APPENDIX C

NOISE AND VIBRATION IMPACT ANALYSIS

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EAST HUNTSMAN AVENUE INDUSTRIAL PARK PROJECT

REEDLEY, CALIFORNIA

LSA

January 2024

NOISE AND VIBRATION IMPACT ANALYSIS

EAST HUNTSMAN AVENUE INDUSTRIAL PARK PROJECT

REEDLEY, CALIFORNIA

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LSA

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LIST OF ABBREVIATIONS AND ACRONYMS

ADT	average daily trips
CEQA	California Environmental Quality Act
City	City of Reedley
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibel(s)
EIR	Environmental Impact Report
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
FTA Manual	FTA *Transit Noise and Vibration Impact Assessment Manual*
in/sec	inch/inches per second
L_{dn}	day-night average noise level
L_{eq}	equivalent continuous sound level
L_{max}	maximum instantaneous sound level
mi	mile/miles
Noise Element	City of Reedley General Plan 2030 Noise Element
PPV	peak particle velocity
project	East Huntsman Avenue Industrial Park Project
RMS	root-mean-square
STC	Sound Transmission Class
VdB	vibration velocity decibels

INTRODUCTION

This noise and vibration impact analysis has been prepared to evaluate the potential noise and vibration impacts and reduction measures associated with the proposed Huntsman Avenue Industrial Park Project (project) in Reedley, California. This report is intended to satisfy the City of Reedley's (City) requirement for a project-specific noise impact analysis by examining the impacts of the project site and evaluating noise reduction measures that the project may require.

PROJECT LOCATION AND DESCRIPTION

The 42-acre project site is located at 20349 East Huntsman Avenue in the City of Reedley's Sphere of Influence (SOI), as shown in Figure 1-1. The project site is currently used for growing agricultural crops and contains agricultural support buildings and one single-family residence. The project site is surrounded by agricultural uses and Reedley Sports Park to the north, agricultural uses to the south, rural residential and agricultural uses to the east, and light industrial uses to the west. Traver Channel, an Alta Irrigation District (AID) channel, bounds the project site to the west and north. East Huntsman Avenue bounds the project site to the south. See Figure 1, Project Location, and Figure 2, Site Plan, below.

The proposed project would divide the 42-acre project site into 26 lots, which would be developed with light industrial uses. The lots would include office, warehouse, retail uses, and truck maintenance building. Future tenants have not been identified. Additionally, 2.23 acres of parking would be provided including, employee, guest, and truck parking stalls.

Additionally, the proposed project would retain two existing structures and one dwelling unit within an approximately 0.93-acre outlot (i.e., Outlot A) located on the southeast corner of the project site; and would retain the adjacent Traver Channel within an approximately 2.14-acre outlot (i.e., Outlot B). The proposed project would retain the 25-foot-wide easements that exist along both sides of the channel. Existing fencing along the project site's northern, southern, and eastern boundary would be removed.

The proposed project would include solar fixtures and would comply with the latest California Green Building Standards Code (CALGreen) building measures and Title 24 standards.

Construction of the proposed project is anticipated to occur over a total 12-month period starting January 2025, and ending January 2026. The proposed project would not require any soil import/export. Additionally, Tier 3 equipment would be utilized during project construction.

EXISTING LAND USES IN THE PROJECT AREA

The project site is surrounded primarily by residential and agricultural uses. The areas adjacent to the project site include the following uses:

- **North:** Existing agricultural uses and Reedley Sports Park;
- **East:** Existing rural residential and agricultural uses;
- **South:** Existing agricultural uses; and

- **West:** Existing light industrial uses to the west.

The closest sensitive receptors to the project site include rural residential dwelling to the east within Outlot A and residential dwelling located approximately 20 feet away from the project site boundary.

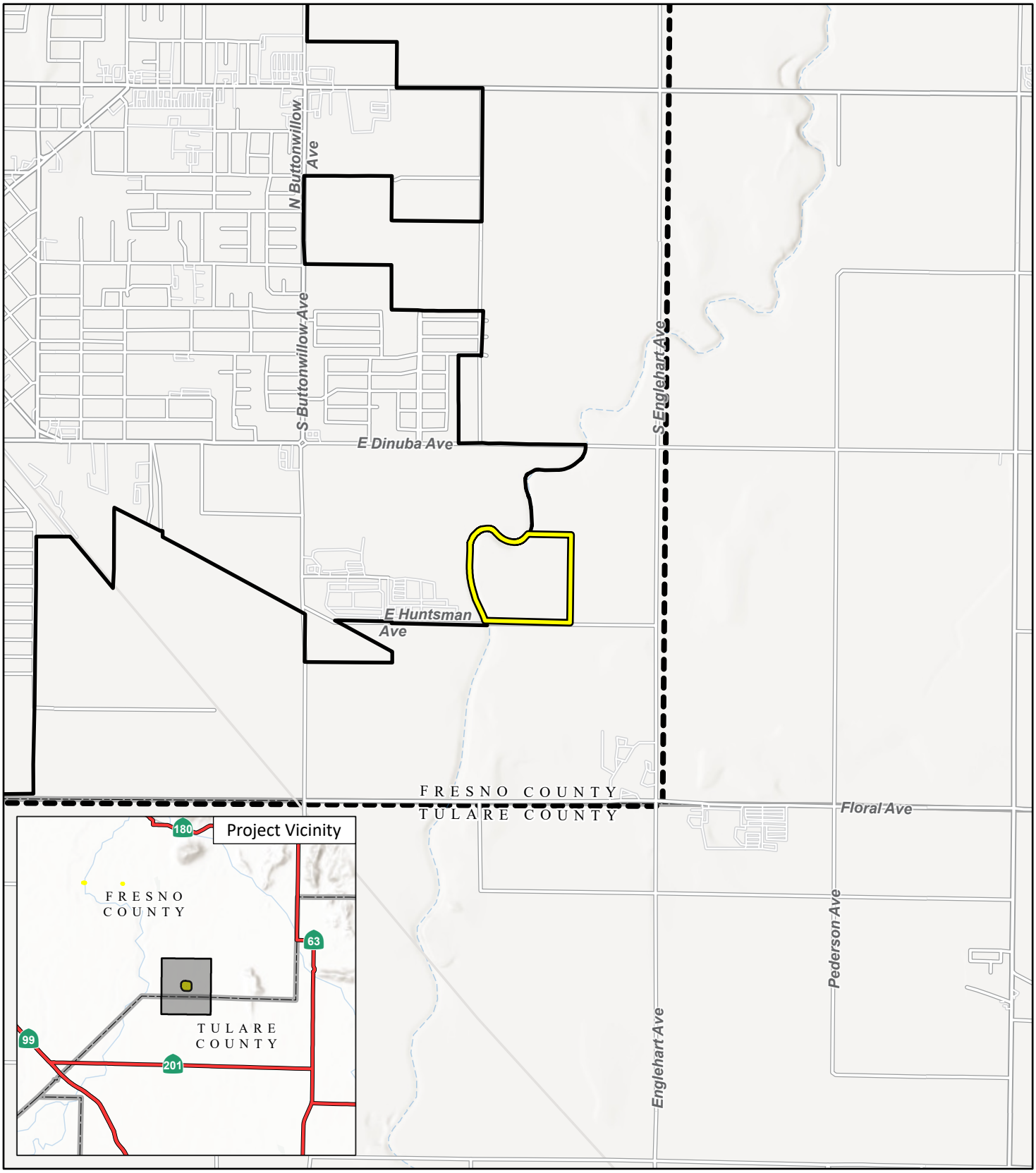

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FIGURE 1

East Huntsman Avenue Industrial Park Project

Regional and Local Context

SOURCE: Esri Topographic (2023)

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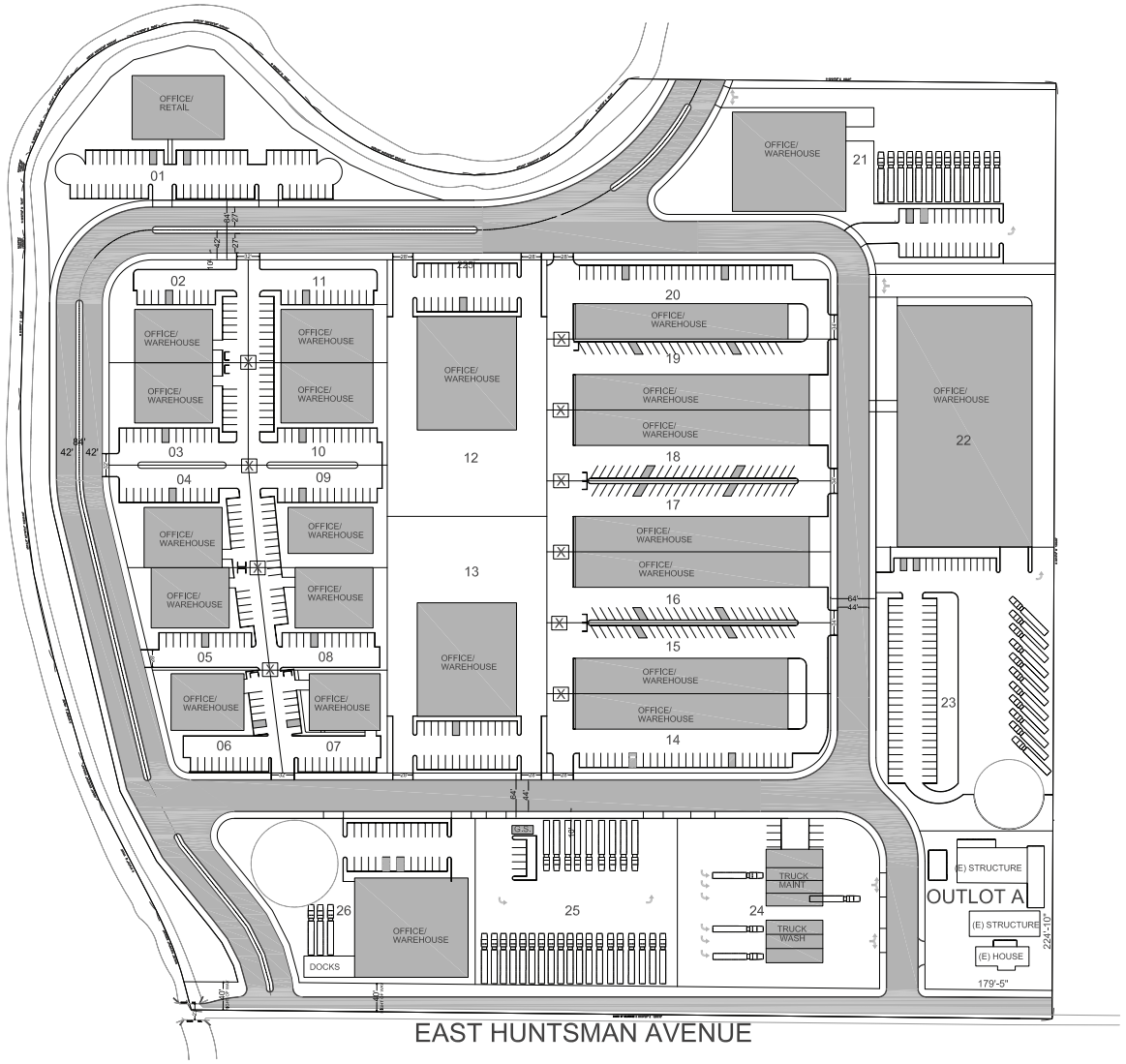

LEGEND

EP	EDGE OF PAVEMENT
P	PAVEMENT ELEVATION
EG	EXISTING GRADE
	TOP OF DITCH
	BUILDING OVERHANG

LOT NUMBER PER THE MAP OF PRODUCERS COLONY, FILED IN BOOK 2 OF RECORD OF SURVEYS, AT PAGE 39, FRESNO COUNTY RECORDS

LSA

FIGURE 2

N

NOT TO SCALE

SOURCE: Rockspire, Inc., 12/2022

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East Huntsman Avenue Industrial Park Project
Site Plan

NOISE AND VIBRATION FUNDAMENTALS

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a sound wave, which results in the tone's range from high to low. Loudness is the strength of a sound, and it describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity is the average rate of sound energy transmitted through a unit area perpendicular to the direction in which the sound waves are traveling. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured with the A-weighted decibel (dBA) scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound, similar to the human ear's de-emphasis of these frequencies. Decibels (dB), unlike the linear scale (e.g., inches or pounds), are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the sound's loudness. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound levels dissipate exponentially with distance from their noise sources. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment. Line-source sound levels decrease 4.5 dB for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels. CNEL is the time-weighted average noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the L_{dn} noise scale for long-term traffic noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts, which are increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to sound levels higher than 85 dBA. Exposure to high sound levels affects the entire system, with prolonged sound exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of sound exposure above 90 dBA would result in permanent cell damage. When the sound level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of sound is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by a feeling of pain in the ear (i.e., the threshold of pain). A sound level of 160–165 dBA will result in dizziness or a

loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

Table A lists definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound measurement that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., the number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period, respectively.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time. Usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.

Sources: (1) Technical Noise Supplement (Caltrans 2013); (2) Transit Noise and Vibration Impact Assessment Manual (FTA 2018).
Caltrans = California Department of Transportation
FTA = Federal Transit Administration

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	Reference level
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2023).

FUNDAMENTALS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may not be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items sitting on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile-driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet (ft) from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft . When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne

vibration from street traffic will not exceed the impact criteria; however, construction of the project could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path will usually be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile-driving to cause vibration of sufficient amplitudes to damage nearby buildings. Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS is best for characterizing human response to building vibration, and PPV is used to characterize the potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where "L_v" is the vibration velocity in decibels (VdB), "V" is the RMS velocity amplitude, and "V_{ref}" is the reference velocity amplitude, or 1×10^{-6} inches/second (in/sec) used in the United States.

REGULATORY SETTING

APPLICABLE NOISE STANDARDS

The applicable noise standards governing the project site include the criteria in the California Code of Regulations and the Noise Element of the City's General Plan 2030 (Noise Element).

State of California Green Building Standards Code

The State of California's Green Building Standards Code (CALGreen Code) contains mandatory measures for nonresidential building construction in Section 5.507 on Environmental Comfort. These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when nonresidential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, or other noise source. If the development falls within an airport or freeway 65 dBA CNEL noise contour, buildings shall be construction to provide an interior noise level environment attributable to exterior sources that does not exceed an hourly equivalent level of 50 dBA L_{eq} in occupied areas during any hour of operation.

City of Reedley

Noise Element of the General Plan 2030

The Noise Element provides the City's goals and policies related to noise, including the land use compatibility guidelines for community exterior noise environments. The City has identified the following goals and policies in the Noise Element:

Goals.

NE 6.1A – To protect the citizens of the City from potential harmful effect due to exposure to excessive noise.

NE 6.1B – To preserve the tranquility of residential and other noise sensitive areas by preventing noise-producing uses from encroaching upon existing and planned noise sensitive uses.

NE 6.1C – To develop a policy framework necessary to achieve and maintain a healthful noise environment.

Policies.

NE 6.1.2: In order to maintain an acceptable noise environment, the following maximum acceptable noise levels should be established for various land use designations (see Tables C and D).

NE 6.1.3: Areas subject to a DNL greater than 60 dBA are identified as noise impact zones. As part of the special permit process the proposed development project will be required to have an acoustical

analysis prepared by a license engineer. The report should also include practical and reasonable mitigation measures.

NE 6.1.4: Within noise impact zones, the City will evaluate the noise impact on development proposals. Mitigating measures, including but not limited to the following, may be required:

(a) Setbacks, berms, and barriers.

(b) Acoustical design of structures.

(c) Location of structures.

NE 6.1.5: Design of all proposed development should incorporate features necessary to minimize adverse noise impacts, while also minimizing effects on surrounding lands uses.

Table C: Allowable City-Wide Noise Exposure – Transportation

Location of Measurement	Allowable Transportation Source Noise Exposure	
	Noise Sensitive Land Uses	New Transportation Noise Sources
Indoor	45 dBA L_{dn}	45 dBA L_{dn}
Outdoor	60 dBA L_{dn}	60 dBA L_{dn}

Source: City of Reedley (2014).
Notes:
1. This table is applicable to noise sources created by either new development and/or new transportation projects.
2. Based on an evaluation of the existing condition and proposed project, the Community Development Director may allow exterior exposure up to 65 dB L_{dn} where practical application of construction practices has been used to mitigate exterior noise exposure.
dBA = A-weighted decibels
L_{dn} = day-night average noise level

Table D: Allowable Noise Exposure – Stationary Sources

	Allowable Stationary Source Noise Exposure	
	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}, dBA	55	50
Maximum Level, dBA	70	65

Source: City of Reedley (2014).
Notes:
1. As determined within outdoor activity areas of existing or planned noise-sensitive uses, if outdoor activity area locations are unknown, the allowable noise exposure shall be determined at the property line of the noise sensitive use.
2. Based on an evaluation of the existing condition and proposed project, the Community Development Director may allow exterior exposure up to 65 dB L_{dn} where practical application of construction practices has been used to mitigate exterior noise exposure.
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

General Plan EIR

Construction Noise Standards. The City has set restrictions to control noise impacts associated with the construction of the proposed project. According to the City's General Plan Environmental Impact Report (EIR), construction activity is limited to the acceptable daily construction hours of 7:00 a.m. to 5:00 p.m.

Federal Transit Administration

Although the City does not have daytime construction noise level limits for activities that occur within the specified hours to determine potential California Environmental Quality Act (CEQA) noise impacts, construction noise was assessed using criteria from the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) (FTA Manual). Table E shows the Federal Transit Administration's (FTA) Detailed Assessment Construction Noise Criteria based on the composite noise levels per construction phase.

Table E: Detailed Assessment Daytime Construction Noise Criteria

Land Use	Daytime 8-hour L_{eq} (dBA)
Residential	80
Commercial	85
Industrial	90

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

APPLICABLE VIBRATION STANDARDS

Federal Transit Administration

Vibration standards included in the FTA Manual are used in this analysis for ground-borne vibration impacts on human annoyance. The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event. Table F provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building.

Table G lists the potential vibration building damage criteria associated with construction activities, as suggested in the FTA Manual. FTA guidelines show that a vibration level of up to 0.5 in/sec in PPV is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster) and would not result in any construction vibration damage. For non-engineered timber and masonry buildings, the construction building vibration damage criterion is 0.2 in/sec in PPV.

Table F: Interpretation of Vibration Criteria for Detailed Analysis

Land Use	Max L_V (VdB)[1]	Description of Use
Workshop	90	Vibration that is distinctly felt. Appropriate for workshops and similar areas not as sensitive to vibration.
Office	84	Vibration that can be felt. Appropriate for offices and similar areas not as sensitive to vibration.
Residential Day	78	Vibration that is barely felt. Adequate for computer equipment and low-power optical microscopes (up to 20×).
Residential Night and Operating Rooms	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power microscopes (100×) and other equipment of low sensitivity.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] As measured in 1/3-octave bands of frequency over a frequency range of 8 to 80 Hertz.
FTA = Federal Transit Administration
Max = maximum
L_V = velocity in decibels
VdB = vibration velocity decibels

Table G: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
FTA = Federal Transit Administration
PPV = peak particle velocity
in/sec = inch/inches per second

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area are transportation facilities. Local traffic on Huntsman Avenue is a steady source of ambient noise.

AMBIENT NOISE MEASUREMENTS

Noise Measurements

Two long-term (24-hour) noise level measurements were conducted on July 26 and 27, 2023, using two Larson Davis Spark 706RC Dosimeter. Table H provides a summary of the measured hourly noise levels from the noise level measurements. Hourly noise levels at surrounding sensitive uses are as low as 44.7 dBA L_{eq} during nighttime hours and 37.4 dBA L_{eq} during daytime hours. Long-term noise monitoring data results are provided in Appendix A. Figure 3 shows the monitoring locations.

Table H: Ambient Noise Level Measurements

Location		Daytime Noise Levels[1] (dBA L_{eq})	Nighttime Noise Levels[2] (dBA L_{eq})	Daily Noise levels (dBA L_{dn})
LT-1	Near southwest corner of project site, on a fence, approximately 20 feet from Huntsman Avenue centerline.	52.3 – 62.9	44.7 – 59.7	61.9
LT-2	Near northeast corner of project site, on a fence, approximately 1,300 feet from Huntsman Avenue centerline.	37.4 – 51.7	46.7 – 56.0	56.5

Source: Compiled by LSA (2023).
Note: Noise measurements were conducted from July 26 to July 27, 2023, starting at 4:00 p.m.
[1] Daytime Noise Levels = Noise levels during the hours from 7:00 a.m. to 10:00 p.m.
[2] Nighttime Noise Levels = Noise levels during the hours from 10:00 p.m. to 7:00 a.m.
dBA = A-weighted decibels
ft = foot/feet
L_{dn} = day-night noise level
L_{eq} = equivalent continuous sound level

EXISTING AIRCRAFT NOISE

Airport-related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. The closest airport to the proposed project site is Reedley Municipal Airport, located approximately 6 miles (mi) north of the project site. According to Figure 6.2 of the City's General Plan, the project site is located well outside the 65 dBA CNEL airport noise impact zone. Therefore, the project would not be adversely affected by airport/airfield noise, nor would the project contribute to or result in adverse airport/airfield noise impacts.

LSA

LEGEND

Project Site Boundary

LT-1 Long-term Noise Monitoring Location

0 350 700

FEET

SOURCE: Google Earth (2023)

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FIGURE 3

East Huntsman Avenue Industrial Park Project

Noise Monitoring Locations

PROJECT IMPACT ANALYSIS

SHORT-TERM CONSTRUCTION NOISE IMPACTS

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single-event noise-exposure potential causing intermittent noise nuisance (passing trucks at 50 ft would generate up to 84 dBA L_{max}), the effect on longer-term ambient noise levels would be small when compared to existing daily traffic volumes on Huntsman Avenue. The results of the California Emissions Estimator Model (CalEEMod) for the proposed project indicate that during the grading phase, an additional 642 vehicles, consisting of worker and hauling trips, would be added to the roadway adjacent to the project site. Because the existing traffic volume on Huntsman Avenue is approximately 570, the future construction-related vehicle trips would increase by 3.3 dBA L_{dn}. Although a noise level increase greater than 3 dBA would be perceptible to the human ear in an outdoor environment, the L_{dn} on Huntsman Avenue would be 54.9 dBA L_{dn}, which is below the 60 dBA L_{dn} exterior City standard. Therefore, short-term construction-related impacts associated with worker commute and equipment transport to the project site would be less than significant.

The second type of short-term noise impact is related to noise generated during construction, which includes site preparation, grading, building construction, paving, and architectural coating on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table I lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 ft between the equipment and a noise receptor, taken from the Federal Highway Administration (FHWA) *Roadway Construction Noise Model* (FHWA 2006).

In addition to the reference maximum noise level, the usage factor provided in Table I is used to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period.

E.L. = noise emission level of the particular piece of equipment at a reference distance of 50 ft.

U.F. = usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time.

D = distance from the receiver to the piece of equipment.

Table I: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Maximum Noise Level (L_{max}) at 50 Feet[2]
Auger Drill Rig	20	84
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Paver	50	77
Pickup Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Trencher	50	80
Welder	40	73

Source: *FHWA Roadway Construction Noise Model User's Guide,* Table 1 (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Specification 721.560 from the Central Artery/ Tunnel program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
FHWA = Federal Highway Administration
L_{max} = maximum instantaneous sound level

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

Using the equations from the methodology above, the reference information in Table I, and the construction equipment list provided, the composite noise level of each construction phase was calculated. The project construction composite noise levels at a distance of 50 ft would range from

74 dBA L_{eq} to 88 dBA L_{eq}, with the highest noise levels occurring during the site preparation and grading phases.

Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq\ (at\ distance\ X) = Leq\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA, while halving the distance would increase noise levels by 6 dBA.

Table J shows the nearest sensitive uses to the project site, their distance from the center of construction activities, and composite noise levels expected during construction. These noise level projections do not consider intervening topography or barriers. Construction equipment calculations are provided in Appendix B.

Table J: Potential Construction Noise Impacts at Nearest Receptor

Receptor (Location)	Composite Noise Level (dBA L_{eq}) at 50 feet[1]	Distance (feet)	Composite Noise Level (dBA L_{eq})
Residences (East)	88	800	64
Residences (Northeast)		1,145	61

Source: Compiled by LSA (2023).
[1] The composite construction noise level represents the site preparation/grading phases, which are expected to result in the greatest noise level as compared to other phases.
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

While construction noise will vary, it is expected that composite noise levels during construction at the nearest off-site sensitive residential uses to the east would reach an average noise level of 64 dBA L_{eq} during daytime hours. These predicted noise levels would only occur when all construction equipment is operating simultaneously and, therefore, are assumed to be rather conservative in nature. While construction-related short-term noise levels have the potential to be higher than existing ambient noise levels in the project area under existing conditions, the noise impacts would no longer occur once project construction is completed.

The proposed project would comply with the construction hours specified above, which states that construction activities are allowed between the hours of 7:00 a.m. and 5:00 p.m. As it relates to off-site uses, construction-related noise impacts would not exceed the 80 dBA L_{eq} construction noise level criteria, as established by the FTA for residential land uses for the average daily condition as modeled from the center of the project site. Construction would be temporary and within the acceptable daily construction hours and therefore the impacts will be intermittent and considered less than significant. Best construction practices presented at the end of this analysis shall be implemented to minimize noise impacts to surrounding receptors.

SHORT-TERM CONSTRUCTION VIBRATION IMPACTS

This construction vibration impact analysis discusses the level of human annoyance using vibration levels in RMS (VdB) and assesses the potential for building damages using vibration levels in PPV (in/sec). This is because vibration levels calculated in RMS are best for characterizing human response to building vibration, while calculating vibration levels in PPV is best for characterizing the potential for damage.

Table K shows the PPV and VdB values at 25 ft from the construction vibration source. As shown in Table K, bulldozers and other heavy-tracked construction equipment (expected to be used for this project) generate approximately 0.089 PPV in/sec or 87 VdB of ground-borne vibration when measured at 25 ft, based on the FTA Manual. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project construction boundary (assuming the construction equipment would be used at or near the project setback line).

Table K: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] Equipment shown in **bold** is expected to be used on site.
µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inch/inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

The formulae for vibration transmission are provided below, and Tables L and M provide a summary of off-site construction vibration levels.

$$L_vdB\ (D) = L_vdB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

As shown in Table F, above, the threshold at which vibration levels would result in annoyance would be 78 VdB for daytime residential uses. As shown in Table G, the FTA guidelines indicate that for a non-engineered timber and masonry building, the construction vibration damage criterion is 0.2 in/sec in PPV.

Table L: Potential Construction Vibration Annoyance Impacts at Nearest Receptor

Receptor (Location)	Reference Vibration Level (VdB) at 25 ft[1]	Distance (ft) [2]	Vibration Level (VdB)
Residences (East)	87	800	42
Residences (Northeast)		1,145	37

Source: Compiled by LSA (2023).
[1] The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.
[2] The reference distance is associated with the average condition, identified by the distance from the center of construction activities to surrounding uses.
ft = foot/feet
VdB = vibration velocity decibels

Table M: Potential Construction Vibration Damage Impacts at Nearest Receptor

Receptor (Location)	Reference Vibration Level (PPV) at 25 ft[1]	Distance (ft)[2]	Vibration Level (PPV)
Residences (East)	0.089	20	0.124
Residences (Northeast)		380	0.002

Source: Compiled by LSA (2023).
[1] The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.
[2] The reference distance is associated with the peak condition, identified by the distance from the perimeter of construction activities to surrounding structures.
ft = foot/feet
PPV = peak particle velocity

Based on the information provided in Table L, vibration levels are expected to approach 42 VdB at the closest residential uses located east of the project site, which is below the 78 VdB threshold for annoyance.

Based on the information provided in Table M, vibration levels are expected to approach 0.124 PPV in/sec at the nearest surrounding structures and would not exceed the 0.2 PPV in/sec damage threshold considered safe for non-engineered timber and masonry buildings. Vibration levels at all other buildings would be lower. Therefore, construction would not result in any vibration damage, and impacts would be less than significant.

Because construction activities are allowed between the hours of 7:00 a.m. and 5:00 p.m., vibration impacts would not occur during the more sensitive nighttime hours.

LONG-TERM OFF-SITE TRAFFIC NOISE IMPACTS

The guidelines included in the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77 108) were used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the L_{dn} values. Table N provides the traffic noise levels for the opening year with and without project scenarios. These noise levels represent the worst-case scenario, which assumes no shielding is provided between the traffic and the location where the noise contours are drawn.

The without and with project scenario traffic volumes were obtained from the *Traffic Impact Study for East Huntsman Avenue Industrial Park Project* (LSA 2023). Appendix C provides the specific assumptions used in developing these noise levels and model printouts. Table N shows that the increase in project-related traffic noise would be up to 6.5 dBA on Huntsman Avenue. Although the noise level increase is greater than 3 dBA, the L_{dn} on Huntsman Avenue would be 53.9 dBA L_{dn}, which is below the 60 dBA L_{dn} exterior City standard. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant and no mitigation measures are required.

Table N: Traffic Noise Levels Without and With Proposed Project

Roadway Segment	Existing – Without Project		Existing – With Project			Near Term – Without Project		Near Term – With Project			Cumulative – Without Project		Cumulative – With Project		
	ADT	L_{dn} (dBA) 50 ft from Centerline of Nearest Lane	ADT	L_{dn} (dBA) 50 ft from Centerline of Nearest Lane	Increase from Existing Conditions (dBA)	ADT	L_{dn} (dBA) 50 ft from Centerline of Nearest Lane	ADT	L_{dn} (dBA) 50 ft from Centerline of Nearest Lane	Increase from Existing Conditions (dBA)	ADT	L_{dn} (dBA) 50 ft from Centerline of Nearest Lane	ADT	L_{dn} (dBA) 50 ft from Centerline of Nearest Lane	Increase from Existing Conditions (dBA)
Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue	8,290	64.0	8,800	64.2	0.2	8,360	64.0	8,870	64.3	0.3	9,440	64.5	9,950	64.8	0.3
Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit	7,880	63.7	8,100	63.9	0.2	7,910	63.8	8,130	63.9	0.1	8,710	64.2	8,930	64.3	0.1
Buttonwillow Avenue between Reedley City limits and Floral Avenue	7,470	63.5	7,690	63.6	0.1	7,510	63.5	7,730	63.7	0.2	7,990	63.8	8,210	63.9	0.1
Englehart Avenue between Dinuba Avenue and Huntsman Avenue	2,470	59.1	2,630	59.4	0.3	2,520	59.2	2,680	59.5	0.3	2,960	59.9	3,120	60.2	0.3
Englehart Avenue between Huntsmen Avenue and Floral Avenue	2,560	59.3	2,720	59.6	0.3	2,610	59.4	2,770	59.6	0.2	2,740	59.6	2,900	59.8	0.2
Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue	8,250	64.4	8,250	64.4	0.0	8,610	64.6	8,610	64.6	0.0	8,880	64.7	8,880	64.7	0.0
Huntsman Avenue between Buttonwillow Avenue and the project site	210	47.0	940	53.5	6.5	210	47.0	940	53.5	6.5	1,730	56.2	2,460	57.7	1.5
Huntsman Avenue between the project site and Englehart Avenue	360	49.4	1,030	53.9	4.5	360	49.4	1,030	53.9	4.5	660	52.0	1,330	55.0	3.0

Source: Compiled by LSA (January 2024).
Note: Shaded cells indicate roadway segments adjacent to the project site.
ADT = average daily traffic
L_{dn}= day-night noise level
dBA = A-weighted decibels
ft = foot/feet

STATIONARY OPERATIONAL NOISE IMPACTS TO OFF-SITE RECEIVERS

Adjacent off-site land uses would be potentially exposed to stationary-source noise impacts from the proposed on-site heating, ventilation, and air conditioning (HVAC) equipment, truck deliveries and loading and unloading activities, and truck maintenance and wash. The potential noise impacts to off-site sensitive land uses from the proposed operational activities are discussed below. To provide a conservative analysis, it is assumed that operations would occur equally during all daytime hours of the day and that 4 loading docks would be active at all times. Additionally, it is assumed that within any given hour, 15 heavy trucks would maneuver to park near or back into one of the proposed loading docks. To determine the future noise impacts from project operations to the noise sensitive uses, a 3-D noise model, SoundPLAN, was used to incorporate the site topography as well as the shielding from the proposed buildings, and the proposed 10 ft high wall along the eastern and northeastern property line. A graphic representation of the operational noise impacts is presented in Appendix D.

Heating, Ventilation, and Air Conditioning Equipment

The project would have various rooftop mechanical equipment, including HVAC units, on the proposed buildings. Based on the project site plan, the project is assumed to have a total of 46 rooftop HVAC units and assumed to operate 24 hours per day. The HVAC equipment could operate 24 hours per day and would generate sound power levels (SPL) of up to 87 dBA SPL or 72 dBA L_{eq} at 5 ft, based on manufacturer data (Trane n.d.).

Truck Deliveries, Truck Loading and Unloading Activities, Truck Maintenance and Truck Wash Operations

Noise levels generated by delivery trucks would be similar to noise readings from truck loading and unloading activities, which generate a noise level of 75 dBA L_{eq} at 20 ft based on measurements taken by LSA (*Operational Noise Impact Analysis for Richmond Wholesale Meat Distribution Center* [LSA 2016]). Shorter term noise levels that occur during the docking process taken by LSA were measured to be 76.3 dBA L_8 at 20 ft. Delivery trucks would arrive on site and maneuver their trailers so that trailers would be parked within the loading docks. During this process, noise levels are associated with the truck engine noise, air brakes, and back-up alarms while the truck is backing into the dock. These noise levels would occur for a shorter period of time (less than 5 minutes). After a truck enters the loading dock, the doors would be closed, and the remainder of the truck loading activities would be enclosed and therefore much less perceptible. To present a conservative assessment, it is assumed that truck arrivals and departure activities could occur at 15 spaces for a period of less than 5 minutes each and unloading activities could occur at 4 docks simultaneously for a period of more than 30 minutes in a given hour.

Truck Maintenance

The significant sources of noise in the service area include impact wrenches and car lifts.

- Impact wrenches: It is assumed that an impact wrench would operate for a total of 30 minutes per hour. Based on reference information gathered from Dewalt, an impact wrench would produce a noise level of 104 dBA SPL at a distance of 2 feet.

- Drive Ratchets: It is assumed that a drive ratchet would operate for a total of 30 minutes per hour. Based on reference information gathered from Milwaukee, an impact wrench would produce a noise level of 99 dBA SPL at a distance of 2 feet.

- Car lifts: It is assumed that car lifts would operate for a total of 30 minutes in a given hour. Based on reference noise levels measured by LSA, a car lift would produce a noise level of 81.9 dBA SPL at a distance of 3 feet.

- Air Hoses: It is assumed that air hoses would operate for less than 30 minutes in a given hour. Based on reference noise levels by Air Saving Products, an air hose would produce a noise level of 84 dBA SPL at a distance of 3 feet.

Truck Wash

Below are sources at the wash bays of the project.

- Shop Vacuum: It is assumed that the shop vacuum equipment would operate for 30 minutes each hour. Based on reference noise level from a variety of commercially available products, each shop vacuum would produce a noise level of 70 dBA SPL at a distance of 3 feet.

- Water Blaster: It is assumed that the water blaster would operate for 30 minutes each hour. Based on reference noise levels from Tech Gear Lab, the shop vacuum would produce a noise level of 65.1 dBA SPL at a distance of 25 feet.

Cumulative Unmitigated Operations Noise Assessment

The SoundPLAN results provided in Appendix D (Sheet B-1) show that the unmitigated project-generated noise levels would exceed the residential use daytime and nighttime noise standards of 55 dBA L_{eq} and 50 dBA L_{eq}, respectively, at the receptors to the east.

Cumulative Mitigated Impact Assessment

Due to an expected noise exceedance at the property line of the residential uses to the east, noise reduction features in the form of sound walls were evaluated. Sheet B-2 in Appendix D shows the daytime noise levels from the project's operations at the surrounding sensitive land uses with the incorporation of a 10 ft wall along the eastern and northeastern property line, would result in noise levels below 55 dBA L_{eq} and would be in compliance with the desired daytime noise criteria.

Sheet B-3 in Appendix D shows the nighttime noise levels from the project's operations at the surrounding sensitive land uses. To meet the nighttime standard of 50 dBA L_{eq}, the following additional mitigation measures are required:

- No operations at the truck wash or maintenance buildings between the hours of 10 p.m. to 7 a.m.

- No loading dock or heavy truck operations/movements at the buildings on Parcels 21 and 22 between the hours of 10 p.m. to 7 a.m.

Therefore, with the incorporation of the mitigation measures above, the impact would be less than significant.

LONG-TERM TRAFFIC-RELATED VIBRATION IMPACTS

The proposed project would not generate vibration levels related to on-site operations. In addition, vibration levels generated from project-related traffic on the adjacent roadways are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Based on a reference vibration level of 0.076 in/sec PPV, structures greater than 20 ft from the roadways that contain project trips would experience vibration levels below the most conservative standard of 0.12 in/sec PPV; therefore, vibration levels generated from project-related traffic on the adjacent roadways would be less than significant, and no mitigation measures are required.

BEST CONSTRUCTION PRACTICES

In addition to compliance with the City's General Plan EIR allowed daily hours of construction between 7:00 a.m. and 5:00 p.m., the following best construction practices would further minimize construction noise impacts:

- The project construction contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers consistent with manufacturer's standards.
- The project construction contractor shall locate staging areas away from off-site sensitive uses during the later phases of project development.
- The project construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site whenever feasible.

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California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September.

City of Reedley. 2014. *General Plan 2030*. February 18.

Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide.* January. Washington, D.C. Website: www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf (accessed January 2024).

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LSA Associates, Inc. (LSA). 2016. *Operational Noise Impact Analysis for Richmond Wholesale Meat Distribution Center*. May.

_____. 2023. *Traffic Impact Study for East Huntsman Avenue Industrial Park Project.*

State of California. 2020. *2019 California Green Building Standards Code.*

Trane. n.d. *Fan Performance - Product Specifications RT-PRC023AU-EN.*

APPENDIX A

NOISE MONITORING DATA

Noise Measurement Survey – 24 HR

Project Number: 20231045.02
Project Name: Huntsman Reedley

Test Personnel: Moe Abushanab
Equipment: Spark 706RC (SN:17815)

Site Number: LT-1 Date: 7/26/2023

Time: From 4:00 p.m. To 4:00 p.m.

Site Location: Near southwest corner of project site, on a fence, approximately 20 feet from Huntsman Avenue centerline.

Primary Noise Sources: Traffic noise on Huntsman Avenue

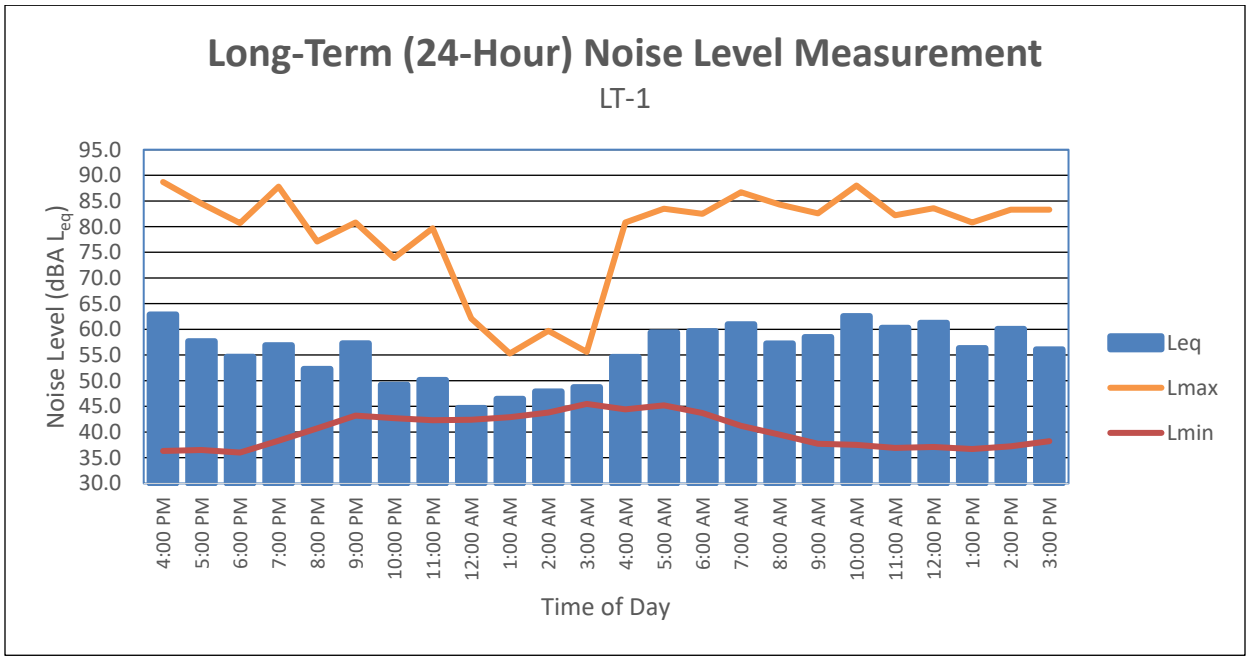
Comments: Some agricultural operations noise (sprinklers, pumps)

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
4:00 PM	7/26/23	62.9	88.7	36.3
5:00 PM	7/26/23	57.7	84.5	36.5
6:00 PM	7/26/23	54.7	80.7	36.0
7:00 PM	7/26/23	56.9	87.8	38.3
8:00 PM	7/26/23	52.3	77.1	40.7
9:00 PM	7/26/23	57.3	80.8	43.2
10:00 PM	7/26/23	49.2	73.9	42.7
11:00 PM	7/26/23	50.2	79.7	42.3
12:00 AM	7/27/23	44.7	62.1	42.4
1:00 AM	7/27/23	46.5	55.3	42.9
2:00 AM	7/27/23	47.9	59.7	43.8
3:00 AM	7/27/23	48.7	55.6	45.5
4:00 AM	7/27/23	54.6	80.8	44.4
5:00 AM	7/27/23	59.4	83.5	45.2
6:00 AM	7/27/23	59.7	82.5	43.7
7:00 AM	7/27/23	61.0	86.7	41.2
8:00 AM	7/27/23	57.2	84.3	39.5
9:00 AM	7/27/23	58.5	82.6	37.7
10:00 AM	7/27/23	62.6	88.0	37.5
11:00 AM	7/27/23	60.3	82.2	36.9
12:00 PM	7/27/23	61.3	83.6	37.1
1:00 PM	7/27/23	56.3	80.8	36.7
2:00 PM	7/27/23	60.1	83.3	37.2
3:00 PM	7/27/23	56.1	83.3	38.2

Source: Compiled by LSA Associates, Inc. (2023).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: 20231045.02
Project Name: Huntsman Reedley

Test Personnel: Moe Abushanab
Equipment: Spark 706RC (SN:18572)

Site Number: LT-2 Date: 7/26/2023

Time: From 4:00 p.m. To 4:00 p.m.

Site Location: Near northeast corner of project site, on a fence, approximately 1,300 feet from Huntsman Avenue centerline.

Primary Noise Sources: Background traffic noise
Occasional aircraft

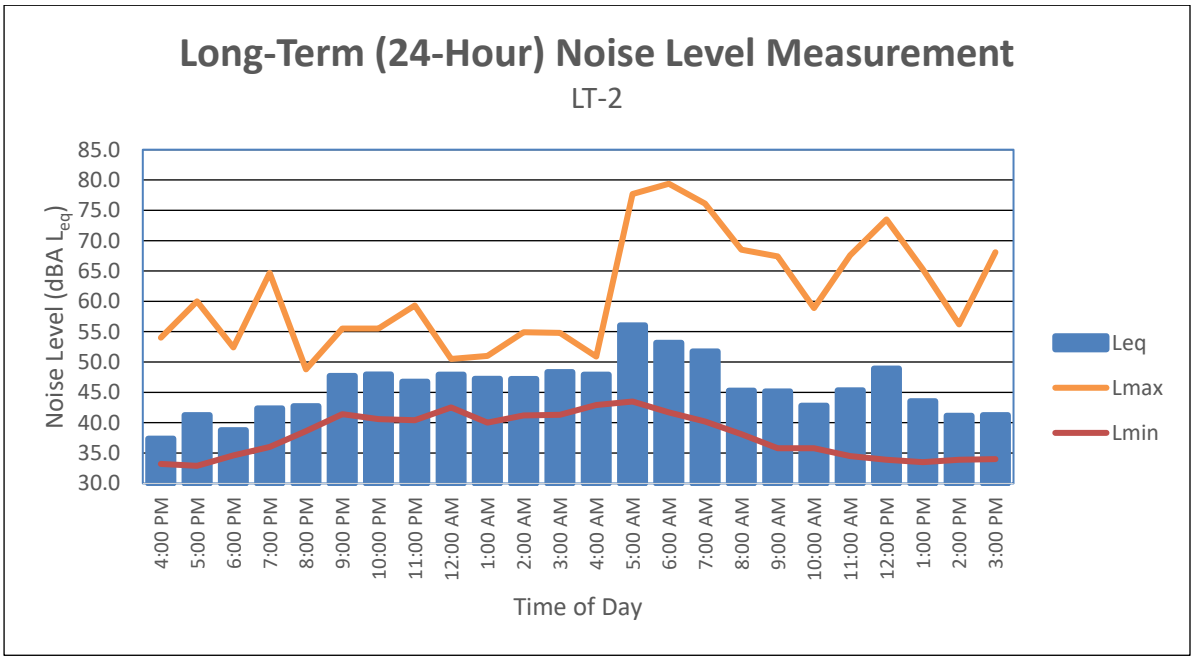
Comments: Some agricultural operations noise (sprinklers, pumps)

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
4:00 PM	7/26/23	37.4	54.0	33.2
5:00 PM	7/26/23	41.2	60.0	32.9
6:00 PM	7/26/23	38.8	52.4	34.6
7:00 PM	7/26/23	42.3	64.7	36.0
8:00 PM	7/26/23	42.7	48.8	38.6
9:00 PM	7/26/23	47.7	55.5	41.4
10:00 PM	7/26/23	47.9	55.5	40.6
11:00 PM	7/26/23	46.7	59.3	40.4
12:00 AM	7/27/23	47.9	50.5	42.5
1:00 AM	7/27/23	47.2	51.0	40.0
2:00 AM	7/27/23	47.2	54.9	41.2
3:00 AM	7/27/23	48.3	54.8	41.3
4:00 AM	7/27/23	47.9	50.9	42.9
5:00 AM	7/27/23	56.0	77.7	43.5
6:00 AM	7/27/23	53.2	79.4	41.7
7:00 AM	7/27/23	51.7	76.1	40.2
8:00 AM	7/27/23	45.3	68.5	38.1
9:00 AM	7/27/23	45.2	67.4	35.8
10:00 AM	7/27/23	42.8	58.9	35.8
11:00 AM	7/27/23	45.3	67.6	34.5
12:00 PM	7/27/23	48.9	73.5	33.9
1:00 PM	7/27/23	43.5	65.3	33.5
2:00 PM	7/27/23	41.1	56.2	33.9
3:00 PM	7/27/23	41.3	68.1	34.0

Source: Compiled by LSA Associates, Inc. (2023).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



APPENDIX B

CONSTRUCTION NOISE CALCULATIONS

Construction Calculations

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Dozer	3	82	40	50	0.5	82	83
Tractor	4	84	40	50	0.5	84	86
					Combined at 50 feet	**86**	**88**
					Combined at Receptor 800 feet	**62**	**64**
					Combined at Receptor 1145 feet	**59**	**61**

Phase: Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Excavator	2	81	40	50	0.5	81	80
Grader	1	85	40	50	0.5	85	81
Dozer	1	82	40	50	0.5	82	78
Scraper	2	84	40	50	0.5	84	83
Tractor	2	84	40	50	0.5	84	83
					Combined at 50 feet	**90**	**88**
					Combined at Receptor 800 feet	**66**	**64**
					Combined at Receptor 1145 feet	**63**	**61**

Phase:Building Construstion

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Crane	1	81	16	50	0.5	81	73
Man Lift	3	75	20	50	0.5	75	73
Generator	1	81	50	50	0.5	81	78
Tractor	3	84	40	50	0.5	84	85
Welder / Torch	1	74	40	50	0.5	74	70
					Combined at 50 feet	**87**	**86**
					Combined at Receptor 800 feet	**63**	**62**

Phase:Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Paver	2	77	50	50	0.5	77	77
All Other Equipment > 5 hp	2	85	50	50	0.5	85	85
Roller	2	80	20	50	0.5	80	76
					Combined at 50 feet	**87**	**86**
					Combined at Receptor 800 feet	**63**	**62**

Phase:Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	78	40	50	0.5	78	74
					Combined at 50 feet	**78**	**74**
					Combined at Receptor 800 feet	**54**	**50**

Sources: RCNM

[1]- Percentage of time that a piece of equipment is operating at full power

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

APPENDIX C

FHWA TRAFFIC NOISE PRINTOUTS

TABLE Existing -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8290 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	56.0	117.1	250.6

TABLE Existing -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7880 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.2	113.3	242.3

TABLE Existing -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Reedley City limits and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7470 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	52.5	109.4	233.9

TABLE Existing -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2470 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	52.8	112.1

TABLE Existing -05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Huntsmen Avenue and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2560 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	54.0	114.8

TABLE Existing -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8250 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.7	116.3	249.7

TABLE Existing -07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between Buttonwillow Avenue and the project site
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 210 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 47.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between the project site and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 360 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	58.1	121.8	260.7

TABLE Existing With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	55.2	115.3	246.8

TABLE Existing With Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Reedley City limits and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7690 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.4	111.5	238.4

TABLE Existing With Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2630 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	55.0	116.9

TABLE Existing With Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Huntsmen Avenue and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2720 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	56.2	119.5

TABLE Existing With Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8250 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.7	116.3	249.7

TABLE Existing With Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between Buttonwillow Avenue and the project site
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 940 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing With Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between the project site and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1030 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	51.1

TABLE Near Term -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8360 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.00

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	56.3	117.7	252.0

TABLE Near Term -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7910 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.4	113.6	242.9

TABLE Near Term -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Reedley City limits and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7510 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	52.7	109.8	234.7

TABLE Near Term -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2520 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	53.5	113.6

TABLE Near Term -05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Huntsmen Avenue and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2610 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	54.7	116.3

TABLE Near Term -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8610 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	56.2	119.6	256.9

TABLE Near Term -07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between Buttonwillow Avenue and the project site
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 210 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 47.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Near Term -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between the project site and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 360 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Near Term With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8870 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	58.4	122.4	262.1

TABLE Near Term With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8130 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	55.3	115.6	247.4

TABLE Near Term With Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Reedley City limits and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7730 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.6	111.9	239.2

TABLE Near Term With Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2680 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	55.7	118.3

TABLE Near Term With Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Huntsmen Avenue and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2770 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	56.9	121.0

TABLE Near Term With Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8610 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	56.2	119.6	256.9

TABLE Near Term With Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between Buttonwillow Avenue and the project site
NOTES: East Huntsman Industrial Park Project - Near Term With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 940 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Near Term With Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between the project site and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Near Term With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1030 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	51.1

TABLE Cumulative-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9440 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	60.7	127.5	273.2

TABLE Cumulative-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit
NOTES: East Huntsman Industrial Park Project - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8710 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	57.7	121.0	259.0

TABLE Cumulative-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Reedley City limits and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7990 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.7	114.3	244.5

TABLE Cumulative-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2960 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	59.3	126.4

TABLE Cumulative-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Huntsmen Avenue and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2740 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	56.5	120.1

TABLE Cumulative-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8880 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	57.4	122.1	262.2

TABLE Cumulative-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between Buttonwillow Avenue and the project site
NOTES: East Huntsman Industrial Park Project - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1730 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	71.5

TABLE Cumulative-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between the project site and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 660 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative With Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9950 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	62.7	132.0	282.9

TABLE Cumulative With Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Huntsman Avenue and Reedley City Limit
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8930 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	58.6	123.0	263.3

TABLE Cumulative With Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Buttonwillow Avenue between Reedley City limits and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8210 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	55.6	116.4	249.0

TABLE Cumulative With Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Dinuba Avenue and Huntsman Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3120 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	61.4	130.9

TABLE Cumulative With Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Englehart Avenue between Huntsmen Avenue and Floral Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2900 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	58.6	124.7

TABLE Cumulative With Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Dinuba Avenue between Buttonwillow Avenue and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8880 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	57.4	122.1	262.2

TABLE Cumulative With Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between Buttonwillow Avenue and the project site
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2460 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	90.1

TABLE Cumulative With Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 12/21/2023
ROADWAY SEGMENT: Huntsman Avenue between the project site and Englehart Avenue
NOTES: East Huntsman Industrial Park Project - Cumulative With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1330 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 10 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	60.3

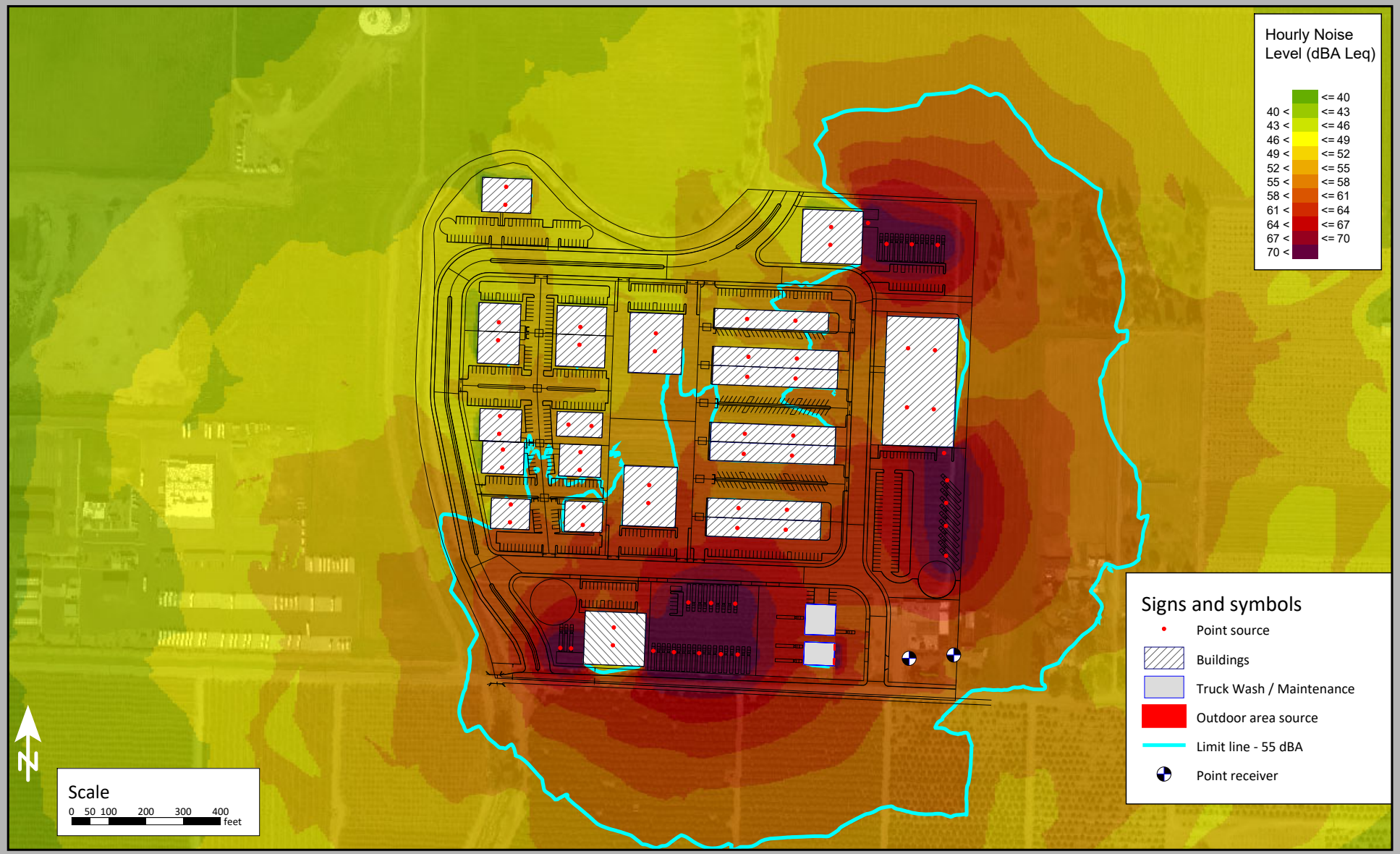
APPENDIX D

SOUNDPLAN NOISE MODEL PRINTOUTS

East Hunstman Avenue Industrial Park Project

Project No. 20231045.02

Project Operational Noise Levels - Daytime - Unmitigated



C:\Users\MAbushanab\OneDrive - LSA Associates\Documents\Desktop\SoundPLAN\20231045.02 - Huntsman Reedley\Day - truck washmain halftime - unmit.sgs - last edit 1/2/2024

East Hunstman Avenue Industrial Park Project

Project No. 20231045.02

Project Operational Noise Levels - Daytime - Mitigated (10ft Wall)

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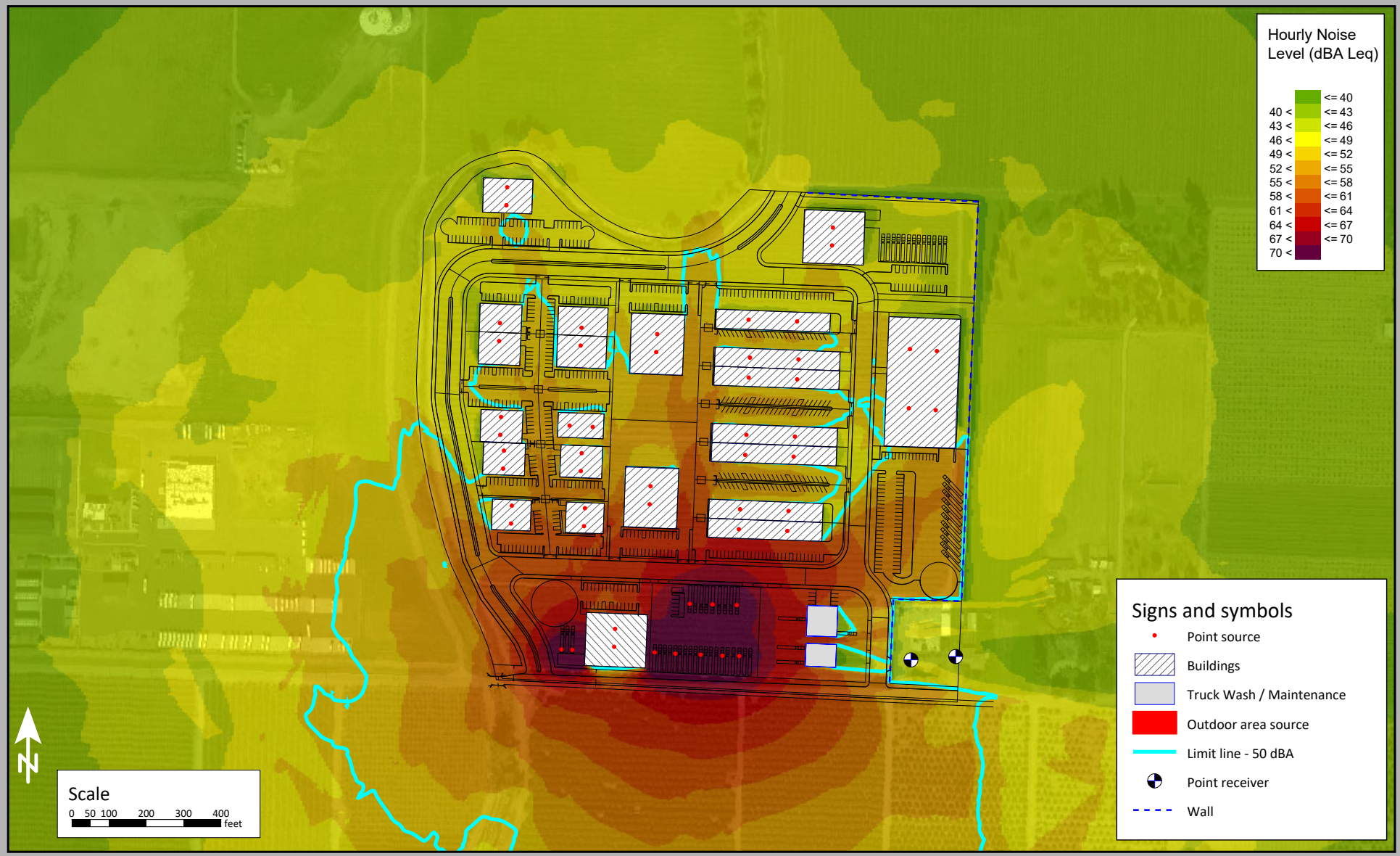
East Hunstman Avenue Industrial Park Project

Project No. 20231045.02

Project Operational Noise Levels - Nighttime - Mitigated (10ft Wall)



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