AIR QUALITY and GHG IMPACT ANALYSES

CROWLEY LAKE FISH CAMP IMPROVEMENTS

MONO COUNTY, CALIFORNIA

Prepared for:

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AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based

upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

The project is located within the Great Basin Unified Air Pollution Control District (GBUAPCD). However, the GBUAPCD has not developed numerical thresholds that define a "substantial" increase in air pollution emissions. However, CEQA procedure will allow reliance on standards or thresholds promulgated by other agencies. For purpose of this project, the CEQA significance thresholds used by the South Coast Air Quality Management District (SCAQMD) have been adopted as representative significance thresholds for this project. Projects with daily emissions that exceed any of the following emission thresholds are considered significant:

Table 1
Adopted Emissions Significance Thresholds (lbs/day)

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

CONSTRUCTION ACTIVITY IMPACTS

CalEEMod was developed by the SCAQMD to provide a computer model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions. It has been adopted for use by most air pollution control districts in California.

Although exhaust emissions will result from on and off-site construction equipment, the exact types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. However, estimated construction emissions were modeled using CalEEMod2016.3.1 to identify maximum daily emissions for each pollutant during project construction using equipment fleets for typical project activities.

The project involves six proposed construction related activities as shown in Table 2. Each activity was modeled in CalEEMod with the following time frame and equipment fleets for each indicated project component:

Table 2
CalEEMod Construction Activity Equipment Fleet
New Water Tank

Excavate 1 week	1 Bobcat
	1 Loader/Backhoe
Pour Concrete Pad 1 week	1 Mixer
	1 Pump
	1 Roller
Install Tank 2 days	1 Crane
	1 Forklift
	1 Welder

CalEEMod Construction Activity Equipment Fleet
New Propane Tank

Excavate 1 week	1 Bobcat
	1 Loader/Backhoe
Pour Concrete Pad 1 week	1 Mixer
	1 Pump
	1 Roller
Install Tank 2 days	1 Crane
	1 Forklift
	1 Welder

CalEEMod Construction Activity Equipment Fleet
RV Campsites

Grade and Trench 2 weeks	1 Bobcat
	1 Trencher
	1 Loader/Backhoe
Concrete Pads and Pave 2 weeks	1 Mixer
	1 Roller
	1 Pump

CalEEMod Construction Activity Equipment Fleet
Water Service to Dry Camp

Trench Utilities 2 weeks	1 Bobcat
	2 Trenchers

CalEEMod Construction Activity Equipment Fleet
Portable Bathrooms

Excavate 1 week	1 Bobcat
	1 Loader/Backhoe
Construct Pad and Install 1 week	1 Mixer
	1 Roller
	1 Pump

CalEEMod Construction Activity Equipment Fleet
Install Septic System

Excavate 3 weeks	1 Bobcat
	1 Loader/Backhoe
Install 1 week	1 Crane
	1 Loader/Backhoe
	1 Welder
	1 Forklift

Utilizing this equipment fleet and durations shown in Table 2, the following worst case daily construction emissions are calculated by CalEEMod:

Table 3
Construction Activity Emissions
Maximum Daily Emissions (pounds/day) 2018

Maximal Construction Emissions	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
New Water Tank	1.0	8.0	5.4	0.0	5.0	2.7
New Propane Tank	1.0	8.0	5.4	0.0	5.0	2.7
RV Campsites	0.7	6.4	5.7	0	1.5	0.9
Water Service to Dry Camp	0.4	3.1	2.4	0.0	0.4	0.2
Portable Bathrooms	0.1	3.4	3.6	0.0	2.2	1.2
Septic System	0.8	5.7	4.5	0.0	1.0	0.6
Total 2018	**4.0**	**34.6**	**27.0**	**0.0**	**15.1**	**8.3**
Significance Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated to be well below SCAQMD CEQA thresholds without the need for added mitigation even if all activities occurred simultaneously. No additional adjustments were used.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. Air pollution agencies do not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-,

30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

OPERATIONAL IMPACTS

Operational emissions are primarily attributed to mobile sources. The increased RV spaces will increase use of electricity and water, but it will be minimal. The Fish Camp staff estimate that peak season (April thru mid-July) would generate about 100 additional trips per day as a result of this project; low season (mid-July thru October) would increase about 30 trips per day as a result of project implementation.

The increased operational trips were associated with the RV uses in the CalEEMod modeling. A one-way distance of 50 miles was used, or 100 miles round trip. The results are provided in Table 4.

Table 4
Daily Operational Impacts

	Operational Emissions (lbs/day)					
Source	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
Mobile	1.7	12.0	33.2	0.0	7.9	2.2
Significance Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod2016.3.1 Output in Appendix

The project would not cause operational emissions to exceed their respective adopted CEQA significance thresholds. Operational emission impacts are judged to be less than significant. No impact mitigation for operational activity emissions is considered necessary to support this finding.

CONSTRUCTION EMISSIONS MINIMIZATION

Construction activities are not anticipated to cause dust emissions to exceed the adopted CEQA significance thresholds. Nevertheless, emissions minimization through enhanced dust control measures is recommended. Recommended measures include:

Fugitive Dust Control

- Apply soil stabilizers or moisten inactive areas.
- Prepare a high wind dust control plan.
- Address previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 2-3 times/day).
- Cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material and require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below adopted CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3 or better heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

GREENHOUSE GAS EMISSIONS

THRESHOLDS OF SIGNIFICANCE

The GBUAPCD has no thresholds for GHG emissions. However, if the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions which recommended a threshold of 3,000 MT CO_2e for all land use projects. This 3,000 MT/year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, project related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

Construction Activity GHG Emissions

The project is assumed to be built in less than one year. As a worst case, all construction was assumed to occur within the same calendar year. During project construction, the CalEEMod2016.3.1 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table 5.

Table 5
2018 Construction Emissions (Metric Tons CO_2e)

	CO_2e
New Water Tank	**3.8**
New Propane Tank	**3.8**
RV Campsites	**7.0**
Water Service to Dry Camp	**1.5**
Portable Bathrooms	**2.1**
Septic System	**5.9**
Total 2018	**24.1**

CalEEMod Output provided in appendix

Air quality agencies typically recommend that construction activity GHG emissions be amortized over the useful life of a project. Assuming a 30-year life for the proposed improvements, the annual average GHG emissions would be less than 1.0 MT/year. Such emissions would have a less-than-significant local, national or global GHG emissions impact.

Project Operational GHG Emissions

The total operational and annualized operational and construction emissions for the proposed project are identified in Table 6.

Table 6
Annual Operational Emissions

Consumption Source	**MT(CO2e)**
Mobile Source	820.4
Annualized Construction	0.8
Total	**821.2**
Guideline Threshold	3,000
Exceeds Threshold?	No

Total project GHG emissions would be substantially below the proposed significance threshold of 3,000 MT suggested by the SCAQMD. Hence, the project would not result in generation of a significant level of greenhouse gases.

CALEEMOD2016.3.1 COMPUTER MODEL OUTPUT

- DAILY EMISISONS
- ANNUAL EMISSIONS