# Appendix D2

## Noise Impact Analysis – Reduced Casino Alternative

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# NOISE IMPACT ANALYSIS

# 111 CALEXICO PLACE PROJECT

# REDUCED CASINO ALTERNATIVE

# CALEXICO, CALIFORNIA

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## NOISE SETTING

Sound is the mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. Sound is characterized by various parameters which describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The unit of sound pressure expressed as a logarithmic ratio to the faintest sound detectable by a keen human ear is called a decibel (dB).

Because sound or noise can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale similar to the Richter scale used for earthquake magnitude is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called "A-weighting," written as "dBA." Any further reference to decibels in this report written as "dB" should be understood to be A-weighted values.

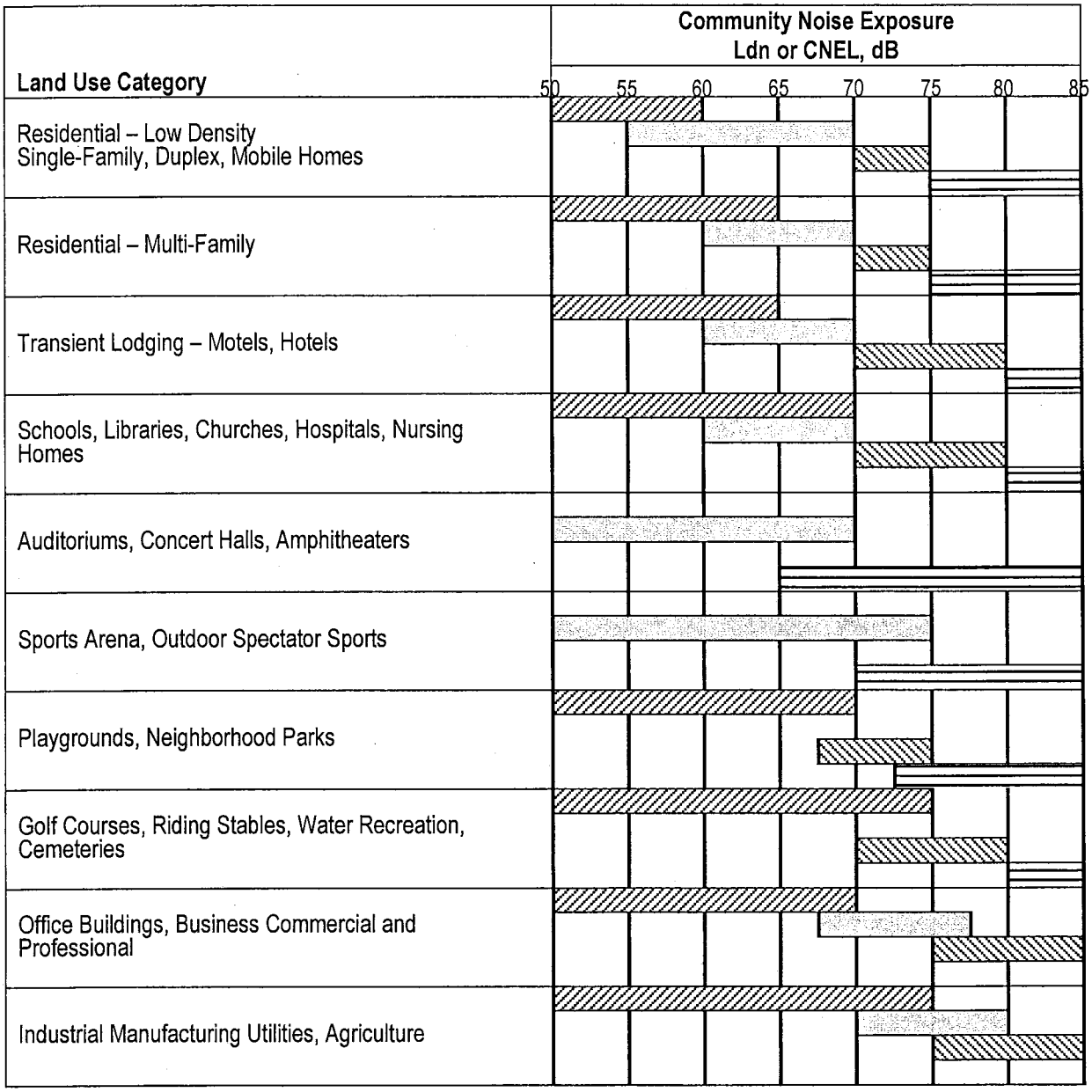
Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called Leq), or, alternately, as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period. Finally, because community receptors are much more sensitive to unwanted noise intrusion during the evening and at night, State law requires that, for planning purposes, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL).

An interior CNEL of 45 dBA is mandated by the State of California Noise Insulation Standards (CCR, Title 24, Part 6, Section T25-28) for multiple family dwellings and hotel and motel rooms. In 1988, the State Building Standards Commission expanded that standard to include all habitable rooms in residential use, including single-family dwelling units. Since normal noise attenuation within residential structures with closed windows is about 20 dB, an exterior noise exposure of 65 dBA CNEL allows the interior standard to be met without any specialized structural attenuation (dual paned windows, etc.). A noise exposure of 65 dBA CNEL is typically the exterior noise-land use compatibility guideline for usable space (yards, patios, spas, etc., for new residential dwellings in California and for transient lodging (motels and hotels). Because commercial or industrial uses are not occupied on a 24-hour basis, the exterior noise exposure standard for less sensitive land uses generally is less stringent.

The project area is within the Calexico city limits. Therefore, noise requirements for the City of Calexico were determined to be the jurisdictional standards applicable for this project. Figure 1 shows the recommended State of California noise/land use compatibility guidelines that have been adopted by the City of Calexico. Hotels are considered "normally acceptable" with exposures up to 65 dB CNEL and "conditionally acceptable" with exposures up to 70 dB CNEL. Commercial uses are considered "normally acceptable" with exposures of up to 70 dB CNEL,

## Figure 1

# Land Use Compatibility for Community Noise Environments




**INTERPRETATION**

**Normally Acceptable:** Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

**Conditionally Acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

**Normally Unacceptable:** New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

**Clearly Unacceptable:** New construction or development should generally not be undertaken.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

and "conditionally acceptable" with exposures of up to 77.5 dB CNEL. Conditionally acceptable requires that a detailed noise analysis be performed and that needed noise insulation features be included in the design.

CNEL-based standards apply to noise sources whose noise generation is preempted from local control, such as on-road vehicles, trains, airplanes, etc. Because local jurisdictions cannot regulate the noise generator, they exercise land use planning authority on the receiving property. Uses that are amenable to local control are generally considered "stationary sources." Local jurisdictions typically do regulate the level of noise that one use may impose upon another for those sources not pre-empted from local control.

The City of Calexico has adopted noise standards for "stationary" sources in Section 8.46 of the Municipal Code which are shown in Table 1 for various zoning uses. If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus five dB shall apply. Nocturnal hours have a lower permissible noise threshold than daytime hours. For residential uses, allowable noise standards are much lower than for commercial or industrial land uses. In order to allow for short-term transient noises, the ordinance allows some deviation from the average with larger deviations allowed for progressively shorter periods.

The one noise source associated with land use intensification that is exempt from compliance with numerical standards is noise from construction activities. The City of Calexico noise ordinance at Section 8.46.042 restricts construction to the hours of 8 a.m. to 5 p.m. if activity noise disturbs the peace and quiet of any person of normal sensitivity. The Building Department may issue a written early work permit if hot or inclement weather create a need to start earlier than 8 a.m.

## TABLE 1

## CITY OF CALEXICO

## NOISE LEVEL LIMITS
## FIXED AND NONSTATIONARY NOISE SOURCES

| ZONE | TIME | SOUND LEVEL IN DECIBELS |
|---|---|---|
| Residential Low Density | 7 a.m. to 10 p.m. | 50 |
| | 10 p.m. to 7 a.m. | 40 |
| Residential High Density | 7 a.m. to 10 p.m. | 60 |
| | 10 p.m. to 7 a.m. | 50 |
| Commercial | 7 a.m. to 10 p.m. | 60 |
| | 10 p.m. to 7 a.m. | 50 |
| Industrial | 7 a.m. to 10 p.m. | 70 |
| | 10 p.m. to 7 a.m. | 55 |

## TIME DURATION CORRECTION TABLE

| **Duration of Sound** | **dB(A) Allowance** |
|---|---|
| Up to 30 minutes per hour | +3 |
| Up to 15 minutes per hour | +6 |
| Up to 10 minutes per hour | +8 |
| Up to 5 minutes per hour | +11 |
| Up to 2 minutes per hour | +15 |
| Up to 1 minutes per hour | +18 |
| Up to 30 seconds per hour | +21 |
| Up to 15 seconds per hour | +24 |

## BASELINE NOISE LEVELS

The proposed project is situated on a 232-acre parcel of land located within the Calexico area of Imperial County. The parcel is currently vacant and is situated at the southwest corner of the intersection of Jasper Road and SR-111. The posted travel speed on SR-111 is 55 mph. Commercial development is located southeast of the site, across SR-111. Much of the site is bordered by agricultural fields.

Noise measurements were made in order to document existing baseline levels in the area. These help to serve as a basis for projecting future noise exposure, both from the project upon the surrounding community and from ambient noise activities upon the proposed project. Short-term noise measurements were conducted on Friday afternoon, March 16, 2007, at five on-site locations. The results of the measurements are shown below.

**Short-Term Noise Measurements (dB[A])**

| Site | Time | Leq | Lmax | Lmin |
|---|---|---|---|---|
| 1 | 12:45-13:00 | 58.8 | 78.5 | 35.5 |
| 2 | 13:05-13:20 | 55.5 | 75.5 | 34.0 |
| 3 | 13:30-13:40 | 64.2 | 74.5 | 40.0 |
| 4 | 13:56-14:06 | 63.9 | 76.0 | 40.5 |
| 5 | 14:22-14:37 | 37.3 | 46.5 | 33.5 |

Site 1: Northwest corner of site near divergence of Jasper Road and Canal closest site to Heber Geothermal Plant.

Site 2: North side of site, south side of Jasper Road, 50 feet to Jasper centerline, east of intersection of north/south dirt road.

Site 3: Northeast corner of site, 50 feet west of Scaroni Road centerline.

Site 4: Southeast corner of site, just north of intersection of Scaroni Road and east/west dirt road that is at southern boundary of site.

Site 5: Southwest corner of site. Intersection of two dirt roads (one runs north/south through site, other is at site's southern boundary.

Except in close proximity to SR-111 noise levels at the site are low. Proposed project land uses adjacent to this intersection are commercial such that traffic noise will not provide a siting constraint. On-site noise from the Heber Geothermal Plant is minimal as measured noise at the northwest corner of the site is 59 dB Leq. The Heber Geothermal Plant does not present a noise siting constraint.

Monitoring experience has shown that 24-hour weighted CNELs are typically 2-3 dB higher than the mid-morning Leq readings shown below. The measured on-site noise levels are in the 37 - 64 dB Leq range. This would translate into CNEL's of 40 to 67 dBA.

## NOISE IMPACTS

Two characteristic noise sources are typically identified with land use intensification such as that proposed for the 111 Calexico Place development. Initially, project construction activities, especially from heavy equipment, will create short-term noise increases near the project site. Since there are no nearby sensitive receptors, this project should not create a noise impact.

Upon completion, project-related traffic will cause an incremental increase in area-wide noise levels throughout the Calexico area. Development may increase the ambient noise environment due to project-related traffic on site access roads. Except in close proximity to the site, traffic from any single project becomes progressively diluted. Noise impacts are therefore mainly cumulative without a clearly perceptible impact being created by any single project.

Traffic noise impacts are generally analyzed to insure that the project will not adversely impact the acoustic environment of the surrounding community. The analysis must also insure that the project site is not exposed to an unacceptable level of noise resulting from the ambient noise environment acting upon the project. Needed buffer distances and propagation barriers must be evaluated to minimize the impact potential where such impacts exceed established impact significance thresholds. Typically, project-related, off-site noise impacts are evaluated as part of area-wide (community plan or specific plan) development planning. The focus of this report, therefore, is the impact of the noise environment upon the project, and not the project upon regional noise patterns.

### STANDARDS OF SIGNIFICANCE

CEQA Guidelines identify significant impacts as those that cause standards to be exceeded when they are currently met. An impact is also considered significant if it "substantially" worsens an existing unacceptable noise environment.

"Substantially" is not defined in any guidelines. The accuracy of sound level meters and of sound propagation computer models is no better than ±1 dB. This is also the human loudness difference discrimination level under ideal laboratory conditions. Most people cannot distinguish a change in the noise environment that differs by less than 3 dB between the pre- and post-project exposure if the change occurs under ambient conditions. For the purposes of this analysis, an increase of 3 dB that creates or worsens an area of noise/land use incompatibility would be considered a significant degradation of noise quality.

Because of the logarithmic relationship between traffic volumes and noise levels, it requires a dramatic increase in traffic to create even a perceptible change in noise levels. A +1 dB increase requires a 25 percent greater traffic volume. A +3 dB noise increase occurs when volumes double. In those areas where traffic levels are already high enough to create a noise concern, few projects would individually cause traffic volumes to double. Off-site traffic noise impacts tend therefore to be more of a cumulative, rather than an individual impact.

CEQA guidelines also consider noise exposure to be a possible issue for any proposed projects within two miles of an airport. The project site is more than two miles north of Calexico International Airport (CIA). No further airport noise analysis is necessary.

A railway line runs west of the site. The distance from the rail line to the western project perimeter varies from 500-1,500 feet. The rail line is rarely used and with the distance separation does not pose a noise constraint.

## CONSTRUCTION NOISE IMPACTS

Construction activities, especially from heavy equipment, may create substantial short-term noise increase near the project site. Temporary construction noise impacts vary markedly because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Short-term construction noise impacts tend to occur in discrete phases dominated initially by earth-moving sources, then by foundation and parking area construction, and finally for finish construction.

The earth-moving sources are the noisiest with equipment noise ranging up to about 90 dB(A) at 50 feet from the source. Figure 2 shows the range of typical construction noise during various construction phases. Spherically radiating point sources of noise emissions are atmospherically attenuated by a factor of 6 dB per doubling of distance. The earth-moving noise sources could thus be detectable beyond about 1,000 feet from the construction area. Because physical structures such as completed development tend to shield certain propagation directions, the heavy equipment construction noise "envelope" is somewhat reduced in portions of the local area by obstruction of line of site noise propagation.

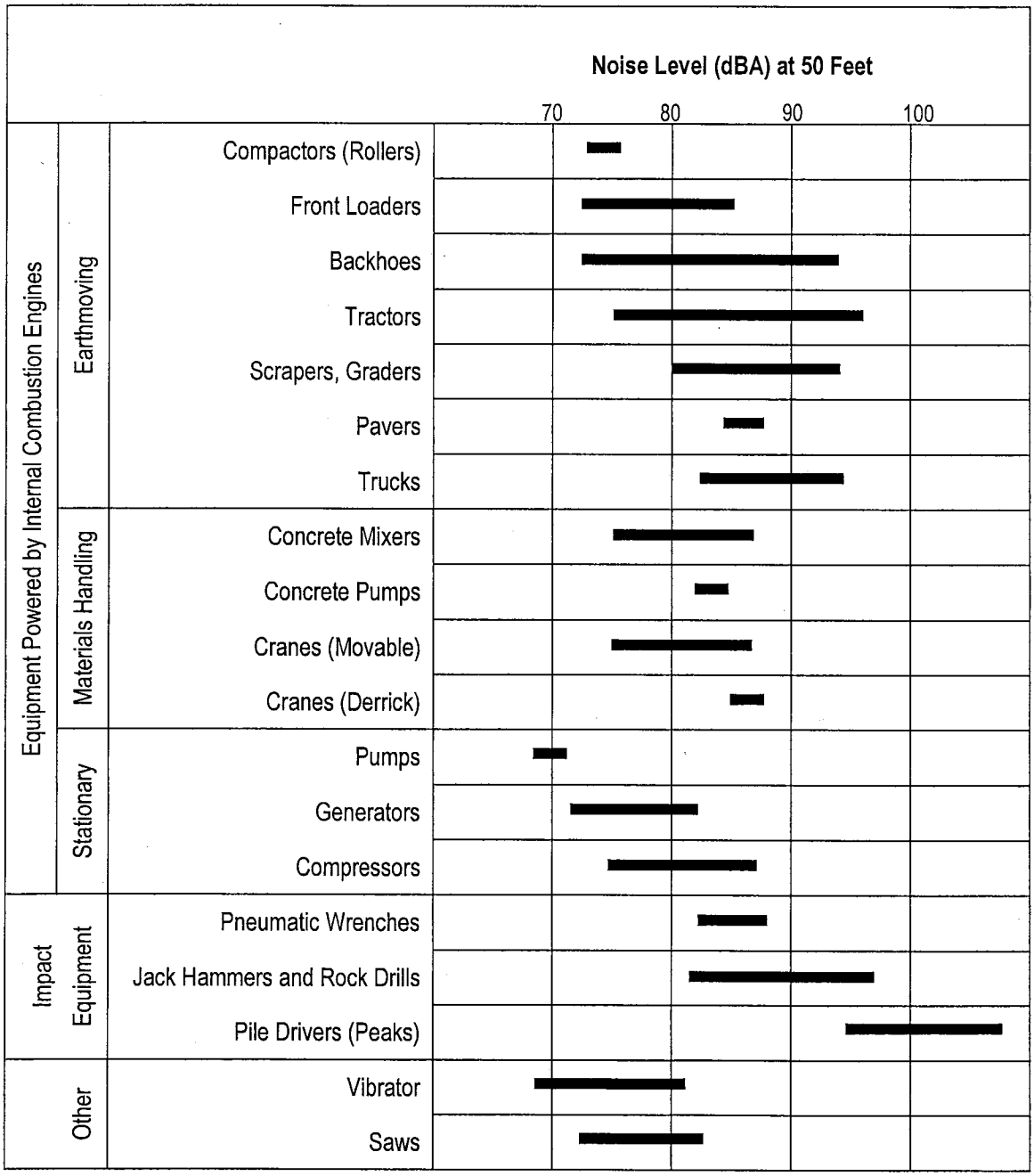
Construction noise sources are not strictly relatable to a noise standard because they occur only during selected times and the source strength varies sharply with time. The penalty associated with noise disturbance usually leads to time limits on construction activities imposed as conditions on construction permits. For construction activities within close proximity to occupied residential units, the hours from 8 a.m. to 5 p.m. are the times allowed in the City of Calexico for construction activities (Municipal Code Section 8.46.042). Earlier start times may be authorized, especially during hotter months.

In order to further minimize possible construction noise conflict, all off-road construction equipment is required to have a properly operated and maintained muffler. Any project site stockpiling or equipment/vehicle staging should be conducted as far as practicable from occupied dwellings or other nearby noise-sensitive land uses.

Materials handling and small stationary noise sources during later stages of construction have lower initial noise levels, and their corresponding noise impact zones are, therefore, much smaller. Noise emissions from cement trucks, fork lifts, compressors, pumps, etc. are generally attenuated to acceptable levels within a few hundred feet of the noise source. As structures are built on the parcel, they will help protect the nearest receptors and further confine the primary noise impact zone within the immediate vicinity of the development itself.

## Figure 2

# Typical Construction Equipment Noise Generation Levels




Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

Because there are no sensitive land uses surrounding the project site, construction noise impacts are not expected to create a significant noise impact.

## PROJECT-RELATED VEHICULAR NOISE IMPACTS

Long-term noise concerns from development of the proposed 111 Calexico Place project center primarily on mobile source traffic noise emissions generated on arterial roadways within the area surrounding the project. These concerns were addressed using the FHWA Highway Traffic Noise Model which calculates the LEQ noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, speeds, or noise barriers. A travel speed of 55 mph was assumed for SR-111. A travel speed of 45 mph was assumed for all other external roadways.

Table 2 summarizes the calculated CNEL at 50 feet from the roadway centerline for eight traffic scenarios at each of thirty three (33) roadway segments analyzed in the project traffic study. A "significant" traffic noise impact would occur if project-related traffic were to increase noise levels by +3 dB or more. As shown in Table 2, in the existing time frame the project will cause 7 segments to exceed this threshold. However, implementation of the Casino alone does not cause a significant impact. Regardless, by 2015 and 2035 this impact is diminished as the project contribution to traffic is diluted by area growth. These segments which exceed significance thresholds in the existing time frame are as follows:

| **Roadway Segment** | **Current Impact (dB CNEL)** | **Impact in 2015 (dB CNEL)** | **Impact in 2035 (dB CNEL)** |
|---|---|---|---|
| Dogwood Rd/ SR-86 - Jasper | **+ 3.1** | + 2.3 | + 1.3 |
| Bowker Rd/ I-8 - McCabe | **+ 4.5** | + 0.8 | + 0.8 |
| Bowker Rd/ McCabe - Heber | **+ 4.7** | + 0.8 | + 0.6 |
| Bowker Rd/ Heber - Jasper | **+ 4.9** | + 0.7 | + 0.4 |
| Jasper Rd/ Scaroni - SR-111 | **+ 11.8** | **+ 5.5** | **+ 4.3** |
| Jasper Rd/ Yourman - Meadows | **+ 10.3** | + 1.0 | + 0.6 |
| Jasper Rd/ Meadows - Bowker | **+ 10.7** | + 1.2 | + 0.6 |

The only segment which remains significant in 2015 and 2035 is on Jasper Road and is immediately adjacent to the project site and is also adjacent to SR-111. Traffic noise from SR-111 will dominate the noise environment and there are no sensitive off-site uses planned adjacent to this segment. Therefore, project related vehicular noise impacts are less-than-significant by 2015.

**Table 1**
**Reduced Casino-Existing Time Frame**
**Traffic Noise Impact Analysis**
**(dB CNEL at 50 feet from centerline)**

| | | Total CNEL | | | Project Impact | |
|---|---|---|---|---|---|---|
| **Segment** | | **Existing** | **Existing + Casino** | **Existing + All Phases** | **Casino Adds** | **All Phases Add** |
| **Dogwood Rd/** | N of I-8 | 69.5 | 69.6 | 69.7 | 0.1 | 0.2 |
| | I-8 - McCabe | 68.2 | 68.6 | 69.7 | 0.4 | 1.5 |
| | McCabe - Sr-86 | 67.9 | 68.5 | 70.0 | 0.6 | 2.1 |
| | SR-86 - Jasper | 66.6 | 67.7 | 69.8 | 1.0 | **3.1** |
| | Jasper -Cole | 66.2 | 66.2 | 66.2 | 0.0 | 0.0 |
| | Cole - SR-98 | 65.1 | 65.5 | 66.6 | 0.4 | 1.5 |
| **SR-111/** | N of I-8 | 72.4 | 72.6 | 73.2 | 0.2 | 0.8 |
| | I-8 - McCabe | 75.9 | 76.1 | 76.6 | 0.2 | 0.7 |
| | McCabe-Heber | 75.5 | 75.7 | 76.2 | 0.2 | 0.7 |
| | Heber-Jasper | 75.7 | 75.9 | 76.5 | 0.2 | 0.8 |
| | Jasper -Cole | 75.7 | 75.9 | 76.3 | 0.2 | 0.6 |
| | Cole - SR-98 | 75.5 | 75.6 | 76.1 | 0.1 | 0.6 |
| | S of SR-98 | 77.2 | 77.3 | 77.7 | 0.1 | 0.5 |
| **Bowker Rd/** | I-8 - McCabe | 57.9 | 59.5 | 62.4 | 1.6 | **4.5** |
| | McCabe - Heber | 57.6 | 59.3 | 62.3 | 1.7 | **4.7** |
| | Heber - Jasper | 57.4 | 59.2 | 62.2 | 1.8 | **4.8** |
| | Jasper -Cole | 57.7 | 57.7 | 57.7 | 0.0 | 0.0 |
| | Cole - SR-98 | 55.0 | 55.0 | 55.0 | 0.0 | 0.0 |
| | S of SR-98 | 48.0 | 48.0 | 48.0 | 0.0 | 0.0 |
| **Meadows Rd/** | Cole - SR-98 | 67.9 | 68.2 | 69.0 | 0.3 | 1.1 |
| | S of SR-98 | 65.8 | 66.3 | 67.5 | 0.5 | 1.7 |
| **Jasper Rd/** | Scaroni - SR-111 | 58.4 | 64.9 | 70.2 | **6.6** | **11.8** |
| | SR-111 - Yourman | 64.0 | 64.9 | 64.3 | 0.9 | 0.3 |
| | Yourman - Meadows | 54.0 | 59.3 | 64.3 | **5.4** | **10.3** |
| | Meadows - Bowker | 53.6 | 59.2 | 64.3 | **5.6** | **10.7** |
| **Cole Rd/** | Enterprise - SR-111 | 69.9 | 70.0 | 70.4 | 0.1 | 0.6 |
| | SR-111 - Yourman | 71.1 | 71.4 | 72.2 | 0.3 | 1.1 |
| | Yourman-Meadows | 67.9 | 68.5 | 69.9 | 0.6 | 2.0 |
| | Meadows - Bowker | 66.6 | 67.0 | 68.0 | 0.4 | 1.4 |
| **SR-98/** | Kloke - SR-111 | 72.0 | 72.0 | NA | NA | NA |
| | SR-111 - Rockwood | 72.2 | 72.2 | NA | NA | NA |
| | Rockwood-Andrade | 72.0 | 72.0 | NA | NA | NA |
| | Andrade - Bowker | 67.8 | 67.8 | NA | NA | NA |

Bolded numbers indicate significant impacts (> 3.0)

**Table 1**
**(continued)**
**Reduced Casino-2015 Time Frame**
**Traffic Noise Impact Analysis**

| | | Total CNEL | | | Project Impact | |
|---|---|---|---|---|---|---|
| **Segment** | | **2015 No Proj.** | **2015 + Casino** | **2015+ Casino+ Project** | **Casino Adds** | **Project Adds** |
| **Dogwood Rd/** | N of I-8 | 70.5 | 70.6 | 70.8 | 0.0 | 0.3 |
| | I-8 - McCabe | 70.8 | 71.0 | 72.1 | 0.2 | 1.3 |
| | McCabe - Sr-86 | 71.1 | 71.4 | 72.7 | 0.3 | 1.7 |
| | SR-86 - Jasper | 70.5 | 70.9 | 72.8 | 0.4 | 2.3 |
| | Jasper -Cole | 68.6 | 68.6 | 68.6 | 0.0 | 0.0 |
| | Cole - SR-98 | 65.2 | 65.7 | 67.4 | 0.4 | 2.1 |
| **SR-111/** | N of I-8 | 73.9 | 74.0 | 74.8 | 0.1 | 0.9 |
| | I-8 - McCabe | 78.0 | 78.1 | 78.7 | 0.1 | 0.7 |
| | McCabe-Heber | 77.7 | 77.8 | 78.4 | 0.1 | 0.7 |
| | Heber-Jasper | 78.4 | 78.5 | 79.0 | 0.1 | 0.6 |
| | Jasper -Cole | 77.2 | 77.3 | 77.8 | 0.1 | 0.6 |
| | Cole - SR-98 | 76.8 | 76.9 | 77.5 | 0.1 | 0.7 |
| | S of SR-98 | 78.0 | 78.1 | 78.6 | 0.1 | 0.6 |
| **Bowker Rd/** | I-8 - McCabe | 69.4 | 69.5 | 70.2 | 0.1 | 0.8 |
| | McCabe - Heber | 69.5 | 69.6 | 70.3 | 0.1 | 0.8 |
| | Heber - Jasper | 70.1 | 70.2 | 70.8 | 0.1 | 0.7 |
| | Jasper -Cole | 68.4 | 68.4 | 68.4 | 0.0 | 0.0 |
| | Cole - SR-98 | 66.4 | 66.4 | 66.4 | 0.0 | 0.0 |
| | S of SR-98 | 62.8 | 62.8 | 62.8 | 0.0 | 0.0 |
| **Meadows Rd/** | Cole - SR-98 | 70.9 | 71.1 | 71.8 | 0.2 | 0.9 |
| | S of SR-98 | 68.6 | 68.9 | 70.0 | 0.3 | 1.4 |
| **Jasper Rd/** | Scaroni - SR-111 | 67.9 | 69.3 | 73.3 | 1.5 | **5.5** |
| | SR-111 - Yourman | 73.7 | 73.9 | 74.4 | 0.1 | 0.7 |
| | Yourman - Meadows | 71.8 | 72.0 | 72.8 | 0.2 | 1.0 |
| | Meadows - Bowker | 70.7 | 70.9 | 71.9 | 0.2 | 1.2 |
| **Cole Rd/** | Enterprise - SR-111 | 71.8 | 71.9 | 72.4 | 0.1 | 0.6 |
| | SR-111 - Yourman | 72.4 | 72.6 | 73.6 | 0.2 | 1.2 |
| | Yourman-Meadows | 69.8 | 70.2 | 71.8 | 0.4 | 2.0 |
| | Meadows - Bowker | 69.7 | 69.9 | 70.9 | 0.2 | 1.1 |
| **SR-98/** | Kloke - SR-111 | NA | NA | NA | NA | NA |
| | SR-111 - Rockwood | NA | NA | NA | NA | NA |
| | Rockwood-Andrade | NA | NA | NA | NA | NA |
| | Andrade - Bowker | NA | NA | NA | NA | NA |

**(dB CNEL at 50 feet from centerline)**

Bolded numbers indicate significant impacts (> 3.0)

**Table 1**
**(continued)**
**Reduced Casino-2035 Time Frame**
**Traffic Noise Impact Analysis**
**(dB CNEL at 50 feet from centerline)**

| | | Total CNEL | | Project Impact |
|---|---|---|---|---|
| **Segment** | | **2035** | **2035 + Project** | **Project Adds** |
| **Dogwood Rd/** | N of I-8 | 73.3 | 73.5 | 0.1 |
| | I-8 - McCabe | 75.4 | 75.8 | 0.4 |
| | McCabe - Sr-86 | 73.4 | 74.1 | 0.7 |
| | SR-86 - Jasper | 71.7 | 73.1 | 1.3 |
| | Jasper -Cole | 73.3 | 73.3 | 0.0 |
| | Cole - SR-98 | 73.8 | 73.8 | 0.0 |
| **SR-111/** | N of I-8 | 75.9 | 76.4 | 0.5 |
| | I-8 - McCabe | 79.3 | 79.8 | 0.5 |
| | McCabe-Heber | 79.7 | 80.2 | 0.5 |
| | Heber-Jasper | 79.2 | 79.7 | 0.5 |
| | Jasper -Cole | 78.1 | 78.6 | 0.5 |
| | Cole - SR-98 | 78.6 | 79.1 | 0.5 |
| | S of SR-98 | 77.9 | 78.3 | 0.4 |
| **Bowker Rd/** | I-8 - McCabe | 69.3 | 70.1 | 0.8 |
| | McCabe - Heber | 70.9 | 71.5 | 0.6 |
| | Heber - Jasper | 72.9 | 73.3 | 0.4 |
| | Jasper -Cole | 73.3 | 73.3 | 0.0 |
| | Cole - SR-98 | 73.1 | 73.4 | 0.3 |
| | S of SR-98 | 69.3 | 70.0 | 0.7 |
| **Meadows Rd/** | Cole - SR-98 | 74.1 | 74.5 | 0.4 |
| | S of SR-98 | 69.4 | 70.5 | 1.1 |
| **Jasper Rd/** | Scaroni - SR-111 | 69.5 | 73.8 | **4.3** |
| | SR-111 - Yourman | 75.6 | 76.0 | 0.4 |
| | Yourman - Meadows | 74.0 | 74.6 | 0.6 |
| | Meadows - Bowker | 72.9 | 73.6 | 0.7 |
| **Cole Rd/** | Enterprise - SR-111 | 73.9 | 74.8 | 0.9 |
| | SR-111 - Yourman | 71.0 | 72.6 | 1.7 |
| | Yourman-Meadows | 70.2 | 72.1 | 1.9 |
| | Meadows - Bowker | 67.8 | 69.7 | 1.9 |
| **SR-98/** | Kloke - SR-111 | 73.3 | 73.8 | 0.6 |
| | SR-111 - Rockwood | 74.3 | 74.6 | 0.2 |
| | Rockwood-Andrade | 74.2 | 74.5 | 0.2 |
| | Andrade - Bowker | 74.1 | 74.4 | 0.2 |

Bolded numbers indicate significant impacts (> 3.0)

## PROJECT EXTERIOR NOISE STANDARD COMPLIANCE

The only noise sensitive project component adjacent to Scaroni Road within the project site is the proposed hotel. Approximation of daily travel volumes along Scaroni Road made with the vehicular turning movements provided in the traffic report, using an estimated travel speed of 35 mph, the traffic noise level along Scaroni Road in 2035 is expected to be 67 dB CNEL at 50 feet from the roadway centerline. At 80 feet from the roadway centerline this noise level decreases to 65 dB CNEL. If there are any proposed outdoor uses within 80 feet of the Scaroni Road centerline noise protection features need to be incorporated in the design to ensure that the 65 dB CNEL exterior noise threshold is met.

According to traffic volumes provided by the traffic consultant, future (2035) with project traffic noise along SR-111 adjacent to the project site is expected to be almost 79 dB CNEL at 50 feet from the roadway centerline for an assumed 55 mph travel speed. Only restaurant and retail uses are sited adjacent to SR-111. If any of the restaurants are to have an outdoor eating area, noise protection features will need to be incorporated into the design. Noise protection could include sting the exterior space on the side of the restaurant away from SR-111 and installing solid glass or block noise walls around any proposed patio with a line-of-sight to SR-111. Outdoor eating areas should be designed to achieve a maximum CNEL of 70 dB.

## OFF-SITE NOISE STANDARD COMPLIANCE

There are currently no sensitive off-site uses adjacent to the project site for which noise mitigation is necessary.

## NOISE MITIGATION SUMMARY

The project-related off-site traffic noise impact is considered less-than-significant.

Recreational space for on-site hotel units must either be will be located 80 feet from the Scaroni Road centerline or must be noise protected to ensure the exterior 65 dB CNEL threshold is met.

Restaurants with outdoor eating areas adjacent to SR-111 require noise mitigation features. Siting the eating area on the side of the building away from the roadway and a solid wall breaking the line-of-sight to SR-111 is recommended. Outdoor eating areas should be designed to achieve a maximum CNEL of 70 dB.

There are no sensitive off-site uses for which the project will be a noise nuisance.

Hotel building plans shall document that any proposed common wall assemblies ("party walls") have a sound test rating of STC=50 or higher. For multi-story development, the floor/ceiling separation between units shall have a sound test rating of STC=50 or higher, and an impact isolation class (IIC) of 50 or higher as required by the Building Code. Any penetrations of sound-rated assemblies shall be sound protected with resilient isolation devices or special acoustic wraps and sealing compounds to maintain the acoustical integrity of the assemblies.