MEMORANDUM

URBAN | CROSSROADS

DATE: July 6, 2023
TO: Tracy Zinn, T&B Planning, Inc.
FROM: Haseeb Qureshi
Ali Dadabhoy
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JOB NO: 15461-03 AQ & GHG Assessment

PLATFORM TUSTIN AIR QUALITY & GREENHOUSE GAS ASSESSMENT

Tracy Zinn,

Urban Crossroads, Inc. is pleased to provide the following Air Quality & Greenhouse Gas Assessment for the Platform Tustin (**Project**), which is located at 15661 Red Hill Avenue (Assessor's Parcel Number APN 430-233-19) in the City of Tustin.

PROJECT OVERVIEW

There are three existing office buildings within Centurion Plaza that currently occupy the site and are presently occupied:

- 15641 Red Hill Avenue: 2-story, multi-tenant office building totaling 50,311 square feet
- 15661 Red Hill Avenue: 2-story, multi-tenant office building totaling 47,782 square feet
- 15621 Red Hill Avenue: 2-story, multi-tenant office building totaling 41,085 square feet
- **Total of 139,178 square feet**

In addition to the ground parking, there is also an existing parking garage located behind 15621 Red Hill Avenue that also serves the site. The Project includes the redevelopment of the site to construct two new warehouse buildings totaling 142,788 square feet with Building 1 totaling 49,553 square feet and Building 2 totaling 93,235 square feet **(totaling 142,788 square feet)**. The Project is anticipated to be developed within a single phase with an opening year of 2024. A site plan for the proposed Project is shown in Exhibit 1.

EXHIBIT 1: SITE PLAN

AIR QUALITY EMISSIONS

PROPOSED PROJECT

CONSTRUCTION DURATION

Based on client provided data, construction of the Project is expected to commence in November 2023 and would last through December 2024. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA Guidelines (1).

TABLE 1: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Demolition	11/1/2023	1/1/2024	44
Site Preparation	1/2/2024	1/10/2024	7
Grading	1/11/2024	2/1/2024	16
Building Construction	2/2/2024	11/4/2024	197
Architectural Coating	11/5/2024	12/3/2024	21

CONSTRUCTION EQUIPMENT

Construction equipment has been provided by client data. Consistent with industry standards and typical construction practices, each piece of equipment will operate up to a total of eight (8) hours per day, or more than two-thirds of the period during which construction activities are allowed pursuant to the code.

TABLE 2: CONSTRUCTION EQUIPMENT

Activity	Equipment	Amount	Hours Per Day
Demolition	Concrete/Industrial Saws	1	8
	Excavators	3	8
	Rubber Tired Dozers	2	8
	Generator Sets	1	8
	Crushing/Proc. Equipment	1	8
Site Preparation	Rubber Tired Dozers	3	8
	Crawler Tractors	4	8

Activity	Equipment	Amount	Hours Per Day
Grading	Excavators	1	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Crawler Tractors	3	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8
	Welders	1	8
	Concrete/Industrial Saws	1	8
	Off-Highway Trucks	1	8
Architectural Coating	Air Compressors	1	8

REGIONAL CONSTRUCTION EMISSIONS SUMMARY

It is our understanding that the Project will redevelop the site to construct two new warehouse buildings: Building 1 with 49,553 square feet and Building 2 with 93,235 square feet (total of 142,788 square feet). The estimated maximum daily construction emissions are summarized on Table 3, and as shown, the Project construction-source emissions would not exceed SCAQMD regional thresholds. Thus, the Project would result in a less than significant impact associated with construction activities. Detailed construction model outputs are presented in Attachment A.

TABLE 3: REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
2024	2.19	17.66	22.98	0.04	1.63	0.87
Winter						
2023	36.84	29.45	73.10	0.04	5.40	2.15
2024	36.61	36.05	71.28	0.05	7.50	4.21
Maximum Daily Emissions	**36.84**	**36.05**	**73.10**	**0.05**	**7.50**	**4.21**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

[1]PM_{10} and $PM_{2.5}$ source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

REGIONAL OPERATIONAL EMISSIONS

Operational activities associated with the Project would result in emissions of VOCs, NO_X, CO, 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.

The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Trip characteristics available from the *Platform Tustin Trip Generation Assessment* were utilized in this analysis (2).

To determine emissions from trucks for the proposed industrial uses, the analysis incorporated the SCAQMD recommended truck trip length 15.3 miles for 2-axle (LHDT1, LHDT2) trucks, 14.2 miles 3-axle (MHDT) trucks and 39.9 miles for 4+-axle (HHDT) trucks and weighting the average trip lengths using the traffic trip percentages taken from the *Platform Tustin Trip Generation Assessment* (2). The trip length function for trucks in CalEEMod has been revised to 30.61 miles, with an assumption of 100% primary trips for the proposed industrial land uses. This trip length assumption is higher than the CalEEMod defaults for trucks.

It is common for warehouse buildings to require the operation of exterior yard trucks or cargo handling equipment (CHE) to move empty containers and empty chassis in the building's truck court areas. The cargo handling equipment is assumed to have a horsepower (hp) range of approximately 175 hp to 200 hp. Based on the latest available information from SCAQMD (3); for example, warehouse projects typically have 3.6-yard trucks/CHE per million square feet of building space. For this Project, on-site modeled operational equipment conservatively includes up to one (1) 200 horsepower (hp), compressed natural gas or gasoline-powered tractor/loader/backhoe operating at 4 hours a day[1] for 365 days of the year.

The estimated operation-source emissions from the Project are summarized on Table 4. Detailed operation model outputs are presented in Attachment A. As shown on Table 4, operational-source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

[1] Based on Table II-3, Port and Rail Cargo Handling Equipment Demographics by Type, from CARB's Technology Assessment: Mobile Cargo Handling Equipment document, a single piece of equipment could operate up to 2 hours per day (Total Average Annual Activity divided by Total Number Pieces of Equipment). As such, the analysis conservatively assumes that the tractor/loader/backhoes would operate up to 4 hours per day.

TABLE 4: TOTAL PROJECT REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Mobile Source	2.51	5.45	25.29	0.09	6.32	1.67
Area Source	4.27	0.05	6.21	0.00	0.01	0.01
Energy Source	0.04	0.74	0.62	0.00	0.06	0.06
On-site Equipment Source	0.12	0.38	16.44	0.00	0.03	0.03
Total Maximum Daily Emissions	**6.94**	**6.62**	**48.57**	**0.09**	**6.41**	**1.76**
Winter						
Mobile Source	2.50	5.77	23.51	0.09	6.32	1.67
Area Source	3.26	0.00	0.00	0.00	0.00	0.00
Energy Source	0.04	0.74	0.62	0.00	0.06	0.06
On-site Equipment Source	0.12	0.38	16.44	0.00	0.03	0.03
Total Maximum Daily Emissions	**5.92**	**6.89**	**40.57**	**0.09**	**6.40**	**1.75**

EXISTING BUILDING

The site is occupied by existing uses that are currently developed with three 2-story multi-tenant office buildings within Centurion Plaza that accommodates ground parking and a parking garage:

- 15641 Red Hill Avenue: 50,311 square feet
- 15661 Red Hill Avenue: 47,782 square feet
- 15621 Red Hill Avenue: 41,085 square feet
- **Total of 139,178 square feet**

The estimated operation-source emissions from the existing building are summarized on Table 5. Detailed operation model outputs for the existing use are presented in Attachment C.

The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. Trip characteristics available from the *Platform Tustin Addendum Trip Generation Assessment* were utilized in this analysis (2).

TABLE 5: EXISTING BUILDING REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Mobile Source	5.48	4.50	49.47	0.12	10.47	2.71
Area Source	4.17	0.05	6.05	0.00	0.01	0.01
Energy Source	0.05	0.95	0.80	0.01	0.07	0.07
Total Maximum Daily Emissions	**9.70**	**5.50**	**56.32**	**0.12**	**10.55**	**2.79**

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Winter						
Mobile Source	5.42	4.90	45.81	0.11	10.47	2.71
Area Source	3.18	0.00	0.00	0.00	0.00	0.00
Energy Source	0.05	0.95	0.80	0.01	0.07	0.07
Total Maximum Daily Emissions	**8.64**	**5.85**	**46.60**	**0.12**	**10.54**	**2.78**

AIR QUALITY EMISSIONS COMPARISON

As shown in Table 6, the proposed Project is anticipated to generate overall less emissions for all criteria pollutants except for NO_X as compared to emissions generated by the existing buildings and operational-source emissions would not exceed the applicable SCAQMD regional thresholds.

TABLE 6: PROJECT NET NEW REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
Proposed Project	6.94	6.62	48.57	0.09	6.41	1.76
Existing Building	9.70	5.50	56.32	0.12	10.55	2.79
Net Emissions (Proposed – Existing)	**-2.76**	**1.12**	**-7.75**	**-0.03**	**-4.13**	**-1.03**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Winter						
Proposed Project	5.92	6.89	40.57	0.09	6.40	1.75
Existing Building	8.64	5.85	46.60	0.12	10.54	2.78
Net Emissions (Proposed – Existing)	**-2.73**	**1.04**	**-6.03**	**-0.03**	**-4.13**	**-1.03**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

LOCALIZED CONSTRUCTION EMISSIONS

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology) (4). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs). The SCAQMD established LSTs in

response to the SCAQMD Governing Board's Environmental Justice Initiative I-4[2]. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses.

Receptors in the Project area are described below and shown on Exhibit 2. Localized air quality impacts were evaluated at receptor land uses nearest the Project site. All distances are measured from the Project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, whichever is closer to the Project site.

R1: Location R1 represents Tustin Body Works at 1361 Bell Ave, adjacent north of the Project site. Receptor R1 is placed at the building façade facing the Project site.

R2: Location R2 represents the Fix Auto Tustin at 15622 Mosher Ave, adjacent northeast of the Project site. Receptor R2 is placed at the building façade facing the Project site.

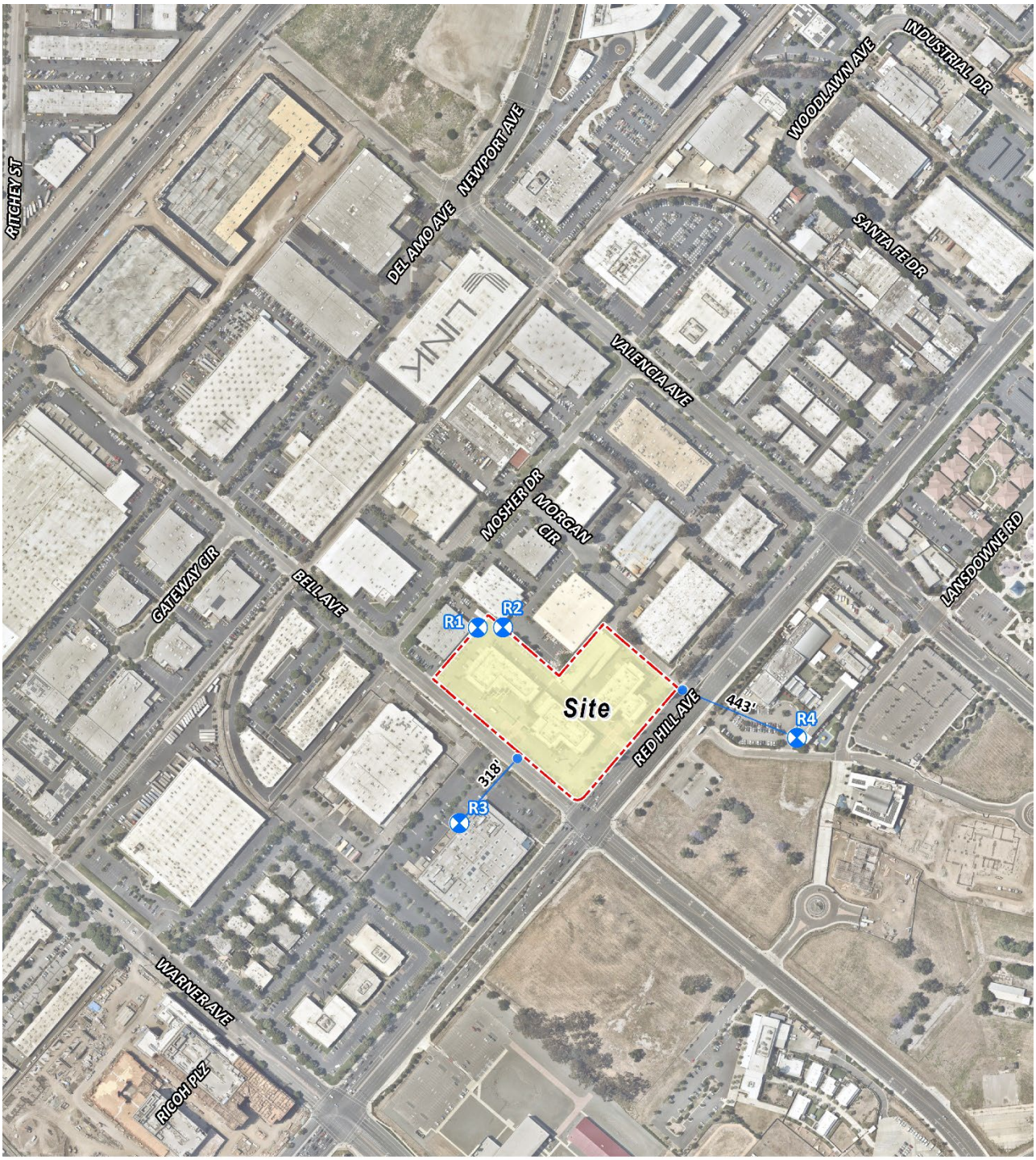
R3: Location R3 represents Tricon Residential at 15771 Red Hill Ave, approximately 318 feet southwest of the Project site. Receptor R3 is placed at the employee outdoor seating area facing the Project site.

R4: Location R4 represents the Orange County Rescue Mission at 1 Hope Dr, approximately 443 feet northeast of the Project site. Receptor R4 is placed at the building façade facing the Project site.

The SCAQMD recommends that the nearest sensitive receptor be considered when determining the Project's potential to cause an individual or cumulatively significant impact. The nearest land use where an individual could remain for 24 hours to the Project site has been used to determine localized construction and operational air quality impacts for emissions of PM_{10} and $PM_{2.5}$ (since PM_{10} and $PM_{2.5}$ thresholds are based on a 24-hour averaging time). The nearest receptor used for evaluation of localized impacts of PM_{10} and $PM_{2.5}$ is location R4, represented by Orange County Rescue Mission at 1 Hope Dr, approximately 443 feet (135 meters) northeast of the Project site. Receptors in the Project study area shown on Exhibit 2.

[2] The purpose of SCAQMD's Environmental Justice program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. Further, the SCAQMD defines Environmental Justice as "...equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

EXHIBIT 2: RECEPTOR LOCATIONS



As previously stated, and consistent with LST Methodology, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO_X and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assume that an individual could be present at these sites for periods of one to 8 hours. The nearest receptor used for evaluation of localized impacts of NO_X and CO is location R1, represented Tustin Body Works at 1361 Bell Ave, adjacent northwest of the Project site.

It should be noted that the *LST Methodology* explicitly states that "*It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters* (4)." As such, for evaluation of localized NO_x and CO, a 25-meter distance will be used.

Table 7 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. Outputs from the model runs for construction LSTs are provided in Attachment A. For analytical purposes, emissions associated with peak demolition, site preparation and grading activities are considered for purposes of LSTs since these phases represent the maximum localized emissions that would occur. Any other construction phases of development that overlap would result in less emissions and consequently lesser impacts than what is disclosed herein. As shown in Table 7, emissions resulting from the Project construction will not exceed the numerical thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized Project-related construction-source emissions and no mitigation is required.

TABLE 7: PROJECT LOCALIZED CONSTRUCTION IMPACTS

On-Site Emissions	Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Demolition				
Maximum Daily Emissions	28.20	71.61	4.93	2.02
SCAQMD Localized Threshold	81	485	39	14
Threshold Exceeded?	NO	NO	NO	NO
Site Preparation				
Maximum Daily Emissions	35.95	32.93	7.26	4.16
SCAQMD Localized Threshold	149	984	57	18
Threshold Exceeded?	NO	NO	NO	NO
Grading				
Maximum Daily Emissions	18.23	18.82	3.09	1.71
SCAQMD Localized Threshold	126	805	50	17
Threshold Exceeded?	NO	NO	NO	NO

LOCALIZED OPERATIONAL EMISSIONS

Table 8 identifies the localized operational impacts at the nearest receptor location in the vicinity of the Project. In an effort to establish a maximum potential impact scenario for analytical purposes, the emissions shown on Table 8 represent all on-site Project-related stationary (area) sources and on-site mobile source emissions. It should be noted that the longest on-site distance is roughly 0.15 miles for both trucks and passenger vehicles. As such, a separate CalEEMod run for operational LSTs has been prepared which accounts for the 0.15-mile on-site travel distance. Outputs from the model runs for operational LSTs are provided in Attachment B. As shown in Table 8, emissions resulting from the Project operation will not exceed the numerical localized thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized Project-related operational-source emissions and no mitigation is required.

TABLE 8: PROJECT LOCALIZED OPERATIONAL IMPACTS

On-Site Emissions	Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	2.05	28.38	0.18	0.12
SCAQMD Localized Threshold	183	1,253	17	5
Threshold Exceeded?	NO	NO	NO	NO

GREENHOUSE GAS EMISSIONS

PROPOSED PROJECT

It is our understanding that the Project will redevelop the site to construct two new warehouse buildings: Building 1 with 49,553 square feet and Building 2 with 93,235 square feet (total of 142,788 square feet). The estimated GHG emissions for the Project land use are summarized on Table 9. The estimated GHG emissions include emissions from Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O), and Refrigerants (R). As shown on Table 9, the Project would generate a total of approximately 1,871.52 $MTCO_2e$/yr. Detailed operation model outputs for the proposed Project are presented in Attachment A.

TABLE 9: TOTAL PROJECT GHG EMISSIONS

Source	Emissions ($MTCO_2e$/yr)				
	CO_2	CH_4	N_2O	R	Total CO_2e
Annual construction-related emissions amortized over 30 years	20.97	8.37E-04	5.35E-04	7.17E-03	21.15
Mobile Source	1356.17	0.07	0.11	2.06	1392.64
Area Source	2.90	0.00	0.00	0.00	2.91
Energy Source	259.71	0.02	0.00	0.00	260.77
Water	46.02	1.08	0.03	0.00	80.69
Waste	11.98	1.20	0.00	0.00	41.90

Source	Emissions ($MTCO_2e/yr$)				
	CO_2	CH_4	N_2O	R	Total CO_2e
Refrigerants	0.00	0.00	0.00	24.10	24.10
On-Site Equipment Source	0.00	0.00	0.00	0.00	47.37
Total CO_2e (All Sources)	**1,871.52**				

EXISTING BUILDING

The site is occupied by existing uses that are currently developed with three 2-story multi-tenant office buildings within Centurion Plaza that accommodates ground parking and a parking garage:

- 15641 Red Hill Avenue: 50,311 square feet
- 15661 Red Hill Avenue: 47,782 square feet
- 15621 Red Hill Avenue: 41,085 square feet
- **Total of 139,178 square feet**

The estimated GHG emissions from the existing buildings are summarized on Table 10. Detailed operation model outputs for the existing buildings are presented in Attachment C.

TABLE 10: EXISTING BUILDING GHG EMISSIONS

Source	Emissions ($MTCO_2e/yr$)				
	CO_2	CH_4	N_2O	R	Total CO_2e
Mobile Source	1,440.82	0.07	0.06	2.83	1,463.23
Area Source	2.82	0.00	0.00	0.00	2.83
Energy Source	579.39	0.05	0.00	0.00	582.18
Water	34.48	0.81	0.02	0.00	60.45
Waste	11.55	1.15	0.00	0.00	40.41
Refrigerants	0.00	0.00	0.00	0.04	0.04
Total CO_2e (All Sources)	**2,149.14**				

GREENHOUSE GAS COMPARISON

Table 11 shows the Project is anticipated to generate less GHG emissions per day as compared to emissions generated by the existing buildings, additionally; the proposed Projects emissions would still be less than the applicable thresholds.

TABLE 11: PROJECT NET NEW GHG EMISSIONS

Emission Source	Total CO_2e
Proposed Project	1,871.52
Existing Building	2,149.14
Net Emissions (Proposed – Existing)	**-277.62**

CONCLUSION

Results of the assessment indicate that the Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality and greenhouse gases.

REFERENCES

1. **State of California.** *2020 CEQA California Environmental Quality Act.* 2020.
2. **Urban Crossroads, Inc.** *Platform Tustin Trip Generation Assessment.* 2023.
3. **South Coast Air Quality Management District.** *SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Busniess Survey Results.* 2014.
4. —. *Localized Significance Thresholds Methodology.* s.l. : South Coast Air Quality Managment District, 2003.

ATTACHMENT A
CALEEMOD PROPOSED EMISSIONS MODEL OUTPUTS

ATTACHMENT B
CALEEMOD OPERATIONAL LSTS MODEL OUTPUTS

ATTACHMENT C
CALEEMOD EXISTING MODEL OUTPUTS