6,603.6945**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/25/2018	7/25/2018	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.09

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.0000	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**	**0.5303**	**0.0000**	**0.5303**	**0.0573**	**0.0000**	**0.0573**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	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**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642
Unmitigated	3.2677	21.1292	16.4488	0.0640	3.1080	0.0393	3.1472	0.8315	0.0367	0.8682		6,586.3738	6,586.3738	0.6436		6,602.4642

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,377.92	231.36	231.36	1,053,255	1,053,255
Parking Lot	6.30	6.30	6.30	38,067	38,067
Total	2,384.22	237.66	237.66	1,091,322	1,091,322

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Parking Lot	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
NaturalGas Unmitigated	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194

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					
Convenience Market With Gas Pumps	10.3038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0103038	1.1000e-004	1.0100e-003	8.5000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.2122	1.2122	2.0000e-005	2.0000e-005	1.2194
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		**1.1000e-004**	**1.0100e-003**	**8.5000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**1.2122**	**1.2122**	**2.0000e-005**	**2.0000e-005**	**1.2194**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Unmitigated	0.0443	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110

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	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0385					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0103	0.0103	3.0000e-005		0.0110
Total	**0.0443**	**4.0000e-005**	**4.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0103**	**0.0103**	**3.0000e-005**		**0.0110**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT "B"

Northgate Center (16 Vehicle Fueling Stations)

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	16.00	Pump	0.37	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is based on Site Plan.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate based on information provided in the Northgate Center Trip Generation Assessment.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/15/2020	6/1/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/1/2020
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.05	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	WD_TR	542.60	198.16

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					
2020	0.0000	0.0000	0.0000	0.0000	2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	9.2300e-003	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.2000e-004
Energy	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	17.4220	17.4220	3.8000e-004	8.0000e-005	17.4561
Mobile	0.4760	3.7590	2.9143	0.0107	0.5362	7.0500e-003	0.5432	0.1436	6.5900e-003	0.1502	0.0000	1,002.1196	1,002.1196	0.1092	0.0000	1,004.8485
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0531	1.9951	2.0482	5.5000e-003	1.4000e-004	2.2266
Total	**0.4852**	**3.7592**	**2.9148**	**0.0107**	**0.5362**	**7.0700e-003**	**0.5432**	**0.1436**	**6.6100e-003**	**0.1503**	**0.0531**	**1,021.5371**	**1,021.5902**	**0.1150**	**2.2000e-004**	**1,024.5316**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.2300e-003	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.2000e-004
Energy	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	17.4220	17.4220	3.8000e-004	8.0000e-005	17.4561
Mobile	0.4760	3.7590	2.9143	0.0107	0.5362	7.0500e-003	0.5432	0.1436	6.5900e-003	0.1502	0.0000	1,002.1196	1,002.1196	0.1092	0.0000	1,004.8485
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0531	1.9951	2.0482	5.5000e-003	1.4000e-004	2.2266
Total	**0.4852**	**3.7592**	**2.9148**	**0.0107**	**0.5362**	**7.0700e-003**	**0.5432**	**0.1436**	**6.6100e-003**	**0.1503**	**0.0531**	**1,021.5371**	**1,021.5902**	**0.1150**	**2.2000e-004**	**1,024.5316**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	6/1/2020	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4760	3.7590	2.9143	0.0107	0.5362	7.0500e-003	0.5432	0.1436	6.5900e-003	0.1502	0.0000	1,002.1196	1,002.1196	0.1092	0.0000	1,004.8485
Unmitigated	0.4760	3.7590	2.9143	0.0107	0.5362	7.0500e-003	0.5432	0.1436	6.5900e-003	0.1502	0.0000	1,002.1196	1,002.1196	0.1092	0.0000	1,004.8485

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	3,170.56	308.48	308.48	1,404,340	1,404,340
Total	3,170.56	308.48	308.48	1,404,340	1,404,340

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	17.1544	17.1544	3.8000e-004	8.0000e-005	17.1869
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	17.1544	17.1544	3.8000e-004	8.0000e-005	17.1869
NaturalGas Mitigated	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2676	0.2676	1.0000e-005	0.0000	0.2692
NaturalGas Unmitigated	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2676	0.2676	1.0000e-005	0.0000	0.2692

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					
Convenience Market With Gas Pumps	5014.54	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2676	0.2676	1.0000e-005	0.0000	0.2692
Total		**3.0000e-005**	**2.5000e-004**	**2.1000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2676**	**0.2676**	**1.0000e-005**	**0.0000**	**0.2692**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	5014.54	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2676	0.2676	1.0000e-005	0.0000	0.2692
Total		**3.0000e-005**	**2.5000e-004**	**2.1000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2676**	**0.2676**	**1.0000e-005**	**0.0000**	**0.2692**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	28528.6	17.1544	3.8000e-004	8.0000e-005	17.1869
Total		**17.1544**	**3.8000e-004**	**8.0000e-005**	**17.1869**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	28528.6	17.1544	3.8000e-004	8.0000e-005	17.1869
Total		**17.1544**	**3.8000e-004**	**8.0000e-005**	**17.1869**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.2300e-003	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.2000e-004
Unmitigated	9.2300e-003	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.2000e-004

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	1.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.2000e-004
Total	**9.2300e-003**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-004**	**4.0000e-004**	**0.0000**	**0.0000**	**4.2000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.2000e-004
Total	**9.2300e-003**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-004**	**4.0000e-004**	**0.0000**	**0.0000**	**4.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0482	5.5000e-003	1.4000e-004	2.2266
Unmitigated	2.0482	5.5000e-003	1.4000e-004	2.2266

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.167315 / 0.102548	2.0482	5.5000e-003	1.4000e-004	2.2266
Total		**2.0482**	**5.5000e-003**	**1.4000e-004**	**2.2266**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.167315 / 0.102548	2.0482	5.5000e-003	1.4000e-004	2.2266
Total		**2.0482**	**5.5000e-003**	**1.4000e-004**	**2.2266**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Northgate Center (12 Vehicle Fueling Stations & RV Park)

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	35.00	Space	0.09	14,000.00	0
Convenience Market With Gas Pumps	12.00	Pump	0.28	1,694.10	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 0.02 acres per VFP.

Construction Phase - Operations Run Only.

Off-road Equipment - Operations Run Only.

Trips and VMT - Operations Run Only.

Vehicle Trips - Trip Rate from the Northgate Center Trip Generation Assessment.

Northgate Center (12 Vehicle Fueling Stations & RV Park) - Riverside-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.32	0.09
tblLandUse	LotAcreage	0.04	0.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	204.47	19.28
tblVehicleTrips	ST_TR	0.00	0.18
tblVehicleTrips	SU_TR	166.88	19.28
tblVehicleTrips	SU_TR	0.00	0.18
tblVehicleTrips	WD_TR	542.60	198.16
tblVehicleTrips	WD_TR	0.00	0.18

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					
2018	0.0000	0.0000	0.0000	0.0000	2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0000	0.0000	0.0000	0.0000	2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	8.0600e-003	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2400e-003
Energy	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	8.5793	8.5793	3.5000e-004	8.0000e-005	8.6105
Mobile	0.3593	2.8403	2.2227	8.2200e-003	0.4167	5.4100e-003	0.4221	0.1116	5.0600e-003	0.1167	0.0000	768.0211	768.0211	0.0825	0.0000	770.0843
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0398	0.7929	0.8327	4.1200e-003	1.0000e-004	0.9665
Total	**0.3674**	**2.8405**	**2.2235**	**8.2200e-003**	**0.4167**	**5.4200e-003**	**0.4221**	**0.1116**	**5.0700e-003**	**0.1167**	**0.0398**	**777.3945**	**777.4343**	**0.0870**	**1.8000e-004**	**779.6625**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0600e-003	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2400e-003
Energy	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	8.5793	8.5793	3.5000e-004	8.0000e-005	8.6105
Mobile	0.3593	2.8403	2.2227	8.2200e-003	0.4167	5.4100e-003	0.4221	0.1116	5.0600e-003	0.1167	0.0000	768.0211	768.0211	0.0825	0.0000	770.0843
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0398	0.7929	0.8327	4.1200e-003	1.0000e-004	0.9665
Total	**0.3674**	**2.8405**	**2.2235**	**8.2200e-003**	**0.4167**	**5.4200e-003**	**0.4221**	**0.1116**	**5.0700e-003**	**0.1167**	**0.0398**	**777.3945**	**777.4343**	**0.0870**	**1.8000e-004**	**779.6625**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/25/2018	7/25/2018	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.09

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3593	2.8403	2.2227	8.2200e-003	0.4167	5.4100e-003	0.4221	0.1116	5.0600e-003	0.1167	0.0000	768.0211	768.0211	0.0825	0.0000	770.0843
Unmitigated	0.3593	2.8403	2.2227	8.2200e-003	0.4167	5.4100e-003	0.4221	0.1116	5.0600e-003	0.1167	0.0000	768.0211	768.0211	0.0825	0.0000	770.0843

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,377.92	231.36	231.36	1,053,255	1,053,255
Parking Lot	6.30	6.30	6.30	38,067	38,067
Total	2,384.22	237.66	237.66	1,091,322	1,091,322

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Parking Lot	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8.3786	8.3786	3.5000e-004	7.0000e-005	8.4086
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8.3786	8.3786	3.5000e-004	7.0000e-005	8.4086
NaturalGas Mitigated	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2007	0.2007	0.0000	0.0000	0.2019
NaturalGas Unmitigated	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2007	0.2007	0.0000	0.0000	0.2019

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					
Convenience Market With Gas Pumps	3760.9	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2007	0.2007	0.0000	0.0000	0.2019
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		**2.0000e-005**	**1.8000e-004**	**1.5000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.2007**	**0.2007**	**0.0000**	**0.0000**	**0.2019**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	3760.9	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2007	0.2007	0.0000	0.0000	0.2019
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		**2.0000e-005**	**1.8000e-004**	**1.5000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.2007**	**0.2007**	**0.0000**	**0.0000**	**0.2019**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	21396.5	6.8174	2.8000e-004	6.0000e-005	6.8418
Parking Lot	4900	1.5612	6.0000e-005	1.0000e-005	1.5668
Total		**8.3786**	**3.4000e-004**	**7.0000e-005**	**8.4086**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	21396.5	6.8174	2.8000e-004	6.0000e-005	6.8418
Parking Lot	4900	1.5612	6.0000e-005	1.0000e-005	1.5668
Total		**8.3786**	**3.4000e-004**	**7.0000e-005**	**8.4086**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0600e-003	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2400e-003
Unmitigated	8.0600e-003	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2400e-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	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2400e-003
Total	**8.0700e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1700e-003**	**1.1700e-003**	**0.0000**	**0.0000**	**1.2400e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1700e-003	1.1700e-003	0.0000	0.0000	1.2400e-003
Total	**8.0700e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1700e-003**	**1.1700e-003**	**0.0000**	**0.0000**	**1.2400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8327	4.1200e-003	1.0000e-004	0.9665
Unmitigated	0.8327	4.1200e-003	1.0000e-004	0.9665

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.125486 / 0.0769109	0.8327	4.1200e-003	1.0000e-004	0.9665
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8327**	**4.1200e-003**	**1.0000e-004**	**0.9665**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.125486 / 0.0769109	0.8327	4.1200e-003	1.0000e-004	0.9665
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8327**	**4.1200e-003**	**1.0000e-004**	**0.9665**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix S

The Exchange Focused Gas Station Health Risk Assessment

260 E. Baker St. | Suite 200 | Costa Mesa, CA 92626 | (949) 660-1994
urbanxroads.com

April 3, 2019

Ms. Jim Guthrie
AFG LLC
1451 Research Park Dr., Suite 200
Riverside, CA 92507

SUBJECT: THE EXCHANGE FOCUSED GAS STATION HEALTH RISK ASSESSMENT

Dear Ms. Jim Guthrie:

Urban Crossroads, Inc. is pleased to submit this Focused Gas Station Health Risk Assessment (HRA) to AFG LLC (Client) for The Exchange ("Project"). The purpose of this analysis is to address the SCAQMD's request that Projects that include gasoline dispending facilities, prepare a HRA to address potential impacts to sensitive receptors from benzene, which is a toxic air contaminant that may be emitted during gasoline refueling operations. The analysis herein serves to address the SCAQMD's request by preparing a focused HRA for the gasoline dispensing facilities proposed, based on the information that is available about a gas station at the Project site.

HEALTH RISK ASSESSMENT

Emissions resulting from gasoline service station operations may include toxic air contaminants (TACs) (e.g., benzene, hexane, MTBE, toluene, xylene) and have the potential to contribute to health risk in the Project vicinity. It should be noted that standard regulatory controls such as the SCAQMD's Rule 461 (Gasoline Transfer and Dispensing) would apply to the Project in addition to any permits required that demonstrate appropriate operational controls. Prior to issuance of a Permit to Operate, each individual gasoline dispensing station would be required to obtain the required permits from SCAQMD which would identify the maximum annual throughput allowed based on specific fuel storage and dispensing equipment that is proposed by the operator.

The analysis presented here reflects a maximum annual throughout of approximately 2,000,000 gallons. Ultimate fuel throughput allowances/requirements would be established by SCAQMD through the fueling station permitting processes noted above.

For purposes of this evaluation, cancer risk estimates have been made consistent with the methodology presented in SCAQMD's *Risk Assessment Procedures for Rules 1401, 1401.1 & 212* which provide screening-level risk estimates for gasoline dispensing operations. The Project site is located within Source Receptor Area (SRA) 23. The SCAQMD's *Risk Tool V1.1* has been utilized to calculate the potential impacts associated with the gasoline service station.

The distance from the fuel canopy to the nearest school building (Administration Building Corner at the Fremont Elementary School) is approximately 484 feet[1]. As such, the nearest sensitive receptor location where an individual could remain for long-term exposure (e.g., 8, 12, or 24 hours per day over the course of years) is located a minimum of 484 feet from the proposed gasoline canopy. All other sensitive receptors are located at a greater distance than 484 feet and would result in lesser impacts than evaluated herein. It should be noted that use of the 484 feet distance is more appropriate than using the approximate 150-foot distance from the Project's property line to the Fremont Elementary School's Playground since the exposure time at the playground area would be limited on a daily basis. Available risk assessment guidance dictates that receptors should be considered for HRA purposes where "long-term" exposure could occur (SCAQMD guidance states that a 30-year exposure duration should be used for residential and sensitive receptor locations and a 25-year exposure duration should be used for off-site workers), since school children at the playground would not be exposed to long-term concentrations at the playground (their time at the playground is limited per day and would certainly not approach 25 or 30-years of exposure), this location that would be appropriate for consideration in the HRA evaluation.

Based on the established SCAQMD procedure outlined in the *SCAQMD Permit Application Package "N"* it is estimated that the maximum risk attributable to the gasoline dispensing would be 0.785 in one million for the nearest sensitive receptor which is substantially below the threshold of 10 in one million. Attachment "A" includes excerpts from the *SCAQMD Permit Application Package "N"* which identifies the potential risk per one million gallons of gasoline dispensed at the defined downwind distances as well as the worksheet outputs from SCAQMD's *Risk Tool V1.1*.

CONCLUSIONS

As shown, no sensitive receptors in the Project vicinity would be exposed to a cancer risk of greater than 10 in one million from the operation of the proposed Project gas station. The maximum risk estimate at any sensitive land use in the vicinity of the Project would be 0.785 in one million. The Project gas station operations would therefore not generate emissions that would cause or result in an exceedance of the applicable SCAQMD cancer threshold of 10 in one million. As such, the Project would not have a significant impact with respect to health risks from the gasoline dispensing stations. No significant impacts would occur; thus, no mitigation is required.

If you have any questions, please contact me directly at (949) 336-5987.

Respectfully submitted,

URBAN CROSSROADS, INC.

Haseeb Qureshi,
Senior Associate

1 Information provided by the Project engineer, Mr. Richard Reaves, P.E. P.L.S., Adkan Engineers (April 2, 2019).

ATTACHMENT "A"

GASOLINE DISPENSING SERVICE STATION

(Procedure Version 8.1 & Package N, September 1, 2017) - Risk Tool V1.1

AN:

Facility Name:

Deem Complete Date:

Storage Tank Type	Underground		MET Station	Riverside Airport	
Annual Throughput	2	million gallons /year	Distance to Resident	148	meter
T-BACT	YES		Distance to Commercial	148	meter

MICR Calculation: MICR = MICR per 1 Million gallons/yr x Annual Throughput (Million gallons/yr)

HIA & HIC Calculation: Negligible compared to Cancer risk and is not calculated.

MICR Result

	Resident	Commercial
MICR	0.785	0.066
MICR ≤ 10	**PASS**	**PASS**

Interpolation for MICR from Nearest Distances

	Residential			**Commercial**		
	near	**actual**	far	near	**actual**	far
Distance (meter)	100	**148**	200	100	**148**	200
MICR (per 1 million gasoline gallon throughput per year)	0.588	**0.3925**	0.177	0.049	**0.033**	0.015

Look up from Table 12 - MICR for Underground Storage Tank

		Downwind Distance (m)							
Station	**Receptor**	**25**	**50**	**75**	**100**	**200**	**300**	**500**	**1000**
Riverside Airport	Resident	4.141	1.678	0.922	0.588	0.177	0.088	0.038	0.013
	Commercial	0.341	0.138	0.076	0.049	0.015	0.007	0.003	0.001

South Coast Air Quality Management District

PERMIT APPLICATION PACKAGE "N"

For Use in Conjunction with the
RISK ASSESSMENT PROCEDURES
for Rules 1401, 1401.1, and 212

Version 8.1

Table 12.1A – Screening Tables for Gasoline Dispensing Facilities

Underground Storage Tank (UST) **Residential**

MICR per One Million Gallons of Gasoline

		Downwind Distance (meters)							
Station Abbr.	**Location**	**25**	**50**	**75**	**100**	**200**	**300**	**500**	**1000**
AZUS	**Azusa**	2.884	1.040	0.550	0.340	0.093	0.045	0.018	0.006
BNAP	**Banning**	4.208	1.703	0.940	0.603	0.186	0.093	0.039	0.013
CELA	**Central L.A.**	2.484	0.876	0.455	0.287	0.085	0.041	0.017	0.005
ELSI	**Lake Elsinore**	2.978	1.075	0.558	0.347	0.103	0.051	0.021	0.007
FONT	**Fontana**	3.306	1.254	0.677	0.423	0.124	0.060	0.025	0.007
MSVJ	**Mission Viejo**	2.721	0.981	0.515	0.319	0.094	0.047	0.018	0.006
PERI	**Perris**	3.494	1.310	0.695	0.436	0.127	0.063	0.026	0.008
PICO	**Pico Rivera**	2.629	0.956	0.509	0.316	0.091	0.044	0.018	0.005
RDLD	**Redlands**	3.562	1.325	0.691	0.418	0.113	0.055	0.024	0.007
UPLA	**Upland**	3.108	1.133	0.609	0.384	0.111	0.054	0.022	0.007
KBUR	**Burbank Airport**	3.097	1.198	0.655	0.410	0.125	0.062	0.026	0.008
KCNO	**Chino Airport.**	4.084	1.609	0.870	0.549	0.166	0.082	0.033	0.010
KCQT	**USC/Downtown L.A.**	3.382	1.244	0.656	0.407	0.110	0.052	0.021	0.007
KFUL	**Fullerton Airport**	2.726	1.027	0.553	0.348	0.104	0.052	0.021	0.007
KHHR	**Hawthorne Airport**	3.225	1.197	0.640	0.405	0.123	0.061	0.025	0.007
KLAX	**Los Angeles Int'l Airport**	4.456	1.830	1.010	0.648	0.204	0.102	0.044	0.013
KLGB	**Long Beach Airport**	3.417	1.394	0.764	0.488	0.151	0.076	0.033	0.010
KONT	**Ontario Airport**	4.834	2.006	1.111	0.710	0.222	0.112	0.047	0.015
KPSP	**Palm Springs Airport**	3.363	1.352	0.736	0.467	0.144	0.073	0.031	0.010
KRAL	**Riverside Airport**	4.141	1.678	0.922	0.588	0.177	0.088	0.038	0.013
KSMO	**Santa Monica Airport**	3.444	1.336	0.731	0.462	0.139	0.068	0.028	0.008
KSNA	**John Wayne Int'l Airport**	4.041	1.605	0.870	0.549	0.164	0.079	0.032	0.010
KTRM	**Desert Hot Springs Airport**	3.820	1.553	0.848	0.540	0.163	0.082	0.035	0.010
KVNY	**Van Nuys Airport**	2.909	1.132	0.608	0.378	0.111	0.055	0.022	0.007

Emission Inventory and Risk Assessment Guidelines for Gasoline Dispensing Stations

Introduction

The purpose of this appendix is to document the methods used by AQMD staff to estimate cancer risks from the industry-wide source category of retail gasoline dispensing facilities. The methods are consistent with (1) AQMD's risk assessment procedures for Rule 1401 and (2) California Air Pollution Control Officer Association (CAPCOA) risk assessment guidance for gasoline service stations. The methods used to estimate emissions, pollutant concentrations, and cancer risks are covered here. Tables of maximum cancer risks at various locations in the South Coast Air Basin and at various residential and occupational distances are provided. The document concludes with an example calculation using the cancer risk tables.

Emission Inventory Methods

Emissions from gasoline transfer and dispensing mainly occur during loading, breathing, refueling, and spillage as described below:

Loading – Emissions occur when a fuel tanker truck unloads gasoline to the storage tanks. The storage tank vapors, displaced during loading, are emitted through its vent pipe. A pressure/vacuum valve installed on the tank vent pipe significantly reduces these emissions.

Breathing – Emissions occur through the storage tank vent pipe as a result of temperature and pressure changes in the tank vapor space.

Refueling – Emissions occur during motor vehicle refueling when gasoline vapors escape through the vehicle/nozzle interface.

Spillage – Emissions occur from evaporating gasoline that spills during vehicle refueling.

All retail service stations under AQMD jurisdiction have Phase I and II vapor recovery systems to control gasoline emissions. Phase I vapor recovery refers to the collection of gasoline vapors displaced from storage tanks when cargo tank trucks make gasoline deliveries. Phase II vapor recovery systems control the vapors displaced from the vehicle fuel tanks during refueling. In addition, all gasoline is stored underground with valves installed on the tank vent pipes to further control gasoline emissions.

The gasoline and benzene emission factors for each of the four processes are summarized in Table 1. The factors given in the table follow the CAPCOA recommended guidelines except that 95 percent control is assumed for Phase II vapor recovery, whereas CAPCOA assumes 90 percent control due to incomplete compliance.

Table 1. Gasoline and Benzene Emission Factors for Retail Service Stations

Process	Gasoline EF (lbs/1000 gal)	Benzene EF (lbs/1000 gal)	Comment
Loading	0.42	0.00126	benzene weight percent in vapor is 0.3%
Breathing	0.025	0.000075	benzene weight percent in vapor is 0.3%
Refueling	0.32	0.00096	benzene weight percent in vapor is 0.3%
Spillage	0.42	0.0042	benzene weight percent in liquid is 1.0%

Exposure Modeling Methods

Air quality modeling was performed using a U.S. EPA air quality dispersion model, called ISCST3 (Industrial Source Complex – Short Term, Version 3). ISCST3 is a Gaussian plume model capable of estimating pollutant concentrations from a wide variety of sources that are typically present in an industrial source complex. Emission sources are categorized into four basic types: point, area, volume, and open pit sources. ISCST3 estimates hourly concentrations for each source/receptor pair and calculates concentrations for user-specified averaging times, including an average concentration for the complete simulation period.

ISCST3 is executed using the urban dispersion parameters, which is AQMD policy for all permitting in its jurisdiction. The U.S. EPA regulatory defaults options are implemented except that the calm processing option is disabled. The AQMD believes that calm processing is inappropriate for its meteorological data for the following reasons:

- Calm processing was developed by the U.S. EPA to correct problems with preprocessed data in which calm winds are given the speed of 1 m/s and the direction of the last non-calm hour. This results in artificial persistence. Wind data collected by the AQMD is not preprocessed.
- Wind speeds in the AQMD stations are always 1 m/s or greater. Thus, model problems associated with lower wind speeds are not an issue.
- Wind direction is always recorded regardless of the wind speed and the direction is randomized over a 22.5 degree sector. Thus, artificial persistence is not an issue.
- AQMD data is more like on-site data and calm processing is not appropriate for on-site data.
- Given the high frequency of calms at many sites in the South Coast Air Basin and their association with high pollutant concentrations, it would be inappropriate to eliminate that portion of the data.

For these reasons, the AQMD does not require calm processing for permit modeling.

Emissions from gasoline service stations are non-buoyant and ground-based (or nearly ground-based). In addition, the peak impacts from this type of facility occur in close

proximity to the source. Under these circumstances the local terrain is relatively unimportant; therefore flat terrain is assumed in the dispersion modeling.

Modeling was performed at all 35 AQMD meteorological stations shown in Figure 1. The locations of each of the sites are given in Table 2. The data are available on the AQMD website (http://www.aqmd.gov/metdata/). A polar receptor grid is assumed at ten degree azimuth increments at the following downwind distances: 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, and 1000 meters.

The peak model-predicted impacts at each downwind distance over the 36 azimuth angles are used to develop the health risk tables for gasoline service stations (see Tables 3 & 4).

Figure 1
Meteorological Monitoring Stations in the South Coast Air Basin

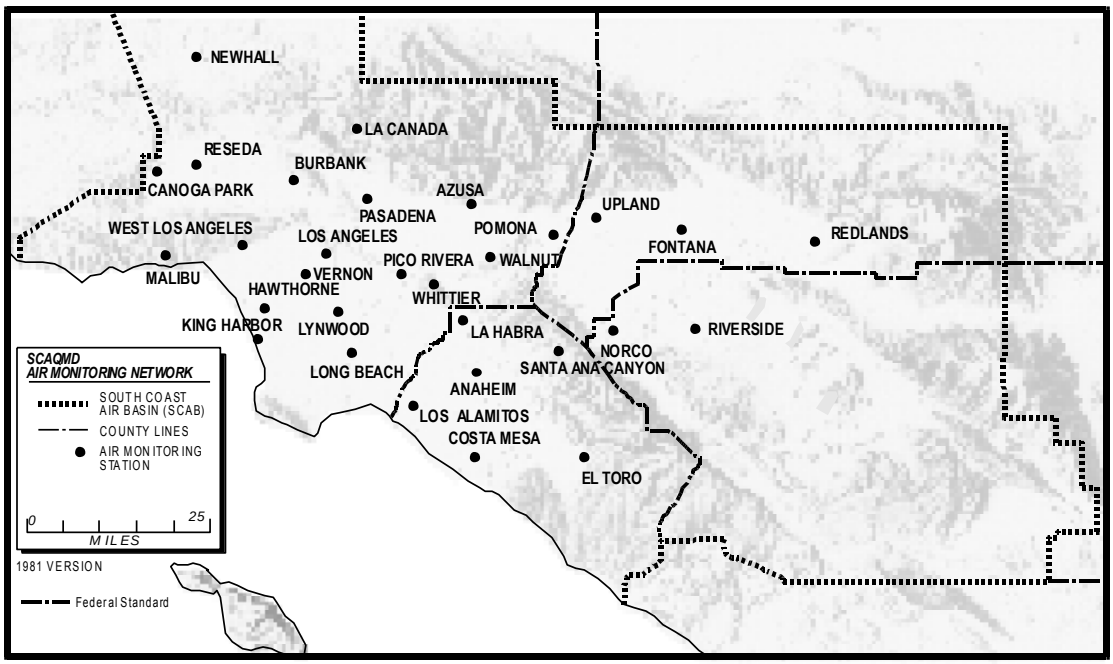

Table 2: Locations of Meteorological Stations

Station name	UTM Coordinates (m)		Lat./Long. Coordinates	
	E-W	N-S	Latitude	Longitude
Anaheim	415.0	3742.5	33°49'16"	117°55'07"
Azusa	414.9	3777.4	34°08'09"	117°55'23"
Banning	510.5	3754.5	33°55'58"	116°53'11"
Burbank	379.5	3783.0	34°10'58"	118°18'27"
Canoga Park	352.9	3786.0	34°12'23"	118°35'48"
Compton	385.5	3750.3	33°53'19"	118°14'17"
Costa Mesa	413.8	3724.2	33°39'21"	117°55'47"
Downtown Los Angeles	386.9	3770.1	34°04'02"	118°13'31"
El Toro	436.0	3720.9	33°37'39"	117°41'25"
Fontana	455.4	3773.9	34°06'24"	117°29'01"
Indio	572.3	3731.0	33°43'06"	116°13'11"
King Harbor	371.2	3744.4	33°50'00"	118°23'30"
La Canada	388.2	3786.1	34°12'42"	118°12'49"
La Habra	412.0	3754.0	33°55'28"	117°57'07"
Lancaster	396.0	3839.5	34°41'38"	118°08'08"
Lennox	373.0	3755.0	33°55'46"	118°22'26"
Long Beach	390.0	3743.0	33°49'24"	118°11'19"
Los Alamitos	404.5	3739.8	33°47'45"	118°01'54"
Lynwood	388.0	3754.0	33°55'20"	118°12'42"
Malibu	344.0	3766.9	34°01'59"	118°41'23"
Newhall	355.5	3805.5	34°22'59"	118°31'02"
Norco	446.8	3749.0	33°52'54"	117°34'31"
Palm Springs	542.5	3742.5	33°49'25"	116°32'27"
Pasadena	396.0	3778.5	34°08'38"	118°07'41"
Pico Rivera	402.3	3764.1	34°00'53"	118°03'29"
Pomona	430.8	3769.6	34°03'60"	117°44'60"
Redlands	486.2	3769.4	34°04'00"	117°09'00"
Reseda	359.0	3785.0	34°11'54"	118°31'49"
Riverside	464.8	3758.6	33°58'10"	117°22'50"
Santa Ana Canyon	431.0	3748.4	33°52'32"	117°44'46"
Upland	440.0	3773.1	34°05'55"	117°39'02"
Vernon	387.4	3762.5	33°59'55"	118°13'10"
Walnut	420.0	3761.7	33°59'41"	117°51'58"
West Los Angeles	372.3	3768.6	34°03'08"	118°23'01"
Whittier	405.3	3754.0	33°55'26"	118°01'28"

As mentioned earlier, CAPCOA has developed industry-wide risk assessment guidelines for gasoline service stations (CAPCOA, 1997). These guidelines were developed to promote consistency throughout the State. However, CAPCOA recognized that many of the districts in the State have developed modeling methods and procedures unique to their situations. To address these differences among districts, CAPCOA allows for a district to deviate from the published guidelines as evidenced by the following statement in the industry-wide risk assessment guidelines for gas stations (CAPCOA, 1997):

> *This effort was initiated to provide a cost effective and uniform method for calculating gasoline station emission inventories and risk assessment for the thousands of gasoline stations throughout the State. However, districts may use other emission information and modeling procedures appropriate in their district.*

The modeling performed here followed CAPCOA guidelines unless otherwise noted.

Loading and breathing emissions exit the underground storage tank vent pipe and are thus treated in ISCST3 as a point source. The height and diameter of the vent are assumed to be 3.7 meters (12 feet) and 0.05 meters (2 inches), respectively.

Refueling and spillage emissions are modeled as volume sources with horizontal dimensions of 13 meters by 13 meters to correspond to the dimensions of the pump islands and a vertical dimension of 5 meters to correspond to the height of the canopy. For refueling, the release height is assumed to be 1 meter to approximate the height of a vehicle fuel tank inlet, whereas spillage emissions are assumed to be released at ground level since nearly all the gasoline from spillage reaches the ground. These dimensions match CAPCOA's recommendations except for the vertical dimension of the volume source; CAPCOA recommends 4 meters. The AQMD has been requiring gas station risk assessments for permitting since early 1990s using a vertical dimension of the volume source corresponding to the pump island canopy top. Assuming a 5-meter vertical dimension continues this modeling practice.

Both the vent pipe and the volume sources are assumed to be co-located at the center of the service station property. Ideally, the locations of the vent pipes and pump islands would be determined on a site by site basis. Unfortunately, that level of detail is not feasible for the industry-wide risk assessment presented here due to the large number of facilities.

It is assumed that the gas station described above operates continuously throughout the year. Further, it is assumed that 80 percent of the daily emissions occur equally each hour from 6 a.m. to 8 p.m. and the remaining 20 percent of the daily emissions occur equally each hour from 8 p.m. to 6 a.m.

A sample ISCST3 model input file for the generic retail service station described above is given in Exhibit 1.

Exhibit 1: ISCST3 Model Input File for The Generic Gasoline Service Station

```
CO STARTING
   TITLEONE  Gasoline Dispensing - 1.0 MM gal/yr
   TITLETWO  80/20 emissions split; 5 m canopy top; West LA meteorology
   MODELOPT  NOCALM  URBAN  CONC
   AVERTIME  PERIOD
   POLLUTID  Benzene
   RUNORNOT  RUN
   ERRORFIL  ERRORS.OUT
CO FINISHED

SO STARTING
   LOCATION  1  POINT     0.0     0.0     0.0
   LOCATION  2  POINT     0.0     0.0     0.0
   LOCATION  3  VOLUME    0.0     0.0     0.0
   LOCATION  4  VOLUME    0.0     0.0     0.0

** Point Source            QS         HS        TS        VS        DS
** Volume Source           QS         HS      SYINIT    SZINIT
   SRCPARAM  1          1.81E-05     3.66     291.0    3.50E-04   0.051
   SRCPARAM  2          1.08E-06     3.66     289.0    1.06E-04   0.051
   SRCPARAM  3          1.38E-05     1.00      3.02      2.33
   SRCPARAM  4          6.04E-05     0.00      3.02      2.33
   EMISFACT  1-4  HROFDY   6*0.48  14*1.371  4*0.48
   SRCGROUP  ALL
SO FINISHED

RE STARTING
   GRIDPOLR POL1 STA
                ORIG     0.0     0.0
                DIST  25 30 40 50 60 70 80 90 100 125 150 175 200
                DIST  250 300 350 400 450 500 600 700 800 900 1000
                GDIR     36     10.0     10.0
   GRIDPOLR POL1 END
RE FINISHED

ME STARTING
   INPUTFIL  c:\metdata\ascii\wla.asc
   ANEMHGHT  10 METERS
   SURFDATA  52158  1981
   UAIRDATA  91919  1981
ME FINISHED

OU STARTING
   RECTABLE  ALLAVE  FIRST
OU FINISHED
```

Risk Assessment Methods

The risk assessment methods used in the AQMD's *Risk Assessment Procedures for Rule 1401 and 212 (Version 7.0)* are used to calculate the cancer risks from retail gasoline service stations. The cancer risk (CR) is calculated as follows:

$$CR = \text{Cancer Potency (CP)} \bullet \text{Dose-Inhalation (DI)} \bullet \text{Multipathway Factor (MP)}$$

where,

$$DI = C_{air} \bullet DBR \bullet EVF \bullet 10^{-6} \bullet MP$$

$$C_{air} = C_{ann} \bullet AF_{ann}$$

Therefore, the equation for calculating cancer risks is:

$$CR = CP \bullet C_{ann} \bullet AF_{ann} \bullet DBR \bullet EVF \bullet 10^{-6} \bullet MP$$

CP is cancer potency in units of $(mg/kg\text{-}day)^{-1}$. The cancer potency for benzene is 0.1 $(mg/kg\text{-}day)^{-1}$. C_{ann} is the model-predicted annual average benzene concentration in $\mu g/m^3$. AF_{ann} is a concentration adjustment factor. It adjusts the model-predicted annual average benzene concentration, which are 24 hrs/day and 7 days/week averages, to an average for the off-site worker exposure period (i.e., 8 hrs/day and 5 days/week). This is necessary because the worker breathing rate of 149 L/kg-day is only applicable to the work-day and work-week exposure. It is assumed that the worker is only exposed while at work. Since the generic gasoline service station is assumed to operate continuously, AF_{ann} is assumed to be 1 for both worker and residential receptors.

DBR is the daily breathing rate in units of L/kg-day. The daily breathing rates for workers and residents are 149 L/kg-day and 302 L/kg-day, respectively. EVF is the exposure value factor, which is assumed to be 0.38 for workers and 0.96 for residents. The multi-pathway adjustment factor (MP) is used for substances that may contribute to risk from exposures other than inhalation. Inhalation is the only pathway into the body for benzene; therefore, the multipathway factor is 1.

Risk Tables

Applying the methods and equations presented above, risk tables are developed for a generic retail gasoline service station. Tables 3 and 4 provide the maximum cancer risk for a gasoline dispensing station with a one million gallon per year throughput at various residential and occupational distances, respectively. The modeled stations are assumed to have 95% vapor recovery (Phase I and II) with cancer risk calculated for different locations.

Cancer risks from a typical gasoline service station can be estimated from Tables 3 and 4 as follows: First, determine which of the 35 locations in these tables is closest to the gas station or best represents the facility. AQMD staff made use of location information that is available in the AQMD's permit database. The South Coast AQMD is broken up into 38

source/receptor areas as shown in Figure 2. The source/receptor area is provided for each facility in AQMD's permit database. As shown in Table C-5, AQMD staff assigned one of the 35 meteorological sites to each source receptor area, which was then used to choose a meteorological site for each gasoline dispensing facility.

Next, determine the distance from the service station to the nearest residential and occupational location. Using the above information, pick the cancer risk from the appropriate cell in Tables 3 and 4. Lastly, scale the cancer risk by the actual gasoline throughput of the service station. An example of a risk calculation is provided for a hypothetical gasoline service station in a subsequent section.

AQMD followed CAPCOA's recommendation, and did not consider the one-hour maximum downwind concentrations of the components in gasoline emissions for non-cancer acute hazard index calculations. Appendix I of the CAPCOA document contains a detailed discussion of the relative toxicity of substances in gasoline. It shows that benzene is the most important substance driving the risk in the gasoline service stations. Toluene and xylene are the only substances which are associated with acute adverse health effects. Not until the benzene concentrations are more than two orders of magnitude above the 10 per million cancer risk threshold, do the emissions of toluene and xylene begin to cause adverse health effects. AQMD's preliminary calculations of gasoline service station cancer risk based on the information submitted by facilities, show that none of the gasoline service stations exceed a cancer risk of 100 per million, and therefore, the downwind toluene and xylene concentrations do not need to be determined.

Table 3: Residential Cancer Risks (in one million) for Gasoline Service Station (1 MM gal/yr throughput)

Downwind Distance (meters)

Location	25	30	40	50	60	70	80	90	100	125	150	175	200
Anaheim	3.15	2.43	1.58	1.10	0.81	0.62	0.49	0.40	0.33	0.22	0.16	0.12	0.09
Azusa	3.61	2.82	1.85	1.30	0.96	0.74	0.59	0.48	0.40	0.27	0.19	0.14	0.11
Banning	2.92	2.28	1.50	1.07	0.79	0.61	0.49	0.40	0.33	0.22	0.16	0.12	0.09
Burbank	3.15	2.50	1.68	1.20	0.90	0.69	0.55	0.45	0.38	0.25	0.18	0.14	0.11
Canoga Park	3.09	2.48	1.69	1.22	0.92	0.72	0.57	0.47	0.39	0.27	0.19	0.15	0.12
Compton	3.09	2.45	1.64	1.17	0.87	0.67	0.54	0.44	0.36	0.24	0.18	0.13	0.10
Costa Mesa	3.34	2.61	1.73	1.22	0.91	0.70	0.56	0.45	0.38	0.26	0.18	0.14	0.11
Downtown LA	2.31	1.85	1.25	0.90	0.67	0.52	0.42	0.34	0.28	0.19	0.14	0.10	0.08
El Toro	2.51	1.92	1.23	0.86	0.65	0.51	0.41	0.34	0.29	0.19	0.14	0.11	0.09
Fontana	3.58	2.93	2.05	1.50	1.14	0.89	0.72	0.59	0.50	0.34	0.25	0.19	0.15
Indio	2.48	1.96	1.30	0.92	0.69	0.53	0.42	0.34	0.29	0.19	0.14	0.10	0.08
King Harbor	2.75	2.14	1.39	0.97	0.72	0.55	0.43	0.35	0.29	0.19	0.14	0.10	0.08
La Canada	4.16	3.45	2.46	1.82	1.39	1.09	0.88	0.73	0.61	0.42	0.30	0.23	0.18
La Habra	2.97	2.28	1.51	1.11	0.84	0.66	0.53	0.44	0.37	0.25	0.18	0.14	0.11
Lancaster	3.56	2.82	1.89	1.35	1.01	0.78	0.62	0.51	0.42	0.29	0.21	0.16	0.12
Lennox	3.51	2.81	1.91	1.38	1.04	0.81	0.65	0.53	0.44	0.30	0.22	0.16	0.13
Long Beach	4.38	3.61	2.54	1.86	1.42	1.11	0.90	0.74	0.62	0.42	0.31	0.23	0.18
Los Alamitos	2.76	2.18	1.46	1.05	0.78	0.61	0.49	0.40	0.33	0.23	0.16	0.12	0.10
Lynwood	3.70	2.94	1.98	1.42	1.06	0.83	0.66	0.54	0.45	0.30	0.22	0.17	0.13
Malibu	2.91	2.32	1.60	1.16	0.87	0.68	0.55	0.45	0.38	0.26	0.19	0.14	0.11
Newhall	3.53	2.83	1.93	1.40	1.05	0.82	0.66	0.54	0.45	0.30	0.22	0.17	0.13
Norco	3.39	2.67	1.77	1.25	0.93	0.72	0.57	0.46	0.38	0.26	0.19	0.14	0.11
Palm Springs	3.61	2.90	1.99	1.43	1.08	0.84	0.68	0.55	0.46	0.31	0.23	0.17	0.14
Pasadena	2.89	2.37	1.66	1.22	0.93	0.73	0.59	0.48	0.40	0.28	0.20	0.15	0.12
Pico Rivera	3.52	2.78	1.85	1.32	0.98	0.76	0.61	0.49	0.41	0.28	0.20	0.15	0.12
Pomona	5.77	4.67	3.21	2.32	1.75	1.37	1.09	0.90	0.75	0.51	0.37	0.28	0.22
Redlands	4.89	4.11	2.98	2.22	1.71	1.35	1.09	0.90	0.76	0.52	0.38	0.29	0.23
Reseda	3.12	2.42	1.57	1.10	0.81	0.62	0.49	0.40	0.33	0.22	0.16	0.12	0.10
Riverside	4.13	3.29	2.21	1.58	1.18	0.92	0.73	0.60	0.50	0.33	0.24	0.18	0.14
Santa Ana Canyon	3.84	2.98	1.93	1.35	0.99	0.76	0.60	0.49	0.41	0.27	0.20	0.15	0.12
Upland	2.80	2.21	1.49	1.07	0.80	0.62	0.50	0.41	0.34	0.23	0.17	0.13	0.10
Vernon	3.97	3.25	2.26	1.65	1.25	0.98	0.79	0.64	0.54	0.37	0.27	0.20	0.16
Walnut	3.69	2.90	1.93	1.37	1.02	0.78	0.62	0.51	0.42	0.28	0.20	0.15	0.12
West LA	5.54	4.36	2.90	2.05	1.53	1.18	0.94	0.77	0.64	0.43	0.31	0.23	0.18
Whittier	2.63	2.05	1.40	1.01	0.76	0.60	0.48	0.39	0.33	0.22	0.16	0.12	0.10

Table 3(Cont.): Residential Cancer Risks (in one million) for Gasoline Service Station (1 MM gal/yr throughput)

Downwind Distance (meters)

Location	250	300	350	400	450	500	600	700	800	900	1000
Anaheim	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00
Azusa	0.07	0.05	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01
Banning	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Burbank	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Canoga Park	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Compton	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Costa Mesa	0.07	0.05	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Downtown LA	0.05	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00
El Toro	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Fontana	0.10	0.07	0.06	0.04	0.04	0.03	0.02	0.02	0.01	0.01	0.01
Indio	0.05	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00
King Harbor	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00
La Canada	0.12	0.09	0.07	0.05	0.04	0.04	0.03	0.02	0.02	0.01	0.01
La Habra	0.07	0.05	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Lancaster	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Lennox	0.09	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Long Beach	0.12	0.09	0.07	0.05	0.04	0.04	0.03	0.02	0.02	0.01	0.01
Los Alamitos	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Lynwood	0.09	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Malibu	0.08	0.05	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Newhall	0.09	0.06	0.05	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01
Norco	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Palm Springs	0.09	0.07	0.05	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01
Pasadena	0.08	0.06	0.04	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Pico Rivera	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Pomona	0.15	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.02	0.01
Redlands	0.16	0.11	0.09	0.07	0.06	0.05	0.03	0.03	0.02	0.02	0.01
Reseda	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Riverside	0.09	0.07	0.05	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01
Santa Ana Canyon	0.08	0.05	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
Upland	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Vernon	0.11	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01
Walnut	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01
West LA	0.12	0.09	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01
Whittier	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01

Table 4: Occupational Cancer Risks (in one million) for Gasoline Service Station (1 MM gal/yr throughput)

Downwind Distance (meters)

Location	25	30	40	50	60	70	80	90	100	125	150	175	200
Anaheim	0.62	0.48	0.31	0.22	0.16	0.12	0.10	0.08	0.06	0.04	0.03	0.02	0.02
Azusa	0.71	0.56	0.36	0.26	0.19	0.15	0.12	0.09	0.08	0.05	0.04	0.03	0.02
Banning	0.58	0.45	0.30	0.21	0.16	0.12	0.10	0.08	0.07	0.04	0.03	0.02	0.02
Burbank	0.62	0.49	0.33	0.24	0.18	0.14	0.11	0.09	0.07	0.05	0.04	0.03	0.02
Canoga Park	0.61	0.49	0.33	0.24	0.18	0.14	0.11	0.09	0.08	0.05	0.04	0.03	0.02
Compton	0.61	0.48	0.32	0.23	0.17	0.13	0.11	0.09	0.07	0.05	0.03	0.03	0.02
Costa Mesa	0.66	0.52	0.34	0.24	0.18	0.14	0.11	0.09	0.07	0.05	0.04	0.03	0.02
Downtown LA	0.46	0.36	0.25	0.18	0.13	0.10	0.08	0.07	0.06	0.04	0.03	0.02	0.02
El Toro	0.49	0.38	0.24	0.17	0.13	0.10	0.08	0.07	0.06	0.04	0.03	0.02	0.02
Fontana	0.71	0.58	0.40	0.30	0.22	0.18	0.14	0.12	0.10	0.07	0.05	0.04	0.03
Indio	0.49	0.39	0.26	0.18	0.14	0.10	0.08	0.07	0.06	0.04	0.03	0.02	0.02
King Harbor	0.54	0.42	0.27	0.19	0.14	0.11	0.09	0.07	0.06	0.04	0.03	0.02	0.02
La Canada	0.82	0.68	0.49	0.36	0.27	0.22	0.17	0.14	0.12	0.08	0.06	0.05	0.04
La Habra	0.59	0.45	0.30	0.22	0.17	0.13	0.11	0.09	0.07	0.05	0.04	0.03	0.02
Lancaster	0.70	0.56	0.37	0.27	0.20	0.15	0.12	0.10	0.08	0.06	0.04	0.03	0.02
Lennox	0.69	0.56	0.38	0.27	0.20	0.16	0.13	0.10	0.09	0.06	0.04	0.03	0.03
Long Beach	0.86	0.71	0.50	0.37	0.28	0.22	0.18	0.15	0.12	0.08	0.06	0.05	0.04
Los Alamitos	0.54	0.43	0.29	0.21	0.15	0.12	0.10	0.08	0.07	0.04	0.03	0.02	0.02
Lynwood	0.73	0.58	0.39	0.28	0.21	0.16	0.13	0.11	0.09	0.06	0.04	0.03	0.03
Malibu	0.57	0.46	0.31	0.23	0.17	0.14	0.11	0.09	0.07	0.05	0.04	0.03	0.02
Newhall	0.70	0.56	0.38	0.28	0.21	0.16	0.13	0.11	0.09	0.06	0.04	0.03	0.03
Norco	0.67	0.53	0.35	0.25	0.18	0.14	0.11	0.09	0.08	0.05	0.04	0.03	0.02
Palm Springs	0.71	0.57	0.39	0.28	0.21	0.17	0.13	0.11	0.09	0.06	0.04	0.03	0.03
Pasadena	0.57	0.47	0.33	0.24	0.18	0.14	0.12	0.10	0.08	0.05	0.04	0.03	0.02
Pico Rivera	0.69	0.55	0.37	0.26	0.19	0.15	0.12	0.10	0.08	0.05	0.04	0.03	0.02
Pomona	1.14	0.92	0.63	0.46	0.35	0.27	0.22	0.18	0.15	0.10	0.07	0.06	0.04
Redlands	0.96	0.81	0.59	0.44	0.34	0.27	0.22	0.18	0.15	0.10	0.08	0.06	0.05
Reseda	0.62	0.48	0.31	0.22	0.16	0.12	0.10	0.08	0.06	0.04	0.03	0.02	0.02
Riverside	0.81	0.65	0.44	0.31	0.23	0.18	0.14	0.12	0.10	0.07	0.05	0.04	0.03
Santa Ana Canyon	0.76	0.59	0.38	0.27	0.20	0.15	0.12	0.10	0.08	0.05	0.04	0.03	0.02
Upland	0.55	0.44	0.29	0.21	0.16	0.12	0.10	0.08	0.07	0.05	0.03	0.02	0.02
Vernon	0.78	0.64	0.45	0.33	0.25	0.19	0.15	0.13	0.11	0.07	0.05	0.04	0.03
Walnut	0.73	0.57	0.38	0.27	0.20	0.15	0.12	0.10	0.08	0.06	0.04	0.03	0.02
West LA	1.09	0.86	0.57	0.41	0.30	0.23	0.19	0.15	0.13	0.08	0.06	0.05	0.04
Whittier	0.52	0.40	0.28	0.20	0.15	0.12	0.09	0.08	0.06	0.04	0.03	0.02	0.02

Table 4(Cont.): Occupational Cancer Risks (in one million) for Gasoline Service Station (1 MM gal/yr throughput)

Downwind Distance (meters)

Location	250	300	350	400	450	500	600	700	800	900	1000
Anaheim	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Azusa	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Banning	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Burbank	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Canoga Park	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Compton	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Costa Mesa	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Downtown LA	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
El Toro	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fontana	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Indio	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
King Harbor	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Canada	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
La Habra	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Lancaster	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Lennox	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Long Beach	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Los Alamitos	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lynwood	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Malibu	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Newhall	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Norco	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Springs	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Pasadena	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Pico Rivera	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Pomona	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Redlands	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Reseda	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riverside	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Santa Ana Canyon	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Upland	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vernon	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Walnut	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
West LA	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Whittier	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Figure 2
Source/Receptor Areas

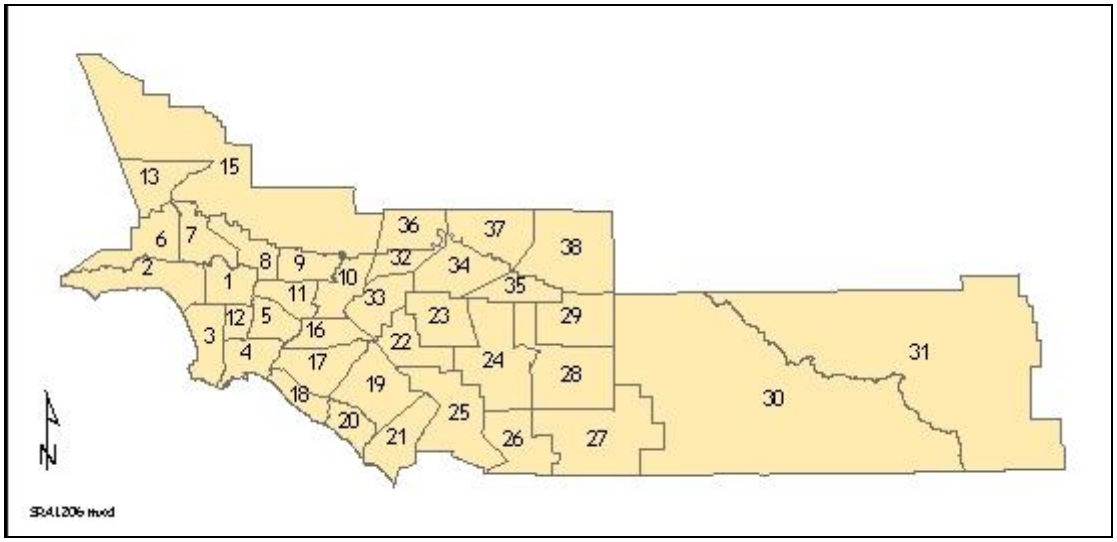

Table 5. Meteorological Stations for Each Source/Receptor Area.

Meteorological Station	Source/ Receptor Area	Meteorological Station	Source/ Receptor Area
Anaheim	17	Newhall	13, 15
Azusa	9	Palm Springs	30, 31
Banning	29	Pasadena	8
Burbank	7	Pico Rivera	11
Costa Mesa	18, 20	Pomona	10
Downtown Los Angeles	1	Redlands	35, 38
El Toro	19, 21	Reseda	6
Fontana	34, 37	Riverside	22-28
La Habra	16	Upland	32, 33, 36
Lennox	3	West Los Angeles	2
Long Beach	4	Whittier	5
Lynwood	12		

Example Calculations

The following example demonstrates how the AQMD staff plans to assign health risk values for retail gasoline dispensing facilities based on information received and using Tables 3 and 4.

The calculation steps are as follows:

1. **Cancer Risk (CR):** The AQMD will assign cancer risk values to each retail gasoline dispensing facility based on facility location, process information, and receptor proximity.
   a. *Residential CR:* Use the facility location and the distance to the nearest resident to identify the risk. The residential CRs for retail gasoline dispensing are contained in Table 3.
   b. *Occupational CR:* Use the facility location and the distance to the nearest worker to identify the risk. The occupational CRs for retail gasoline dispensing are contained in Table 4.
   c. *Maximum Individual CR (MICR):* Select the greater CR between the residential and occupational CRs (as identified above).

Please note the following when calculating risk values for gasoline dispensing facilities:

- The gasoline dispensing risk tables (Tables 3 and 4) are based on a gasoline throughput of 1 million (MM) gallons per year (gal/yr). Actual facility throughput should be multiplied by the values contained in the gasoline dispensing risk tables to calculate the appropriate facility risk.
- The AQMD maintains 35 meteorological stations as shown in Figure 1. If there are no meteorological stations in the city of the facility, the closest meteorological station to the facility should be used.
- The gasoline dispensing risk tables (Tables 3 and 4) are based on discrete downwind distances, which cover two pages. If the actual downwind distance is not listed in the tables, then linear interpolation between distance cells is acceptable.
- Although gasoline vapors and its TAC constituents (for example, benzene, toluene, and xylene) have non-cancer impacts, **the risks from retail gasoline dispensing facilities are dominated by cancer risk**. Therefore, hazard index for these facilities are not calculated.

Example: A retail gasoline dispensing facility submits the following information: 15 MM gal/yr gasoline throughput, located in Pomona, nearest residential receptor 250 meters away, and nearest occupational receptor 25 meters away.

In this example the actual downwind distances are in the tables. However, if the actual downwind distances are not in the table, then linear interpolation between distance cells is acceptable to obtain cancer risks for the actual downwind distances.

1. **Cancer Risk (CR):**

   a. *Residential CR:* Using Table 3, the residential cancer risk is 0.15 in one million (250 meters and Pomona) for 1 MM gal/yr. Since the facility's gasoline throughput for this example is 15 MM gal/yr, the corresponding residential cancer risk is 2.3 in one million.

   Residential CR = $\frac{\text{0.15 in one million}}{\text{(1 MM gal/yr)}} \times \text{(15 MM gal/yr)}$

Residential CR = 2.3 in one million

   a. *Occupational CR:* Using Table 4, the occupational cancer risk is 1.14 in one million (25 meters and Pomona) for 1 MM gal/yr. Since the facility's gasoline throughput for this example is 15 MM gal/yr, the corresponding occupational cancer risk is 17.1 in one million.

   Occupational CR (GDS) = $\frac{\text{1.14 in one million}}{\text{(1 MM gal/yr)}} \times \text{(15 MM gal/yr)}$

Occupational CR = 17.1 in one million

   b. *MICR:* The MICR for this IWS facility (GDS) is **17.1** in one million (occupational receptor).

Appendix T

Update to the Determination of Biologically Equivalent or Superior Preservation for the Exchange Project

Rincon Consultants, Inc.

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April 5, 2019
Project No: 18-05645

Brian Norton, Senior Planner
City of Riverside
Planning Division, Community Development Department
3900 Main Street, 3rd Floor
Riverside, California 92501
Via email: BNorton@riversideca.gov

Subject: **Update to the Determination of Biologically Equivalent or Superior Preservation for the Exchange Project, City of Riverside, California**

Dear Mr. Norton:

This document is intended to be an update to the Determination of Biologically Equivalent or Superior Preservation (DBESP) prepared by Rincon Consultants (Rincon) in January 2019 for the Exchange Project (project) located in the City of Riverside, California. This update has been prepared upon request from the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW).

Project Location and Description

The approximately 35.4-acre project site is located in the northwestern section of the City of Riverside and is bounded generally by Orange Street to the west, Strong Street to the north, State Route (SR) 60 to the south and Interstate 215 (I-215) to the east. The site is in an urban area, has been previously graded and developed, and is surrounded by roads, highways, residential buildings, and a school. The proposed mixed-use project would consist of multi-family residential dwelling units, multi-tenant commercial buildings, a vehicle fueling station, a drive-thru restaurant, two hotels, recreational vehicle (RV) overnight parking, and space for intermittent outdoor entertainment and on-site activities (e.g., farmers market, car shows).

Project Background

Rincon Consultants completed a Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis and Jurisdictional Delineation (JD) for the project in 2018. The Consistency Analysis and JD identified riverine resources protected per the guidelines in section 6.1.2 (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools) of the MSHCP. These resources will be permanently impacted during the proposed project and are unavoidable. To ensure compliance with MSHCP guidelines that state impacts to riverine resources shall be mitigated such that the lost functions and values as they relate to plant and wildlife species covered in the MSHCP are replaced to conditions that are equivalent or superior, Rincon prepared a DBESP in January 2019. The January 2019 DBESP proposed a mitigation ratio of “no less than 1:1” for unavoidable impacts to 1.15 acres of riverine resources through the purchase of the appropriate number of riparian/riverine restoration credits from the nearby Riverside-Corona Resource Conservation District (RCRCD).

Update to Proposed Off-site Riparian/Riverine Habitat Restoration and Enhancement

For unavoidable impacts to riparian/riverine systems, the MSHCP requires that a project establishes that it would be "biologically equivalent or superior" when compared to complete avoidance of the existing habitat. The project site contains 1.15 acres of riverine resources that will be permanently impact by the project. Unavoidable impacts to riverine resources shall be mitigated through the purchase of the appropriate number of riparian/riverine restoration credits from the nearby Riverside-Corona Resource Conservation District (RCRCD). After discussions USFEWS and CDFW the mitigation ratios provided in the January 2019 DBESP are being updated to ensure no net loss of riparian/riverine resources within the MSHCP boundaries. These impacts are now proposed to be mitigated at a 2:1 ratio.

Conclusions

The proposed project will be consistent with MSHCP Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools. With the purchase of restoration credits from the nearby RCRCD at a 2:1 ratio, the proposed project will result in an alternative that is equivalent or superior to the impacted riparian/riverine resources, and any lost functions and values of habitat for species covered by the MSHCP will be replaced through off-site mitigation.

Sincerely,
Rincon Consultants, Inc.

Megan Minter
Senior Biologist

Appendix U

The Exchange Supplemental Air Quality Assessment

URBAN CROSSROADS

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urbanxroads.com

April 16, 2019

Mr. Jim Guthrie
AFG LLC
1451 Research Park Dr., Suite 200
Riverside, CA 92507

SUBJECT: THE EXCHANGE SUPPLEMENTAL AIR QUALITY ASSESSMENT

Dear Mr. Jim Guthrie:

Urban Crossroads, Inc. is pleased to submit this Supplemental Air Quality Assessment for The Exchange ("Project"), which is located in the City of Riverside. This letter has been prepared to supplement information in *The Exchange Air Quality Impact Analysis* ("AQIA") prepared in September 2018 by Urban Crossroads, Inc.

PURPOSE

A recent Supreme Court of California decision, *Sierra Club v. County of Fresno (Friant Ranch)*, found an EIR inadequate and states that:

The EIR should be revised to relate the expected adverse air quality impacts to likely health consequences or explain in meaningful detail why it is not feasible at the time of drafting to provide such an analysis, so that the public may make informed decisions regarding the costs and benefits of the Project.

To be clear, the Project at issue in *Friant Ranch* was a 942-acre Specific Plan that involved a commercial master planned community of approximately 2,500 dwelling units and extensive commercial supporting development. The anticipated air quality impacts resulting from this development included significant and unavoidable emissions of multiple criteria pollutants – including significant emissions of *both* primary ozone precursors (NOx and ROGs) – at levels that exceeded the daily thresholds of significance several times over. Further, no formal Health Risk Assessment was prepared. In contrast, The Exchange Project proposes to develop only 35.4-acres and, as mitigated, has less than significant air quality impacts as to all criteria pollutants except for NOx. Additionally, a formal Air Toxic and Criterial Pollutant Health Risk Assessment was prepared for the Project (see Draft EIR Appendix E), and a supplemental Health Risk Assessment was thereafter prepared to more closely analyze the Project's proposed gas-station facility – both of which confirmed that no potentially significant health risks would result. As such, the portions of the *Friant Ranch* decision addressing air quality and health risk impacts is not clearly applicable to The Exchange Project.

Nonetheless, and given that the analysis for this Project identifies a significant and unavoidable project level and cumulative impacts with regard to Nitrogen Dioxide (NO_X) emissions, the following assessment serves to provide an analysis in conformance with the *Friant Ranch* decision which further clarifies, amplifies, and augments the air quality analysis already undertaken for the Project.

As summarized in the AQIA, NOx is an ozone precursor with the potential to contribute to ozone non-attainment conditions in the Basin. The Project's operational-source NO_X emissions will exceed applicable SCAQMD numeric regional mass daily thresholds for the Project's on-going operational activity. The Project would not exceed any of the SCAQMD's numeric regional mass daily thresholds for the Project's short-term construction activity. Per SCAQMD significance guidance, these impacts at the project level are also considered cumulatively significant and would persist over the life of the proposed project.

BACKGROUND

REGIONAL AIR QUALITY IMPROVEMENT

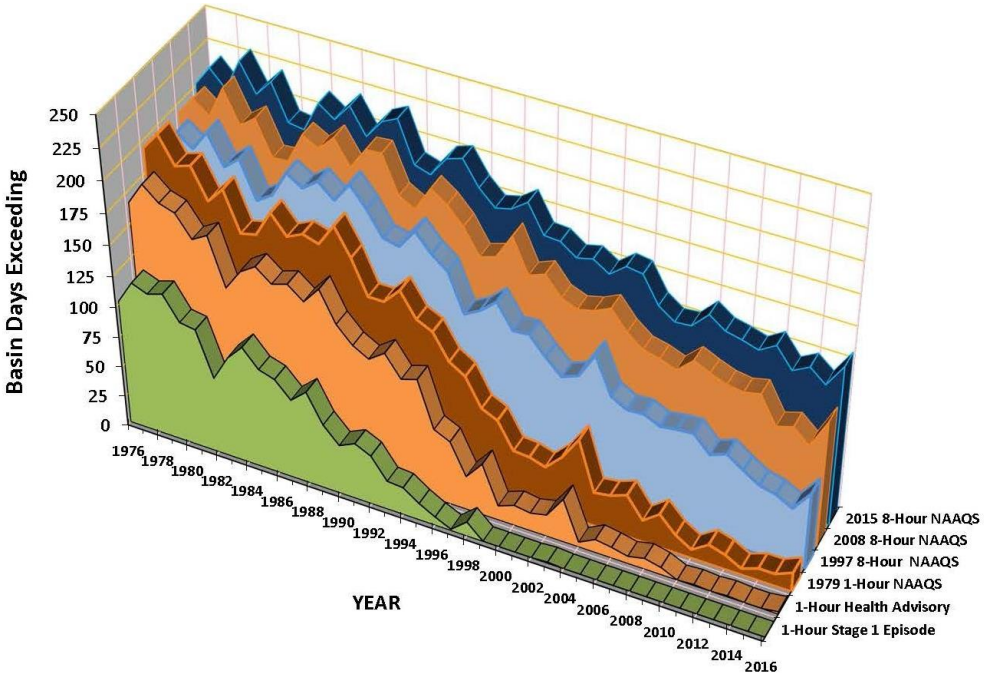
The Project is within the jurisdiction of the SCAQMD. In 1976, California adopted the Lewis Air Quality Management Act which created SCAQMD from a voluntary association of air pollution control districts in Los Angeles, Orange, Riverside, and San Bernardino counties. The geographic area of which SCAQMD consists is known as the SCAB. SCAQMD develops comprehensive plans and regulatory programs for the region to attain federal standards by dates specified in federal law. The agency is also responsible for meeting state standards by the earliest date achievable, using reasonably available control measures.

SCAQMD rule development through the 1970s and 1980s resulted in dramatic improvement in Basin air quality. Nearly all control programs developed through the early 1990s relied on (i) the development and application of cleaner technology; (ii) add-on emission controls, and (iii) uniform CEQA review throughout the Basin. Industrial emission sources have been significantly reduced by this approach and vehicular emissions have been reduced by technologies implemented at the state level by CARB.

As discussed above, the SCAQMD is the lead agency charged with regulating air quality emission reductions for the entire Basin. SCAQMD created AQMPs which represent a regional blueprint for achieving healthful air on behalf of the 16 million residents of the South Coast Basin. The 2012 AQMP states, "the remarkable historical improvement in air quality since the 1970's is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs," (1).

Ozone, NO_x, VOC, and CO have been decreasing in the Basin since 1975 and are projected to continue to decrease through 2020 (2). These decreases result primarily from motor vehicle controls and reductions in evaporative emissions. Although vehicle miles traveled in the Basin continue to increase, NO_x and VOC levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_x emissions from electric utilities have also decreased due to use of cleaner fuels and renewable energy. Ozone contour maps show that the number of days exceeding the national 8-hour standard has decreased between 1997 and 2007. In the 2007 period, there was an overall decrease in exceedance days compared with the 1997 period. Ozone levels in the SCAB have decreased substantially over the last 30 years as shown in Table 1 (3). Today, the maximum measured concentrations are approximately one-third of concentrations within the late 70's.

TABLE 1: SOUTH COAST AIR BASIN OZONE TREND



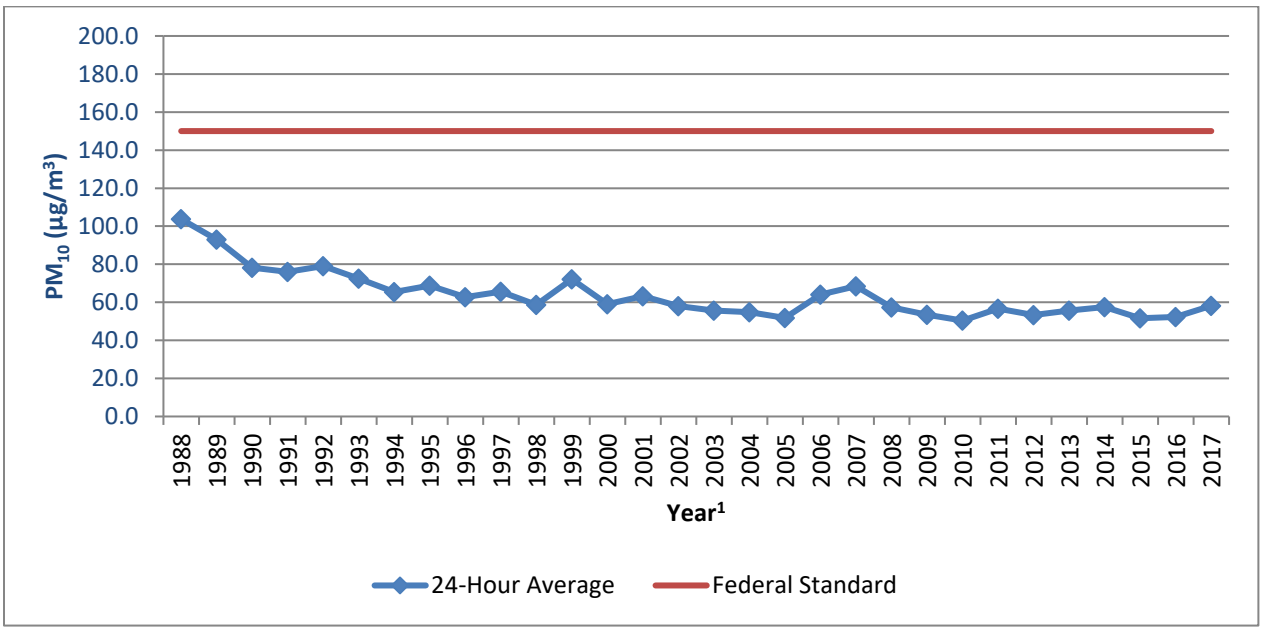
Source: Air Quality Management District

The overall trends of PM_{10} and $PM_{2.5}$ levels in the air (not emissions) show an overall improvement since 1975. Direct emissions of PM_{10} have remained somewhat constant in the Basin and direct emissions of $PM_{2.5}$ have decreased slightly since 1975. Area wide sources (fugitive dust from roads, dust from construction and demolition, and other sources) contribute the greatest amount of direct particulate matter emissions.

As with other pollutants, the most recent PM_{10} statistics and also show overall improvement as illustrated in Tables 2 and 3. During the period for which data are available, the 24-hour national annual average concentration for PM_{10} decreased by approximately 44 percent, from 103.7 µg/m³ in 1988 to 58.2 µg/m³ in 2017 (4). Although the values are below the federal standard, it should be noted that there are days within the year where the concentrations will exceed the threshold. The 24-hour state annual average for emissions for PM_{10}, have decreased by approximately 56 percent since 1988 (4). Although data in the late 1990's show some variability, this is probably due to meteorology rather than a change in emissions. Similar to the ambient concentrations, the calculated number of days above the 24-hour PM_{10} standards has also shown an overall drop.

Table 4 shows the most recent 24-hour average $PM_{2.5}$ concentrations in the SCAB from 1999 through 2017. Overall, the national and state annual average concentrations have decreased by almost 52 percent and 30 percent respectively (4). The SCAB is currently designated as nonattainment for the State and federal $PM_{2.5}$ standards.

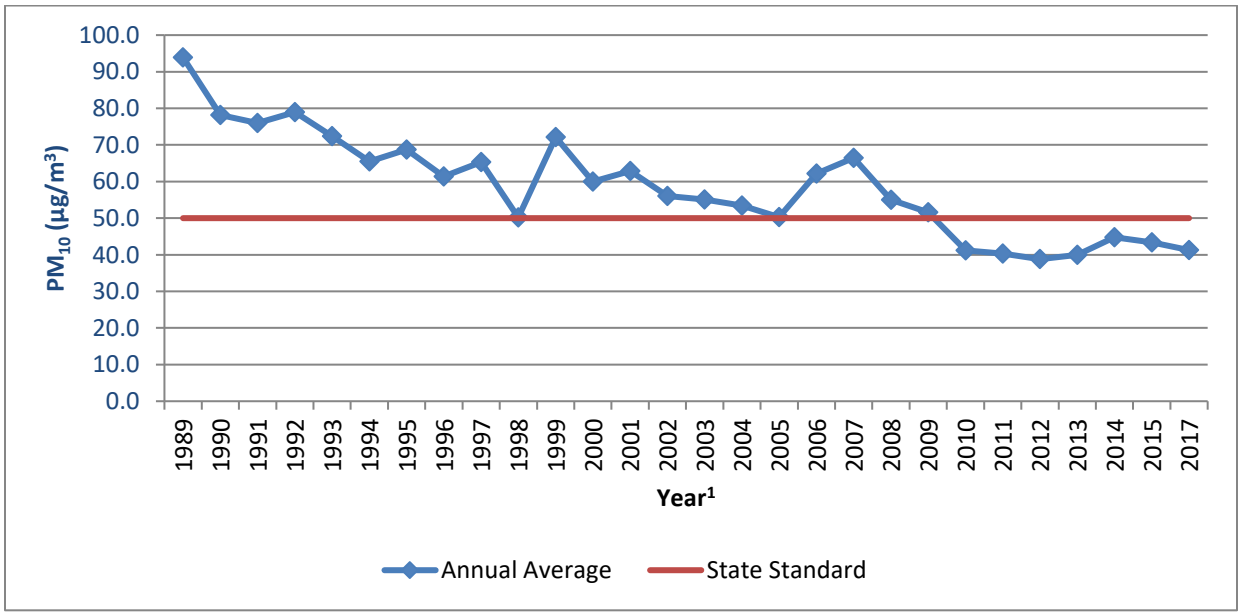
TABLE 2: SOUTH COAST AIR BASIN AVERAGE 24-HOUR CONCENTRATION PM10 TREND1



Source: California Air Resource Board

[1] Some year have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

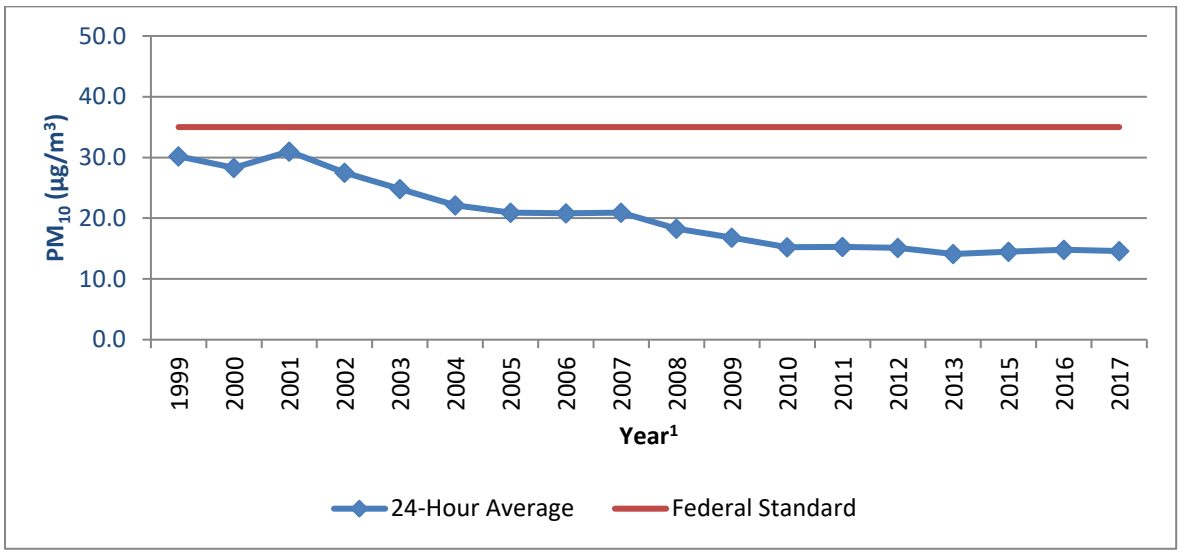
TABLE 3: SOUTH COAST AIR BASIN ANNUAL AVERAGE CONCENTRATION PM10 TREND1



Source: California Air Resource Board

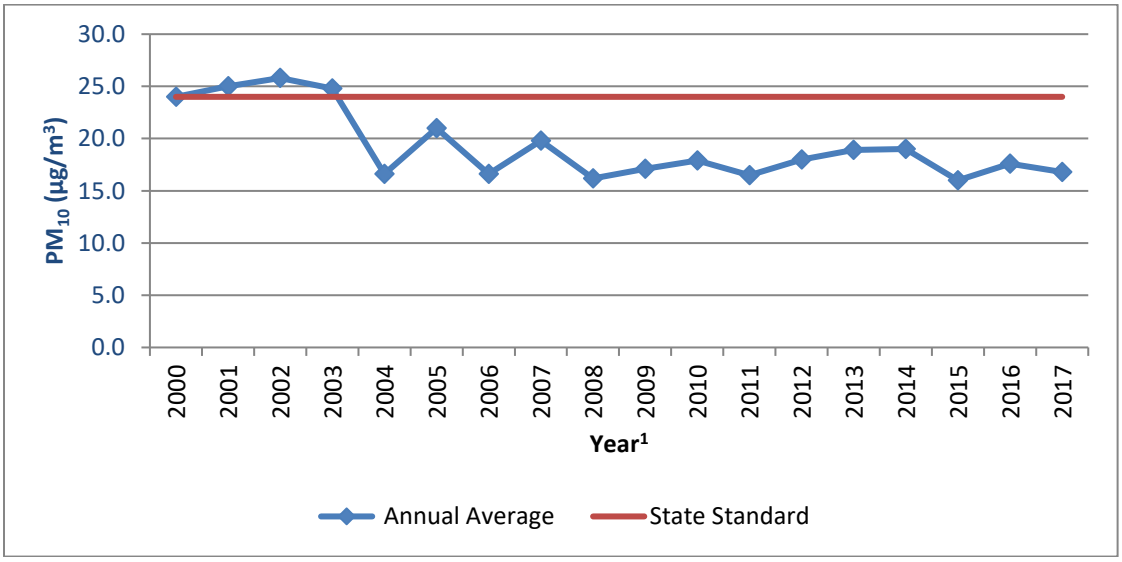
[1] Some year have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

TABLE 4: SOUTH COAST AIR BASIN 24-HOUR AVERAGE CONCENTRATION PM2.5 TREND1



Source: California Air Resource Board
[1] Some year have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

TABLE 5: SOUTH COAST AIR BASIN ANNUAL AVERAGE CONCENTRATION PM2.5 TREND[1]



Source: California Air Resource Board
[1] Some year have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

While the 2012 AQMP PM_{10} attainment demonstration and the 2015 associated supplemental SIP submission indicated that attainment of the 24-hour standard was predicted to occur by the end of 2015, it could not anticipate the effect of the ongoing drought on the measured $PM_{2.5}$.

The 2006 to 2010 base period used for the 2012 attainment demonstration had near-normal rainfall. While the trend of $PM_{2.5}$- equivalent emission reductions continued through 2015, the severe drought conditions contributed to the $PM_{2.5}$ increases observed after 2012. As a result of the disrupted progress toward attainment of the federal 24-hour $PM_{2.5}$ standard, SCAQMD submitted a request and the U.S. EPA approved, in January 2016, a "bump up" to the nonattainment classification from "moderate" to "serious," with a new attainment deadline as soon as practicable, but not beyond December 31, 2019.

In March 2017, the AQMD released the Final 2016 AQMP. The 2016 AQMP continues to evaluate current integrated strategies and control measures to meet the NAAQS, as well as, explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (5). Similar to the 2012 AQMP, the 2016 AQMP incorporates scientific and technological information and planning assumptions, including the 2016 RTP/SCS and updated emission inventory methodologies for various source categories (6).

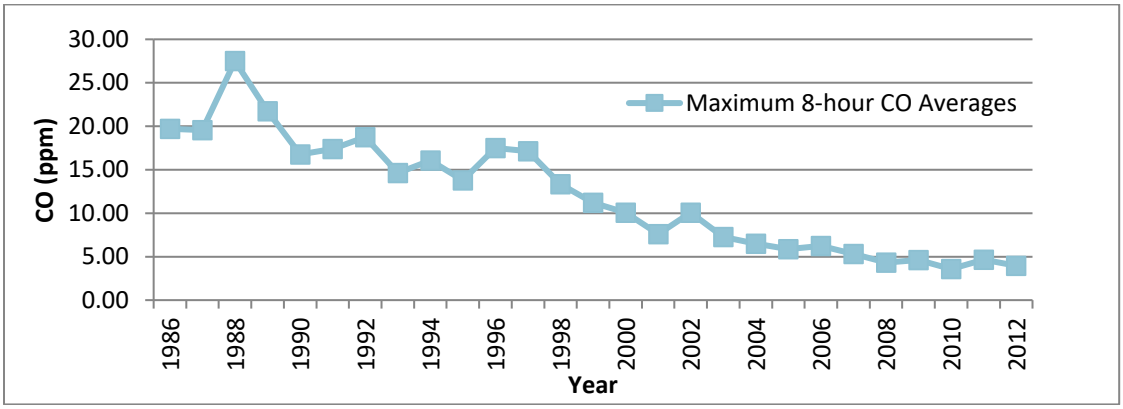
The most recent CO concentrations in the SCAB are shown in Table 6 (4). CO concentrations in the SCAB have decreased markedly — a total decrease of more about 80 percent in the peak 8-hour concentration since 1986. It should be noted 2012 is the most recent year where 8-hour CO averages and related statistics are available in the South Coast Air Basin. The number of exceedance days has also declined. The entire SCAB is now designated as attainment for both the state and national CO standards. Ongoing reductions from motor vehicle control programs should continue the downward trend in ambient CO concentrations.

Part of the control process of the SCAQMD's duty to greatly improve the air quality in the Basin is the uniform CEQA review procedures required by SCAQMD's CEQA Handbook (7). The single threshold of significance used to assess Project direct and cumulative impacts has in fact "worked" as evidenced by the track record of the air quality in the Basin dramatically improving over the course of the past decades. As stated by the SCAQMD, the District's thresholds of significance are based on factual and scientific data and are therefore appropriate thresholds of significance to use for this Project.

The most recent NO_2 data for the SCAB is shown in Tables 7 and 8 (4). Over the last 50 years, NO2 values have decreased significantly; the peak 1-hour national and state averages for 2017 is approximately 77 percent lower than what it was during 1963. The SCAB attained the State 1-hour NO2 standard in 1994, bringing the entire State into attainment. A new state annual average standard of 0.030 parts per million was adopted by the ARB in February 2007 (8). The new standard is just barely exceeded in the South Coast. NO2 is formed from NOx emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NO_x emissions. These measures are expected to bring the South Coast into attainment of the State annual average standard.

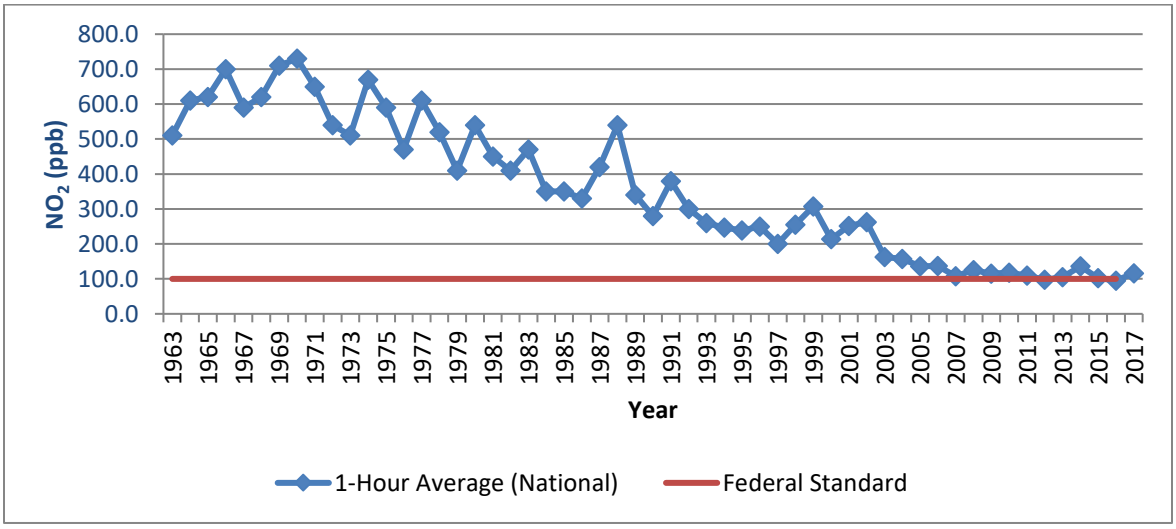
The American Lung Association website includes data collected from State air quality monitors that are used to compile an annual State of the Air report. The latest State of the Air Report compiled for the Basin was in 2017 (9). As noted in this report, air quality in the Basin has significantly improved in terms of both pollution levels and high pollution days over the past three decades. The area's average number of high ozone days dropped from 230 days regionally in 2000 to 142 days in the 2017 and continues to decrease the number of days. The region has also seen dramatic reduction in particle pollution from 107 days regionally in 2004 to 14 days in the 2017 and continues to decrease the number of days (9).

TABLE 6: SOUTH COAST AIR BASIN 8-HOUR AVERAGE CARBON MONOXIDE TREND1



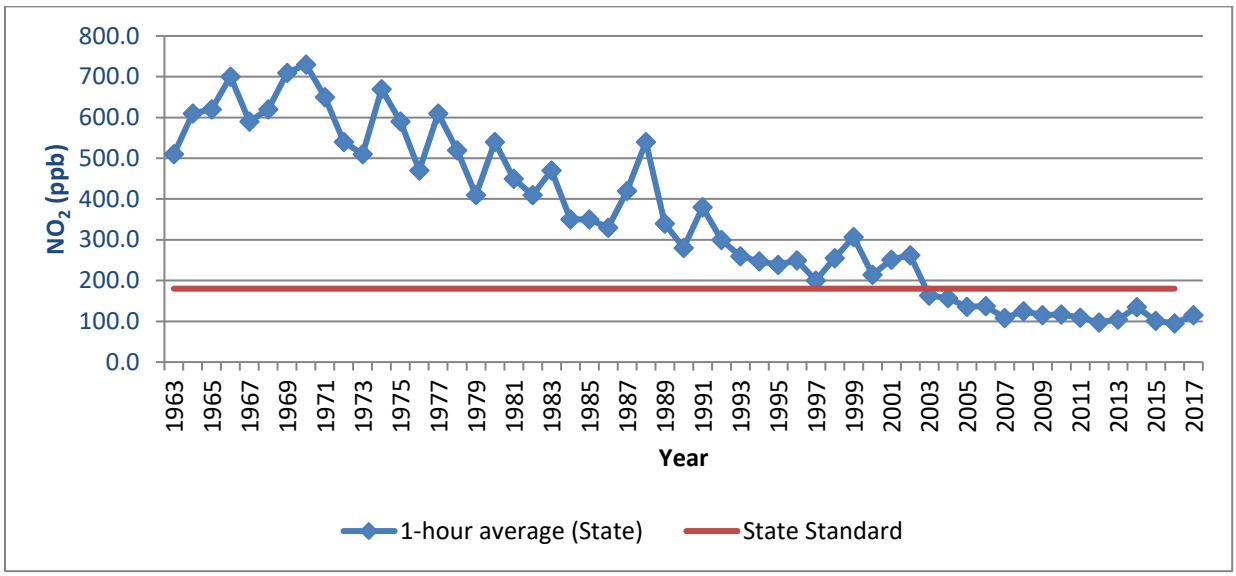
Source: California Air Resource Board
[1] The most recent year where 8-hour concentration data is available is 2012.

TABLE 7: SOUTH COAST AIR BASIN 24-HOUR AVERAGE NITROGEN DIOXIDE TREND (BASED ON FEDERAL STANDARD)



Source: California Air Resource Board

TABLE 8: SOUTH COAST AIR BASIN 24-HOUR AVERAGE NITROGEN DIOXIDE TREND (BASED ON STATE STANDARD)



Source: California Air Resource Board

TOXIC AIR CONTAMINANTS (TACS) TRENDS

In 1984, as a result of public concern for exposure to airborne carcinogens, the CARB adopted regulations to reduce the amount of air toxic contaminant emissions resulting from mobile and area sources, such as cars, trucks, stationary products, and consumer products. According to the *Ambient and Emission Trends of Toxic Air Contaminants in California* journal article (10) which was prepared for CARB, results show that between 1990-2012, ambient concentration and emission trends for the seven TACs responsible for most of the known cancer risk associated with airborne exposure in California have declined significantly (between 1990 and 2012). The seven TACs studied include those that are derived from mobile sources: diesel particulate matter (DPM), benzene, and 1,3-butadiene; those that are derived from stationary sources: perchloroethylene and hexavalent chromium; and those derived from photochemical reactions of emitted VOCs: formaldehyde and acetaldehyde[1]. TACs data was gathered at monitoring sites from both the Bay Area and South Coast Air Basins, as shown on Exhibit A; Several of the sites in the SCAB include Reseda, Compton, Rubidoux, Burbank, and Fontana. The decline in ambient concentration and emission trends of these TACs are a result of various regulations CARB has implemented to address cancer risk.

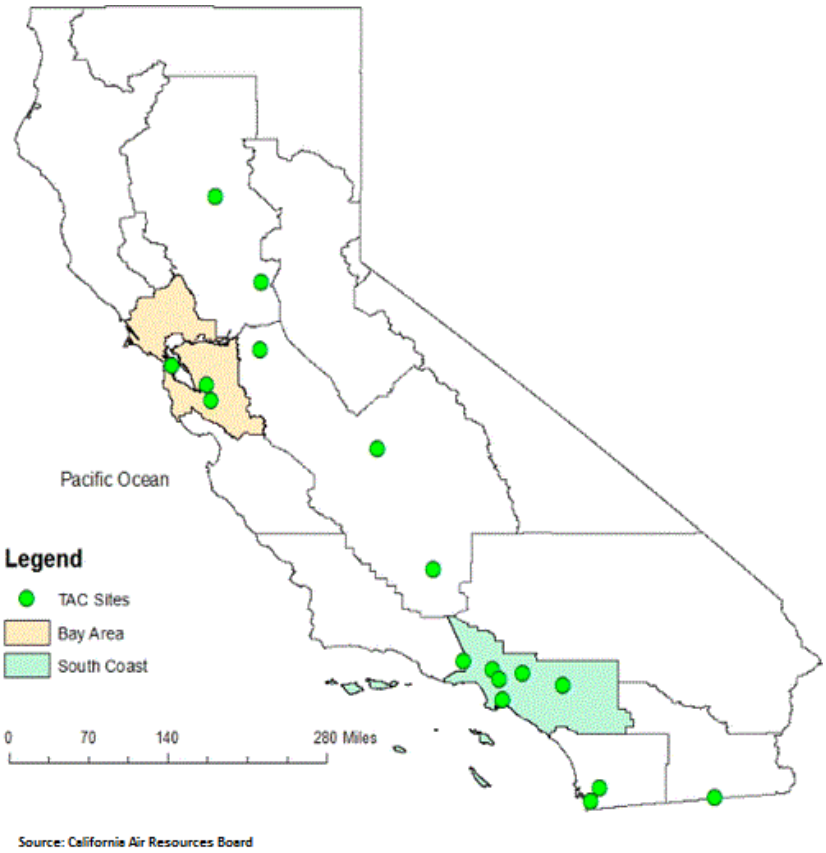
Mobile Source TACs

CARB introduced two programs that aimed at reducing mobile emissions for light and medium duty vehicles through vehicle emissions controls and cleaner fuel. In California, light-duty vehicles sold after

1 It should be noted that ambient DPM concentrations are not measured directly. Rather, a surrogate method using the coefficient of haze (COH) and elemental carbon (EC) is used to estimate DPM concentrations.

1996 are equipped with California's second-generation On-Board Diagnostic (OBD-II) system. The OBD II system monitors virtually every component that can affect the emission performance of the vehicle to ensure that the vehicle remains as clean as possible over its entire life and assists repair technicians in diagnosing and fixing problems with the computerized engine controls. If a problem is detected, the OBD II system illuminates a warning lamp on the vehicle instrument panel to alert the driver. This warning lamp typically contains the phrase Check Engine or Service Engine Soon. The system will also store important information about the detected malfunction so that a repair technician can accurately find and fix the problem. ARB has recently developed similar OBD requirements for heavy-duty vehicles over 14,000 lbs. CARB's phase II Reformulated Gasoline (RFG-2) regulation, adopted in 1996, also led to a reduction of mobile source emissions. Through such regulations, benzene levels declined 88% from 1990-2012. 1,3-Butadiene concentrations also declined 85% from 1990-2012 as a result of the use of reformulated gasoline and motor vehicle regulations (10).

EXHIBIT A: CALIFORNIA TOXIC AIR CONTAMINANT SITES

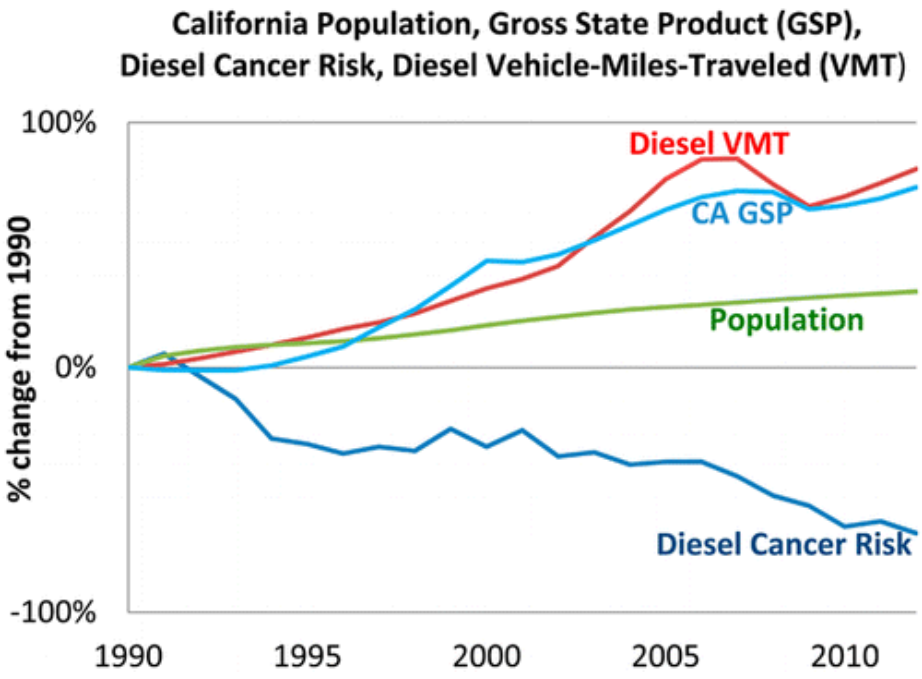


Source: California Air Resources Board

In 2000, CARB's Diesel Risk Reduction Plan (DRRP) recommended the replacement and retrofit of diesel-fueled engines and the use of ultra-low-sulfur (<15ppm) diesel fuel. As a result of these measures, DPM concentrations have declined 68% since 2000, even though the state's population increased 31% and

the amount of diesel vehicles miles traveled increased 81%, as shown on Exhibit B. With the implementation of these diesel-related control regulations, ARB expects a DPM decline of 71% for 2000-2020.

EXHIBIT B: DIESEL PARTICULATE MATTER AND DIESEL VEHICLE MILES TREND



Source: California Air Resources Board

DIESEL REGULATIONS

The CARB and the Ports of Los Angeles and Long Beach have adopted several iterations of regulations for diesel trucks that are aimed at reducing diesel particulate matter (DPM). More specifically, the CARB Drayage Truck Regulation (11), the CARB statewide On-road Truck and Bus Regulation (12), and the Ports of Los Angeles and Long Beach "Clean Truck Program" (CTP) require accelerated implementation of "clean trucks" into the statewide truck fleet (13). In other words, older more polluting trucks will be replaced with newer, cleaner trucks as a function of these regulatory requirements.

Moreover, the average statewide DPM emissions for Heavy Duty Trucks (HDT), in terms of grams of DPM generated per mile traveled, will dramatically be reduced due to the aforementioned regulatory requirements.

CANCER RISK TRENDS

Based on information available from CARB, overall cancer risk throughout the basin has had a declining trend since 1990. In 1998, following an exhaustive 10-year scientific assessment process, the State of

California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines as a toxic air contaminant. The SCAQMD initiated a comprehensive urban toxic air pollution study, called MATES-II (for Multiple Air Toxics Exposure Study). Diesel particulate matter (DPM) accounts for more than 70 percent of the cancer risk.

In 2008 the SCAQMD prepared an update to the MATES-II study, referred to as MATES-III. MATES-III estimates the average excess cancer risk level from exposure to TACs is an approximately 17% decrease in comparison to the MATES-II study.

Nonetheless, the SCAQMD's most recent in-depth analysis of the toxic air contaminants and their resulting health risks for all of Southern California was from the *Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV,"* which shows that cancer risk has decreased more than 55% between MATES III (2005) and MATES IV (2015) ((14)).

SUPPLEMENTAL ASSESSMENT

SCAQMD ANALYSIS IN ITS BRIEF

As noted in the Brief of Amicus Curiae by the South Coast Air Quality Management District in the Friant Ranch case (April 6, 2015, Attachment A) (Brief), SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes. (Brief at page App-2). SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality. Brief at page 7. The SCAQMD staff provides comments on as many as 25 or 30 such documents each month. *Ibid*. Therefore, the AQIA and this Supplemental Assessment rely on SCAQMD expertise, thresholds, and guidance to disclose the Project's air quality impacts.

The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the proposed Project, due to many factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). Brief at pages 9-10. The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s))[2]. Brief at page 10. Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk--it does not necessarily mean anyone will contract cancer as a result of the project. Ibid. The Brief also cites the author of the CARB methodology, which reported that a PM 2.5 methodology is not suited for small projects and may yield unreliable results (Brief at page 14). Similarly, SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NOx or VOC emissions from relatively small

[2] It should also be noted that the actual occurrence of specific health conditions are based on numerous other factors that are infeasible to quantify, such as an individuals genetic predisposition, diet, exercise regiment, stress, and other behavioral characteristics.

projects. reached with respect to NOx or VOC emissions from relatively small projects, due to photochemistry and regional model limitations (Brief at page 12). The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful (Brief at page 15).

On the other hand, for extremely large regional projects (unlike the Proposed Project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 pounds per day of NOx and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone (Brief, at page 12)

APPLICATION OF SCAQMD ANALYSIS TO THE PROPOSED PROJECT

The Brief makes it clear that SCAQMD does not believe that there must be a quantification of a project's health risks in all CEQA documents prepared for individual projects. Any attempt to quantify the proposed Project's health risks would be considered unreliable and misleading. The proposed Project is much less intense than the Friant Ranch project and has dramatically fewer air quality emissions, and the SCAQMD determined that an attempt to quantify the Friant Ranch health risks would be unreliable and misleading, due to the aforementioned factors. Also, the proposed Project does not generate anywhere near 6,620 pounds per day of NOx or 89,190 pounds per day of VOC emissions, which SCAQMD stated was a large enough emission to quantify ozone-related health impacts (see Pages 12-14 of SCAQMD Brief of Amicus Curiae). Therefore, the Project's emissions are not sufficiently high enough to use regional modeling program to correlate health effects on a basin-wide level. Notwithstanding, as previously noted, the AQIA does include a site-specific localized impact analysis that does correlate potential project health impacts on a local level to immediately adjacent land uses (see Draft EIR p 4.2-3 discussing the general health impacts of NOx).

FURTHER DISCUSSION OF THE PROPOSED PROJECT'S HEALTH RISKS

Although it may be misleading and unreliable to attempt to specifically and numerically quantify the proposed Project's health risks, the AQIA this report provide extensive information concerning the proposed Project's potential health risks. While the proposed Project is expected to exceed the SCAQMD's numeric regional mass daily thresholds for NOx only, this does not in itself constitute a significant health impact to the population adjacent to the Project and within the air basin.

The SCAQMD's numeric regional thresholds are based in part on Section 180 (e) of the federal Clean Air Act (CAA) – it should be noted that the numeric regional mass daily thresholds have not changed since their adoption as part of the *CEQA Air Quality Handbook* published by SCAQMD in 1993 (over 20 years ago). The numeric regional mass daily thresholds are also intended to provide a means of consistency in significance determination within the environmental review process. Notwithstanding, simply exceeding the SCAQMD's numeric regional mass daily thresholds does not constitute a particular health impact to an individual receptor. The reason for this is that the mass daily thresholds are in pounds per day emitted into the air whereas health effects are determined based on the concentration of emissions in the air at

a particular receptor (e.g., parts per million by volume of air, or micrograms per cubic meter of air). State and federal ambient air quality standards were developed to protect the most susceptible population groups from adverse health effects and were established in terms of parts per million or micrograms per cubic meter for the applicable emissions.

For this reason, the SCAQMD developed a methodology to assist lead agencies in analyzing localized air quality impacts from a proposed project as they relate to carbon monoxide (CO), nitrogen oxides (NOx), particulate matter less than 2.5 microns in aerodynamic diameter (PM2.5) and particulate matter less than 10 microns in aerodynamic diameter (PM10). This methodology is collectively referred to as the localized significance thresholds (LSTs). The LSTs differ from the numeric regional mass daily thresholds since the LSTs are based on the amount of emissions generated from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are based on the ambient concentrations of the pollutant and the relative distance to the nearest sensitive receptor (the SCAQMD performed air dispersion modeling to determine what amount of emissions generated a particular concentration at a particular distance).

The AQIA evaluated the proposed Project's localized impact to air quality for emissions of CO, NOx, PM10, and PM2.5 by comparing the proposed Project's on-site emissions to the SCAQMD's applicable LST thresholds (see Sections 3.6 and 3.7 of the AQIA). As evaluated in the AQIA Report, the Project would not result in emissions that exceeded the SCAQMD's LSTs. Therefore, the Project would not be expected to exceed the most stringent applicable federal or state ambient air quality standards for emissions of CO, NOx, PM10, and PM2.5. It should be noted that the ambient air quality standards are developed and represent levels at which the most susceptible persons (children and the elderly) are protected from health-based impacts. In other words, the ambient air quality standards are purposefully set low to protect children, elderly, and those with existing respiratory problems.

Furthermore, as shown in the previous sections, air quality trends for both emissions of NOx, VOCs, and Ozone (which is a byproduct of NOx and VOCs) have been trending downward within the air basin even as development has increased over the last several years. Therefore, although the proposed Project will exceed the SCAQMD's numeric thresholds for emissions of NOx this does not in itself constitute a basin-wide increase in health effects related to these pollutants.

As noted in the *Brief of Amicus Curiae* by the South Coast Air Quality Management District (April 6, 2015, Attachment A), the SCAQMD has acknowledged that for criteria pollutants it would be extremely difficult, if not impossible to quantify health impacts for various reasons including modeling limitations as well as where in the atmosphere air pollutants interact and form. Furthermore, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD) (April 13, 2015, Attachment B), SJVAPCD has acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development

project's air emissions and specific human health impacts.[3] (*see Page 4 of SJVAPCD Brief of Amicus Curiae*).

For analytical purposes, the LSTs for emissions of NOx can be used as a surrogate to determine whether or not there would be a potential health impact related to emissions of VOCs (since there are no ambient air quality standards for VOCs). As shown above, LSTs for NOx would not exceed the applicable threshold and a less than significant impact to localized (adjacent) sensitive receptors would occur. It should be noted that impacts related to air quality in the general sense are based on a source-receptor relationship – in other words, the further away one moves from the source, the lower the concentration in the ambient air.

The Project does not generate anywhere near 6,620 pounds per day of NO_X or 89,190 pounds per day of VOC emissions. The Project would generate 63.84 pounds per day of NOx during construction and 183.72 pounds per day of NO_X during operations (0.96 percent and 2.78 percent of 6,620 pounds per day, respectively).

The Project would also generate 70.11 pounds per day of VOC emissions during construction and 46.59 pounds per day of VOC emissions during operations (0.08 percent and 0.05 percent of 89,190 pounds per day, respectively).

Therefore, the Project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level. Further, SJVAPCD acknowledges the same: "…the Air District is simply not equipped to analyze and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area…even for projects with relatively high levels of emissions of criteria pollutant precursor emissions." (see Page 8 of SJVAPCD Brief of Amicus Curiae).

Notwithstanding, as previously noted, the AQIA does include a site-specific localized impact analysis that does correlate potential project health impacts on a local level to immediately adjacent land uses. The SCAQMD Brief of Amicus Curiae and SJVAPCD Brief of Amicus Curiae are incorporated by reference into this letter and into the environmental documentation for this Project, including all references therein.

Unfortunately, current scientific, technological, and modeling limitations prevent the relation of expected adverse air quality impacts to likely health consequences. For this reason, this Supplemental Air Quality Assessment explains in meaningful detail why it is not feasible to provide such a numerical analysis, but why health-based impacts are nonetheless anticipated to be less than significant.

3 This is even true for the scope of the Friant Ranch Project which includes the construction of approximately 2,500 single and multi-family residential units, a commercial village center, a recreation center, trails, open space, a neighborhood electric vehicle network, parks and parkways, and 250,000 square feet of commercial space on 482 acres.

Respectfully submitted,

URBAN CROSSROADS, INC.

Haseeb Qureshi,
Senior Associate

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ATTACHMENT A

S219783

IN THE SUPREME COURT OF C ALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,

Plaintiffs and Appellants,

v.

COUNTY OF FRESNO,

Defendant and Respondent,

and,

FRIANT RANCH, L.P.,

Real Party in Interest and Respondent.

After a Published Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726
Honorable Rosendo A. Pena, Jr.

APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*

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Rules

Other

TO THE HONORABLE CHIEF JUSTICE AND JUSTICES OF THE SUPREME COURT:

APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 8.520(f) of the California Rules of Court, the South Coast Air Quality Management District (SCAQMD) respectfully requests leave to file the attached *amicus curiae* brief. Because SCAQMD's position differs from that of either party, we request leave to submit this amicus brief in support of neither party.

HOW THIS BRIEF WILL ASSIST THE COURT

SCAQMD's proposed amicus brief takes a position on two of the issues in this case. In both instances, its position differs from that of either party. The issues are:

1) Does the California Environmental Quality Act (CEQA) require an environmental impact report (EIR) to correlate a project's air pollution emissions with specific levels of health impacts?
2) What is the proper standard of review for determining whether an EIR provides sufficient information on the health impacts caused by a project's emission of air pollutants?

This brief will assist the Court by discussing the practical realities of correlating identified air quality impacts with specific health outcomes. In short, CEQA requires agencies to provide detailed information about a project's air quality impacts that is sufficient for the public and decisionmakers to adequately evaluate the project and meaningfully understand its impacts. However, the level of analysis is governed by a rule of reason; CEQA only requires agencies to conduct analysis if it is reasonably feasible to do so.

With regard to health-related air quality impacts, an analysis that correlates a project's air pollution emissions with specific levels of health impacts will be feasible in some cases but not others. Whether it is feasible depends on a variety of factors, including the nature of the project and the nature of the analysis under consideration. The feasibility of analysis may also change over time as air districts and others develop new tools for measuring projects' air quality related health impacts. Because SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, it is uniquely situated to express an opinion on the extent to which the Court should hold that CEQA requires lead agencies to correlate air quality impacts with specific health outcomes.

SCAQMD can also offer a unique perspective on the question of the appropriate standard of review. SCAQMD submits that the proper standard of review for determining whether an EIR is sufficient as an informational document is more nuanced than argued by either party. In our view, this is a mixed question of fact and law. It includes determining whether additional analysis is feasible, which is primarily a factual question that should be reviewed under the substantial evidence standard. However, it also involves determining whether the omission of a particular analysis renders an EIR insufficient to serve CEQA's purpose as a meaningful, informational document. If a lead agency has not determined that a requested analysis is infeasible, it is the court's role to determine whether the EIR nevertheless meets CEQA's purposes, and courts should not defer to the lead agency's conclusions regarding the legal sufficiency of an EIR's analysis. The ultimate question of whether an EIR's analysis is "sufficient" to serve CEQA's informational purposes is predominately a question of law that courts should review de novo.

This brief will explain the rationale for these arguments and may assist the Court in reaching a conclusion that accords proper respect to a lead agency's factual conclusions while maintaining judicial authority over the ultimate question of what level of analysis CEQA requires.

STATEMENT OF INTEREST OF *AMICUS CURIAE*

The SCAQMD is the regional agency primarily responsible for air pollution control in the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of the Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410; Cal. Code Regs., tit. 17, § 60104.) The SCAQMD participates in the CEQA process in several ways. Sometimes it acts as a lead agency that prepares CEQA documents for projects. Other times it acts as a responsible agency when it has permit authority over some part of a project that is undergoing CEQA review by a different lead agency. Finally, SCAQMD also acts as a commenting agency for CEQA documents that it receives because it is a public agency with jurisdiction by law over natural resources affected by the project.

In all of these capacities, SCAQMD will be affected by the decision in this case. SCAQMD sometimes submits comments requesting that a lead agency perform an additional type of air quality or health impacts analysis. On the other hand, SCAQMD sometimes determines that a particular type of health impact analysis is not feasible or would not produce reliable and informative results. Thus, SCAQMD will be affected by the Court's resolution of the extent to which CEQA requires EIRs to correlate emissions and health impacts, and its resolution of the proper standard of review.

CERTIFICATION REGARDING AUTHORSHIP AND FUNDING

No party or counsel in the pending case authored the proposed amicus curiae brief in whole or in part, or made any monetary contribution intended to fund the preparation or submission of the brief. No person or entity other than the proposed *Amicus Curiae* made any monetary contribution intended to fund the preparation or submission of the brief.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT
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SOUTH COAST AIR QUALITY
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BRIEF OF AMICUS CURIAE

SUMMARY OF ARGUMENT

The South Coast Air Quality Management District (SCAQMD) submits that this Court should not try to establish a hard-and-fast rule concerning whether lead agencies are required to correlate emissions of air pollutants with specific health consequences in their environmental impact reports (EIR). The level of detail required in EIRs is governed by a few, core CEQA (California Environmental Quality Act) principles. As this Court has stated, "[a]n EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Assn. v. Regents of the Univ of Cal.* (1988) 47 Cal.3d 376, 405 ["*Laurel Heights I*"]) Accordingly, "an agency must use its best efforts to find out and disclose all that it reasonably can." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (quoting CEQA Guidelines § 15144)[1].). However, "[a]nalysis of environmental effects need not be exhaustive, but will be judged in light of what is reasonably feasible." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390; CEQA Guidelines §§ 15151, 15204(a).)

With regard to analysis of air quality related health impacts, EIRs must generally quantify a project's pollutant emissions, but in some cases it is not feasible to correlate these emissions to specific, quantifiable health impacts (e.g., premature mortality; hospital admissions). In such cases, a general description of the adverse health impacts resulting from the pollutants at issue may be sufficient. In other cases, due to the magnitude

[1] The CEQA Guidelines are found at Cal. Code Regs., tit. 14 §§ 15000, *et seq.*

or nature of the pollution emissions, as well as the specificity of the project involved, it may be feasible to quantify health impacts. Or there may be a less exacting, but still meaningful analysis of health impacts that can feasibly be performed. In these instances, agencies should disclose those impacts.

SCAQMD also submits that whether or not an EIR complies with CEQA's informational mandates by providing sufficient, feasible analysis is a mixed question of fact and law. Pertinent here, the question of whether an EIR's discussion of health impacts from air pollution is sufficient to allow the public to understand and consider meaningfully the issues involves two inquiries: (1) Is it feasible to provide the information or analysis that a commenter is requesting or a petitioner is arguing should be required?; and (2) Even if it is feasible, is the agency relying on other policy or legal considerations to justify not preparing the requested analysis? The first question of whether an analysis is feasible is primarily a question of fact that should be judged by the substantial evidence standard. The second inquiry involves evaluating CEQA's information disclosure purposes against the asserted reasons to not perform the requested analysis. For example, an agency might believe that its EIR meets CEQA's informational disclosure standards even without a particular analysis, and therefore choose not to conduct that analysis. SCAQMD submits that this is more of a legal question, which should be reviewed de novo as a question of law.

ARGUMENT

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK.

A. Air Quality Regulatory Background

The South Coast Air Quality Management District (SCAQMD) is one of the local and regional air pollution control districts and air quality

management districts in California. The SCAQMD is the regional air pollution agency for the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410, 17 Cal. Code Reg. § 60104.) The SCAQMD also includes the Coachella Valley in Riverside County (Palm Springs area to the Salton Sea). (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "chapter 7" hyperlink; pp 7-1, 7-3 (last visited Apr. 1, 2015).) The SCAQMD's jurisdiction includes over 16 million residents and has the worst or nearly the worst air pollution levels in the country for ozone and fine particulate matter. (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Executive Summary" hyperlink p. ES-1 (last visited Apr. 1, 2015).)

Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. (Health & Saf. Code § 40000.) The California Air Resources Board (CARB), part of the California Environmental Protection Agency, is primarily responsible for controlling pollution from motor vehicles. (*Id.*) The air districts must adopt rules to achieve and maintain the state and federal ambient air quality standards within their jurisdictions. (Health & Saf. Code § 40001.)

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to identify pollutants that are widely distributed and pose a threat to human health, developing a so-called "criteria" document. (42 U.S.C. § 7408; CAA § 108.) These pollutants are frequently called "criteria pollutants." EPA must then establish "national ambient air quality standards" at levels "requisite to protect public health",

allowing "an adequate margin of safety." (42 U.S.C. § 7409; CAA § 109.) EPA has set standards for six identified pollutants: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter (PM), and lead. (U.S. EPA, National Ambient Air Quality Standards (NAAQS), http://www.epa.gov/air/criteria.html (last updated Oct. 21, 2014).)[2]

Under the Clean Air Act, EPA sets emission standards for motor vehicles and "nonroad engines" (mobile farm and construction equipment, marine vessels, locomotives, aircraft, etc.). (42 U.S.C. §§ 7521, 7547; CAA §§ 202, 213.) California is the only state allowed to establish emission standards for motor vehicles and most nonroad sources; however, it may only do so with EPA's approval. (42 U.S.C. §§ 7543(b), 7543(e); CAA §§ 209(b), 209(c).) Sources such as manufacturing facilities, power plants and refineries that are not mobile are often referred to as "stationary sources." The Clean Air Act charges state and local agencies with the primary responsibility to attain the national ambient air quality standards. (42 U.S.C. § 7401(a)(3); CAA § 101(a)(3).) Each state must adopt and implement a plan including enforceable measures to achieve and maintain the national ambient air quality standards. (42 U.S.C. § 7410; CAA § 110.) The SCAQMD and CARB jointly prepare portion of the plan for the South Coast Air Basin and submit it for approval by EPA. (Health & Saf. Code §§ 40460, et seq.)

The Clean Air Act also requires state and local agencies to adopt a permit program requiring, among other things, that new or modified "major" stationary sources use technology to achieve the "lowest achievable emission rate," and to control minor stationary sources as

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[2] Particulate matter (PM) is further divided into two categories: fine particulate or $PM_{2.5}$ (particles with a diameter of less than or equal to 2.5 microns) and coarse particulate (PM_{10}) (particles with a diameter of 10 microns or less). (U.S. EPA, Particulate Matter (PM), http://www.epa.gov/airquality/particlepollution/ (last visited Apr. 1, 2015).)

needed to help attain the standards. (42 U.S.C. §§ 7502(c)(5), 7503(a)(2), 7410(a)(2)(C); CAA §§ 172(c)(5), 173(a)(2), 110(a)(2)(C).) The air districts implement these permit programs in California. (Health & Saf. Code §§ 42300, et seq.)

The Clean Air Act also sets out a regulatory structure for over 100 so-called "hazardous air pollutants" calling for EPA to establish "maximum achievable control technology" (MACT) for sources of these pollutants. (42 U.S.C. § 7412(d)(2); CAA § 112(d)(2).) California refers to these pollutants as "toxic air contaminants" (TACs) which are subject to two state-required programs. The first program requires "air toxics control measures" for specific categories of sources. (Health & Saf. Code § 39666.) The other program requires larger stationary sources and sources identified by air districts to prepare "health risk assessments" for impacts of toxic air contaminants. (Health & Saf. Code §§ 44320(b), 44322, 44360.) If the health risk exceeds levels identified by the district as "significant," the facility must implement a "risk reduction plan" to bring its risk levels below "significant" levels. Air districts may adopt additional more stringent requirements than those required by state law, including requirements for toxic air contaminants. (Health & Saf. Code § 41508; *Western Oil & Gas Assn. v. Monterey Bay Unified APCD* (1989) 49 Cal.3d 408, 414.) For example, SCAQMD has adopted a rule requiring new or modified sources to keep their risks below specified levels and use best available control technology (BACT) for toxics. (SCAQMD, *Rule 1401-New Source Review of Toxic Air Contaminants*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiv; then follow "Rule 1401" hyperlink (last visited Apr. 1, 2015).)

B. The SCAQMD's Role Under CEQA

The California Environmental Quality Act (CEQA) requires public agencies to perform an environmental review and appropriate analysis for projects that they implement or approve. (Pub. Resources Code § 21080(a).) The agency with primary approval authority for a particular project is generally the "lead agency" that prepares the appropriate CEQA document. (CEQA Guidelines §§ 15050, 15051.) Other agencies having a subsequent approval authority over all or part of a project are called "responsible" agencies that must determine whether the CEQA document is adequate for their use. (CEQA Guidelines §§ 15096(c), 15381.) Lead agencies must also consult with and circulate their environmental impact reports to "trustee agencies" and agencies "with jurisdiction by law" including "authority over resources which may be affected by the project." (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines §§ 15086(a)(3), 15073(c).) The SCAQMD has a role in all these aspects of CEQA.

Fulfilling its responsibilities to implement its air quality plan and adopt rules to attain the national ambient air quality standards, SCAQMD adopts a dozen or more rules each year to require pollution reductions from a wide variety of sources. The SCAQMD staff evaluates each rule for any adverse environmental impact and prepares the appropriate CEQA document. Although most rules reduce air emissions, they may have secondary environmental impacts such as use of water or energy or disposal of waste—e.g., spent catalyst from control equipment.[3]

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[3] The SCAQMD's CEQA program for its rules is a "Certified Regulatory Program" under which it prepares a "functionally equivalent" document in lieu of a negative declaration or EIR. (Pub. Resources Code § 21080.5, CEQA Guidelines § 15251(l).)

The SCAQMD also approves a large number of permits every year to construct new, modified, or replacement facilities that emit regulated air pollutants. The majority of these air pollutant sources have already been included in an earlier CEQA evaluation for a larger project, are currently being evaluated by a local government as lead agency, or qualify for an exemption. However, the SCAQMD sometimes acts as lead agency for major projects where the local government does not have a discretionary approval. In such cases, SCAQMD prepares and certifies a negative declaration or environmental impact report (EIR) as appropriate.[4] SCAQMD evaluates perhaps a dozen such permit projects under CEQA each year. SCAQMD is often also a "responsible agency" for many projects since it must issue a permit for part of the projects (e.g., a boiler used to provide heat in a commercial building). For permit projects evaluated by another lead agency under CEQA, SCAQMD has the right to determine that the CEQA document is inadequate for its purposes as a responsible agency, but it may not do so because its permit program already requires all permitted sources to use the best available air pollution control technology. (SCAQMD, *Rule 1303(a)(1) – Requirements*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiii; then follow "Rule 1303" hyperlink (last visited Apr. 1, 2015).)

Finally, SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality—a natural resource affected by the project. (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines § 15366(a)(3).) The SCAQMD staff provides comments on as many as 25 or 30 such documents each month.

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[4] The SCAQMD's permit projects are not included in its Certified Regulatory Program, and are evaluated under the traditional local government CEQA analysis. (Pub. Resources Code §§ 21150-21154.)

(SCAQMD Governing Board Agenda, Apr. 3, 2015, Agenda Item 16, Attachment A, http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-april-3-2015; then follow "16. Lead Agency Projects and Environmental Documents Received by SCAQMD" hyperlink (last visited Apr. 1, 2015).) Of course, SCAQMD focuses its commenting efforts on the more significant projects.

Typically, SCAQMD comments on the adequacy of air quality analysis, appropriateness of assumptions and methodology, and completeness of the recommended air quality mitigation measures. Staff may comment on the need to prepare a health risk assessment detailing the projected cancer and noncancer risks from toxic air contaminants resulting from the project, particularly the impacts of diesel particulate matter, which CARB has identified as a toxic air contaminant based on its carcinogenic effects. (California Air Resources Board, Resolution 98-35, Aug. 27, 1998, http://www.arb.ca.gov/regact/diesltac/diesltac.htm; then follow Resolution 98-35 hyperlink (last visited Apr. 1, 2015).) Because SCAQMD already requires new or modified stationary sources of toxic air contaminants to use the best available control technology for toxics and to keep their risks below specified levels, (SCAQMD Rule 1401, supra, note 15), the greatest opportunity to further mitigate toxic impacts through the CEQA process is by reducing emissions—particularly diesel emissions—from vehicles.

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS.

Numerous cases hold that courts do not review the correctness of an EIR's conclusions but rather its sufficiency as an informative document. (*Laurel Heights 1, supra*, 47 Cal.3d at p. 392; *Citizens of Goleta Valley v.*

Bd. of Supervisors (1990) 52 Cal.3d 553, 569; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197.)

As stated by the Court of Appeal in this case, where an EIR has addressed a topic, but the petitioner claims that the information provided about that topic is insufficient, courts must "draw[] a line that divides *sufficient* discussions from those that are *insufficient*." (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) The Court of Appeal readily admitted that "[t]he terms themselves – sufficient and insufficient – provide little, if any, guidance as to where the line should be drawn. They are simply labels applied once the court has completed its analysis." (*Id.*)

The CEQA Guidelines, however, provide guidance regarding what constitutes a sufficient discussion of impacts. Section 15151 states that "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." Case law reflects this: "Analysis of environmental effects need not be exhaustive, but will be judged in light of what was reasonably feasible." (*Association of Irritated Residents v. County of Madera, supra,* 107 Cal.App.4th at p. 1390; see also CEQA Guidelines § 15204(a).)

Applying this test, this Court cannot realistically establish a hard-and-fast rule that an analysis correlating air pollution impacts of a project to quantified resulting health impacts is always required, or indeed that it is never required. Simply put, in some cases such an analysis will be "feasible"; in some cases it will not.

For example, air pollution control districts often require a proposed new source of toxic air contaminants to prepare a "health risk assessment" before issuing a permit to construct. District rules often limit the allowable cancer risk the new source may cause to the "maximally exposed individual" (worker and residence exposures). (*See, e.g.*, SCAQMD Rule 1401(c)(8); 1401(d)(1), *supra* note 15.) In order to perform this analysis, it

is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). (SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), pp. 11-16*; (last visited Apr. 1, 2015) http://www.aqmd.gov/home/library/documents-support-material; "Guidelines" hyperlink; AB2588; then follow AB2588 Risk Assessment Guidelines hyperlink.)

Thus, it is feasible to determine the health risk posed by a new gas station locating at an intersection in a mixed use area, where receptor locations are known. On the other hand, it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk—it does not necessarily mean anyone will contract cancer as a result of the project.

In order to find the "cancer burden" or expected additional cases of cancer resulting from the project, it is also necessary to know the numbers and location of individuals living within the "zone of impact" of the project: i.e., those living in areas where the projected cancer risk from the project exceeds one in a million. (SCAQMD, Health Risk Assessment Summary form, http://www.aqmd.gov/home/forms ; filter by "AB2588" category; then "Health Risk Assessment" hyperlink (last visited Apr. 1, 2015).) The affected population is divided into bands of those exposed to at least 1 in a million risk, those exposed to at least 10 in a million risk, etc. up to those exposed at the highest levels. (*Id.*) This data allows agencies to calculate an approximate number of additional cancer cases expected from

the project. However, it is not possible to predict which particular individuals will be affected.

For the so-called criteria pollutants[5], such as ozone, it may be more difficult to quantify health impacts. Ozone is formed in the atmosphere from the chemical reaction of the nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. (U.S. EPA, Ground Level Ozone, http://www.epa.gov/airquality/ozonepollution/ (last updated Mar. 25, 2015).) It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. (U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2, http://www.epa.gov/ttnamti1/archive/cpreldoc.html (last visited Apr. 1, 2015).) NO_x and VOC are known as "precursors" of ozone.

Scientifically, health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes. (U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, http://www.epa.gov/apti/ozonehealth/population.html#levels (last visited Apr. 1, 2015).) However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. For example, the SCAQMD's 2012 AQMP showed that reducing NO_x by 432 tons per day (157,680 tons/year) and reducing VOC by 187 tons per day (68,255 tons/year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. (South Coast Air Quality Management District, *Final 2012 AQMP (February 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Appendix V: Modeling & Attainment Demonstrations" hyperlink,

[5] See discussion of types of pollutants, supra, Part I.A.

pp. v-4-2, v-7-4, v-7-24.) SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects.

On the other hand, this type of analysis may be feasible for projects on a regional scale with very high emissions of NO_x and VOCs, where impacts are regional. For example, in 2011 the SCAQMD performed a health impact analysis in its CEQA document for proposed Rule 1315, which authorized various newly-permitted sources to use offsets from the districts "internal bank" of emission reductions. This CEQA analysis accounted for essentially *all* the increases in emissions due to new or modified sources in the District between 2010 and 2030.[6] The SCAQMD was able to correlate this very large emissions increase (e.g., 6,620 pounds per day NO_x (1,208 tons per year), 89,180 pounds per day VOC (16,275 tons per year)) to expected health outcomes from ozone and particulate matter (e.g., 20 premature deaths per year and 89,947 school absences in the year 2030 due to ozone).[7] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System* (see hyperlink in fn 6*)* at p. 4.1-35, Table 4.1-29.)

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[6] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, Attachment G, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System, Vol. 1, p.4.0-6,* http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-february-4-2011; the follow "26. Adopt Proposed Rule 1315 – Federal New Source Review Tracking System" (last visited April 1, 2015).)

[7] The SCAQMD was able to establish the location of future NO_x and VOC emissions by assuming that new projects would be built in the same locations and proportions as existing stationary sources. This CEQA document was upheld by the Los Angeles County Superior Court in *Natural Res. Def. Council v SCAQMD*, Los Angeles Superior Court No. BS110792).

However, a project emitting only 10 tons per year of NO_x or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels. Thus, in this case it would not be feasible to directly correlate project emissions of VOC or NO_x with specific health impacts from ozone. This is in part because ozone formation is not linearly related to emissions. Ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology and seasonal impacts, and because ozone is formed some time later and downwind from the actual emission. (EPA Guideline on Ozone Monitoring Site Selection (Aug. 1998) EPA-454/R-98-002, § 5.1.2; https://www.epa.gov/ttnamti1/archive/cpreldoc.html; then search "Guideline on Ozone Monitoring Site Selection" click on pdf) (last viewed Apr. 1, 2015).)

SCAQMD has set its CEQA "significance" threshold for NO_x and VOC at 10 tons per year (expressed as 55 lb/day). (SCAQMD, *Air Quality Analysis Handbook*, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook; then follow "SCAQMD Air Quality Significance Thresholds" hyperlink (last visited Apr. 1, 2015).) This is because the federal Clean Air Act defines a "major" stationary source for "extreme" ozone nonattainment areas such as SCAQMD as one emitting 10 tons/year. (42 U.S.C. §§ 7511a(e), 7511a(f); CAA §§ 182(e), 182(f).) Under the Clean Air Act, such sources are subject to enhanced control requirements (42 U.S.C. §§ 7502(c)(5), 7503; CAA §§ 172(c)(5), 173), so SCAQMD decided this was an appropriate threshold for making a CEQA "significance" finding and requiring feasible mitigation. Essentially, SCAQMD takes the position that a source that emits 10 tons/year of NO_x or VOC would contribute cumulatively to ozone formation. Therefore, lead agencies that use SCAQMD's thresholds of significance may determine

that many projects have "significant" air quality impacts and must apply all feasible mitigation measures, yet will not be able to precisely correlate the project to quantifiable health impacts, unless the emissions are sufficiently high to use a regional modeling program.

In the case of particulate matter ($PM_{2.5}$)[8], another "criteria" pollutant, SCAQMD staff is aware of two possible methods of analysis. SCAQMD used regional modeling to predict expected health impacts from its proposed Rule 1315, as mentioned above. Also, the California Air Resources Board (CARB) has developed a methodology that can predict expected mortality (premature deaths) from large amounts of $PM_{2.5}$. (California Air Resources Board, *Health Impacts Analysis: PM Premature Death Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort_arch.htm (last reviewed Jan. 19, 2012).) SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1837 lbs/day). (Final Environmental Assessment for Rule 1315, *supra*, pp 4.0-12, 4.1-13, 4.1-37 (e.g., 125 premature deaths in the entire SCAQMD in 2030), 4.1-39 (0.05 to 1.77 annual premature deaths from power plants.) Again, this project involved large amounts of additional $PM_{2.5}$ in the District, up to 2.82 tons/day (5,650 lbs/day of $PM_{2.5}$, or, or 1029 tons/year. (*Id.* at table 4.1-4, p. 4.1-10.)

However, the primary author of the CARB methodology has reported that this $PM_{2.5}$ health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties. [9] (SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren*

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[8] SCAQMD has not attained the latest annual or 24-hour national ambient air quality standards for "$PM_{2.5}$" or particulate matter less than 2.5 microns in diameter.

[9] Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts. (*Id.* at p. 2-24.)

E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011), http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2011; then follow "Final Subsequent Mitigated Negative Declaration for Warren E&P Inc. WTU Central Facility, New Equipment Project" hyperlink, pp. 2-22, 2-23 (last visited Apr. 1, 2015).) Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small $PM_{2.5}$ increases (3.8 lb/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated $PM_{2.5}$ emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so. (*Id.* at pp 2-22 to 2-24.) SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information. (*Id.* at pp. 2-23, 2-25.) This CEQA document was not challenged in court.

In the above case, while it may have been technically possible to plug the data into the methodology, the results would not have been reliable or meaningful. SCAQMD believes that an agency should not be required to perform analyses that do not produce reliable or meaningful results. This Court has already held that an agency may decline to use even the "normal" "existing conditions" CEQA baseline where to do so would be misleading or without informational value. (*Neighbors for Smart Rail v. Exposition Metro Line* (2013) 57 Cal.4th 439, 448, 457.) The same should be true for a decision that a particular study or analysis would not provide reliable or meaningful results.[10]

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[10] Whether a particular study would result in "informational value" is a part of deciding whether it is "feasible." CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and

Therefore, it is not possible to set a hard-and-fast rule on whether a correlation of air quality impacts with specific quantifiable health impacts is required in all cases. Instead, the result turns on whether such an analysis is reasonably feasible in the particular case.[11] Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths. (California Air Resources Board, *Health Impacts Analysis: PM Mortality Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort.htm (last reviewed Dec. 29, 2010).) This factor also counsels against setting any hard-and-fast rule in this case.

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW.

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document

A second issue in this case is whether courts should review an EIR's informational sufficiency under the "substantial evidence" test as argued by Friant Ranch or the "independent judgment" test as argued by Sierra Club.

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technological factors." (Pub. Resources Code § 21061.1.) A study cannot be "accomplished in a *successful* manner" if it produces unreliable or misleading results.

[11] In this case, the lead agency did not have an opportunity to determine whether the requested analysis was feasible because the comment was non-specific. Therefore, SCAQMD suggests that this Court, after resolving the legal issues in the case, direct the Court of Appeal to remand the case to the lead agency for a determination of whether the requested analysis is feasible. Because Fresno County, the lead agency, did not seek review in this Court, it seems likely that the County has concluded that at least some level of correlation of air pollution with health impacts is feasible.

As this Court has explained, "a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 435.) For questions regarding compliance with proper procedure or other legal questions, courts review an agency's action de novo under the "independent judgment" test. (*Id.*) On the other hand, courts review factual disputes only for substantial evidence, thereby "accord[ing] greater deference to the agency's substantive factual conclusions." (*Id.*)

Here, Friant Ranch and Sierra Club agree that the case involves the question of whether an EIR includes sufficient information regarding a project's impacts. However, they disagree on the proper standard of review for answering this question: Sierra Club contends that courts use the independent judgment standard to determine whether an EIR's analysis is sufficient to meet CEQA's informational purposes,[12] while Friant Ranch contends that the substantial evidence standard applies to this question.

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[12] Sierra Club acknowledges that courts use the substantial evidence standard when reviewing predicate factual issues, but argues that courts ultimately decide as a matter of law what CEQA requires. (Answering Brief, pp. 14, 23.)

SCAQMD submits that the issue is more nuanced than either party contends. We submit that, whether a CEQA document includes sufficient analysis to satisfy CEQA's informational mandates is a mixed question of fact and law,[13] containing two levels of inquiry that should be judged by different standards.[14]

The state CEQA Guidelines set forth standards for the adequacy of environmental analysis. Guidelines Section 15151 states:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

In this case, the basic question is whether the underlying analysis of air quality impacts made the EIR "sufficient" as an informative document. However, whether the EIR's analysis was sufficient is judged in light of what was reasonably feasible. This represents a mixed question of fact and law that is governed by two different standards of review.

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[13] Friant Ranch actually states that the claim that an EIR lacks sufficient relevant information is, "most properly thought of as raising mixed questions of fact and law." (Opening Brief, p. 27.) However, the remainder of its argument claims that the court should apply the substantial evidence standard of review to all aspects of the issue.

[14] Mixed questions of fact and law issues may implicate predominantly factual subordinate questions that are reviewed under the substantial evidence test even though the ultimate question may be reviewed by the independent judgment test. *Crocker National Bank v. City and County of San Francisco* (1989) 49 Cal.3d 881, 888-889.

SCAQMD submits that an EIR's sufficiency as an informational document is ultimately a legal question that courts should determine using their independent judgment. This Court's language in *Laurel Heights I* supports this position. As this Court explained: "The court does not pass upon the correctness of the EIR's environmental conclusions, but only upon its *sufficiency as an informative document.*" (*Laurel Heights I, supra,* 47 Cal.3d at 392-393) (emphasis added.) As described above, the Court in *Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 431, also used its independent judgment to determine what level of analysis CEQA requires for water supply impacts. The Court did not defer to the lead agency's opinion regarding the law's requirements; rather, it determined for itself what level of analysis was necessary to meet "[t]he law's informational demands." (*Id.* at p. 432.) Further, existing case law also holds that where an agency fails to comply with CEQA's information disclosure requirements, the agency has "failed to proceed in the manner required by law." (*Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 118.)

However, whether an EIR satisfies CEQA's requirements depends in part on whether it was reasonably feasible for an agency to conduct additional or more thorough analysis. EIRs must contain "a detailed statement" of a project's impacts (Pub. Res. Code § 21061), and an agency must "use its best efforts to find out and disclose all that it reasonably can." (CEQA Guidelines § 15144.) Nevertheless, "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." (CEQA Guidelines § 15151.)

SCAQMD submits that the question of whether additional analysis or a particular study suggested by a commenter is "feasible" is generally a question of fact. Courts have already held that whether a particular alternative is "feasible" is reviewed by the substantial evidence test.

(*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 598-99; *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 883.) Thus, if a lead agency determines that a particular study or analysis is infeasible, that decision should generally be judged by the substantial evidence standard. However, SCAQMD urges this Court to hold that lead agencies must explain the basis of any determination that a particular analysis is infeasible in the EIR itself. An EIR must discuss information, including issues related to the feasibility of particular analyses "in sufficient detail to enable meaningful participation and criticism by the public. '[W]hatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.'" (*Laurel Heights I, supra*, 47 Cal.3d at p. 405 (quoting *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 831) (discussing analysis of alternatives).) The evidence on which the determination is based should also be summarized in the EIR itself, with appropriate citations to reference materials if necessary. Otherwise commenting agencies such as SCAQMD would be forced to guess where the lead agency's evidence might be located, thus thwarting effective public participation.

Moreover, if a lead agency determines that a particular study or analysis would not result in reliable or useful information and for that reason is not feasible, that determination should be judged by the substantial evidence test. (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, *supra*, 57 Cal.4th 439, 448, 457:

whether "existing conditions" baseline would be misleading or uninformative judged by substantial evidence standard.[15])

If the lead agency's determination that a particular analysis or study is not feasible is supported by substantial evidence, then the agency has not violated CEQA's information disclosure provisions, since it would be infeasible to provide additional information. This Court's decisions provide precedent for such a result. For example, this Court determined that the issue of whether the EIR should have included a more detailed discussion of future herbicide use was resolved because substantial evidence supported the agency's finding that "the precise parameters of future herbicide use could not be predicted." *Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 955.

Of course, SCAQMD expects that courts will continue to hold lead agencies to their obligations to consult with, and not to ignore or misrepresent, the views of sister agencies having special expertise in the area of air quality. (*Berkeley Keep Jets Over the Bay v. Board of Port Commissioners* (2007) 91 Cal.App.4th 1344, 1364 n.11.) In some cases, information provided by such expert agencies may establish that the purported evidence relied on by the lead agency is not in fact "substantial". (*Id.* at pp. 1369-1371.)

In sum, courts retain ultimate responsibility to determine what CEQA requires. However, the law does not require exhaustive analysis, but only what is reasonably feasible. Agencies deserve deference for their factual determinations regarding what type of analysis is reasonably feasible. On the other hand, if a commenter requests more information, and the lead agency declines to provide it but does *not* determine that the

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[15] The substantial evidence standard recognizes that the courts "have neither the resources nor the scientific expertise" to weigh conflicting evidence on technical issues. (*Laurel Heights I, supra,* 47 Cal.3d 376, 393.)

requested study or analysis would be infeasible, misleading or uninformative, the question becomes whether the omission of that analysis renders the EIR inadequate to satisfy CEQA's informational purposes. (*Id.* at pp. 1370-71.) Again, this is predominantly a question of law and should be judged by the de novo or independent judgment standard of review. Of course, this Court has recognized that a "project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR. That further study...might be helpful does not make it necessary." (*Laurel Heights I, supra,* 47 Cal.3d 376, 415 – see also CEQA Guidelines § 15204(a) [CEQA "does not require a lead agency to conduct every test. . . recommended or demanded by commenters."].) Courts, then, must adjudicate whether an omission of particular information renders an EIR inadequate to serve CEQA's informational purposes.[16]

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[16] We recognize that there is case law stating that the substantial evidence standard applies to "challenges to the scope of an EIR's analysis of a topic" as well as the methodology used and the accuracy of the data relied on in the document "because these types of challenges involve factual questions." (*Bakersfield Citizens for Local Control v. City of Bakersfield, supra,* 124 Cal.App.4th 1184, 1198, and cases relied on therein.) However, we interpret this language to refer to situations where the question of the scope of the analysis really is factual—that is, where it involves whether further analysis is feasible, as discussed above. This interpretation is supported by the fact that the *Bakersfield* court expressly rejected an argument that a claimed "omission of information from the EIR should be treated as inquiries whether there is substantial evidence supporting the decision approving the project. " *Bakersfield, supra,* 124 Cal.App.4th at p. 1208. And the *Bakersfield* court ultimately decided that the lead agency must analyze the connection between the identified air pollution impacts and resulting health impacts, even though the EIR already included some discussion of air-pollution-related respiratory illnesses. *Bakersfield, supra,* 124 Cal.App.4th at p. 1220. Therefore, the court must not have interpreted this question as one of the "scope of the analysis" to be judged by the substantial evidence standard.

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law.

In its brief, Friant Ranch makes a distinction between cases where a required CEQA topic is not discussed at all (to be reviewed by independent judgment as a failure to proceed in the manner required by law) and cases where a topic is discussed, but the commenter claims the information provided is insufficient (to be judged by the substantial evidence test). (Opening Brief, pp. 13-17.) The Court of Appeal recognized these two types of cases, but concluded that both raised questions of law. (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) We believe the distinction drawn by Friant Ranch is unduly narrow, and inconsistent with cases which have concluded that CEQA documents are insufficient. In many instances, CEQA's requirements are stated broadly, and the courts must interpret the law to determine what level of analysis satisfies CEQA's mandate for providing meaningful information, even though the EIR discusses the issue to some extent.

For example, the CEQA Guidelines require discussion of the existing environmental baseline. In *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 954-955, the lead agency had discussed the environmental baseline by describing historic month-end water levels in the affected lakes. However, the court held that this was not an adequate baseline discussion because it failed to discuss the timing and amounts of past actual water releases, to allow comparison with the proposed project. The court evidently applied the independent judgment test to its decision, even though the agency discussed the issue to some extent.

Likewise, in *Vineyard Area Citizens* (2007) 40 Cal.4th 412, this Court addressed the question of whether an EIR's analysis of water supply impacts complied with CEQA. The parties agreed that the EIR was required to analyze the effects of providing water to the development project, "and that in order to do so the EIR had, in some manner, to identify the planned sources of that water." (*Vineyard Area Citizens, supra,* at p. 428.) However, the parties disagreed as to the level of detail required for this analysis and "what level of uncertainty regarding the availability of water supplies can be tolerated in an EIR . . . ." (*Id.*) In other words, the EIR had analyzed water supply impacts for the project, but the petitioner claimed that the analysis was insufficient.

This Court noted that neither CEQA's statutory language or the CEQA Guidelines specifically addressed the question of how precisely an EIR must discuss water supply impacts. (*Id.*) However, it explained that CEQA "states that '[w]hile foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.'" (*Id.*, [Guidelines § 15144].) The Court used this general principle, along with prior precedent, to elucidate four "principles for analytical adequacy" that are necessary in order to satisfy "CEQA's informational purposes." (*Vineyard Area Citizens, supra,* at p. 430.) The Court did not defer to the agency's determination that the EIR's analysis of water supply impacts was sufficient. Rather, this Court used its independent judgment to determine for itself the level of analysis required to satisfy CEQA's fundamental purposes. (*Vineyard Area Citizens, supra*, at p. 441: an EIR does not serve its purposes where it neglects to explain likely sources of water and "... leaves long term water supply considerations to later stages of the project.")

Similarly, the CEQA Guidelines require an analysis of noise impacts of the project. (Appendix G, "Environmental Checklist Form."[17]) In *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1123, the court held that the lead agency's noise impact analysis was inadequate even though it had addressed the issue and concluded that the increase would not be noticeable. If the court had been using the substantial evidence standard, it likely would have upheld this discussion.

Therefore, we do not agree that the issue can be resolved on the basis suggested by Friant Ranch, which would apply the substantial evidence standard to *every* challenge to an analysis that addresses a required CEQA topic. This interpretation would subvert the courts' proper role in interpreting CEQA and determining what the law requires.

Nor do we agree that the Court of Appeal in this case violated CEQA's prohibition on courts interpreting its provisions "in a manner which imposes procedural or substantive requirements beyond those explicitly stated in this division or in the state guidelines." (Pub. Resources Code § 21083.1.) CEQA requires an EIR to describe *all* significant impacts of the project on the environment. (Pub. Resources Code § 21100(b)(2); *Vineyard Area Citizens, supra,* at p. 428.) Human beings are part of the environment, so CEQA requires EIRs to discuss a project's significant impacts on human health. However, except in certain particular circumstances,[18] neither the CEQA statute nor Guidelines specify the precise level of analysis that agencies must undertake to satisfy the law's requirements. (see, e.g., CEQA Guidelines § 15126.2(a) [EIRs must describe "health and safety problems caused by {a project's} physical changes"].) Accordingly, courts must interpret CEQA as a whole to

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[17] Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) p.287.

[18] E.g., Pub. Resources Code § 21151.8(C)(3)(B)(iii) (requiring specific type of health risk analysis for siting schools).

determine whether a particular EIR is sufficient as an informational document. A court determining whether an EIR's discussion of human health impacts is legally sufficient does not constitute imposing a new substantive requirement.[19] Under Friant Ranch's theory, the above-referenced cases holding a CEQA analysis inadequate would have violated the law. This is not a reasonable interpretation.

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS

Courts must "scrupulously enforce" CEQA's legislatively mandated requirements. (*Vineyard Area Citizens, supra*, 40 Cal.4th 412, 435.) Case law has firmly established that lead agencies must consult with the relevant air pollution control district before conducting an initial study, and must provide the districts with notice of the intention to adopt a negative declaration (or EIR). (*Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 958.) As *Schenck* held, neither publishing the notice nor providing it to the State Clearinghouse was a sufficient substitute for sending notice directly to the air district. (*Id.*) Rather, courts "must be satisfied that [administrative] agencies have fully complied with the procedural requirements of CEQA, since only in this way can the important public purposes of CEQA be protected from subversion." *Schenck,* 198 Cal.App.4th at p. 959 (citations omitted).[20]

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[19] We submit that Public Resources Code Section 21083.1 was intended to prevent courts from, for example, holding that an agency must analyze economic impacts of a project where there are no resulting environmental impacts (see CEQA Guidelines § 15131) , or imposing new procedural requirements, such as imposing additional public notice requirements not set forth in CEQA or the Guidelines.

[20] Lead agencies must consult air districts, as public agencies with jurisdiction by law over resources affected by the project, *before* releasing an EIR. (Pub. Resources Code §§ 21104(a); 21153.) Moreover, air

Lead agencies should be aware, therefore, that failure to properly seek and consider input from the relevant air district constitutes legal error which may jeopardize their project approvals. For example, the court in *Fall River Wild Trout Foundation v. County of Shasta,* (1999) 70 Cal.App.4th 482, 492 held that the failure to give notice to a trustee agency (Department of Fish and Game) was prejudicial error requiring reversal. The court explained that the lack of notice prevented the Department from providing any response to the CEQA document. (*Id.* at p. 492.) It therefore prevented relevant information from being presented to the lead agency, which was prejudicial error because it precluded informed decision-making. (*Id.*)[21]

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districts should be considered "state agencies" for purposes of the requirement to consult with "trustee agencies" as set forth in Public Resources Code § 20180.3(a). This Court has long ago held that the districts are not mere "local agencies" whose regulations are superseded by those of a state agency regarding matters of statewide concern, but rather have concurrent jurisdiction over such issues. (*Orange County Air Pollution Control District v. Public Util. Com.* (1971) 4 Cal.3d 945, 951, 954.) Since air pollution is a matter of statewide concern, *Id* at 952, air districts should be entitled to trustee agency status in order to ensure that this vital concern is adequately protected during the CEQA process.

[21] In *Schenck,* the court concluded that failure to give notice to the air district was not prejudicial, but this was partly because the trial court had already corrected the error before the case arrived at the Court of Appeal. The trial court issued a writ of mandate requiring the lead agency to give notice to the air district. The air district responded by concurring with the lead agency that air impacts were not significant. (*Schenck,* 198 Cal.App.4th 949, 960.) We disagree with the *Schenck* court that the failure to give notice to the air district would not have been prejudicial (even in the absence of the trial court writ) merely because the lead agency purported to follow the air district's published CEQA guidelines for significance. (*Id.*, 198 Cal.App.4th at p. 960.) In the first place, absent notice to the air district, it is uncertain whether the lead agency properly followed those guidelines. Moreover, it is not realistic to expect that an air district's published guidelines would necessarily fully address all possible air-quality related issues that can arise with a CEQA project, or that those

Similarly, lead agencies must obtain additional information requested by expert agencies, including those with jurisdiction by law, if that information is necessary to determine a project's impacts. (*Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236-37.) Approving a project without obtaining that information constitutes a failure to proceed in the manner prescribed by CEQA. (*Id.* at p. 1236.)

Moreover, a lead agency can save significant time and money by consulting with the air district early in the process. For example, the lead agency can learn what the air district recommends as an appropriate analysis on the facts of its case, including what kinds of health impacts analysis may be available, and what models are appropriate for use. This saves the lead agency from the need to do its analysis all over again and possibly needing to recirculate the document after errors are corrected, if new significant impacts are identified. (CEQA Guidelines § 15088.5(a).) At the same time, the air district's expert input can help the lead agency properly determine whether another commenter's request for additional analysis or studies is reasonable or feasible. Finally, the air district can provide input on what mitigation measures would be feasible and effective.

Therefore, we suggest that this Court provide guidance to lead agencies reminding them of the importance of consulting with the relevant air districts regarding these issues. Otherwise, their feasibility decisions may be vulnerable to air district evidence that establishes that there is no substantial evidence to support the lead agency decision not to provide specific analysis. (*See Berkeley Keep Jets Over the Bay, supra,* 91 Cal.App.4th 1344, 1369-1371.)

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guidelines would necessarily be continually modified to reflect new developments. Therefore we believe that, had the trial court not already ordered the lead agency to obtain the air district's views, the failure to give notice would have been prejudicial, as in *Fall River, supra,* 70 Cal.App.4th 482, 492.

CONCLUSION

The SCAQMD respectfully requests this Court *not* to establish a hard-and-fast rule concerning whether CEQA requires a lead agency to correlate identified air quality impacts of a project with resulting health outcomes. Moreover, the question of whether an EIR is "sufficient as an informational document" is a mixed question of fact and law containing two levels of inquiry. Whether a particular proposed analysis is feasible is predominantly a question of fact to be judged by the substantial evidence standard of review. Where the requested analysis is feasible, but the lead agency relies on legal or policy reasons not to provide it, the question of whether the EIR is nevertheless sufficient as an informational document is predominantly a question of law to be judged by the independent judgment standard of review.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.520(c)(1) of the California Rules of Court, I hereby certify that this brief contains 8,476 words, including footnotes, but excluding the Application, Table of Contents, Table of Authorities, Certificate of Service, this Certificate of Word Count, and signature blocks. I have relied on the word count of the Microsoft Word Vista program used to prepare this Certificate.

DATED: April 3, 2015 Respectfully submitted,

Barbara Baird

Barbara Baird

PROOF OF SERVICE

I am employed in the County of Los Angeles, California. I am over the age of 18 years and not a party to the within action. My business address is 21865 Copley Drive, Diamond Bar, California 91765.

On April 3, 2015 I served true copies of the following document(s) described as **APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*** by placing a true copy of the foregoing document(s) in a sealed envelope addressed as set forth on the attached service list as follows:

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing following our ordinary business practices. I am readily familiar with this District's practice for collection and processing of correspondence for mailing. Under that practice, the correspondence would be deposited with the United States Postal Service, with postage thereon fully prepaid at Diamond Bar, California, in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on April 3, 2015 at Diamond Bar, California.

Patricia Anderson

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ATTACHMENT B

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

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[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

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[6] CEQA does not require speculation. *See, e.g., Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

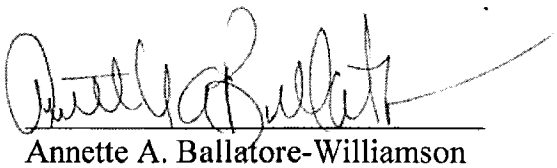
Rule 8.520 Disclosure

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

CONCLUSION

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015



Annette A. Ballatore-Williamson
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Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

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[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf (visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041l.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015

Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel (SBN 192176)

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO

On all parties to this action at the following addresses and in the following manner:

PLEASE SEE ATTACHED SERVICE LIST

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

SERVICE LIST

Sierra Club et al, v. County of Fresno, et al
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Fifth District Court of Appeal Case No.: F066798
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Attachment 1

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment (Public Resources Code 21081.6). This mitigation monitoring and reporting program is designed to ensure compliance with adopted mitigation measures during project implementation. For each mitigation measure recommended in the Final Environmental Impact Report (Final EIR), specifications are made herein that identify the action required and the monitoring that must occur. In addition, a responsible agency is identified for verifying compliance with individual conditions of approval contained in this Mitigation Monitoring and Reporting Program (MMRP).

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Air Quality							
AQ-1 Super-Compliant Low VOC Paint							
During the architectural coating phase of construction, the project shall utilize "Super-Compliant" low VOC paints formulated to exceed the regulatory VOC limits put forth by SCAQMD Rule 1113. Super-Compliant low VOC paints shall contain no more than 10 grams of VOC per liter. Alternatively, the applicant may utilize tilt-up concrete panels that do not require architectural coatings.	Verify the use of low VOC paints containing no more than 10 grams of VOC per liter.	Prior to issuance of building permits	Once	City of Riverside Community and Economic Development Department, Building and Safety Division			
AQ-2 Site Preparation and Grading Watering							
During site preparation and grading activity phases of construction, all actively graded areas shall be watered at two-hour watering intervals (i.e., four times per day) or a movable sprinkler system shall be in place to ensure a minimum soil moisture of 12 percent is maintained. Moisture content shall be verified with the use of a moisture probe by the grading contractor four times per day during grading activities.	Project Applicant or their Contractor shall submit evidence to the City that soil moisture content measurements are being conducted by the grading contactor.	Site preparation and grading phase of construction	Periodically	City of Riverside Public Works Department Project Contractor			
AQ-3 Exceedance of California Building Code Title 24							
Prior to the issuance of building permits, the project applicant shall submit energy usage calculations to the City of Riverside Building Division showing that the project is designed to achieve a minimum five percent efficiency beyond the existing California Building Code Title 24 and Building and Safety Requirements. Examples of measures that reduce energy consumption include, but are not limited to, the following: ▪ Increase in insulation such that hear transfer and thermal bridging is minimalized ▪ Limit air leakage through the structure and/or within the heating and cooling distribution system	Verify energy usage calculations submitted to the City of Riverside Building Division show that the project is designed to achieve minimum five percent efficiency beyond the existing California Building Code Title 24 and Building and Safety Requirements.	Prior to issuance of building permits	Once	City of Riverside Community and Economic Development Department, Building and Safety Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
▪ Use energy-efficient space heating and cooling equipment ▪ Install electrical hook-ups at loading dock areas ▪ Install dual-paned or other energy efficient windows ▪ Use interior and exterior energy efficient lighting that exceeds current California Title 24 Energy Efficiency performance standards ▪ Install automatic devises to turn off lights where they are not needed ▪ Apply a paint and surface color palette that emphasizes light and off-white colors to reflect heat away from buildings ▪ Design buildings with "cool roofs" using products certified by the Cool Roof Rating Council, and/or exposed roof surface using light off-white colors ▪ Design buildings to accommodate photo-voltaic solar electricity systems or install photo-voltaic solar electricity systems ▪ Install ENERGY STAR-qualified, energy-efficient appliances, heating and cooling systems, office equipment, and/or lighting products The items listed above are not all required, but present examples of efficiency measures. Neither is the list all-inclusive; other features that reduce energy consumption could be acceptable at the discretion of the City Building Official.							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
AQ-4 Enhanced Water Conservation							
Prior to the issuance of building permits, the project applicant shall prepare a Water Conservation Strategy and demonstrate a minimum 30 percent reduction in outdoor water use compared to baseline water demand. Baseline water demand is the total expected water demand without implementation of the Water Conservation Strategy. The project Water Conservation Strategy shall be subject to review and approval by the City. The project shall also implement the following: ▪ Install a landscaping palette emphasizing drought tolerant plants ▪ Use water-efficient irrigation techniques ▪ Implement USEPA Certified WaterSense labeled or equivalent faucets, high-efficiency toilets, and water-conserving shower heads	Verify that a Water Conservation Strategy has been prepared, which demonstrates a minimum 30 percent reduction in outdoor water usage compared to baseline water demand and implements the measures outlined in AQ-4.	Prior to issuance of building permits	Once	City of Riverside Community and Economic Development Department, Building and Safety Division (Construction Documents) Planning Division (Landscape and Irrigation Plans)			
Biological Resources							
BIO-1a Burrowing Owl Preconstruction Survey							
Pre-construction presence/absence surveys for burrowing owl shall be conducted in the survey area where suitable habitat is present prior to ground disturbance in new areas, throughout the construction phase of the project. Pre-construction surveys shall be conducted by a qualified biologist in the development footprint and a 500-foot buffer no more than 30 days prior to grading or other significant site disturbance. The surveys should be conducted in accordance with the most recent CDFW and California Burrowing Owl Consortium guidelines. A burrow shall be considered occupied when there is confirmed use by burrowing owl based on observations made by a qualified biologist. If owls are not found to be occupying habitat in the survey area during the pre-construction survey,	Monitor the schedule of proposed activities related to the project to confirm whether or not these activities will require pre-construction presence/absence surveys. Review results of pre-construction presence/absence surveys.	No more than 30 days prior to grading or other significant ground disturbances	Once	City of Riverside Community and Economic Development Department, Planning Division Qualified Biologist			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
the proposed disturbance activities may proceed. Take of active nests shall be avoided.							
BIO-1b Burrowing Owl Avoidance Measures							
If owls are discovered on and/or within 500 feet of the proposed project site, avoidance measures shall be developed in compliance with the MSHCP and in coordination with the CDFW and/or Western Riverside County Regional Conservation Authority. Such measures will include but not be limited to the following: ▪ Burrowing owls shall not be disturbed on-site and/or within a 500-foot buffer between February 1 and August 31 to avoid impacting nesting. ▪ Prior to any ground disturbance, all limits of project construction shall be delineated and marked to be clearly visible to personnel on foot and in heavy equipment. All construction-related activities shall occur inside the limits of construction and designated staging areas. Construction staging and equipment storage shall be located outside of any occupied burrowing owl burrow locations. All construction-related movement shall be restricted to the limits of construction and staging areas. Avoidance measures shall include passive relocation by a qualified biologist to remove the owls between September 1 and January 31, which is outside of the typical nesting season.	Development of burrowing owl avoidance measures in compliance with MSHCP and in coordination with the CDFW and/or Western Riverside County Regional Conservation Authority if burrowing owls are discovered on and/ or within 500 feet of the project site.	Upon notice of located active owl burrow	Once	City of Riverside Community and Economic Development Department, Planning Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
BIO-2 Nesting Bird Avoidance							
Prior to the issuance of grading permits, the following measures shall be implemented: To avoid disturbance of nesting and special-status birds such as Cooper's hawk, and including other raptorial species protected by the Migratory Bird Treated Act and CFGC, activities related to the project, including but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (February 1 through August 30). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 30 days prior to initiation of construction activities. The nesting bird pre-construction survey shall be conducted on foot inside the project site disturbance areas, and including a 500-foot buffer. Inaccessible areas (e.g., private lands) will be surveyed from afar using binoculars to the extent practical. The survey shall be conducted by a qualified biologist familiar with the identification of avian species known to occur in western Riverside County. If nests are found, an appropriate avoidance buffer will be determined by a qualified biologist and demarcated by a qualified biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. Effective buffer distances are highly variable and based on specific project stage, bird species, stage of nesting cycle, work type, and the tolerance of a particular bird pair. The buffer may be up to 500 feet in diameter, depending on the species of nesting bird found and the biologist's observations. If nesting birds are located adjacent to the project site with the potential to be affected by construction activity noise above 60 dBA Leq (see Section 4.10, Noise, for definitions and discussion of noise levels), a temporary noise barrier would be erected. The barrier would consist of large	Monitor the schedule of proposed activities related to the project, to confirm whether or not these activities will occur outside of the bird breeding season. Review results of pre-construction nesting bird survey if initial site disturbance cannot be conducted outside of bird breeding season, to confirm that it meets the requirements of this mitigation measure. Confirm that the avoidance buffer has been appropriately determined and demarcated by the avian biologist, construction personnel have been appropriately notified of its existence and to avoid entering it during the nesting season, no ground disturbing activities occur within the avoidance buffer until the avian biologist has confirmed that breeding/ nesting is completed and the young have fledged the nest, and that encroachment into the buffer occurs only at the discretion of the qualified avian biologist.	Prior to the issuance of grading permits Prior to each project activity Prior to ground disturbance and construction activities that will occur during the bird breeding season Upon notice of located active bird nests	Once	Riverside Community and Economic Development Department, Planning Division City of Riverside Community and Economic Development Department, Planning Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
panels designed specifically to be deployed on construction sites for reducing noise levels at sensitive receptors. If 60 dBA Leq is exceeded, an acoustician would require the construction contractor to make operational and barrier changes to reduce noise levels to 60 dBA during the breeding season (February 1 through August 30). Noise monitoring shall occur during operational changes and installation of barriers to ensure their effectiveness. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No parking, storage of materials, or construction activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist, if it is determined such encroachment will not adversely impact the nesting birds.							
BIO-3 Avoidance and Minimization							
Jurisdictional areas outside the footprint of direct development impact (i.e., the eastern portion of the concrete channel) shall be avoided. Any material/spoils generated from project activities shall be located away from jurisdictional areas and protected from stormwater run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank. Any material spills will be stopped if this can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman will be notified.	Project applicant shall submit evidence which verify prevention of stormwater run-off from the project site into drainage channels through implementation of temporary perimeter sediment barriers, storage materials on impervious surfaces, and the stopping of any material spills if possible. In the case of any material spills: the project foreman will be notified, the spill is to be cleaned, and contaminated materials properly disposed.	Prior to grading permit	Periodically	City of Riverside Public Works Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
BIO-4 Consultation and Compensatory Mitigation							
Prior to ground disturbance activities that will impact waters and WoUS and/or WOS, the project proponent shall consult with USACE on the need for a CWA Section 404 permit, the RWQCB regarding compliance with Section 401 of the CWA, CDFW on the need for a Streambed Alteration Agreement, and the Western Riverside Conservation Authority, which oversees compliance with the Multiple Species Habitat Conservation Plan (MSHCP). Discussions with these agencies were initiated in October 2018 and are ongoing. Appropriate permits shall be obtained prior to disturbance of jurisdictional resources. Impacts to jurisdictional waters shall be mitigated through the purchase of the appropriate number of riparian/riverine restoration credits from the nearby Riverside-Corona Resource Conservation District. These impacts will be mitigated at no less than a 2:1 ratio	Ensure project proponent has completed: ▪ Compliance with Section 401 of the CWA ▪ Compliance with USACE on the need for a CWA Section 404 Permit ▪ Compliance with CDFW on need for a Streambed Alteration Agreement ▪ Consultation with Western Riverside Conservation Authority for compliance with the MSHCP ▪ Purchase of the appropriate number of riparian/riverine restoration credits	Prior to any grading permit	Once	City of Riverside Community and Economic Development Department, Planning Division			
Cultural Resources							
CR-1 Archaeological Monitoring Plan							
At least 30 days prior to issuance of grading permit and before any grading, excavation, and/or ground disturbing activities take place, the developer shall retain a qualified archaeologist, defined as an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983), to carry out all mitigation measures related to archaeological and historic resources. The project archaeologist, in consultation with consulting tribes, the developer, and the City, shall develop an Archaeological Monitoring Plan to address the details, timing, and responsibility of all archaeological and cultural activities that	Review and approve the Archaeological Monitoring Plan to confirm that it meets the requirements of this mitigation measure.	At least 30 days prior to issuance of grading permit	Once	City of Riverside Community and Economic Development Department, Planning Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
will occur on the project site. Details in the plan shall include: ▪ Project grading and development scheduling ▪ A rotating or simultaneous schedule in coordination with the developer and the project archaeologist for designated Native American Tribal Monitors from the consulting tribes during grading, excavation, and ground-disturbing activities on the site, including the scheduling, safety requirements, duties, scope of work, and Native American Tribal Monitors' authority to stop and redirect grading activities in coordination with all project archaeologists ▪ Protocols and stipulations that the developer, tribes, and project archaeologist/ paleontologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits, or non-renewable paleontological resources that shall be subject to a cultural resources evaluation ▪ Treatment and final disposition of any cultural and paleontological resources, sacred sites, and human remains if discovered on the project site ▪ The scheduling and timing of the Cultural and Archaeological Sensitivity Training noted in mitigation measure CR-2.							
CR-2 Cultural and Archaeological Sensitivity Training							
A qualified archaeologist and any consulting tribes shall attend the pre-grading meeting with the developer's contractors to conduct a Worker's Environmental Awareness Program training for cultural and archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities. Archaeological sensitivity training shall include a description of the types of cultural	Applicant to submit sign-in sheet for cultural and archaeological sensitivity training, conducted by a qualified archaeologist, for all construction site personnel.	Prior to construction activities	Once	City of Riverside Community and Economic Development Department, Planning Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
material that may be encountered, cultural sensitivity issues, regulatory issues, procedures to follow during ground disturbance in sensitive areas, and protocols in the event unanticipated resources are discovered. Only construction personnel who received this training can conduct construction and disturbance activities in sensitive areas. All attendees shall confirm attendance by signing a sign-in sheet to be submitted to the City of Riverside.							
CR-3 Treatment and Disposition of Cultural Resources							
In the event cultural resources are encountered inadvertently during ground-disturbing activities, work in the immediate area must halt and the qualified archaeologist must be immediately contacted and may consult with the tribal monitor(s) to evaluate the find and develop a plan for treatment of the find/archaeological site. The following procedures shall be carried out for treatment and disposition of the discoveries: 1. Temporary Curation and Storage: During the course of construction, all discovered resources shall be temporarily curated in a secure location on site or at the offices of the project archaeologist. The removal of any artifacts from the project site shall need to be inventoried thoroughly with tribal monitor oversight, as necessary, of the process. 2. Treatment and Final Disposition: The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains, as part of the required mitigation for impacts to cultural resources. The landowner(s) shall relinquish the artifacts through one or more of the following methods and provide the City of Riverside Community and Economic Development Department with evidence of	Confirm that a qualified archaeologist has informed all on-site construction personnel of the proper procedures in the event of a cultural or archaeological discovery. Submittal of a Phase IV Monitoring Report.	Grading and Construction activities Submittal of Phase IV Monitoring Report within 60 days of completion of grading	On-going	City of Riverside Community and Economic Development Department, Planning Division. Qualified Archaeologist Native American Monitor Landowner and Project Applicant			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
same: ▪ Accommodate the process for on-site reburial of the discovered items with the consulting tribes. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation are completed. ▪ Secure a curation agreement with an appropriate qualified repository in Riverside County that meets federal standards per 36 CFR Part 79 and will professionally curate and make available findings to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility in Riverside County, to be accompanied by payment of the fees necessary for permanent curation. ▪ If more than one consulting tribe is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center or Riverside Metropolitan Museum by default. ▪ At the completion of grading, excavation, and ground-disturbing activities on the site, a Phase IV Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the project archaeologist and Native Tribal Monitors, as necessary, within 60 days of completion of grading. This report shall document the impacts to the known resources on the property; describe how each mitigation measure was fulfilled; document the type of cultural resources							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced shall be submitted to the City of Riverside, Eastern Information Center, and consulting tribes.							
CR-4 Paleontological Resources Monitoring							
The following mitigation measure would address the potentially significant impacts relating to the discovery of paleontological resources during project implementation and ground-disturbing activities. This measure would apply to all phases of project construction and would ensure that any significant fossils present on site are preserved. The following procedures shall be carried out: ▪ Prior to the commencement of ground-disturbing activities under the project, a qualified professional paleontologist shall be retained to conduct paleontological monitoring during project ground disturbing activities. The Qualified Paleontologist (Principal Paleontologist) shall meet the education and professional experience standards as set forth by the SVP, which recommends the paleontologist shall have at least a Master's Degree or equivalent work experience in paleontology, shall have knowledge of the local paleontology, and shall be familiar with paleontological procedures and techniques. ▪ Ground-disturbing construction activities (including grading, trenching, drilling with an auger greater than three feet in diameter, and other excavation) below five feet and within	Applicant shall submit evidence a Principal Paleontologist is placed on retainer. Confirm submittal of a final report by the Principal Paleontologist, describing the results of the paleontological mitigation monitoring efforts associated with the project.	Grading and Construction activities	On-going	City of Riverside Community and Economic Development Department, Planning Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
project areas with high paleontological sensitivity (i.e., Pleistocene alluvium; Qvof, Qof) shall be monitored on a full-time basis. Spot-check monitoring is recommended for ground disturbance below ten feet for project areas underlain by geologic units with low paleontological sensitivity (i.e., younger Quaternary alluvium; Qyf) to determine underlying sensitive units are being impacted. Monitoring shall be supervised by the Qualified Paleontologist and shall be conducted by a qualified paleontological monitor, who is defined as an individual who meets the minimum qualifications per standards set forth by the SVP, which includes a BS or BA degree in geology or paleontology with one year of monitoring experience and knowledge of collection and salvage of paleontological resources. ▪ The duration and timing of the monitoring shall be determined by the Qualified Paleontologist. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, he or she may recommend reducing monitoring to periodic spot-checking or cease entirely. Monitoring would be reinstated if any new ground disturbances are required and reduction or suspension would need to be reconsidered by the Qualified Paleontologist. ▪ If a paleontological resource is discovered, the monitor shall have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and collected. Once salvaged, significant fossils shall be prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection (such as the Western Science Center in Hemet). Curation fees are the responsibility of the project							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
owner. A final report shall be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the lead agency(s) for the project. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.							
Geology and Soils							
GEO-1 Plan Review and Construction Monitoring							
Prior to the issuance of grading permits, project foundation and grading plans shall be reviewed by the geotechnical engineer to confirm consistency with all standards contained in the geotechnical report and required under the City's grading ordinance. Plans shall demonstrate positive drainage away from all structures, as recommended in the geotechnical report. All grading operations, including the preparation of the natural ground surface, shall be observed and compaction tests performed by the geotechnical engineer to ensure site preparation and grading adheres to over-excavation and relative compaction standards contained in the geotechnical report. Sub-excavated surfaces and all other surfaces to receive fill should be scarified to a minimum depth of 12 inches, moisture conditioned to at least 120 percent of the optimum moisture content, and densified to a minimum relative compaction of 90 percent pursuant to ASTM International standard D1557—Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified	Verify foundation and grading plans have been reviewed by a geotechnical engineer to confirm consistency with all standards contained in the geotechnical report and required under the City's grading ordinance. Applicant shall submit evidence of geotechnical engineer which would monitor grading operations and perform compaction tests.	Prior to issuance of grading permits	Once	City of Riverside Department of Public works City of Riverside Community and Economic Development Department, Building and Safety Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Effort—as confirmed by the geotechnical engineer.							
GEO-2 Geotechnical Recommendation Implementation							
All recommendations included in the approved geotechnical report shall be implemented as project conditions of approval. Such recommendations include, but are not limited to: ▪ Over-excavation, moisture conditioning, densification, and relative compaction standards detailed in the geotechnical report ▪ Application of appropriate seismic design parameters cited in the geotechnical report ▪ Retaining wall design standards and soil backfill requirements ▪ Shallow foundation design standards, including placement of 12-inch wide footings at least 18 inches below the lowest final adjacent grade for retaining walls and one-, two-, and three-story buildings. The spread and wall footings should be designed for a maximum safe soil bearing pressure of 2,000 pounds per square foot for dead plus live loads. Footings for the 4-story buildings should be at least 24 inches in depth, and may be designed for a maximum safe soil bearing pressure of 2,500 pounds per square foot. ▪ Slab-on-grade design features specified in the geotechnical report, including four-inch thick floors and concrete slabs-on-grade reinforced with No. 3 bars at 24 inches on-center each way or equivalent. The implementation of these recommendations shall be overseen by the geotechnical engineer throughout grading operations and shall be confirmed by the City of Riverside.	Include Geotechnical Report recommendations into conditions of approval. Applicant to include recommendations onto grading and building plan submittals.	Project approval, grading and building plan review, grading operations	Once	City of Riverside Department of Public Works City of Riverside Community and Economic Development Department, Building and Safety Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Hydrology and Water Quality							
HWQ-1 Letter of Map Revision							
Prior to the issuance of building permits, the applicant shall obtain a revision to the Flood Insurance Rate Map reflecting post-development drainage conditions. This process will first entail a conditional letter of map revision prior to issuance of a grading permit. Then, prior to issuance of a building permit, a letter of map revision showing the actual "as built" plans shall be submitted. The applicant shall adhere to all FEMA-required processes and shall demonstrate, with supporting technical data, that the lowest point of all structures remain at or above the 1-percent-annual-chance flood event base flood elevation.	Confirm submittal of conditional letter of revision to FEMA Flood Insurance Rate Map reflecting post-development drainage conditions. Confirm submittal of letter of revision to FEMA Flood insurance Rate Map showing the actual "as built" plans to be submitted.	Prior to issuance of grading permits Prior to issuance of building permits	Once	City of Riverside Department of Public Works City of Riverside Community and Economic Development Department			
Noise							
N-1 Operational Noise Barrier							
The project applicant shall incorporate a permanent noise barrier along the entire northern boundary of the project site. The design for this barrier shall be completed prior to issuance of building permits, and the construction of the barrier shall be completed prior to the issuance of a certificate of occupancy. The noise barrier shall be 6 feet high and shall consist of a solid face from top to bottom. Unnecessary openings or decorative cutouts in the barrier shall not be made. All gaps, except for weep holes, shall be filled with grout or caulking. The noise barrier shall provide a weight of at least four pounds per square foot of face area or it shall provide a minimum transmission loss of 20 dBA. The noise barrier shall be constructed using the following materials capable of providing a minimum transmission loss of 20 dBA: ▪ Decorative Masonry block;	Confirm design of barrier is consistent with specifications outlined in mitigation measure. Confirm construction of barrier is completed.	Prior to issuance of building permits Prior to issuance of certificate of occupancy	Once	City of Riverside Community and Economic Development Department, Building and Safety Division and Planning Division			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
▪ Precision masonry block with stucco							
Transportation and Traffic							
T-1 Main Street and Strong Street (Intersection #3)							
Restripe the eastbound and westbound approaches to provide a left turn lane and a shared through-right turn lane. A conceptual striping plan is provided in Appendix 1.2 of the TIA	Confirm restriping has been completed according to the Traffic Impact Analysis recommendations.	Prior to issuance of First Occupancy	Once	City of Riverside Public Works Department			
T-2 Orange Street and Strong Street (Intersection #8)							
Install a traffic signal.	Confirm traffic signal has been installed.	Prior to issuance of First Occupancy	Once	City of Riverside Public Works Department			
T-3 Orange Street and Oakley Avenue/SR 60 Westbound Ramps (Intersection #11)							
Install a traffic signal, construct a northbound left turn lane, and construct a westbound right turn lane with a minimum of 200 feet of storage.	Confirm traffic light has been installed and lanes described in mitigation measure have been constructed.	Prior to issuance of First Occupancy	Once	City of Riverside Public Works Department			
T-4 West La Cadena Drive and Interchange Street/I-215 Southbound Ramps (Intersection #14)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of signalization, a northbound left turn lane, and a southbound left turn lane.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			
T-5 East La Cadena Drive and I-215 Northbound Ramps (Intersection #16)							
Prior to the issuance of building permits, the applicant shall contribute its fair-share amount for the recommended improvements at this intersection, which consist of signalization, restriping the northbound through lane as a shared through-left lane and construction a second receiving lane on the on-ramp.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
T-6 Riverside Avenue/Main Street and Placentia Lane (Intersection #1)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of installation of a traffic signal.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			
T-7 Orange Street and Russel Street (Intersection #12)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of installation of a traffic signal, and construction of northbound, southbound, eastbound, and westbound left turn lanes.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			
T-8 East La Cadena Drive and Columbia Avenue (Intersection #17)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of modifying the traffic signal to implement overlap phasing on the westbound right turn lane.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			
T-9 East Riverside Avenue/Main Street and Placentia Lane (Intersection #1)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of construction of a southbound approach to provide a second left turn lane.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			
T-10 Main Street and SR 60 EB Ramps (Intersection #5)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of construction of a second southbound left turn lane.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
T-11 West La Cadena Drive and Interchange Street/I-215 Southbound Ramps (Intersection #14)							
Prior to the issuance of building permits, the applicant shall contribute their fair-share amount for the recommended improvements, which consist of construction of a second southbound left turn lane and the westbound approach to provide a left turn lane.	Confirm fair-share contribution has been received for this mitigation measure.	Prior to issuance of building permits	Once	City of Riverside Public Works Department			

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