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KELLER CROSSING SPECIFIC PLAN AIR QUALITY AND GREENHOUSE GAS ASSESSMENT EVALUATION

Ms. Jerrica Harding,

Urban Crossroads, Inc. is pleased to provide the following Air Quality and Greenhouse Gas Assessment Evaluation (referred to as Memo) for Keller Crossing Specific Plan development which is located on the northwest corner of Winchester Road (SR-79) and Keller Road in the County of Riverside.

BACKGROUND

In May 2022, the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from MMs.

The previously completed Keller Crossing Specific Plan Air Quality Impact Analysis (dated October 8, 2021) and Keller Crossing Specific Plan Greenhouse Gas Analysis (dated October 14, 2021) (referred to herein as "technical studies") were prepared before the release of CalEEMod Version 2022.1. Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational emissions. Output from the model runs for both construction and operational activity are provided in Attachments A through C.

Construction emissions were modeled in CalEEMod 2022 utilizing the construction schedule, phasing, and equipment assumptions detailed in the previous technical studies. Operational emissions were modeled assuming a Project opening year of 2028. However, in order to remain conservative, the construction schedule has not been modified from the previous analysis, which assumed that construction would begin in November 2022 and be completed by the end of 2024.

As shown on Tables 1 through 4, use of CalEEMod 2022.1 would result in an exceedance of the SCAQMD regional significance threshold for emissions of VOCs during the operational phase of the proposed Project. It is important to note that a majority of the operational-source VOC

emissions would be generated by mobile sources (vehicle exhaust) and cannot meaningfully be controlled or mitigated by the Project applicant.

PROJECT AIR QUALITY EMISSIONS SUMMARY

TABLE 1: CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	Summer					
2022	4.08	29.70	51.50	0.07	5.05	2.05
2023	69.30	37.50	66.40	0.08	6.20	2.54
	Winter					
2022	9.94	95.80	76.80	0.11	13.90	8.33
2023	4.32	41.10	46.20	0.07	5.05	2.86
2024	69.20	37.90	60.20	0.08	6.20	2.54
Maximum Daily Emissions	**69.30**	**95.80**	**76.80**	**0.11**	**13.90**	**8.33**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

TABLE 2: OPERATIONAL EMISSIONS SUMMARY (1 OF 2)

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	Summer					
Area Source	26.8	6.82	35.00	0.04	0.55	0.55
Energy Source	0.49	8.45	4.17	0.05	0.68	0.68
Mobile Source	73.40	25.30	242.00	0.61	22.10	4.27
Total Maximum Daily Emissions	**100.69**	**40.57**	**281.17**	**0.70**	**23.33**	**5.50**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**

TABLE 2: OPERATIONAL EMISSIONS SUMMARY (2 OF 2)

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Winter						
Area Source	23.20	6.50	2.77	0.04	0.53	0.53
Energy Source	0.49	8.45	4.17	0.05	0.68	0.68
Mobile Source	71.30	27.00	205.00	0.58	22.10	4.27
Total Maximum Daily Emissions	**94.99**	**41.95**	**211.94**	**0.67**	**23.31**	**5.48**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**

LOCALIZED EMISSIONS SUMMARY

BACKGROUND

The analysis makes use of methodology included in the SCAQMD Final Localized Significance Threshold Methodology (LST Methodology). 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-41. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use LSTs as another indicator of significance in its air quality impact analyses.

LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. To address the issue of localized significance, the SCAQMD adopted LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects. The analysis makes use of methodology included in the LST

[1] 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."

Methodology. Based on SCAQMD's guidance, LSTs only apply to concentrations of CO, NO_2, PM_{10}, and $PM_{2.5}$.

EMISSIONS CONSIDERED

Based on SCAQMD's LST Methodology, emissions for concern during construction activities are on-site NO_X, CO, $PM_{2.5}$, and PM_{10}. The LST Methodology clearly states (page 1-4) that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs." As such, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered.

DISPERSION MODELING

In order to estimate localized pollutant concentrations resulting from Project construction, the SCAQMD-approved AERMOD dispersion model was utilized. The modeling approach utilized is discussed as follows:

SOURCES

It should be noted that to model worst-case conditions, the highest daily peak on-site emissions resulting from overlapping construction activity were modeled.

A ground level release height and a 1 meter (~3.28 feet) initial vertical dimension (sigma z) were utilized for emissions of PM_{10} and $PM_{2.5}$ consistent with SCAQMD's LST guidance.

In order to account for equipment exhaust emissions of NO_2 and CO, a release height of 5.0 meters was utilized consistent with SCAQMD's LST guidance.

METEOROLOGICAL DATA AND MODEL OPTIONS

To account for meteorological conditions at the Project site, meteorological data from the SCAQMD's Perris monitoring station was utilized, as this is the nearest station to the Project site for which meteorological data is available. Additionally, a receptor height of 2 meters and regulatory default options were utilized consistent with SCAQMD's LST guidance.

RECEPTORS

As previously stated, LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable NAAQS and CAAQS at the nearest residence or sensitive receptor. Receptor locations are off-site locations where individuals may be exposed to emissions from Project activities.

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as "sensitive receptors." These structures typically include uses such as residences, schools, hotels, and hospitals where an individual can

remain for 24 hours. Consistent with the LST Methodology, the nearest land use where an individual could remain for 24 hours to the Project site will be used to determine 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.

LSTs apply, even for non-sensitive land uses, consistent with *LST Methodology* and SCAQMD guidance. Per the *LST Methodology*, commercial and industrial facilities are not included in the definition of sensitive receptor because employees and patrons do not typically remain onsite for a full 24 hours but are typically onsite for 8 hours or less. However, *LST Methodology* explicitly states that "*LSTs based on shorter averaging periods, such as the NO_2 and CO LSTs, could also be applied to receptors such as industrial or commercial facilities since it is reasonable to assume that a worker at these sites could be present for periods of one to eight hours* (11)." Therefore, any adjacent land use where an individual could remain for 1 or 8-hours, which is located at a closer distance to the Project site than the receptor used for PM_{10} and $PM_{2.5}$ analysis, must be considered to determine construction and operational LST air impacts for emissions of NO_2 and CO since these pollutants have shorter averaging times of 1 or 8-hours.

CONSTRUCTION-SOURCE LOCALIZED EMISSIONS

Emissions during peak construction activity will not exceed the SCAQMD's localized significance thresholds as illustrated on Table 3. As such, the Project's localized impacts during construction activity would be less than significant. Outputs from the model runs for construction LSTs are provided in Attachment D.

TABLE 3: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION

Peak Construction	CO		NO_2	PM_{10}	$PM_{2.5}$
	Averaging Time				
	1-Hour	8-Hours	1-Hour	24-Hours	24-Hours
Localized Emissions	0.02	0.01	0.02	0.66	0.36
Concentration[A]	2.6	2.4	0.06	N/A	N/A
Total Concentration	**2.62**	**2.41**	**0.08**	**0.66**	**0.36**
SCAQMD Localized Significance Threshold	20	9	0.18	10.4	10.4
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**

[A] Highest background concentration from the last three years of available data.

Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in $\mu g/m^3$. All others are expressed in ppm

OPERATIONAL-SOURCE LOCALIZED EMISSIONS

The LST analysis generally includes on-site sources (including area, energy, on-site mobile, and on-site cargo handling equipment, as discussed in the AQIA). However, it should be noted that

the CalEEMod outputs do not separate on-site and off-site emissions from mobile sources. As such, to establish a maximum potential impact scenario for analytic purposes, the modeled emissions include all on-site Project-related stationary (area) sources and 10% of the Project-related mobile sources.

Emissions during the peak operational activity will not exceed the SCAQMD's localized significance thresholds as illustrated on Table 4. As such, the Project's localized impacts during operational activity would be less than significant. Outputs from the model runs for operational LSTs are provided in Attachment D.

TABLE 4: LOCALIZED SIGNIFICANCE SUMMARY PEAK OPERATION

Peak Operation	CO		NO_2	PM_{10}	$PM_{2.5}$
	Averaging Time				
	1-Hour	8-Hours	1-Hour	24-Hours	24-Hours
Localized Emissions	6.72E-03	4.91E-03	1.15E-03	0.22	0.11
Concentration[A]	2.6	2.4	0.06	N/A	N/A
Total Concentration	**2.61**	**2.40**	**0.06**	**0.22**	**0.11**
SCAQMD Localized Significance Threshold	20	9	0.18	2.5	2.5
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**

[A] Highest background concentration from the last three years of available data.

Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in $\mu g/m^3$. All others are expressed in ppm

PROJECT GHG ANALYSIS

Greenhouse gas emissions resulting from construction and operation of the proposed Project was also modeled using CalEEMod 2022. For the operational phase of the proposed Project, an opening year of 2028 has been assumed as previously noted. However, all other assumptions and inputs remain consistent with the previous technical studies.

Tables 5 and 6 below present the construction and operational GHG emissions from CalEEMod 2022.

TABLE 5: CONSTRUCTION GHG EMISSIONS SUMMARY

Year	Emissions (MT/yr)				
	CO_2	CH_4	N_2O	R	Total CO_2E
2022	196.00	0.01	< 0.005	0.02	197.00
2023	1,245.00	0.05	0.06	1.02	1,264.00
2024	1,412.00	0.05	0.06	1.12	1,433.00
Total Annual Construction Emissions	2,853.00	0.11	0.12	2.16	2,894.00
Amortized Construction Emissions ($MTCO_2E$)	**95.10**	**3.67E-03**	**4.00E-03**	**0.07**	**96.47**

TABLE 6: OPERATIONAL GHG EMISSIONS SUMMARY (2028 OPENING YEAR)

Source	Emissions (MT/yr)				
	CO_2	CH_4	N_20	R	Total CO_2E
Annual construction-related emissions amortized over 30 years	95.10	3.67E-03	4.00E-03	0.07	96.47
Area	105.00	< 0.005	< 0.005	N/A	105.00
Energy	2,854.00	0.26	0.02	N/A	2,865.00
Mobile	6,276.00	0.31	0.31	8.26	6,385.00
Waste	64.80	6.48	0.00	N/A	227.00
Water	120.00	1.05	0.03	N/A	154.00
Refrigerants	N/A	N/A	N/A	67.70	67.70
Total CO_2E (All Sources)	**9,900.17**				

According to Appendix D-1 of the County of Riverside CAP, if a Project can demonstrate an efficiency equal to or greater than the 25% GHG efficiency identified in the CAP when comparing the emissions estimate of the Project assuming efficiency levels in 2020, the Project is considered to consistent with the reduction quantities anticipated in the County of Riverside CAP for the land use located at the site. As shown above in Table 6, the Project as proposed will result in 9,900.17 MT CO_2E/yr. As shown below in Table 7, under a 2020 scenario the Project would result in 13,307.47 MT CO_2E/yr. Thus, the Project as proposed would be approximately 26% ([13,307.47-9,900.17]/13,307.47 = 25.6%) more efficient than the County of Riverside's CAP projected reductions through 2030. Therefore, impacts would be less than significant.

TABLE 7: OPERATIONAL GHG EMISSIONS SUMMARY (2020 EFFICIENCY)

Source	Emissions (MT/yr)				
	CO_2	CH_4	N_20	R	Total CO_2E
Annual construction-related emissions amortized over 30 years	95.10	3.67E-03	4.00E-03	0.07	96.47
Area	105.00	< 0.005	< 0.005	N/A	105.00
Energy	3,442.00	0.26	0.02	N/A	3,453.00
Mobile	7,345.00	0.44	0.40	16.80	7,493.00
Waste	64.80	6.48	0.00	N/A	227.00
Water	179.00	1.05	0.03	N/A	213.00
Refrigerants	N/A	N/A	N/A	1,720.00	1,270.00
Total CO_2E (All Sources)	**13,307.47**				

ATTACHMENT A

CALEEMOD 2022 PROPOSED PROJECT EMISSIONS MODEL OUTPUTS – CONSTRUCTION

ATTACHMENT B

CALEEMOD 2022 PROPOSED PROJECT EMISSIONS MODEL OUTPUTS – OPERATION

ATTACHMENT C

CALEEMOD 2022 PROPOSED PROJECT EMISSIONS MODEL OUTPUTS – 2020 PROJECT SCENARIO

ATTACHMENT D
LOCALIZED SIGNIFICANCE AERMOD INPUTS/OUTPUTS