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RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix G, H, I

Subsection(s):

- G.1 - Noise Analysis
- H.1 - Trip Generation
- I.1 - Visual & Lighting Analysis

RB INYOKERN DATA CENTER

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- G.1 - Noise Analysis

ACOUSTICAL ANALYSIS

INYOKERN DATA CENTER
KERN COUNTY, CALIFORNIA

WJVA Report No. 25-45

PREPARED FOR

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MARCH 17, 2026

1. INTRODUCTION

Project Description:

The project proposes to develop an approximately 50-acre site with a 24/7 continuously operational 99 megawatts (MW) Teir III hyperscale data center and associated infrastructure, including a new substation that interconnects to Southern California Edison's Inyokern Substation to the east of the data center facility. The data center would be approximately 238,000 square feet, single-story, with a maximum 30 feet height and would contain six modular data suites. The project utilizes dual-sided electrical and mechanical systems for concurrent maintainability, high energy efficiency and redundancy.

The project site consists of four separate parcels (APN 084-010-43, -44, -45, and -48); a Lot Line Adjustment has been requested to create a single parcel for the data center from APNs 084-010-43, -44 and -45. The new substation that interconnects to Southern California Edison's Inyokern Substation and an easement that would accommodate the gen-tie connection from the point of interconnection to the project to the east is proposed on APN 084-010-48.

The project has the following objectives, as identified by the project applicant:

- Develop a state-of-the-art data center large enough to meet the increased intensity of data processing, computational power, and energy demands from the projected growth of cloud computing and AI applications;
- Develop RBIDC on land that is currently zoned to permit a data center use at the subject location and that is acceptable to the County of Kern;
- Incorporate the most reliable and flexible form of backup electric generating technology into the RBIDC.
- Reliability. Design and use backup electric generation technology that is proven extremely reliable in case of an emergency loss of electricity from the utility.
- To achieve an overall reliability of equal to or greater than 99.982 percent availability at the critical load.
- To achieve the greatest extent feasible during natural disasters including earthquakes.
- The selected backup electric generation technology must have a proven built-in resiliency so if any backup unit fails due to external or internal failure, the system will have redundancy to continue to operate without interruption.
- To maintain power for a minimum of 24–72 hours during a utility outage.
- Commercial Availability and Feasibility. The selected backup electric generation technology

has proven as an accepted industry standard for technology sufficient to receive commercial guarantees. It must be able to be permitted and operational within a reasonable timeframe.

- Technical Feasibility. The selected backup electric generation technology must utilize systems that are compatible with one another.

Environmental Noise Assessment:

This environmental noise assessment has been prepared to determine if significant noise impacts will be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The environmental noise assessment, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project site plan provided by the applicant (dated 10.21.25), noise level data provided by the project applicant, and findings of ambient noise level measurements conducted in the project vicinity on January 14 and 15, 2026. Revisions to the site plan or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report. The project site plan is provided as Figure 1.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides examples of sound levels for reference.

In terms of human perception, a 5 dB increase or decrease is considered to be a noticeable change in noise levels. Additionally, a 10 dB increase or decrease is perceived by the human ear as half as loud or twice as loud. In terms of perception, generally speaking the human ear cannot perceive an increase (or decrease) in noise levels less than 3 dB.

2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines apply the following questions for the assessment of significant noise impacts for a project:

- a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?
- c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

a. Noise Level Standards

Kern County

General Plan

The Noise Element of *Kern County General Plan*¹ establishes noise level criteria in terms of the Day-Night Average Level (L_{dn}) metric. The L_{dn} is the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The L_{dn} represents cumulative exposure to noise over an extended period of time and is therefore calculated based upon annual average conditions.

The Noise Element establishes a land use compatibility criterion of 65 dB L_{dn} for exterior noise levels in outdoor activity areas of residential uses. Outdoor activity areas generally include backyards of single-family residences and individual patios or decks of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

The Noise Element also requires that interior noise levels attributable to exterior noise sources not exceed 45 dB L_{dn} . The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep. Excerpts from the Kern County General Plan Noise Element relevant to the project are provided below.

The following noise sensitive land uses have been identified in the County:

- Residential areas
- Schools
- Convalescent and acute care hospitals
- Parks and recreational areas
- Churches

Goals

- 1) Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- 2) Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- 1) Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- 2) Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health (DOSH).
- 3) Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
- 4) Utilize good land use planning principles to reduce conflicts related to noise emissions.
- 5) Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels: a) 65 dB L_{dn} or less in outdoor activity areas; b) 45 dB L_{dn} or less within interior living spaces or other noise sensitive interior spaces.
- 6) Ensure that new development in the vicinity of airports will be compatible with existing and projected airport noise levels as set forth in the ALUCP.
- 7) Employ the best available methods of noise control.
- 8) Enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code concerning the construction of new multiple-occupancy dwellings such as hotels, apartments, and condominiums.

Implementation Measures

The following are programs to be carried out by the Kern County to implement the goals and policies of the Noise Element.

- A) Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- B) Require proper acoustical treatment of transportation facilities, including highways, airports, and railroads.
- C) Review discretionary development plans, programs, and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- D) Review discretionary development plans for proposed residential or other noise sensitive land uses in noise-impacted areas to ensure their conformance with the noise standards of 65 dB L_{dn} or less in outdoor activity areas and 45 dB L_{dn} or less within interior living spaces.
- E) Review discretionary development plans to ensure compatibility with adopted Airport Land Use Compatibility Plans.
- F) Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- G) At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
 - a) Be the responsibility of the applicant.
 - b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
 - c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.
- H) Encourage cooperation between the County and the incorporated cities within the County to control noise.
- I) Noise analyses shall include recommended mitigation, if required, and shall:
 - a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10-20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.

c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

J) Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

State of California

There are no state noise standards that are applicable to the project.

Federal Noise Standards

There are no federal noise standards that are applicable to the project.

b. Construction Noise and Vibration

Section 8.36 (Noise Control) of the *Kern County Code of Ordinances*² limits construction to the hours of 6:00 a.m. to 9:00 p.m. on weekdays, and between 8:00 a.m. and 9:00 p.m. on weekends, when construction is within 1,000 feet of a residence. Certain exceptions to these hours are specified in the code.

Kern County does not provide specific allowable noise limits and thresholds for construction noise sources. Therefore, the analysis of construction noise provided in this report applies construction noise thresholds established by the U.S Department of Transportation Federal Transit Administration (FTA). These FTA construction noise thresholds are applied to assess potential impacts resulting from temporary construction noise. The FTA provides these construction noise thresholds in the *Transit Noise and Vibration Impact Assessment Manual*³. Based upon these FTA guidelines, an exterior threshold of 80 dBA L_{eq} is applied at residential land uses, 85 dBA L_{eq} is applied at commercial land uses, and 90 dBA L_{eq} is applied at industrial land uses, during daytime hours of construction activities.

Kern County does not have regulations that define acceptable levels of vibration. One of the most recent references suggesting vibration guidelines is the California Department of Transportation (Caltrans) *Transportation and Construction Vibration Guidance Manual*⁴. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria.

These criteria are provided below in Table I and Table II, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

TABLE I		
GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA		
Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4

Source: Caltrans

TABLE II		
GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA		
Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans

3. SETTING

The project is located in the eastern high desert region of Kern County in the unincorporated community of Inyokern, approximately 9.4 miles south of Inyo County and 9.3 miles west of San Bernardino County. The project site is approximately 5.5 miles west of the City of Ridgecrest, 3 miles east of the community of Indian Wells, and 8 miles west of the China Lake Naval Air Weapons Station. Land uses in the project area are both industrial and residential, as well as some open space. Topography in the project area is relatively flat. The project area is primarily accessible, including emergency access, is provided on SR 178 (West Inyokern Road).

The project site is located on undeveloped privately-owned land in the community of Inyokern. The project site is relatively flat and has an elevation that ranges from approximately 2,300 to 2,400 feet (700 to 730 meters) above mean sea level (amsl). Existing development in the project vicinity includes a gas station convenience store, hardware store with outdoor storage and undeveloped land to the south, undeveloped land and a solar facility to the north, undeveloped land to the east and North Brown Road and single-family residences to the west.

a. Background Noise Level Measurements

Existing noise levels in the project vicinity are dominated by traffic noise associated with vehicles on Brown Road and Inyokern Road (SR 178). Other existing noise sources identified during the project site visit include noise associated nearby commercial, industrial and residential land uses and aircraft overflights (Inyokern Airport and Naval Air Weapons Station, China Lake).

Measurements of existing ambient noise levels in the project vicinity were conducted between January 14-15, 2026. Long-term (24-hour) ambient noise level measurements were conducted at two (2) locations (sites LT-1 and LT-2). Noise levels at the two long-term noise measurement sites are summarized below, and provided graphically at the end of the report, and reported in terms of the L_{eq} , L_{10} , L_{50} and L_{90} statistical parameters, as required by the California Energy Commission (CEC).

Temperatures observed during the January ambient noise measurement period ranged from early morning lows in the mid-30s to late afternoon highs in the low-70s. Skies were generally clear, with no precipitation occurring during the measurement period. Wind speeds during the measurement period were generally calm, ranging from approximately 0 to 12 mph over the two-day period. Humidity was generally moderate, ranging from approximately 20-80%.

Site LT-1 was located west of the project site and in the vicinity of the closest sensitive receptors (residential land uses) to the project site, along Brown Road. Site LT-1 was exposed to noise associated with vehicles traveling along Brown Road, as well as noise associated with nearby commercial and residential land uses, as well as aircraft overflights. Site LT-1 was located approximately 275 feet west of the project site western boundary. Noise levels were measured at site LT-1 for a continuous period of 25 hours (as required by the CEC).

Site LT-2 was located south of the project site and in the vicinity of nearby commercial land uses (Chevron gas station and convenience store), along W. Inyokern Road (SR 178). Site LT-2 was exposed to noise associated with vehicles traveling along W. Inyokern Road, as well as noise associated with nearby commercial land uses, as well as aircraft overflights. Site LT-2 was located approximately 125 feet south of the project site southern boundary. Noise levels were measured at site LT-2 for a continuous period of 25 hours (as required by the CEC).

Short-term (15-minute) ambient noise level measurements were conducted at five (5) additional locations (Sites ST-1 through ST-5). Two (2) individual measurements were taken at each short-term site to quantify ambient noise levels in the morning and afternoon hours. The project vicinity and locations of the noise monitoring sites are shown on Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2" microphones. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured hourly energy average noise levels (L_{eq}) at site LT-1 ranged from a low of 51.1 dB between 2:00 a.m. and 3:00 a.m. to a high of 66.7 dBA between 4:00 p.m. and 5:00 p.m. Hourly maximum (L_{max}) noise levels at site LT-1 ranged from 77.0 to 91.0 dBA. Residual noise levels at the monitoring site, as defined by the L_{90} , ranged from 29.1 to 48.5 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft, and other local noise sources. The measured L_{dn} value at Site LT-1 over the 24-hour monitoring period was 66.5 dB L_{dn} . Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1 over the 24-hour monitoring period. Figure 4 provides a photograph of site LT-1.

Measured hourly energy average noise levels (L_{eq}) at site LT-2 ranged from a low of 47.2 dB between 3:00 a.m. and 4:00 a.m. to a high of 58.4 dBA between 11:00 a.m. and noon. Hourly maximum (L_{max}) noise levels at site LT-2 ranged from 65.0 to 77.8 dBA. Residual noise levels at the monitoring site, as defined by the L_{90} , ranged from 28.2 to 52.0 dBA. The measured L_{dn} value at Site LT-2 over the 24-hour monitoring period was 60.2 dB L_{dn} . Figure 5 graphically depicts hourly variations in ambient noise levels at site LT-2 over the 24-hour monitoring period. Figure 6 provides a photograph of site LT-2.

The short-term site noise measurement data included energy average (L_{eq}) maximum (L_{max}) as well as five (5) individual statistical parameters (including L_{eq} , L_{10} , L_{50} and L_{90}), as required by the CEC. Short-term noise measurements were conducted for 15-minute periods. Observations were made of the dominant noise sources affecting the measurements. The statistical parameters describe the percent of time a noise level was exceeded during the measurement period. Table III summarizes short-term noise measurement results.

TABLE III
SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA
INYOKERN DATA CENTER, KERN COUNTY
JANUARY 14 & 15, 2026

Site	Time	A-Weighted Decibels, dBA					Sources
		L _{eq}	L _{max}	L ₁₀	L ₅₀	L ₉₀	
ST-1	8:05 a.m.	65.6	77.8	71.0	49.8	40.6	TR, AC
ST-1	4:15 p.m.	64.1	76.2	68.4	49.0	41.2	TR, V, AC
ST-2	8:25 a.m.	60.4	71.5	62.4	46.2	38.7	TR, L
ST-2	4:35 p.m.	61.8	76.4	63.3	47.5	39.9	TR, AC
ST-3	8:45 a.m.	66.7	81.2	72.8	51.4	42.7	TR
ST-3	4:55 p.m.	64.9	74.4	70.0	51.1	43.2	TR
ST-4	9:10 a.m.	51.2	62.4	58.2	42.8	38.6	TR, D, AC
ST-4	5:15 p.m.	53.5	66.6	59.0	45.1	41.2	TR, AC
ST-5	9:40 a.m.	63.8	71.4	68.5	55.5	46.8	TR, D
ST-5	5:40 p.m.	65.7	76.2	69.1	57.4	50.7	TR

TR: Traffic AC: Aircraft V: Voices D: Dogs Barking B: Birds C: Construction Activities L: Landscaping Activities

Source: WJV Acoustics, Inc.

4. PROJECT RELATED NOISE LEVELS

The project would produce both temporary (construction) and permanent (operational) noise. The noise sources and resulting noise levels associated with both temporary and permanent project-related noise sources are summarized and quantified below.

a. Noise from Construction (Less Than Significant)

Construction noise is typically not considered to be a significant impact if construction is limited to the daytime hours and construction equipment is adequately maintained and muffled. The Kern County Code of Ordinances limits construction to the hours of 6:00 a.m. to 9:00 p.m. on weekdays, and between 8:00 a.m. and 9:00 p.m. on weekends, when construction is within 1,000 feet of a residence.

Construction noise could occur at various locations within the project site through the build-out period and would generally occur at distances of greater than 600 feet from nearby noise-sensitive land uses (residences) and 300 feet or greater from commercial land uses (gas station and retail store). Table IV provides typical construction-related noise levels at reference distances of 250 feet, 500 feet, and 1,000 feet.

TABLE IV TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA			
Type of Equipment	250 Ft.	500 Ft.	1,000 Ft.
Backhoe	64	58	52
Concrete Saw	76	70	64
Crane	67	61	55
Excavator	67	61	55
Front End Loader	65	59	53
Jackhammer	75	69	63
Paver	63	57	51
Pneumatic Tools	71	65	59
Dozer	68	62	56
Rollers	66	60	54
Trucks	72	66	60
Pumps	66	60	54
Scrapers	73	67	61
Portable Generators	66	60	54
Grader	72	66	60
Pile Driver	96	90	84

Source: FHWA

Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

Construction of the proposed data center project is anticipated to begin in 2027 and would require approximately 48 months to complete, based on the integrated construction schedule

for site development, structural work, major mechanical and electrical installation, data hall buildout, and commissioning activities. Construction activities for the proposed project are generally organized into the following major categories:

1. Site preparation and infrastructure development,
2. Structural and building shell construction, and
3. Mechanical, electrical, and data hall systems installation, followed by commissioning and closeout.

The proposed project would be constructed by several specialized construction contractors. Construction would primarily occur during daylight hours, Monday through Friday, between 7:00 a.m. and 6:00 p.m. Additional hours/days may be necessary to facilitate the schedule. Any construction work performed outside of the normal work schedule would be coordinated with the appropriate agencies and would conform to the Kern County Noise Ordinance (Chapter 8.36 of Kern County Code of Ordinances).

WJVA used the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) and the estimated daily construction equipment schedule provided by the applicant to estimate project-related construction noise levels. Construction noise levels were modeled from the approximate geometric center-point of the overall project construction area to setback distances of 500 feet, 750 feet, and 1,000 feet.

Construction will be conducted in three (3) general construction phases. Table V below provides the anticipated peak construction-related noise levels for each of the three phases of construction, based upon the loudest anticipated windows of each construction phase. The peak noise levels for each phase are provided at setback distances (from the project construction center-point) to distances of 500 feet, 750 feet, and 1,000 feet.

TABLE V			
INYOKERN DATA CENTER, KERN COUNTY CONSTRUCTION NOISE LEVELS BY PHASE, dBA, L_{eq}			
PHASE	500 FEET ¹	750 FEET ¹	1,000 FEET ¹
1 (site prep/earthwork/grading)	64	61	58
2 (structural/utilities/paving)	61	57	55
3 (mechanical/electrical/commissioning)	60	56	54

Source: FHWA RCNM
WJVA

¹As measured from the center of the project area

Reference to Table V indicates that maximum noise levels resulting from construction activities would be expected to be in the in range of approximately 60-64 dB L_{eq} at a setback distance of 500 feet during the three overall construction phases. The closest sensitive receptors (residential

land uses) are located at distance of 1,000 feet or greater (as measured from the approximate geometric center-point of the overall project/construction area. Construction noise levels (as summarized above in Table V) would not be expected to exceed any construction noise thresholds as established by the FTA (summarized above). Therefore, construction noise would not result in any significant noise impact.

b. Vibration Impacts (Less Than Significant)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. Typical vibration levels at distance of 300 feet are summarized by Table VI. These levels would not exceed any significant threshold levels for annoyance or damage, as provided above in Table I and Table II.

TABLE VI	
TYPICAL VIBRATION LEVELS DURING CONSTRUCTION	
Equipment	PPV (in/sec) @ 300'
Bulldozer (Large)	0.006
Bulldozer (Small)	0.00019
Loaded Truck	0.005
Jackhammer	0.002
Vibratory Roller	0.013
Caisson Drilling	0.006
Vibratory Pile Driver	0.042

Source: *Caltrans*

The vibration levels provided in Table VI were derived from data provided in the Caltrans Transportation and Construction Vibration Guidance Manual. The Manual provides vibration levels for various pieces of construction equipment, normalized to a setback distance of 25 feet from the equipment source. Using these source levels provided at 25 feet, the Caltrans Manual also states that vibration from this equipment can be estimated for various setback distances by the following formula:

$$PPV_{Equipment} = PPV_{Ref} (25/D)^n \text{ (in/sec)}$$

Where:

PPV_{Ref} = reference PPV at 25 ft.

D = distance from equipment to the receiver in ft.

$n = 1.1$ (the value related to the attenuation rate through ground)

c. Project-Related Increases in Traffic Noise Exposure (Less Than Significant)

WJVA analyzed potential project-related increases in traffic noise exposure along W. Inyokern Road (SR 178), the project site access roadway. Traffic noise levels along W. Inyokern Road were calculated using the *FHWA Highway Traffic Noise Prediction Model*⁵. The FHWA Model is a standard methodology for traffic noise prediction. Project-related impacts of traffic noise were assessed for both the project construction phase and the project operational phase.

Existing annual average traffic volumes used in the noise modeling process were obtained from Caltrans. Project-related traffic volumes were obtained from the traffic study prepared for the project by Ruettgers & Schuler, Civil Engineers. The percentages and medium and heavy trucks were provided by Caltrans. The distribution of day/night traffic was estimated by WJVA based upon previous studies conducted in the area, as such data was not available from governmental sources. Appendix C summarizes traffic data used for noise modeling. Table VI summarizes existing annual average traffic noise exposure for existing conditions, at a reference setback distance of 100 feet from the centerline of the roadway.

TABLE VI INYOKERN DATA CENTER KERN COUNTY, CALIFORNIA TRAFFIC NOISE EXPOSURE LEVELS, dB, L_{DN}					
Roadway	Project Phase	Existing	Existing With Project	Change ¹	Significant Impact (Yes/No)
W. Inyokern Rd	Construction	57	57	0	No
W. Inyokern Rd	Operational	57	57	0	No

¹ Existing traffic noise exposure with the project compared to existing traffic noise exposure without the project.

Source: WJV Acoustics, Inc.

Ruettgers & Schuler Civil Engineers

As indicated above in Table VI, project-related increases in traffic would not result in any measurable increase in traffic noise exposure along W. Inyokern Road during both construction and operation. As such, the project would not result in a significant impact to traffic noise exposure levels.

d. Project Operational Noise (Less Than Significant)

The project would include various noise-producing mechanical equipment, located exterior to the building, including emergency generators, various transformers, chillers, cooling tower, pumps, and various HVAC components. The mechanical equipment would be located on the east, west, and south sides of the building, as well as roof-mounted equipment. Manufacturer-supplied noise levels for the assumed project equipment were provided by the project applicant and summarized as Appendix D. Appendix D also provides the quantities of each analyzed piece of noise-producing mechanical equipment.

WJVA calculated project-related operational noise levels based upon the noise levels provided in Appendix D, and the locations and quantities of each equipment type. Calculations were made based upon the standard rate of noise attenuation with increased distance from a noise source (- 6dB/doubling of distance). Project related operational noise levels were calculated for nearby residential land uses, churches, schools, and commercial/retail land uses.

Project-related noise levels were calculated at eight (8) nearby sensitive-receiver locations (R-1 through R-8), including five (5) residential land uses (R-1, R-2, R-4, R-7, R-8), one (1) church land use (R-3), one school land use (R-5), and one (1) commercial land use (R-6). It should be noted; the analyzed commercial land use (R-6) is not considered a noise-sensitive land use by Kern County but was analyzed due to its proximity to the project site. The locations of the eight analyzed sensitive receiver locations are provided as Figure 7.

According to the project applicant, the generators (40 total) located exterior to the project building would be operational only during emergency (power outages) or for periodic maintenance and testing. The applicant has indicated that at a time of emergency usage, approximately 24 generators would be operational, with the remaining 16 intended as backup/redundancy. Under “typical” operating conditions, the generators would not be operational. In order to analyze the project operational noise levels, from a “worst-case” perspective, WJVA calculated noise levels assuming all 40 generators were simultaneously operational.

Table VII provides the calculated noise levels at each of the eight analyzed sensitive receptor locations (R-1 through R-8). Noise levels in Table VII are provided both in terms of the energy average (L_{eq}) and the Day/Night Level (L_{dn}). Kern County noise standards are established in terms of the Day/Night Level. Noise levels summarized in Table VII assume all project mechanical equipment are in simultaneous and constant operation over a 24-hour period of time. Calculated decibel levels summarized in Table VII have been rounded to the nearest whole decibel.

TABLE VII INYOKERN DATA CENTER KERN COUNTY, CALIFORNIA PROJECT OPERATIONAL LEVELS, dB, L_{EQ} and L_{DN}			
Receiver	Project Operational Noise, L_{eq}	Project Operational Noise, L_{dn}	Significant Impact (Yes/No)
R-1	48	54	No
R-2	50	56	No
R-3	48	54	No
R-4	49	55	No
R-5	43	50	No
R-6	52	58	No
R-7	44	50	No
R-8	43	49	No

Source: WJV Acoustics, Inc.

As described above, the Kern County exterior noise level standard for sensitive receivers is 65 dB L_{dn} . Kern County considers the following land uses to be “noise-sensitive land uses”:

- Residential areas
- Schools
- Convalescent and acute care hospitals
- Parks and recreational areas
- Churches

As noted above, analyzed receiver R-6 is a commercial/retail land use and is not considered to be a noise-sensitive land use by Kern County. However, noise levels were calculated for this location as it represents the closest off-site land use to the project site.

Reference to Table VII indicates that worst-case (all mechanical equipment in constant and simultaneous operation) project-related noise levels would not exceed the Kern County noise level standard of 65 dB L_{dn} at any off-site land use. Furthermore, the noise levels would not exceed existing ambient noise levels, as determined by the above-described ambient noise level measurements conducted by WJVA. As such, project operational noise levels would not result in a significant noise impact at any off-site land use.

e. Noise Impacts from Nearby Airports or Airstrips (No Impact)

The Project site is located within two miles of a public airport or private airstrip. The Inyokern Airport is located approximately 1 mile west of the project site.

WJVA reviewed the Kern County Airport Land Use Compatibility Plan and determined that the project site is not located within any airport noise contours and does not have any land use designation restrictions and is considered to be compatible with the airport land use compatibility plan. The Inyokern Airport noise level contours are provided as Figure 8 for reference.

5. IMPACT SUMMARY

- Construction noise is typically not considered to be a significant impact if construction is limited to the daytime hours and construction equipment is adequately maintained and muffled. The Kern County Code of Ordinances limits construction to the hours of 6:00 a.m. to 9:00 p.m. on weekdays, and between 8:00 a.m. and 9:00 p.m. on weekends, when construction is within 1,000 feet of a residence.

Construction noise guidance established by the FTA states that a construction noise impact could be considered to occur if hourly noise levels associated with construction activities exceed 80 dB L_{eq} at residential land uses. Construction noise was analyzed for the three basic phases of project construction and determined to be in the range of approximately 54-58 dB L_{eq} at the closest residential land uses.

- Project-related traffic would not result in any measurable increases in traffic noise exposure along W. Inyokern Road, where all project-related traffic would access the project site during both construction and operational phases.
- Project-related operational noise levels resulting from the proposed project are not expected to exceed any applicable Kern County noise level standards or produce noise levels that would exceed existing ambient noise levels at all off-site noise-sensitive locations. Mitigation measures are not required for project noise compliance.

6. SOURCES CONSULTED

1. *Kern County General Plan, 2004.*
2. *Kern County Code of Ordinances, updated September 22, 2025.*
3. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.
4. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.
4. Federal Highway Administration, *Traffic Noise Model, Version 2.5*, April 14, 2004

FIGURE 1: PROJECT SITE PLAN

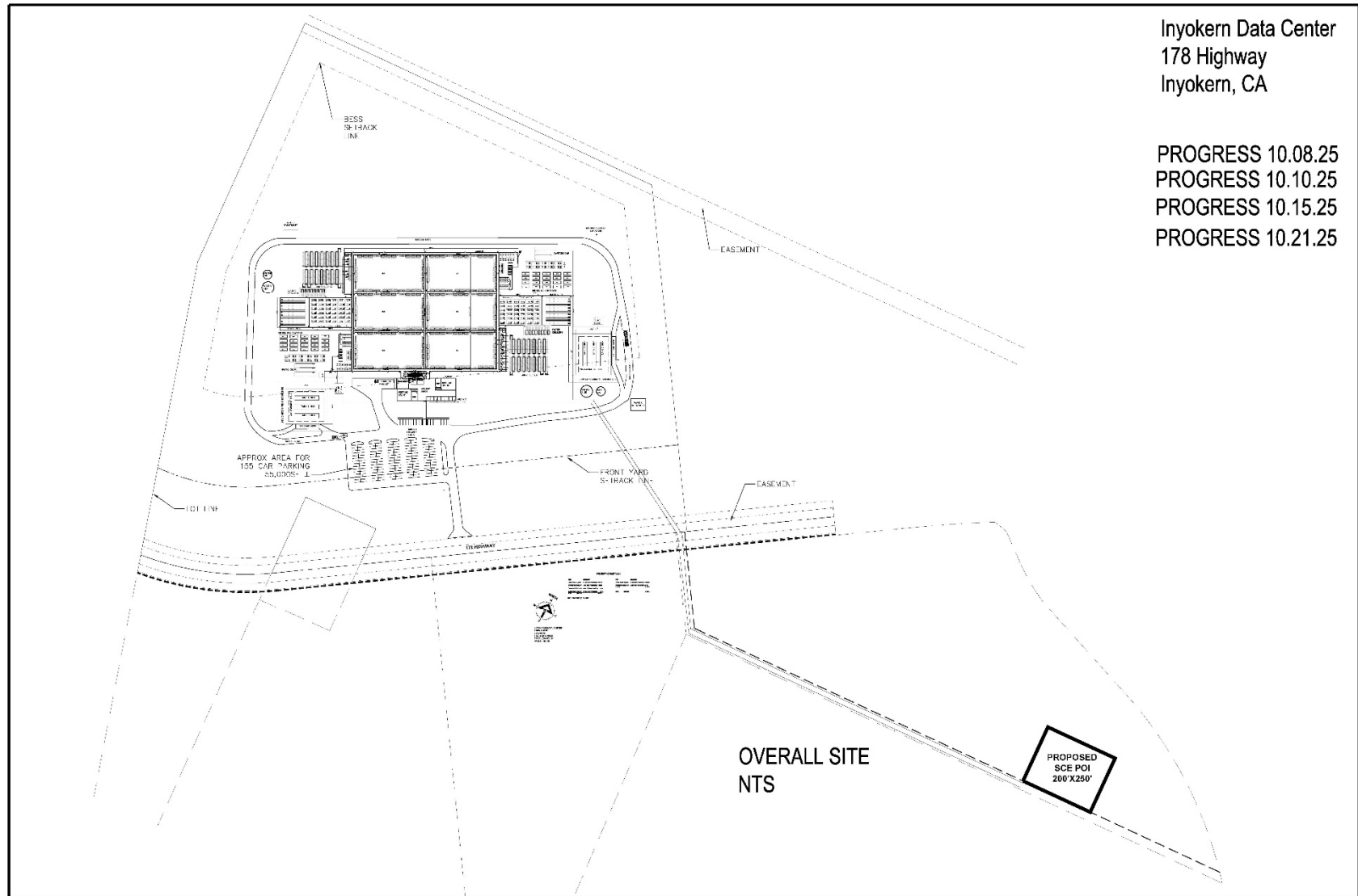


FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITES



FIGURE 3: HOURLY NOISE LEVELS AT SITE LT-1

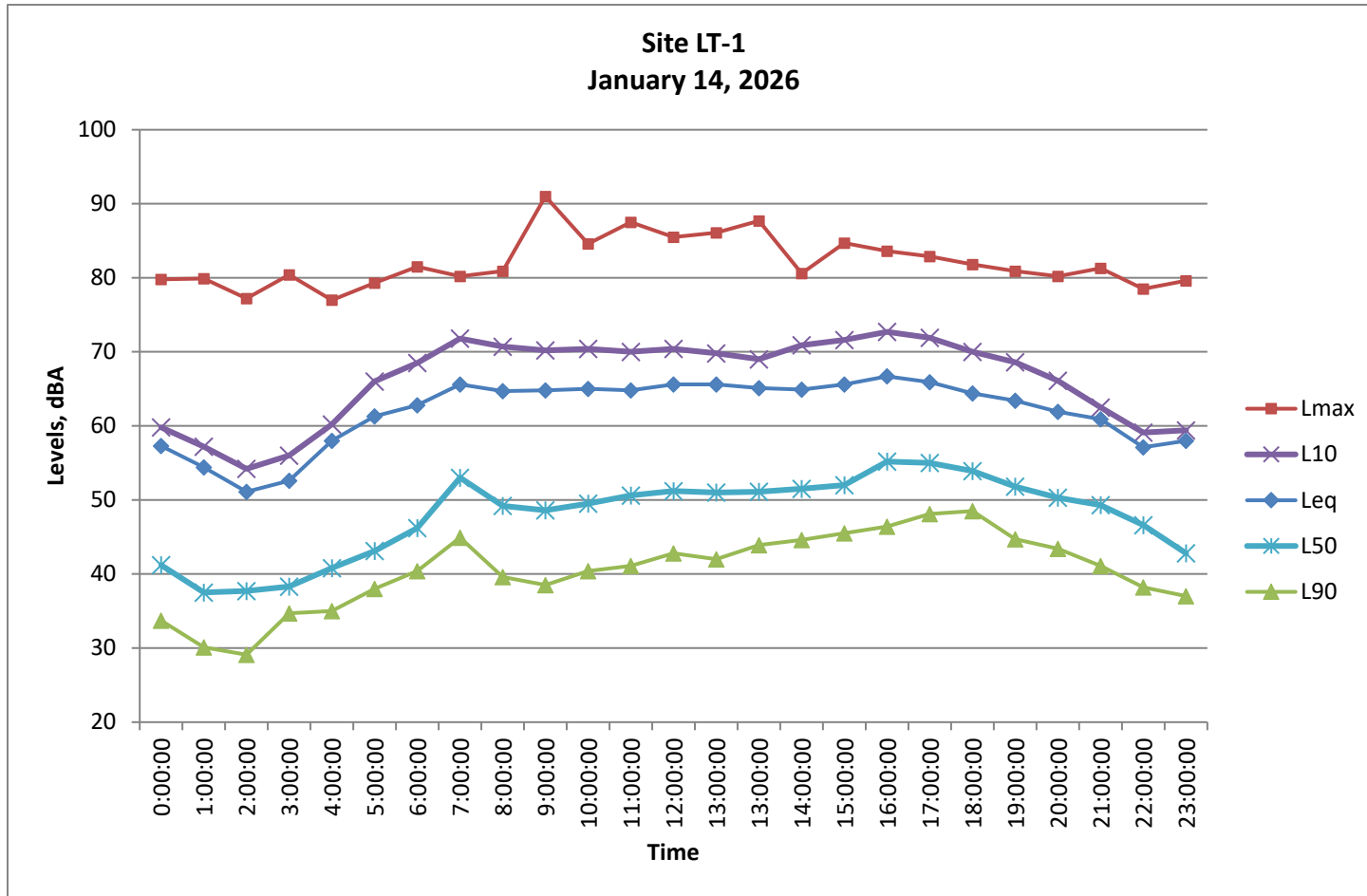


FIGURE 4: SITE LT-1



FIGURE 5: HOURLY NOISE LEVELS AT SITE LT-2

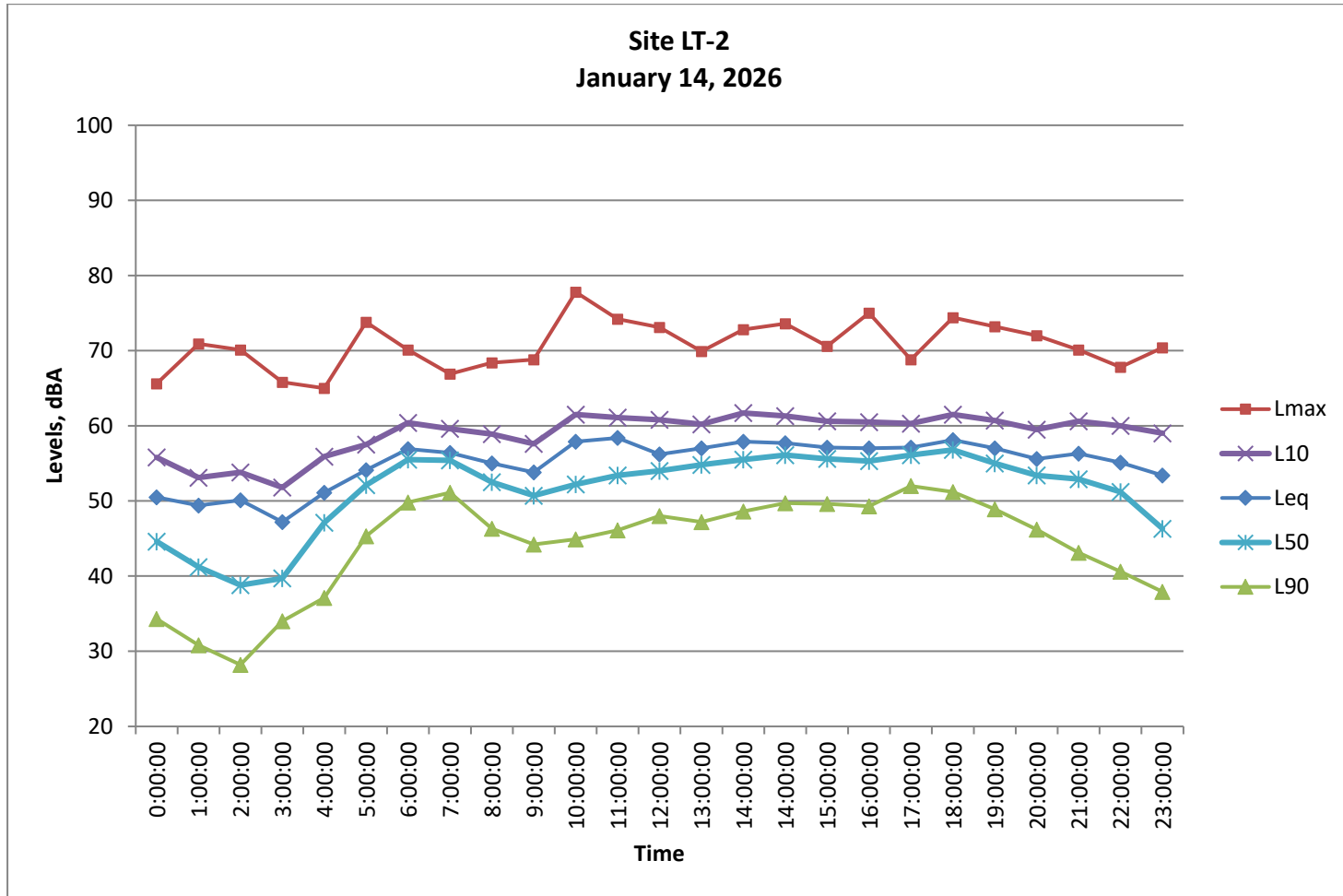


FIGURE 6: SITE LT-2



FIGURE 7: ANALYZED SENSITIVE RECEPTORS

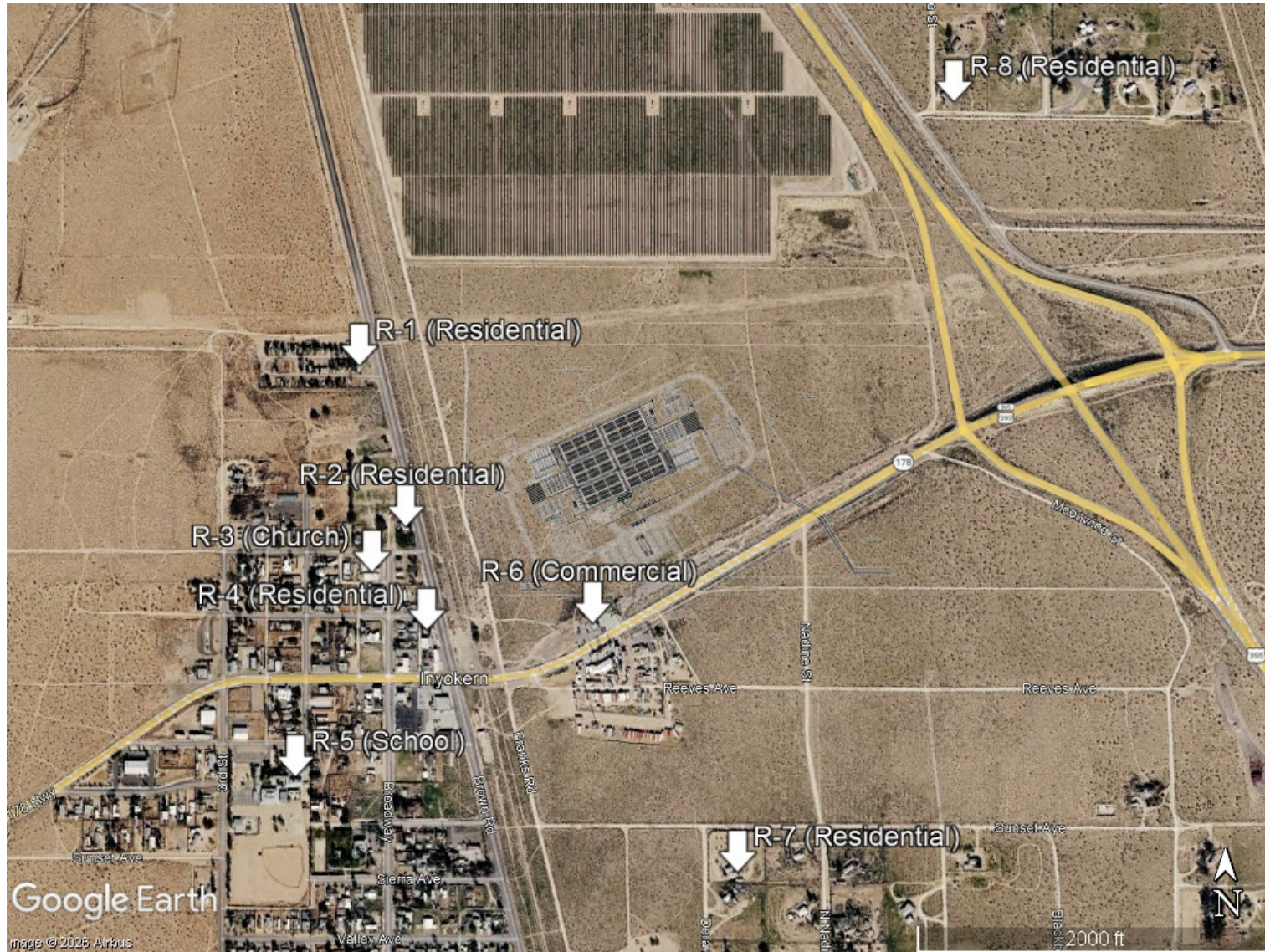


FIGURE 8: INYOKERN AIRPORT NOISE CONTOURS

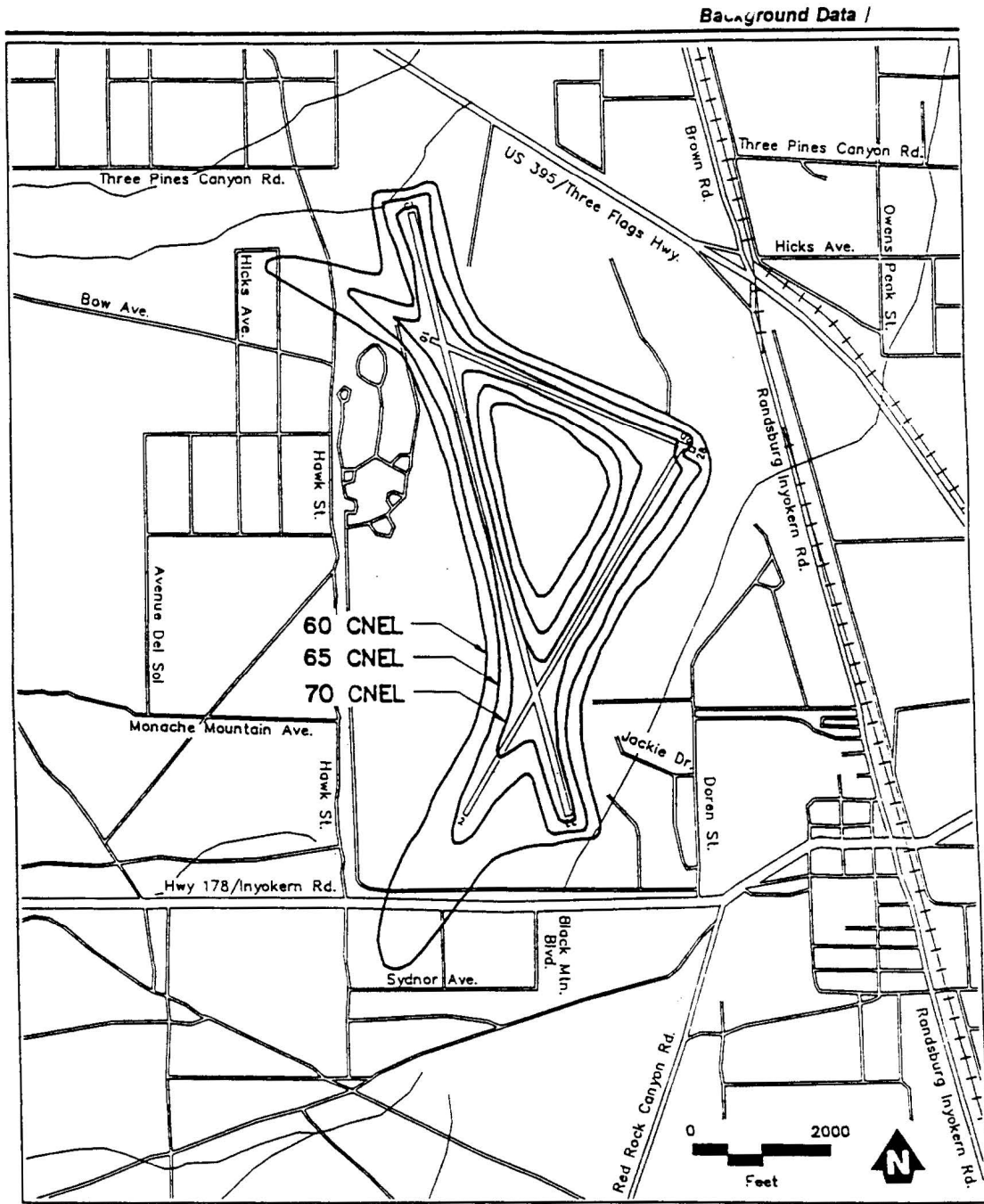


Figure 4 - 24

**Noise Contours
Inyokern Airport**

APPENDIX A-1

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL:	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
CNEL:	Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.
DECIBEL, dB:	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
DNL/L_{dn}:	Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
L_{eq}:	Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L _{eq} is typically computed over 1, 8 and 24-hour sample periods.
NOTE:	The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L _{eq} represents the average noise exposure for a shorter time period, typically one hour.
L_{max}:	The maximum noise level recorded during a noise event.
L_n:	The sound level exceeded "n" percent of the time during a sample interval (L ₉₀ , L ₅₀ , L ₁₀ , etc.). For example, L ₁₀ equals the level exceeded 10 percent of the time.

A-2

ACOUSTICAL TERMINOLOGY

**NOISE EXPOSURE
CONTOURS:**

Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

**NOISE LEVEL
REDUCTION (NLR):**

The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of "noise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL:

Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL:

The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

**SOUND TRANSMISSION
CLASS (STC):**

The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS

NOISE SOURCE	SOUND LEVEL	SUBJECTIVE DESCRIPTION
AMPLIFIED ROCK 'N ROLL ▶	120 dB	DEAFENING
JET TAKEOFF @ 200 FT ▶		
	100 dB	VERY LOUD
BUSY URBAN STREET ▶		
	80 dB	LOUD
FREEWAY TRAFFIC @ 50 FT ▶		
	60 dB	MODERATE
CONVERSATION @ 6 FT ▶		
TYPICAL OFFICE INTERIOR ▶		FAINT
SOFT RADIO MUSIC ▶	40 dB	
RESIDENTIAL INTERIOR ▶		VERY FAINT
WHISPER @ 6 FT ▶	20 dB	
HUMAN BREATHING ▶	0 dB	

APPENDIX C

TRAFFIC NOISE MODELING CALCULATIONS

APPENDIX D

OPERATIONAL EQUIPMENT NOISE LEVELS

RBICD - Major Mechanical & Electrical Equipment List (Outdoor ONLY)

Rev. 0 - 1/14/2026

(All equipment listed below is part of the conceptual basis of design. All equipment is subject to adjustment upon final engineering & permitting)

Item	Category	Description	Manufacturer	Model	QTY	Spec. & Data Sheet Reference	Assumed Values (Per Spec Sheets)
9	Electrical - Switchyard	Transformer: 66/88/110MVA, 115/34.6kV Oil filled , Nema 3R	-	-	2	TBD - Pending SCE Final Design Requirements	67 dB @ 1'
10	Electrical - Outdoor	Transformer: 36/48/60MVA, 13.8/34.6kV Oil filled , Nema 3R	GE	Custom	4	10.0 - GE Power Transformers and Reactors	77 dB @ 3'
11	Electrical - Outdoor	Diesel gen, 3Kva, 13.8kV, 0.9 pf, Outdoor	Caterpillar	3516E	40	11.0 - CAT 3516E 3.0MW Technical Data	65 dB @ 23'
12	Electrical - Outdoor	Swgr, 34.5kV, 2000A main, 2000A tie, other breakers: 20@200A, 2@1200A, 2@300A, Space, Nema 3	Eaton	VacClad	1	12.0 - Eaton Submittal Pacakge_Technical Documents	60 dB @ 3'
13	Electrical - Outdoor	Swgr, 34.5kV, 2000A main, incoming lug, other breakers: 20@200A, 2@1200A, 2@300A, Space, Nema 3	Eaton	VacClad	1	12.0 - Eaton Submittal Pacakge_Technical Documents	60 dB @ 3'
14	Electrical - Outdoor	Swgr, 13.8kV, 2@2000A main, other breakers: 20@200A, Nema 3R	Eaton	VacClad	2	12.0 - Eaton Submittal Pacakge_Technical Documents	60 dB @ 3'
15	Electrical - Outdoor	Swgr, 34.5kV, 2@300A main, other breakers: 6@200A, Space, Nema 3R	Eaton	VacClad	2	12.0 - Eaton Submittal Pacakge_Technical Documents	60 dB @ 3'
16	Electrical - Outdoor	Transformer 7.5MVA, 34.5/0.48kV, Less flammable fluid filled, Nema 3R (750 gal fluid)	Eaton	Custom	36	12.0 - Eaton Submittal Pacakge_Technical Documents	67 dB @ 1'
17	Electrical - Outdoor	Transformer 3.75MVA, 34.5/0.48kV, Less flammable fluid filled, Nema 3R (550 gal fluid)	Eaton	Custom	12	12.0 - Eaton Submittal Pacakge_Technical Documents	64 dB @ 1'
30	Mechanical - Outside	508T Air cooled screw chiller	Carrier	30XF500M	28	26.0 - Carrier Screw Chiller Data Sheets	61 dB @ 33'
32	Mechanical - Outside	508T Water cooled chiller	Carrier	19MV-41L41N379N35	16	26.0 - Carrier Screw Chiller Data Sheets	80 dB @ 3'
35	Mechanical - Outside	Series 3000 Cooling Tower	BAC	S3E-1222-10P-4	2	20.0 - BAC Series 3000 Cooling Tower Data Sheet	80 dB @ 10'
36	Mechanical - Outside	25T DX cooling w/ electric heat RTU	Carrier	50K3GU26-0B6A1F3B1	1	21.0 - Carrier 48-50K-01APD Data Sheets	69 dB @ 10'
37	Mechanical - Outside	100 T DX w electric heat RTU	Carrier	50V2GS98A1B6B9MAG1	2	22.0 - Carrier 50V2GS Data Sheets	75 dB @ 3'
38	Mechanical - Outside	5T DX w/electric heat RTU	Carrier	50GECM06A2M6-3W3A0	6	23.0 - Carrier 50GE Data Sheets	68 dB @ 5'
39	Mechanical - Outside	DOAS DX w/ electric heat RTU	Carrier	62XC35-5JG-MJK--LY	6	24.0 - Carrier 62X DOAS Data Sheet	80 dB @ 3'
40	Mechanical - Outside	90T DX w/ electric heat RTU	Carrier	50V2GS90A0B6B9LAG1	4	25.0 - Carrier 50V2 Data Sheets	85 dB @ 3'
41	Mechanical - Outside	5T DX w/electric heat RTU	Carrier	50GECM06A2M6-3W3A0	18	23.0 - Carrier 50GE Data Sheets	65 dB @ 5'

RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix G, H, I

Subsection(s):

- H.1 - Trip Generation

January 14, 2026

Jaymie Brauer
QK, Inc.
5080 California Ave. Suite 220
Bakersfield, CA 93309

RE: Trip Generation and Vehicle Miles Traveled Analysis for Proposed Data Center in Inyokern, CA

Dear Ms. Brauer:

This letter is in response to QK Inc.'s request for trip generation and vehicle miles traveled analysis of a proposed data center located in the northwest quadrant of State Route 178 and State Route 395 in Inyokern, CA. The project will consist of a 270,218 square foot data center. A conceptual site plan is attached.

Construction Phase

Construction is anticipated to begin in 2027 and will require approximately 48 months to complete (four years). Depending on the construction schedule, the daily workforce will peak at 600 construction personnel. On average, there will be 150-200 construction personnel on site daily, with vehicle trips arriving and departing throughout the workday. It is anticipated that construction personnel will carpool to and from the project site, so a carpool factor of 1.5 was applied to the average daily traffic. It is also anticipated that approximately 30% of the average daily vehicle trips will occur during the AM and PM peak hours. Table 1 shows the calculations for the construction traffic based on the above information and assumptions.

**Table 1
Construction Trip Generation**

Traffic Type	Variable (Personnel)	ADT*	AM Peak Hour Trips		PM Peak Hour Trips	
			In	Out	In	Out
			Trips	Trips	Trips	Trips
Construction Personnel	200 (average per day)	267	25%	5%	5%	25%
			33	7	7	33

*Carpool factor of 1.5 applied.

As shown in Table 1, the construction phase is anticipated to generate 267 daily trips, 40 AM peak hour trips and 40 PM peak hour trips. Per the *Kern County Division Nine: Standards for Traffic Engineering*, the threshold for requiring level of service analysis is 50 trips in the peak hour. The

construction phase of the project does not exceed the peak hour threshold of significance established by Kern County; therefore, no level of service analysis is required.

Operational Phase

Trip generation volumes for the proposed land use for the operational phase were calculated using the Institute of Transportation Engineers (ITE) Trip Generation, 12th Edition. The trip generation is based on the ITE Code 160 (Data Center). The results are shown in Table 2.

**Table 2
 Trip Generation**

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
160	Data Center	270.218 1000 sq ft GFA	eq ¹	241	eq ¹	71% 17	29% 6	0.05	19% 3	81% 11

¹Equation (eq) represents the ITE 12th Edition fitted curve equation.

As shown in Table 2, the proposed project is anticipated to generate 241 daily trips, 23 AM peak hour trips, and 14 PM peak hour trips. The operational phase of the project does not meet the 50-trip peak hour threshold required for further analysis, as established by Kern County; therefore, the level of service is anticipated to remain the same.

Traffic Analysis

The published daily capacity of a two-lane roadway in Kern County, such as State Route 178 within the study scope, is approximately 15,000 vehicles per day. Based on the most recent traffic volume data provided by the Caltrans Traffic Census Program, the average daily traffic volume for the segment of the 178 within the project scope is approximately 3,300 vehicles per day. Kern County uses a Volume-to-Capacity (V/C) ratio to determine a roadway’s level of service. A (V/C) > 0.80 is typically considered below level of service C and may require mitigation. In the case of the segment of State Route 178 within the study scope, the volume-to-capacity ratio is (3,300/15,000) = 0.22, which is less than 0.80, therefore the roadway segment is currently operating at an acceptable level of service and will continue to do so with the addition of project traffic.

Vehicle Miles Traveled (VMT)

Background

In 2013, the state of California enacted legislation (SB 743) which required the Governor’s Office of Planning and Research (OPR) to identify new metrics for measuring and mitigating transportation impacts within the California Environmental Quality Act (CEQA). For land development projects, OPR recommended replacing the metric of vehicle delay, as defined by level of service (LOS) and other

similar measures, with VMT metrics based on project land use. Regulatory changes to CEQA Guidelines incorporating SB 743 were approved on December 28, 2018. Statewide implementation began on July 1, 2020.

Under CEQA, lead agencies have the authority to establish their own VMT significance thresholds and analysis methodologies. At the time of this letter, Kern County has not yet adopted VMT guidelines. Therefore, the VMT analysis was completed using the guidelines and thresholds identified in the *California Governor's Office of Research and Planning Technical Advisory (OPR TA)*, dated December 2018.

The VMT Guidelines contain criteria for determining whether a land use project may be screened from a detailed VMT analysis. These "screening" criteria relate to project size, location, and accessibility to transit. The project does not meet any of the screening criteria. Therefore, a detailed VMT analysis was conducted for the mixed-use project.

As defined in the OPR TA, the project can be evaluated using the VMT per capita metric. Per the OPR TA recommendation, data center land uses less than 15% below the existing regional VMT per capita will indicate a significant VMT impact.

VMT Calculation Methodology

Regional VMT

The Kern Council of Governments (KernCOG) provided regional Traffic Analysis Zone (TAZ) information detailing vehicle types, trip types and respective trip volumes for the region of Kern County where the project is located. The analysis also considers the land uses, population draws, and types of activities within the analysis zone. Based on the KernCOG model, the regional average VMT by land use was found to be 36.85 (see analysis details attached). The OPR TA threshold of significance is a VMT of 31.32.

Project VMT

The average VMT of the project was estimated by distributing and assigning project traffic to the street network and calculating the average miles traveled per project trip. The VMT calculation summary and results are attached to this letter. The output gives a detailed summary of each trip assigned to the street network. The average VMT for the project was determined to be 27.13, which considers trips to areas in Los Angeles to the south, as well as Bakersfield and other Central Valley locations to the west. Table 3 shows the regional VMT, OPR threshold of significance for the regional VMT, and the project VMT.

Table 3
Regional & Project VMT Comparison

Regional VMT	OPR Threshold* for Regional VMT	Project VMT	% Below Regional VMT
36.85	31.32	27.13	30.37

*15% below the regional VMT.

VMT Conclusion

As shown in Table 3, the project VMT (27.13) is 30.37% below the regional VMT (36.85) and does not exceed the OPR TA regional threshold of significance of 31.32. Therefore, the project is expected to have a less than significant transportation impact and no further VMT analysis is required.

Please contact me should you have any questions.

Very truly yours,

DRAFT

Ian J. Parks
R.C.E. 58155
SSH/MEA

Attachments

RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix G, H, I

Subsection(s):

- I.1 - Visual & Lighting Analysis



Date: March 2, 2026

Project No.: 160268.05

To: Robbie Barker and Kyly Mohr- R&B Capital, Inc

From: Jaymie L. Brauer - Principal Planner

Subject: Conceptual Lighting Management Plan, Data Center Facility, Kern County, CA

Introduction

This conceptual site lighting plan provides safe and functional illumination while minimizing environmental and visual impacts. Through a normally dim + task-up control strategy, node-based perimeter lighting, and fully shielded luminaires, the design meets Kern County Dark Sky objectives, airport compatibility requirements, and CEC SPPE Appendix B expectations, while preserving the low-ambient nighttime character of the surrounding environment.

Existing Nighttime Lighting Conditions

The project site is located on an undeveloped property surrounded predominantly by open, undeveloped lands. Undeveloped land is characterized as having very low ambient nighttime lighting levels. However, there are developed areas in the immediate vicinity that have limited lighting sources associated with roadway infrastructure, i.e, street lights and nearby commercial uses along State Route 178, including a gas station and convenience store with safety and security lighting. There is residential development along Brown Road, which also contributes to lighting sources.

Project Description

For purposes of this lighting analysis, the “project site” is defined as the fenced operational footprint shown on Figure 1. All exterior lighting design, control strategies, and impact evaluations are limited to this fenced area.

The Project proposes to construct and operate a data center, which includes its associated utility infrastructure and other related improvements. The Project proposes to develop an approximately 50-acre site with a 24/7 continuously operational 99 megawatts (MW) Tier III hyperscale data center and associated infrastructure, including a Project-owned substation that interconnects to Southern California Edison’s existing Inyokern substation to the east of the data center facility. The data center would be approximately 238,000 square feet, single-story, with a maximum 30 feet height and would contain six modular data suites. A conceptual lighting layout is included as Attachment A and a Bill of Materials list of equipment is included as Attachment B.

Governing Regulations and Design Criteria

The conceptual site lighting plan has been developed in accordance with the following governing requirements:



- Kern County General Plan and Inyokern Specific Plan policies and goals, municipal codes for outdoor lighting, including dark-sky objectives intended to reduce glare, light trespass, and sky glow.
- Kern County Airport Land Use Compatibility Plan, and aviation safety requirements, including avoidance of glare, distracting lighting, and high-angle brightness visible to aircraft.
- California Energy Commission (CEC) SPPE Appendix B requires project-specific outdoor lighting descriptions, control and management plans, and visual impact considerations.

Where multiple standards apply, the lighting design adheres to the most restrictive applicable requirement.

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan evaluates the visual and aesthetic setting of Kern County and assess the potential for visual impacts. The Kern County General Plan Energy Element sets forth policies to encourage orderly energy development in visually sensitive areas.

The Kern County General Plan contains goals, policies, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1: Land Use, Open Space, and Conservation Element 1.10.7: Light and Glare

Policies

Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.

Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measures

Measure AA: The County shall utilize CEQA guidelines and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.

Kern County Zoning Ordinance

Chapter 19.80.030, Development and Performance Standards – Commercial and Industrial Districts Standard J:

All exterior lighting shall be directed away from adjacent properties and roads. When lighting will be visible from a residential district or adjacent public roads, the lighting will be visible from a residential district or adjacent public roads, the lighting standards shall be equipped with glare shields or baffles and shall not exceed forty (40) feet in height above grade.



Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting, recognizing that excessive illumination can create a glow that may obscure the night sky and excessive illumination, or glare may constitute a nuisance. The ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to accomplish the following objectives:

1. Encourage a safe, secure, and less light-oriented night-time environment for residents, businesses and visitors.
2. Promote a reduction in unnecessary light intensity and glare, and to reduce light spillover onto adjacent properties.
3. Protect the ability to view the night sky by restricting unnecessary upward projections of light.
4. Promote a reduction in the generation of greenhouse gases by reducing wasted electricity that can result from excessive or unwanted outdoor lighting.

Chapter 8.36 – Noise Control

8.36.020 - Prohibited sounds

(H) Create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:

1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
2. Emergency work is exempt from this section.

Inyokern Specific Plan

The Inyokern Specific Plan guides development within and surrounding the community of Inyokern. The Inyokern Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. There are no objectives, policies, or implementation measures in the Inyokern Specific Plan that are applicable to aesthetics. The Inyokern Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Inyokern Specific Plan are incorporated by reference

Kern County Airport Land Use Compatibility Plan

3.3 Airspace Protection

3.3.5 Other Flight Hazards



Land use characteristics which may produce hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:

- a. Glare, distracting lights, or light patterns which could be mistaken for airport lights;
- b. Sources of dust, steam, or smoke which may impair pilot visibility;
- c. Sources of electrical interference with aircraft communications or navigation; and
- d. Any use, especially landfills and certain agricultural uses, which may attract large flocks of birds.
- e. Any light or series of lights which may cause visual discomfort or loss of orientation during critical phases of flight

The County's ALUCP requires that projects located within the planning boundary or Airport Influence Area for each airport comply with the height restriction standards and procedures set forth in FAA Part 77. Section 4.5 of the ALUCP defines policies associated with the Inyokern Airport, including requirements regarding the height of proposed structures as well as certain land use characteristics, such as glare. The project site is located approximately 0.3 miles east of the Inyokern Airport's western boundary and is within the airport influence area. Specifically, the project site is located in Compatibility C. According to the Kern County ALUCP, areas within Zone C would be impacted by "limited risk" due to aircraft at or below 1,000 feet above ground level. Per Section 3.3.3 of the ALUCP, the maximum height of structures or other objects is restricted to 35 feet above ground level for projects within Zone C.

California Energy Commission (CEC) SPPE Appendix B

(6) Visual Resources

(D)(v) Provide a project specific conceptual outdoor lighting control and management plan (lighting plan) and explain the control of reflectance from exterior surfaces offsite that conform with the city municipal code or county government code.

- a. Provide a list of the project-specific luminaires, identify the design (e.g., full cutoff, semi cutoff, non cutoff) and indicate if the luminaires have the International Dark-Sky Association Fixture Seal of Approval to the extent feasible consistent with safety and security considerations. Show the project-specific luminaires locations on a diagram or elevation.
- b. Describe reflectance, the intensity of the specular reflectance from the exterior surface of the project's large buildings, structures, and major equipment offsite to the surrounding area (e.g., the light reflected from the shiny surface). The reflectance of the object--how bright it shines--depends on the intensity of the light striking it and the materials from which it is made (e.g., glass, reinforced concrete, structural steel).

Lighting Design Objectives

The primary objectives of the site lighting design are to:

- Provide safe and functional illumination for vehicular, pedestrian, security, and operational activities.
- Limit lighting to only those areas necessary for site operation and security.
- Minimize light trespass beyond the project boundary.



- Reduce glare and high-angle brightness visible from off-site locations and surrounding airspace.
- Preserve the low-ambient nighttime character of the surrounding desert environment.
- Use lighting controls to reduce illumination levels when areas are unoccupied.

Lighting Control Philosophy – “Normally Dim + Task-Up”

All exterior lighting is governed by a controls-first strategy.

Baseline Operation

During nighttime hours, exterior lighting operates at a low, dimmed baseline level sufficient to maintain safety, security presence, and basic circulation while minimizing off-site visibility and sky glow.

Task-Up Operation

Lighting levels temporarily increase only in localized areas when activity is detected or initiated, including:

- Gate operation or access events
- Motion detected near perimeter fence corners
- Vehicle or personnel activity in operational yards or service drives

After activity ceases, lighting automatically returns to the baseline condition following a programmed time delay.

Emergency and Maintenance

Manual override capability is provided for emergency response and maintenance activities. Emergency egress lighting operates in accordance with applicable code requirements.

Site Lighting Zones and Nodes Entrance Gate Lighting

The site includes a single controlled access point. Gate lighting is designed to:

- Operate at a dimmed baseline under normal conditions.
- Temporarily increase during gate operation or detected motion.
- Illuminate only the immediate gate area.
- Avoid high vertical illumination or vehicular identification lighting.

All gate luminaires are fully shielded and aimed downward and inward toward the site.

Perimeter Lighting

Perimeter lighting is intentionally node-based, not continuous.

- Lighting is provided only at fence corner locations and the entrance gate.
- No continuous fence-line lighting is installed.



- Corner lighting operates at a dim baseline and increases only upon motion detection near the fence.

This approach reduces total installed lumens, minimizes light trespass, and supports dark-sky and airport compatibility objectives.

Parking Areas

Parking and internal circulation areas are illuminated using full cutoff luminaires.

- After hours, parking areas operate at reduced baseline levels.
- Task-up lighting is triggered by occupancy or vehicle movement.
- Lighting levels are selected to balance safety with minimized off-site visibility.

Service Drives

Internal service drives operate at reduced baseline lighting levels.

- Task-up lighting is activated only during vehicle movement or service activity.
- Lighting is oriented to minimize spill toward the site perimeter.

Operational Yards

Generator yards, cooling equipment yards, fuel areas, and utility areas maintain minimal baseline illumination.

- Lighting increases only during active maintenance or operational activity.
- Shielded luminaires and controlled aiming are used to prevent glare and reflected light from large equipment surfaces.

Building Perimeter and Egress

Building-mounted lighting is limited to code-required egress locations and select security points where pole lighting is not practical.

All building-mounted luminaires are:

- Fully shielded
- Directed downward
- Integrated into the site lighting control system to avoid continuous bright perimeter lighting

Luminaire Selection and Shielding

All exterior luminaires are selected to meet the following criteria:

- Full cutoff or fully shielded optics
- No uplight fixtures- all fixtures will be directed downward
- Minimal high-angle brightness
- Dimmable drivers compatible with site lighting controls
- House-side shielding or equivalent glare-control optics where fixtures are located near the project boundary



The number of luminaire families is intentionally limited to simplify operation, maintenance, and regulatory review. Where feasible and consistent with safety/security needs, luminaires will be selected from products holding the International Dark-Sky Association Fixture Seal of Approval; where not available, fixtures will meet equivalent full cutoff/fully shielded performance

Correlated Color Temperature (CCT)

Exterior lighting will utilize warm correlated color temperatures consistent with dark-sky objectives. Area, perimeter, gate, and wall-mounted luminaires will be specified in the 2700K to 3000K range. Yard and task lighting fixtures will utilize 3000K sources, which represent the warmest available option for the selected fully shielded task-lighting luminaire family. Yard lighting is limited in quantity and operates primarily in task-up mode, further minimizing potential nighttime impacts.

Glare, Light Trespass, and Specular Reflectance Control

The lighting design incorporates multiple strategies to minimize glare and light trespass:

- Downward-directed luminaires with zero tilt wherever feasible
- Controlled mounting heights consistent with Kern County and airport compatibility constraints
- Task-up controls that limit the duration of higher lighting levels
- Coordination of lighting with building and equipment finishes to reduce reflected glare from large surfaces
- Use of non-reflective materials and neutral colors on the external walls of buildings and other large pieces of equipment such as tanks.
- Conservative assumptions regarding nearby sensitive receptors

Property-line light levels will be evaluated during photometric analysis to demonstrate compliance.

Lighting Mounting Heights

Exterior lighting mounting heights will be limited to the minimum necessary to achieve safe and functional illumination, consistent with Kern County outdoor lighting regulations and airport compatibility considerations. Pole heights will comply with applicable Kern County height limitations for non-residential development and will be further constrained, where appropriate, to reduce glare, light trespass, and visibility from surrounding sensitive receptors and airspace. Final mounting heights will be confirmed during engineering and photometric analysis to ensure compliance with glare control and aviation safety requirements.

Biological Resource Considerations

Given the open desert context and documented wildlife activity in the surrounding area, the lighting design emphasizes avoidance and minimization of nighttime disturbance. Full cutoff luminaires, low default illumination levels, and localized task-up controls limit light spill beyond the fenced project boundary and reduce potential effects on adjacent habitat areas.

Airport Compatibility Considerations



Due to the project's proximity to Inyokern Airport, the lighting concept explicitly addresses aviation compatibility by:

- Avoiding high-angle brightness visible from aircraft
- Preventing light sources that could be mistaken for aviation or navigational lighting
- Limiting lighting heights and controlling aiming to reduce off-site visibility
- Using shielded, downward-directed luminaires exclusively

All exterior lighting is designed to avoid glare or visual distraction visible from aircraft and to comply with applicable airport land use compatibility policies and FAA glare considerations. Any required FAA notification or review will be completed as part of project implementation.

Construction Lighting

Temporary construction will adhere to Kern County regulations for outdoor lighting, as appropriate. Although construction will typically be conducted during daylight hours, if activities are needed prior to sunrise or after sunset, lighting will be minimized, fully shielded, directed downward, and limited in duration through a separate construction lighting plan to avoid unnecessary nighttime illumination.

Please feel free to call me at (661) 616-2600 if you have any questions or would like to discuss our findings.

Attachment A – Conceptual Lighting Layout

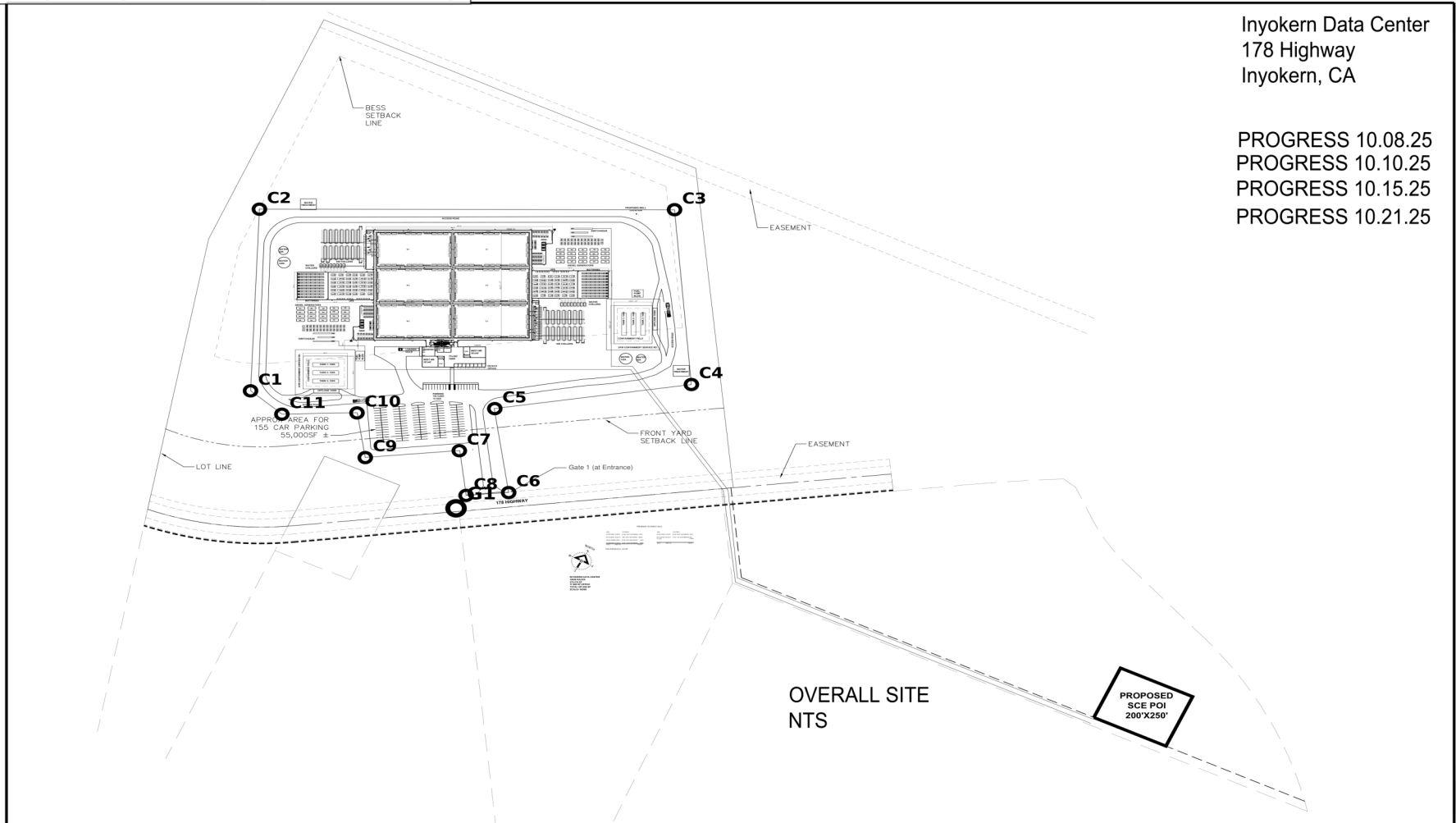
Attachment B - Bill of Materials



Attachment A – Conceptual Lighting Layout

Concept Site Lighting – Perimeter Nodes (Gate + Corners Only)

Concept Only - Normally Dim + Task-Up



Perimeter lighting is limited to discrete nodes at fence corners and the single entrance gate.

Concept Site Lighting – Numbered Reference Key

Ref.	Zone / Node Description
[1]	Entrance Gate Lighting Node – Normally dimmed; task-up on gate operation or motion. No vehicular ID lighting.
[2]	Perimeter Corner Lighting Nodes – Corners only; no continuous fence lighting. Motion-activated task-up.
[3]	Parking Area Lighting Zone – Dim baseline after-hours; task-up on occupancy.
[4]	Service Drive Lighting Zone – Reduced baseline; task-up during vehicle or service activity.
[5]	Operational Yard Lighting Zone – Minimal baseline; task-up during maintenance or operations.
[6]	Building Perimeter / Egress Lighting – Shielded, downward-directed, coordinated with site controls.



Attachment B – Bill of Materials

Inyokern Data Center Concept Site Lighting Plan - BOM

Rev 0

Item	Component	Minimum performance / compliance notes	Concept Design Manufacturer (BOD)	Concept Design Model / Series (BOD)	Estimated (Qty)
A1	Pole-mounted full cutoff area luminaire (PA)	Fully shielded; 0° tilt; house-side shielding available; low glare; 0-10V dimming; order 2700K/3000K	Acuity Brands – Lithonia	D-Series Area (DSX1/DSX2)	12
A2	Wall-mounted full cutoff fixture (WB)	Fully shielded/downward; strong backlight control; 0-10V dimming; 2700K/3000K	Acuity Brands – Lithonia	D-Series Wall Pack (DSXW1/DSXW2)	24
A3	Shielded yard/task flood (YF)	Tight distribution; add visor; aim down/in; task-up only ; treat as fully shielded where applicable; 2700K/3000K	Acuity Brands – Lithonia	D-Series Flood (DSXF) + Full Visor (DSXF*FV)	15
A4	Door / egress exterior luminaire (EG)	Code-driven egress; low-output; shielded/down; coordinated with controls; 2700K/3000K	Acuity Brands – Lithonia	DSXW1 (low-output config.) (or equivalent shielded downlight)	20
A5	Corner/perimeter node luminaire set (CN)	Fully shielded; inward aimed; motion task-up; low output	Acuity Brands – Lithonia	DSX1/DSX2 low-lumen + DSX House-Side Shield	10
A6	Gate node luminaire set (GN)	Fully shielded; inward aimed; no vehicular ID ; task-up via motion + gate input	Acuity Brands – Lithonia	DSX1 gate config. + DSX House-Side Shield	1
B1	Steel light poles (parking/drives)	Height TBD by airport/Kern + photometrics; anchor-base or direct-bury	Valmont	RTS – Round Tapered Steel Pole	12
B2	Steel light poles (perimeter nodes)	Shorter where feasible to reduce high-angle brightness	Valmont	RTS – Reduced Height	11
B3	Pole base covers / handhole covers	Maintenance access / durability	Valmont	Standard Pole Handhole / Base Cover	23
B4	Anchor bolt cage + template	Per pole engineering	Valmont	Anchor Base Kit	23
B6	Arms / brackets	Prefer single-arm, single head to keep output minimal	Valmont	Standard Mast Arm	18
B7	House-side / glare shields	Use at perimeter & receptor-facing edges; reduces backlight & glare	Acuity Brands – Lithonia	DSX House-Side Shield (DSXHS)	18
B8	Aiming locks / mounts (floods)	Prevent drift; maintain shielding intent	Acuity Brands – Lithonia	DSXF yoke hardware + visor	15
C1	Astronomical scheduling (time-based control)	Baseline schedule/curfew logic and zone scheduling	Acuity Brands – nLight	nDTC (nLight Digital Time Clock)	1
C2	Photocell / daylight control	Daylight inhibit / dusk-dawn enable	Sensor Switch (Acuity)	ARPA Photosensor	1
C3	Lighting control cabinet / relay panel	Centralized switching + 0-10V dimming by zone ; supports override input	Acuity Brands – nLight	ARP Relay Panel	1
C4	Zone dimming / relay modules	Supports baseline vs task-up by zone	Acuity Brands – nLight	ARP relays / 0-10V modules (panel-configured)	6
C5	Exterior motion sensors	Corner + gate + yards task-up; low false triggers	Legrand – Wattstopper	FSP-201B + lens	20
C6	Gate interface (dry-contact input)	Task-up on gate operation/access event	Acuity Brands – nLight	ARP override / dry-contact input	1
C7	Local override switches	Maintenance/emergency override (keyed if required)	Acuity Brands – nLight	nPODM / wall switch (as required)	2
C8	Network interface (optional)	Only if monitoring/reporting is required	Acuity Brands – nLight	SensorView / network interface	0