

3.3 AIR QUALITY

This section describes the environmental and regulatory setting for air quality. It also describes existing conditions and potential impacts related to air quality that would result from implementation of the proposed project, and mitigation for potentially significant impacts, where feasible.

3.3.1 Environmental Setting

North Coast Air Basin and Humboldt County Climate

The project is located in Humboldt County in the North Coast Air Basin (NCAB). The climate of the air basin is influenced by the mountains of the Coast Range and proximity to the Pacific Ocean. The Coast Range runs north to south with peaks reaching heights of approximately 9,000 feet that act as a barrier blocking moisture and wind from reaching the east side of the range.

In addition to effects from the Coast Range, climate of the region is largely dependent on proximity of the site to the Pacific Ocean. The inland areas of the NCAB experience hot, dry summers and cool, snowy winters. Coastal areas experience cool summers and rainy winters. Predominant winds are from the north to northwest in the summer, and from the south to southwest in the winter.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The project site currently contains sensitive receptors based on existing residences within the site. The future residents of the subject project development would be considered sensitive receptors.

Existing Sources of Toxic Emissions

There are no known existing sources of toxic emissions within 1,000 feet of the project site.

3.3.2 Regulatory Setting

Federal

The U.S. Environmental Protection Agency (USEPA) has been charged with implementing national air quality programs. USEPA air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA made by Congress were in 1990.

Criteria Air Pollutants

The CAA required USEPA to establish national ambient air quality standards (NAAQS). As shown in Table 3.2-2, the USEPA has established primary and secondary NAAQS for the following criteria air



pollutants: ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, respirable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead. The primary standards protect the public health, and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan, referred to as a State Implementation Plan (SIP). The federal CAA amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The USEPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation would achieve air quality goals. If the USEPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated timeframe, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Hazardous Air Pollutants

The USEPA and the California Air Resources Board (CARB) regulate hazardous air pollutants (HAP) and toxic air contaminants (TACs) through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for TACs to limit emissions, respectively. These, in conjunction with additional rules set forth by the Bay Area Air Quality Management District (BAAQMD), described further below, establish the regulatory framework for TACs.

The USEPA has programs for identifying and regulating HAPs. Title III of the CAA directed the USEPA to promulgate national emissions standards for hazardous air pollutants (NESHAP). The NESHAP may differ for major sources and for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; sources that emit less than 10 TPY of a single air toxic or less than 25 TPY of a combination of air toxics are considered area sources. The emissions standards are to be promulgated in two ways. First, the USEPA has technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum available control technology for toxics. For area sources, the standards may be different, based on generally available control technology. Second, the USEPA also has health-risk-based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP.

The CAA also required USEPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene, and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene.

State

The California legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. California law authorizes CARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in



consideration of public health, safety, and welfare (California Ambient Air Quality Standards [CAAQS]). The federal and state ambient air quality standards are listed below in Table 3.3-1.

Table 3.3-1: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 hour	0.09 ppm (180 µg/m ³)	—	Same as primary standard
	8 hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	
Respirable particulate matter	24 hour	50 µg/m ³	150 µg/m ³	Same as primary standard
	Annual arithmetic mean	20 µg/m ³	—	
Fine particulate matter	24 hour	—	35 µg/m ³	Same as primary standard
	Annual arithmetic mean	12 µg/m ³	12 µg/m ³	
Carbon monoxide	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	—
	8 hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	—
Nitrogen dioxide	1 hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	—
	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as primary standard
Sulfur dioxide	1 hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	—
	3 hour	—	—	0.5 ppm (1,300 µg/m ³)
	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas)	—
	Annual arithmetic mean	—	0.030 ppm (for certain areas)	—
Lead	30-day average	1.5 µg/m ³	—	—
	Calendar quarter	—	1.5 µg/m ³	Same as Primary Standard
	Rolling 3-month average	—	0.15 µg/m ³	
Visibility-reducing particles	8 hour	See Footnote ¹	No National Standards	
Sulfates	24 hour	25 µg/m ³		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m ³)		
Vinyl chloride	24 hour	0.01 ppm (26 µg/m ³)		

Notes:

1. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

µg/m³ =micrograms per liter

mg/m³ = milligrams per cubic meter

Source: CARB 2016



Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

CCAA requires that all local air districts in the state endeavor to achieve and maintain CAAQS by the earliest date practicable. CCAA specifies that local air districts should focus attention on reducing the emissions from transportation and area-wide emission sources and provides districts with the authority to regulate indirect sources.

Among CARB's other responsibilities are overseeing local air district compliance with federal and state laws, approving local air quality plans, submitting SIPs to the USEPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs, including diesel particulate matter (DPM), and has adopted the USEPA's list of HAPs as TACs.

Once a TAC is identified, CARB adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the source must incorporate best available control technology for toxics to minimize emissions.

CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Recent milestones included the low-sulfur diesel fuel requirement and stricter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (2011). Over time, replacing older vehicles would result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, DPM) in California have been reduced substantially over the last decade; such emissions will be reduced further through a progression of regulatory measures (e.g., low-emission vehicles, clean fuels, and Phase II reformulated-gasoline regulations) and control technologies. The California Air Pollution Control Offices Association Health Risk Assessments for Proposed Land Use Projects Guidance Document recommends that when siting a residential project within 500 feet of a freeway, the associated public health risk should be disclosed in a CEQA document; therefore, a Health Risk Assessment was not prepared for the project.

The attainment status for the criteria pollutants are listed in Table 3.3-2.



Table 3.3-2: Humboldt County Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone	Attainment	Attainment
Carbon monoxide	Attainment	Attainment
PM ₁₀	Attainment	Non-attainment
PM _{2.5}	Attainment	Attainment
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Attainment
Sulfur dioxide	Attainment	Attainment
Sulfates	Attainment	—
Lead	Attainment	Attainment
Hydrogen sulfide	Attainment	—
Visibility reducing particles	Attainment	—

Notes:

PM_{2.5} = particulate matter less than 2.5 microns in aerodynamic diameter

PM₁₀ = particulate matter between 2.5 and 10 microns in aerodynamic diameter

Source: NCUAQMD 2019

As summarized in Table 3.3-2, the County is considered to be in attainment for all NAAQS and state standards, except for the state 24-hour PM₁₀ threshold.

Regional

North Coast Unified Air Quality Management District

All projects are subject to the North Coast Unified Air Pollution Control District’s (NCUAQMD) rules and regulations in effect at the time of construction. Specific rules applicable to project construction may include, but are not limited to:

- Rule 102: Required Permits. Under Rule 102, any project that is a new source of air contaminants, including an indirect source, may be required to obtain an Authority to Construct Permit from the Air Pollution Control Officer, which specifies the location and design of such new source and incorporates necessary permit conditions to ensure compliance with applicable Rules and Regulations and State and Federal Ambient Air Quality Standards.
- Rule 104: Prohibitions. Rule 104 states that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the health, comfort, repose or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.” Specifically, Section D of Rule 104 limits fugitive dust emission from handling, transporting, or open storage of materials and requires reasonable precautions to prevent particulate matter from becoming airborne.
- Rule 110: New Source Review (NSR) and Prevention of Significant Deterioration. Rule 110 establishes preconstruction review requirements for new and modified stationary sources of air pollution for use of best available control technology, analysis of air quality impacts, and to ensure that the operation of such sources does not interfere with the attainment or maintenance of the CAAQS or NAAQS. NCUAQMD does not have CEQA guidelines and recommends using the NSR thresholds in CEQA analyses.



Air Quality Plans

Cities, counties, or regions adopt air quality plans to describe control strategies to be implemented. The primary purpose of an air quality plan is to achieve attainment with federal and state air quality standards. In 1995, NCUAQMD adopted a PM₁₀ attainment plan including transportation control measures, guidelines for general plans, regulation of open burning and restrictions on residential burning to achieve PM₁₀ reductions and attainment status.

Humboldt County Policies and Ordinances

The Humboldt County General Plan, adopted October 23, 2017, contains several policies that directly pertain to air quality, including the following:

- **Policy AQ-P2: Reduce Localized Concentrated Air Pollution.** Reduce or minimize the creation of “hot spots” or localized places of concentrated automobile emissions.
- **Policy AQ-P4: Construction and Grading Dust Control.** Dust control practices on construction and grading sites shall achieve compliance with NCAQMD fugitive dust emission standards.
- **Policy AQ-P5: Air Quality Impacts from New Development.** During environmental review of discretionary permits, reduce emissions of air pollutants from new commercial and industrial development by requiring feasible mitigation measures to achieve the standards of the NCAQMD.
- **Policy AQ-P6: Buffering Land Uses.** During environmental review of discretionary commercial and industrial projects, consider the use of buffers between new sources of emissions and adjacent land uses to minimize exposure to air pollution.
 - **Standard AQ-S1: Construction and Grading Dust Control.** Ground disturbing construction and grading shall employ fugitive dust control strategies to prevent visible emissions from exceeding NCAQMD regulations and prevent public nuisance.
 - **Standard AQ-S3: Evaluate Air Quality Impacts.** During environmental review of discretionary projects, evaluate new commercial and industrial sources of emissions using analytical methods and significance criteria used, or recommended by, the NCAQMD.

3.3.3 Methodology for Analysis

Construction

Short-term construction-related emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program. CalEEMod was used to calculate emissions from construction of proposed residences and new roadways. Modeling was based on project-specific information (e.g., building type and size, amount of demolition, area to be paved) where available, and default values in CalEEMod are based on the project’s location, land use type, and type of construction.

Construction equipment to be used during the project construction phase would include graders, scrapers, backhoes, front-end loaders, generators, water trucks, and dump trucks. Construction would begin in as early as January 2021 with Phase 1 and would continue with a projected Phase 9 completion in December of 2029. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario, since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology and more stringent regulatory requirements. Therefore,



construction emissions would decrease if the construction schedule moves to later years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as require per CEQA guidelines.

Operation

Long-term operational emissions of criteria air pollutants and precursors were also calculated using CalEEMod. Operational activity involving area- and water-heating would be provided by natural gas. Emissions from consumer products, landscape maintenance activities, and mobile-source emissions (including trip rate estimates) were estimated using the applicable modules in CalEEMod. The proposed land use represents the combined uses of housing and commercial facilities. The proposed land use is based on the function space of the project and includes trips generated by residents, patrons and employees. Operational emissions from all sources were estimated at full buildout of the project, which is anticipated to occur in 2030.

Detailed model assumptions and inputs for these calculations can be found in Appendix B of this Draft EIR.

3.3.4 Thresholds of Significance

In developing thresholds of significance for air pollutants, Appendix G of the State CEQA Guidelines require that agencies consider the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary.

NCUAQMD has not established significance criteria resulting from projects such as the North McKay Ranch development. NCUAQMD has indicated that it is appropriate for lead agencies to compare emissions from proposed projects to criteria pollutant significance thresholds for new or modified stationary source projects proposed in its jurisdiction as listed in Rule 110. Table 3.3-3 summarizes NCUAQMD stationary sources thresholds, which were used for this analysis.

Table 3.3-3: NCUAQMD Air Quality CEQA Thresholds of Significance

Criteria Air Pollutants and Precursors (regional)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (TPY)
ROG	50	40
NO _x	50	40
PM ₁₀	80	15
PM _{2.5}	50	10

Notes:

ROG = reactive organic gases

NO_x = nitrous oxides

PM₁₀ = particulate matter 10 microns or less in diameter

PM_{2.5} = particulate matter 2.5 microns or less in diameter



The CEQA Guidelines' Appendix G Environmental Checklist was assessed during the NOP scoping process to identify the proposed project components that have the potential to cause a significant impact. The following thresholds of significance were used to determine if further evaluation within this EIR was warranted to ascertain whether the proposed project may:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area under the applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Have the potential to result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Regarding a project's cumulative impacts, past, present, and future development projects in the region contribute to adverse air quality impacts in the region on a cumulative basis. Air pollution is largely a cumulative impact by its nature. No single project is sufficient in its overall emission, in isolation, to result in nonattainment of ambient air quality standards. A project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Significance thresholds are intended to analyze whether a project's contribution to the cumulative impact is considerable. Therefore, if a project exceeds the identified significance thresholds, its emissions would also be considered cumulatively considerable, resulting in a significant adverse air quality impact to the region's existing air quality conditions and additional analysis to assess cumulative impacts is unnecessary (BAAQMD 2017).

3.3.5 Project Impact Analysis and Mitigation Measures

This section analyzes the proposed project's potential to result in significant impacts to air quality. When a potential impact was determined to be potentially significant, feasible mitigation measures were identified to reduce or avoid that impact.

Air Quality Plan

Impact AQ-1	The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.
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Impact Analysis

Construction Emissions

There are no applicable local or regional air quality plans related to NAAQS attainment. The NCUAQMD 1995 plan for attainment of state PM₁₀ standards includes the following activities as associated with the production of fugitive dust:

- Grading, excavation and earthmoving activities
- Travel by construction equipment and employee vehicles, especially on unpaved surfaces
- Exhaust from on-site construction equipment



The NCUAQMD 1995 plan includes strategies for reducing PM₁₀ from the above sources, including transportation control measures, guidelines for general plans, and regulation of open and residential burning.

Construction of the proposed project would involve the use of various types of equipment and vehicles which could generate construction emissions in the form of exhaust and fugitive dust from earth moving activities. These activities would involve the use of diesel and gasoline powered equipment that would generate emissions of criteria pollutants, such as reactive organic gases (ROG), nitrous oxide (NO_x), and PM emissions. Construction emissions could occur in the vicinity of both the residential/commercial portion of the project area, as well as in the new water tank location of the project area. Further, removal of approximately 59.27 acres of trees within the project area could further increase dust and construction emissions beyond that of a normal residential/commercial construction site.

Air quality modeling was performed to evaluate the proposed project emissions for criteria pollutants to determine whether the proposed project would generate criteria pollutant emissions in excess of levels identified by the NCUAMQD. The proposed project's unmitigated construction emissions shown in Table 3.3-4 are less than the NCUAMQD's thresholds of significance.

Table 3.3-4: Proposed Project Unmitigated Construction Emissions (Tons/Year)

Construction Year	tons/year			
	ROG	NO _x	PM ₁₀	PM _{2.5}
2021	0.36	3.24	0.61	0.36
2022	1.49	2.82	0.64	0.37
2023	0.30	2.15	0.21	0.12
2024	0.29	2.04	0.21	0.26
2025	3.58	1.79	0.46	0.07
2026	0.19	1.66	0.08	0.29
2027	0.80	1.88	0.53	0.08
2028	0.22	1.75	0.13	0.08
2029	2.95	1.76	0.13	0.03
2030	0.17	0.95	0.07	0.29
NCUAQMD Threshold tons/year	40	40	15	10
Does Any Year Exceed Significance Threshold?	No	No	No	No

Notes:

ROG = reactive organic gases

NO_x = nitrous oxides

PM₁₀ = particulate matter 10 microns or less in diameter

PM_{2.5} = particulate matter 2.5 microns or less in diameter



Table 3.3-5: Proposed Project Unmitigated Construction Emissions (lbs/day)

Construction Year	Average Pounds/Day			
	ROG	NO _x	PM ₁₀	PM _{2.5}
2021	2.77	24.81	4.68	2.79
2022	11.43	21.62	4.92	2.81
2023	2.33	16.50	1.65	0.92
2024	2.21	15.60	1.57	0.84
2025	27.45	13.70	3.56	2.03
2026	1.44	12.69	0.64	0.53
2027	6.14	14.42	4.08	2.24
2028	1.66	13.41	1.01	0.63
2029	22.60	13.52	1.02	0.63
2030	1.31	7.31	0.52	0.24
NCUAQMD Threshold lbs/day	50	50	80	50
Does Any Year Exceed Significance Threshold?	No	No	No	No

Notes:

ROG = reactive organic gases

NO_x = nitrous oxidesPM₁₀ = particulate matter 10 microns or less in diameterPM_{2.5} = particulate matter 2.5 microns or less in diameter

Humboldt County's General Plan lays out practices to reduce and minimize PM₁₀ emissions as described in the above Regulatory Setting and as reflected in NCUAQMD Rule 104 for the prevention of visible fugitive dust emissions. Reduction measures as described in Rule 104 will be implemented at the project site throughout project construction to reduce PM emissions.

Operational Emissions

Operational emission associated with the proposed project would include operation of automobiles and use of energy resources for both the residential and commercial portions of the project. Annual operational emissions are summarized in Table 3.3-6.

Table 3.3-6: Unmitigated Annual Operational Emissions (tons/year)

Emissions Source	tons/year			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Annual Total	6.66	4.35	6.72	5.44
NCUAQMD Threshold tons/year	40	40	15	10
Significant?	No	No	No	No

Notes:

ROG = reactive organic gases

NO_x = nitrous oxidesPM₁₀ = particulate matter 10 microns or less in diameterPM_{2.5} = particulate matter 2.5 microns or less in diameter

Source: CalEEMod Output (Appendix B)



Table 3.3-7: Unmitigated Annual Operational Emissions (lbs/day)

Emissions Source	Average Pounds/Day			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Annual Total	36.48	23.86	36.85	29.82
NCUAQMD Threshold lbs/day	50	50	80	50
Significant?	No	No	No	No

Notes:

ROG = reactive organic gases

NO_x = nitrous oxides

PM₁₀ = particulate matter 10 microns or less in diameter

PM_{2.5} = particulate matter 2.5 microns or less in diameter

Source: CalEEMod Output (Appendix B)

As shown in Table 3.3-6 and Table 3.3-7 above, the proposed project would not exceed any annual or daily significance thresholds for operational emissions sources. Therefore, long-term operational impacts resulting from implementation of the proposed project would be less than significant.

Conclusion

The project does not exceed the NCUAQMD significance thresholds and would implement Rule 104 to further reduce fugitive dust emissions. Therefore, the project’s potential construction and operational impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less Than Significant Impact.

Criteria Pollutants

Impact AQ-2	The proposed project could potentially result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
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Impact Analysis

In developing thresholds of significance for air pollutants, the NCUAQMD allows for the use of thresholds developed in consideration of stationary sources. As construction emissions associated with the proposed project would be temporary, this is a conservative assumption to determine the potential significance of cumulative impacts. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable for the purposes of this analysis. Proposed project construction and operational impacts are assessed separately below.



Construction Emissions

Emissions from construction-related activities are generally short-term but may still cause adverse air quality impacts. The proposed project would generate emissions from construction equipment exhaust, worker travel, and fugitive dust. These construction emissions include criteria air pollutants from the operation of heavy construction equipment.

Construction activities would occur over approximately 10 years, as discussed in Section 2.0, Project Description. The construction schedule used in the analysis represents a “worst-case” analysis scenario since emission factors for construction equipment decrease as the analysis year increases due to improvements in technology and more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moves to later years. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required pursuant to CEQA Guidelines 15064(f)(5).

Table 3.3-4 and Table 3.3-5 provide the unmitigated construction emissions estimated for the proposed project. The construction emissions in each year are well below the recommended thresholds of significance for annual and daily emissions. In addition, the project would comply with Rule 104 and implement dust control measures. Therefore, emissions from construction would be less than significant.

Operational Emissions

Operational emissions would occur over the lifetime of the proposed project and would be from two main sources: area sources and motor vehicles, or mobile sources. It was assumed that the entire proposed project would be operational in 2030 to provide a conservative estimate of operational emissions. If a later buildout year were used, the emissions would be lower due to cleaner vehicles from increasing regulations. Therefore, using an earlier year to consider full buildout of the proposed project would provide a worst-case scenario of emissions. As shown in Table 3.3-6 and Table 3.3-7, the proposed project operational emissions would be below the NCUAQMD significance thresholds, and therefore, impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less Than Significant Impact.

Sensitive Receptors

Impact AQ-3 The proposed project would not expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

This discussion addresses whether the project would expose sensitive receptors to construction-generated fugitive dust (PM₁₀), naturally occurring asbestos (NOA), construction-generated DPM, operational related TACs, or operational CO hotspots. Some land uses are considered more sensitive to



air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The project site is considered a sensitive receptor.

Construction Emissions

Fugitive Dust PM₁₀

Fugitive dust (PM₁₀) would be generated from site grading and other earth-moving activities. Most of this fugitive dust would remain localized and would be deposited near the project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from the project site. The project would comply with the Humboldt County General Plan and the NCUAQMD Rule 104. Therefore, the project’s construction-generated fugitive dust impacts would be less than significant level.

Naturally Occurring Asbestos

Construction in areas of rock formations that contain NOA could release asbestos to the air and pose a health hazard. NCUAQMD enforces CARB’s air toxic control measures at sites that contain ultramafic rock. The air toxic control measures for construction, grading, quarrying and surface mining operations were signed into state law on July 22, 2002, and became effective in the NCAB in November 2002. The purpose of this regulation is to reduce public exposure to NOA. A review of the map with areas more likely to have rock formations containing NOA in California indicates that there is no asbestos in the immediate project area (USGS 2011). Therefore, it can be reasonably concluded that the project would not expose sensitive receptors to NOA. Impacts would be less than significant.

Toxic Air Contaminants/Diesel Particulate Matter

TACs from construction of the proposed project would generally be associated with DPM from diesel-fueled engines. TACs can result in health risks associated with exposure to DPMs from diesel vehicles and generators. Table 3.3-8 shows the distance to the nearest sensitive receptors per phase for construction.

Table 3.3-8: Distance to Sensitive Receptors per Construction Phase

Proposed Project Phase	Closest Sensitive Receptor	Approximate Shortest Distance between Project and Receptor
Phase 1	Single-Family Residence along Manzanita Avenue	20’
Phase 2	Glen Paul School	62’
Phase 3	Single-Family Homes Along Redwood Street	40’
Phase 4	Single-Family Homes Along Fern Street	915’
Phase 5	Single-Family Homes Along Redwood Street	540’



Proposed Project Phase	Closest Sensitive Receptor	Approximate Shortest Distance between Project and Receptor
Phase 6	Single-Family Homes Along Redwood Street	945'
Phase 7	Glen Paul School	470'
Phase 8	Glen Paul School	890'
Phase 9	Glen Paul School	855'

Source: April 17, 2019 Planning NOP Review Drawing Set for North McKay Ranch Subdivision

Construction activities would operate generally close to potential receptors during Phase 1, Phase 2, and Phase 3; therefore, MM AIR-1 would be implemented during construction activities, which would minimize potential off-road construction equipment emissions.

Operational Emissions

Carbon Monoxide Hotspots

Localized high levels of CO hotspots are associated with traffic congestion and idling or slow-moving vehicles. The project would result in a less than significant impact to air quality for local CO if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; or
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

According to the traffic study prepared for the project by TJKM Transportation Consultants, at buildout, the project would generate 2,879 trips per day. Therefore, it is expected that the project would meet the above screening criteria and, therefore, the project would not significantly contribute to an existing or projected CO hotspot. Impacts would be less than significant.

Toxic Air Contaminants – Operations

The CARB Air Quality and Land Use Handbook contains recommendations that will “help keep California’s children and other vulnerable populations out of harm’s way with respect to nearby sources of air pollution” (CARB 2005), including recommendations for distances between sensitive receptors and certain land uses. The proposed project is not identified as a land use of concern by CARB. The proposed project is considered a sensitive receptor but is not located within any screening distances recommended by CARB to land uses of concern.

Level of Significance Before Mitigation

Potentially Significant Impact.



Mitigation Measures

MM AIR-1: Off-Road Construction Equipment Emissions Minimization. The project shall demonstrate compliance with the following Construction Emissions Minimization Measures prior to issuance of building or grading permits:

1. All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:
 - a) Where access to alternative sources of power are available, portable diesel engines shall be prohibited;
 - b) All off-road equipment shall have:
 - i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (CARB) Tier 3 off-road emission standards, and
 - ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

Impact AQ-4	Result in other emissions (such as those leading to odors) affecting a substantial number of people?
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Impact Analysis

While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the NCUAQMD. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. The nearest sensitive receptor in the vicinity of the proposed project site would be the residences approximately 20 feet from the project during Phase 1 construction. Construction activities associated with the proposed project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present on site temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The proposed project does not contain land uses typically associated with emitting objectionable odors. Therefore, the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less Than Significant Impact.



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