HELIPLANNERS

41689 Enterprise Circle North, Suite 212, Temecula, California 92590 USA
Phone: (951) 693-5090
www.heliplanners.com

Aviation Planning Consultants
Heliport Specialists

13 February 2020

Ms. Amanda Fagan
Director of Planning & Policy
Ventura County Transportation Commission
950 County Square Drive, Suite 207
Ventura, CA 93003

Subject: **Airport Land Use Commission (ALUC) Consistency Review Application**
Los Robles Regional Medical Center Heliport Expansion, Thousand Oaks

Dear Ms. Fagan:

On behalf of the Los Robles Regional Medical Center and its parent company, HCA, Heliplanners hereby submits this application package for Ventura County Transportation Commission's consistency review of a proposed heliport expansion on the Medical Center's existing parking garage. We make this application per California Public Utilities Code (PUC) Section 21661.5(a) in VCTC's role as the County's ALUC (VCTC).

Project Description
Ventura County's Aviation Unit has recently acquired the Sikorsky S-70 (UH-60) Firehawk helicopter. As a trauma center in Ventura County, Los Robles Regional Medical Center is expanding its existing heliport, located above a parking structure, from 50-foot dimensions to 65' x 65' for the Firehawk via a new aluminum helideck to replace the existing concrete deck. It is also increasing loadbearing capability from its existing 15,000 pounds to 22,000, also for the Firehawk. It will also upgrade perimeter lighting to current LED technology with IR emitters for night vision goggle (NVG) compatibility. The project does not propose other significant changes or modify flightpaths. Its design complies with FAA Advisory Circular 150/5390-2C, *Heliport Design*. Therefore, the reconfigured heliport will have virtually no new airspace impacts.

The heliport has served Ventura County residents in its current location and configuration for almost 16 years, since Caltrans Division of Aeronautics issued its Heliport Permit in March 2004. Now, with the County's greater firefighting capacity, the Medical Center is upgrading its heliport to accommodate the new Firehawk aircraft. As part of that project, the enlarged heliport is undergoing review by the Federal Aviation Administration, Caltrans Division of Aeronautics and the City of Thousand Oaks we well as ALUC.

In addition to the ALUC application form, we include the following documents:

- Heliport Layout Plan (HLP) prepared by Heliplanners
- Noise Study prepared by Meridian Consultants

We respectfully ask that you place this project on VCTC's 6 March 2020 agenda.

Please contact us at (951) 693-5090 should you need additional information. Thank you for your assistance.

Sincerely,

Jeff Wright

encl

AIRPORT COMPREHENSIVE LAND USE PLAN
CONSISTENCY REVIEW APPLICATION

FILING DATE: 13 February 2020

APPLICANT INFORMATION

NAME OF APPLICANT: Los Robles Regional Medical Center

ADDRESS: 215 Janss Road

Thousand Oaks, CA 91360

CONTACT PERSON: Jeff Wright, Heliplanners (Aviation consultant) **PHONE:** (951) 693-5090

41689 Enterprise Circle North, Suite 212, Temecula, CA 92590

PROJECT INFORMATION

PROJECT NAME: Los Robles Regional Medical Center Heliport Expansion Project

PROJECT LOCATION: 215 Janss Road

Thousand Oaks, CA 91360

PROJECT DESCRIPTION: Expansion of existing parking structure heliport to accommodate Ventura County's recently-acquired Sikorsky S-70 (UH-60) Firehawk helicopter. See full project description in accompanying cover letter.

EXISTING DESIGNATION: _____

PROPOSED DESIGNATION: _____

ATTACHMENTS

___ **LOCAL AGENCY REFERRAL LETTER**
_x_ **PROJECT MAPS** (Heliport Layout Plan)
___ **BUILDING ELEVATIONS**
___ **AIRCRAFT HAZARD & RISK ASSESSMENT**
_x_ **ENVIRONMENTAL DOCUMENTATION** (Helicopter Noise Assessment)
_x_ **APPLICATION FEE** ($500 check from HCA (Medical Center owner) to be transmitted via separate cover)

ALUC USE ONLY

APPLICATION COMPLETION DATE: _____ **INITIALS:** _____

Noise Study

for the

Los Robles Medical Center Helipad Expansion Project

PREPARED FOR:

HCA
One Park Plaza, II-3E
Nashville, TN 37203

PREPARED BY:

Westlake Village Office
920 Hampshire Road, Suite A5
Westlake Village, CA 91361

Meridian Consultants

Los Angeles Office
706 S. Hill Street, 11th Floor
Los Angeles, CA 90014

January 2020

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EXECUTIVE SUMMARY

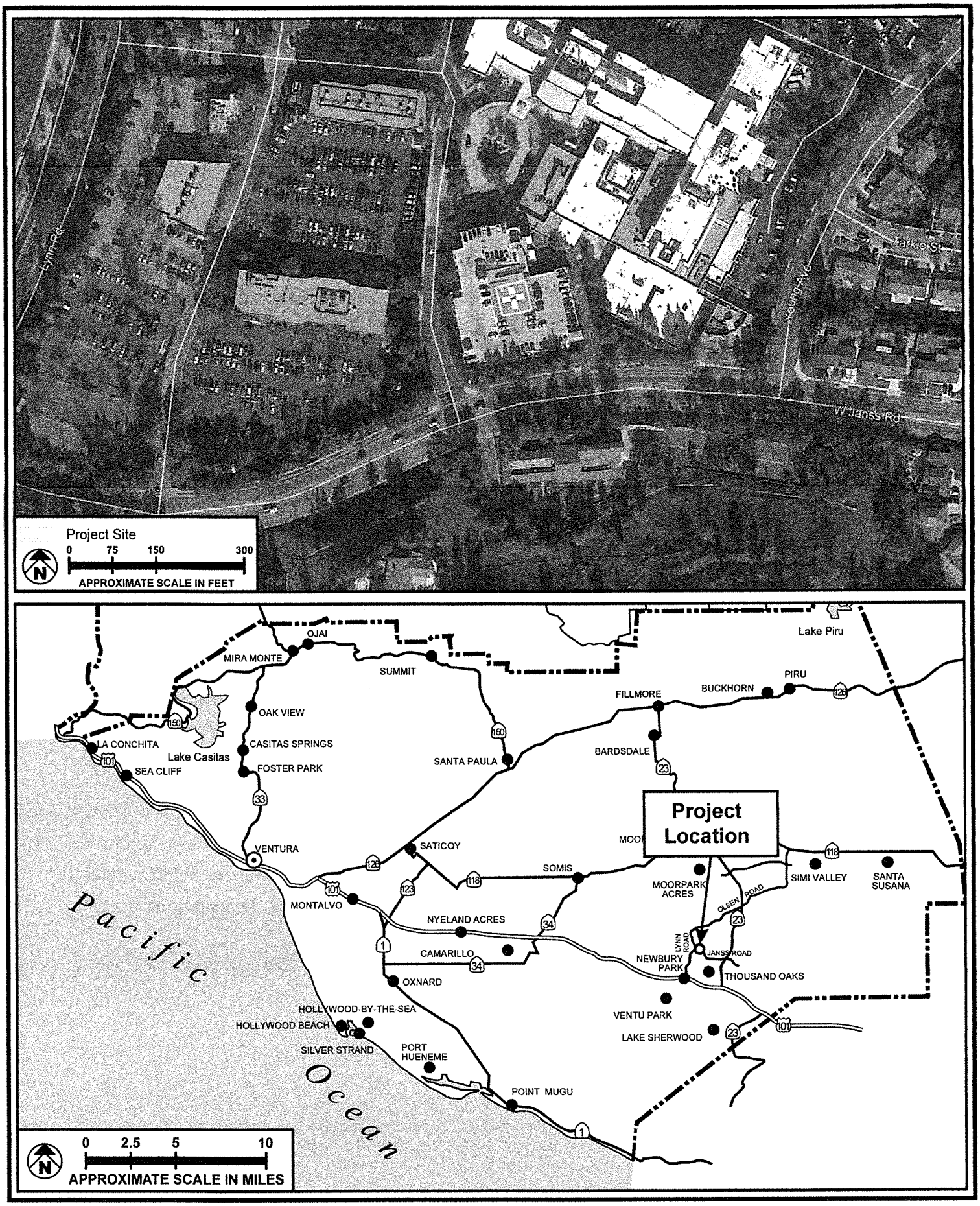
This Noise Report is intended to provide the City of Thousand Oaks (City) with information and proposed mitigation measures, or alternatives needed to maintain noise within established standards. This Noise Report describes the existing environment in the Project area and estimate future noise levels at surrounding land uses resulting from operation of the Project. The study discusses applicable federal, State, and local noise regulations; monitoring data; applicable noise thresholds; the methodology used to analyze potential noise impacts; and the modeled on-site uses. The finding of the analyses are as follows:

- Helicopter approach/departure to the west would increase off-site noise levels by a maximum of 4.2 dBA CNEL. Noise level increases from ambient conditions would not exceed thresholds for the surrounding sensitive receptors.
- Helicopter approach/departure to the northwest would increase off-site noise levels by a maximum of 3.8 dBA CNEL. Noise level increases from ambient conditions would not exceed thresholds for the surrounding sensitive receptors.

INTRODUCTION

Hospital Corporation of America (HCA) is proposing to make improvements to the existing helipad at the Los Robles Medical Center (LRMC) located at 215. W. Janss Road in the City (refer to **Figure 1: Regional and Project Site Location**). The proposal includes modifying the current helipad at LRMC to accommodate for larger weight-class helicopters, such as the Firehawk and Blackhawk helicopters that may be used by local emergency response agencies (Ventura County and Los Angeles County Fire Departments). Currently, the existing helipad at LRMC is located on the existing parking structure and is capable of handling helicopters such as the Airbus H135, Bell 407 and Bell 412 helicopters.

Helicopter flight patterns would be regulated by the currently approved Caltrans Division of Aeronautics heliport permit. Pilots would be instructed to use the specified approach/departure path ("flight paths"), as illustrated in **Figure 2: Flight Path**, unless conditions (e.g., strong winds, temporary obstructions, obscured view, etc.) favored alternate approaches/departures.



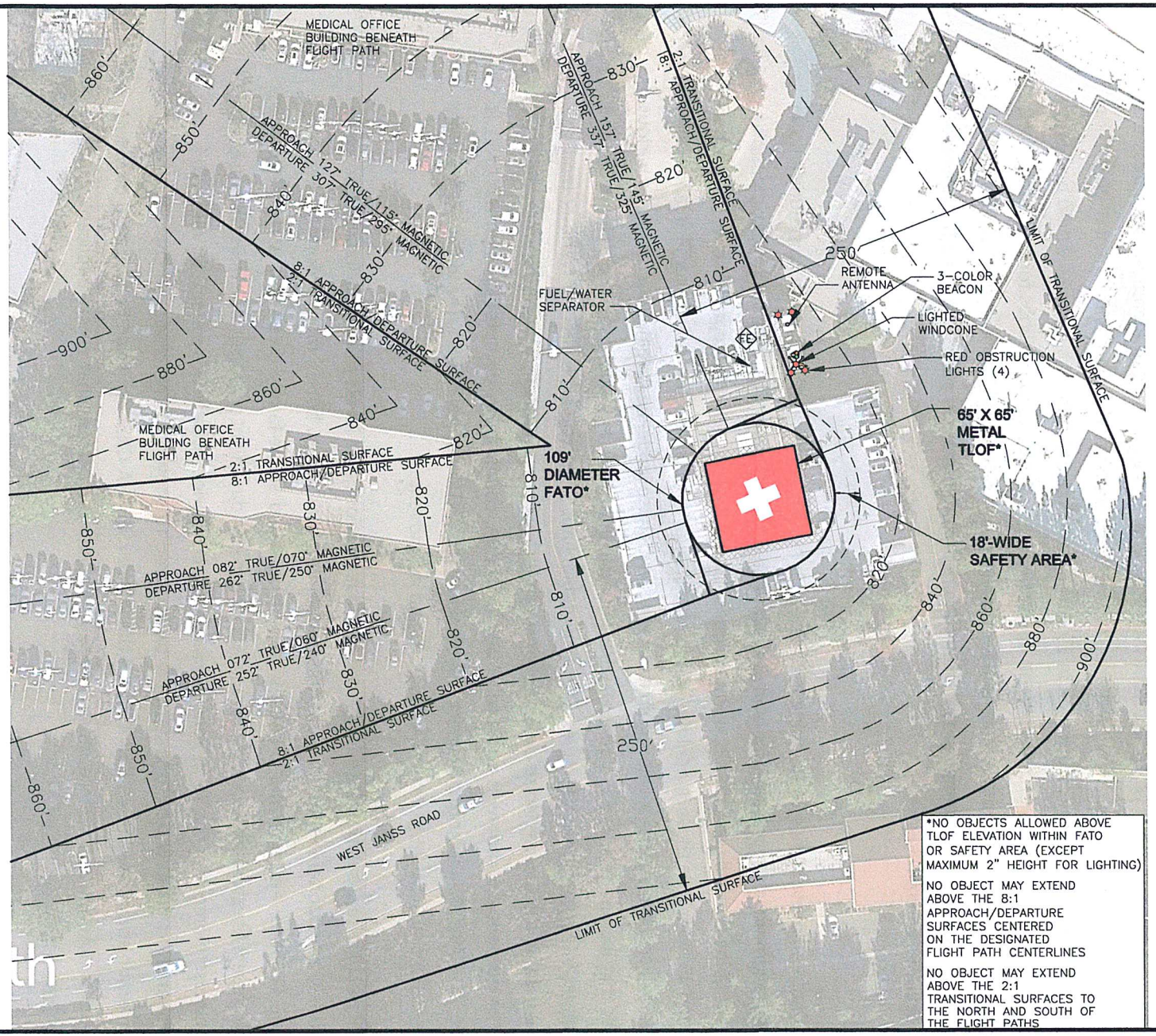
SOURCE: Google Earth - 2020; Meridian Consultants, LLC - 2020

FIGURE 1

Meridian Consultants

Regional and Project Site Location

270-001-19



SOURCE: Heliplanners - 2019

FIGURE **2**

Meridian Consultants

Flight Path

270-001-19

NOISE STANDARDS

Federal

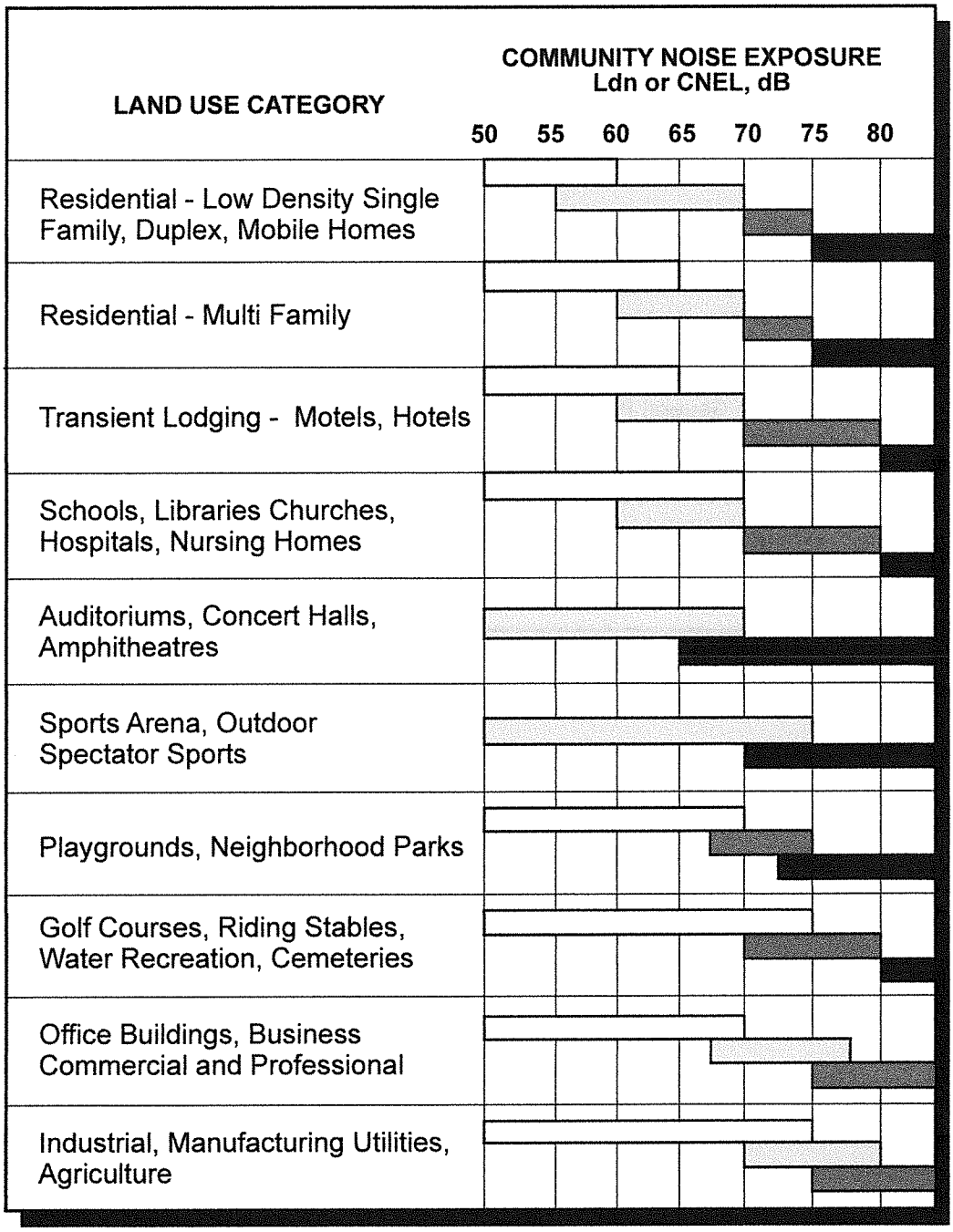
The Federal Noise Control Act of 1972 establishes programs and guidelines to identify and address the effects of noise on public health and welfare and the environment. The US Environmental Protection Agency (USEPA) administrators determined in 1981 that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise-control guidelines and regulations contained in the rulings of the USEPA in prior years remain in place, enforced by designated federal agencies where relevant.

State

The State of California, Office of Planning and Research has published, with regard to community noise exposure, recommended guidelines for land use compatibility. These guidelines rate land use compatibility in terms of being normally acceptable, normally unacceptable, and clearly unacceptable. Each jurisdiction is required to consider these guidelines when developing a general plan noise element and when determining acceptable noise levels within its community. These guidelines are representative of various land uses that include residential, commercial/mixed-use, industrial, and public facilities. **Figure 3: Land Use Compatibility to Noise**, identifies the acceptable limit of noise exposure for various land use categories within the County. Noise exposure for single-family uses is normally acceptable when the CNEL at exterior residential locations is equal to or below 60 dBA; conditionally acceptable when the CNEL is between 55 to 70 dBA; and normally unacceptable when the CNEL exceeds 70 dBA. These guidelines apply to noise sources such as vehicular traffic, aircraft, and rail movements.

The California Noise Insulation Standards[1] require that interior noise levels from exterior sources be 45 dBA or less in any habitable room of a multiresidential-use facility (e.g., hotels, motels, dormitories, long-term care facilities, and apartment houses, except detached single-family dwellings) with doors and windows closed. Measurements are based on CNEL or Ldn (the day–night average), whichever is consistent with the noise element of the local general plan. Where exterior noise levels exceed 60 dBA CNEL, an acoustical analysis for new development may be required to show that the proposed construction will reduce interior noise levels to 45 dBA CNEL. If the interior 45 dBA CNEL limit can be achieved only with the windows closed, the residence must include mechanical ventilation that meets applicable Uniform Building Code (UBC) requirements.

1 California Code of Regulations, Title 24, sec. 3501 et seq.



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 reduction features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

SOURCE: California Governor's Office of Planning and Research, State of California General Plan Guidelines, Appendix C: Guidelines for the Preparation and Content of Noise Elements of the General Plan, October 2003.

FIGURE **3**

Meridian Consultants

Land Use Compatibility to Noise

270-001-19

Local

City of Thousand Oaks Noise Element

The General Plan Noise Element includes a program to help the City achieve its noise goals and objectives. As part of this program, the City has defined thresholds for determining significance of noise impacts under CEQA, as shown in **Table 1: Thresholds of Significance for Noise Impact**. According to the City, if the annual average CNEL that considers a proposed project, cumulative projects, and General Plan buildout in an area currently designated in the General Plan for noise-sensitive land use is expected to be less than 55 dB, then impacts would be considered less than significant. If the CNEL is expected to be 55 to 60 dB, then a project would be considered to have an individually significant impact if it would increase noise levels by greater than 1 dB. When the CNEL would be expected to be 60 dB or greater, then a project would be considered significant if noise levels increase by 0.5 dB or more.

Table 1
Thresholds of Significance for Noise Impact

If the annual average noise level with the proposed project, cumulative projects, and General Plan buildout in an area currently used for or designated in the General Plan for a noise-sensitive land use[1] is expected to be:	A significant project or cumulative impact may result if the change in annual average noise levels from existing conditions due to all sources in an area currently used for or designated in the General Plan for a noise sensitive land use[1] is:	The project alone may be considered to make a substantial contribution significant cumulative impact if the change in annual average noise level due to the project is:
Less than 55 dB CNEL	Not significant for any change in noise level	Not significant for any change in noise level
55–60 dB CNEL	Equal to or greater than 3.0 decibels	Equal to or greater than 1.0 decibels
60–70 dB CNEL	Equal to or greater than 1.5 decibels	Equal to or greater than 0.5 decibels
Greater than 70 dB CNEL	Equal to or greater than 1.0 decibels	Equal to or greater than 0.5 decibels

Source: City of Thousand Oaks General Plan Noise Element, Table 9

[1] *A noise-sensitive land use is a use for which the lower limit of the noise level considered "normally unacceptable" for development because of noise impact is 70 dB CNEL or lower. In identifying land use areas, areas which are undevelopable for noise-sensitive uses because of slope, development restriction, easement, etc., or which are used for non-noise-sensitive components of a multiple-use or mixed-use project, should not be considered noise-sensitive.*

Municipal Code

Title 5, Chapter 21 of the City's Municipal Code regulates noise levels throughout the City. This chapter prohibits any person from causing any loud, unnecessary, and unusual noise that disturbs the peace or

quiet of any neighborhood, or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

Acceptable hours for construction activities are set forth in Title 8, Chapter 11 of the City's Municipal Code. According to the code, construction hours are limited to between the hours of 7:00 AM and 7:00 PM, Monday through Saturday, unless a permit for work during different hours or days has been issued by the Public Works Director.

METHODOLOGY

Noise Modeling

Noise-level calculations at the location of noise-sensitive land uses in the Project vicinity were assessed using the SoundPLAN noise model. The SoundPLAN model depicts noise contours at varying distances and accounts for various inputs to analyze topography, vegetation, propagation from buildings, and existing- and proposed-noise sources and barriers. The SoundPLAN model takes into account the varying slant distances between the helicopter and the receiver. The software uses various inputs to analyze the topography, vegetation, vehicle traffic, existing- and proposed-noise sources, and existing- and proposed-barriers to depict noise contours at varying distances. The software utilizes algorithms (based on the inverse square law) to calculate noise level projections. Accuracy has been validated in published studies to be +/- 2.7 dBA with an 85 percent confidence level. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. Helicopter flight profiles were modeled based on the flight paths shown in **Figure 2** above and were programmed into the SoundPLAN noise modeling system.

Existing Noise Environment

The area surrounding the Project site is highly urbanized with multiple noise sources including, but not limited to, traffic on local and arterial streets, helicopter arrivals to and departures from the LRMC, and commercial activity (e.g., truck loading/unloading).

Noise measurements were taken with a Larson Davis Type 1 meter. This meter satisfies the American National Standards Institute standard for general environmental noise measurement instrumentation. Random incidence microphones with windscreens were used, given the outdoor (i.e., free field) conditions of monitoring. The sound level averages were measured as A-weighted, slow-time-weighted (1-minute period) sound pressure level variables, commonly used for measuring environmental sounds. Sound levels presented in this report are in terms of dBA.

To quantify the existing noise environment, measurements were taken at three (3) locations and shown in **Figure 4: Ambient Noise Monitoring Locations**. Long-term continuous 24-hour noise level measurements were taken at two (2) locations between December 19 – December 20, 2019 within the existing flight path (refer to Site 1 and Site 2 in **Figure 4**). Short-term noise level measurements were taken from one (1) location at the Chinese Christian Church south of the Project site during a test flight conducted on December 20, 2019 (refer to Site A in **Figure 4**). Furthermore, additional sites were assessed through the modeling process described below including the residential uses along Young Avenue (refer to Site 3 in **Figure 4**) to the east of the Project site and the residential uses along Oberlin Avenue (refer to Site 4 in **Figure 4**) to the south of the Project site.

Results of the 24-hour ambient noise measurements are presented in **Table 2: Long-term (24-hour) Ambient Noise Measurements**. As shown in **Table 2**, the maximum 1-hour LAeq of 76.0 dBA for Site 1 occurred between 10:00 AM–11:00 AM during the test flight described below. Similar noise levels also occurred between 1:00 PM–2:00 PM with a maximum 1-hour LAeq of 73.0 dBA (refer to **Appendix A)**. In addition, the maximum 1-hour LAeq of 71.4 dBA for Site 2 occurred between 4:00 PM–5:00 PM. Other similar noise levels occurred between 7:00 AM–8:00 AM and 1:00 PM–2:00 PM (refer to **Appendix A**).

Table 2
Long-term (24-hour) Ambient Noise Measurements

Site	Leq Daytime (7:00 AM–10:00 PM)	Leq Nighttime (10:00 PM–7:00 AM)	Max Leq (1-hour)	24-hour CNEL
Site 1	69.1	59.0	76.0[1]	69.4
Site 2	69.6	62.1	71.4[2]	71.1

*Source; Refer to **Appendix A** for Ldn-CNEL conversion worksheets.*
Note:
[1] Site 1 maximum 1-hour Leq took place between 10:00 AM – 11:00 AM.
[2] Site 2 maximum 1-hour Leq took place between 4:00 PM – 5:00 PM.

Table 3: Test Flight Measurements, provides noise measurements (1-minute LAeq) from the Chinese Christian Church during a test flight demonstration of a typical approach and departure to and from the Project site. As mentioned previously, typical helicopters that operate at the site include the Airbus H135, Bell 407 and Bell 412 helicopters. For the helicopter approach, once a ground speed of 0 was reached, the helicopter began a vertical descent to the landing pad, which took approximately 15 seconds. Once on the helipad surface, the helicopter underwent a 30-second ground idle. Following the idle period, the helicopter was shut down. Overall, the entire duration of the helicopter approach took under 2 minutes and this noise activity occurred between 10:35AM–10:36 AM as shown in **Table 3**.

For the helicopter departure, start-up and flight checks were performed during the ground-idle phase, which typically last up to 3 minutes. Following the flight checks and start-up, the rotor blades began turning at full power, hover was initiated, and the aircraft ascended vertically above the pad, which lasted approximately 15 seconds. Once desired altitude was reached, the helicopter accelerates horizontally and departs the Project site. Overall, the main noise-producing portion of the departure to altitude and cruising speed from initial start-up would take under 1 minute, with surrounding land uses exposed to maximum sound levels for less than 15 seconds during this period. This activity occurred between 10:46 AM – 10:47 AM as shown in **Table 3**.

Table 3
Test Flight Measurements

Time	LAeq (1-minute)
Approach	
10:33 AM	68.1
10:34 AM	68.7
10:35 AM	81.0
10:36 AM	76.1
10:37 AM	69.8
Departure	
10:44 AM	68.0
10:45 AM	72.9
10:46 AM	81.7
10:47 AM	81.3
10:48 AM	66.8

*Source: Refer to **Appendix B** for Test Fight Measurements.*
Note: Helicopter approach occurred between 10:35 AM – 10:36 AM.
Helicopter departure occurred between 10:46 AM – 10:47 AM.

The existing environment was modeled using SoundPLAN and the results of the modeling process for the existing operations and the test flight is shown graphically in **Figure 5: Modeled Existing Operations Contour Map** in terms of 24-hour CNEL.

Noise equivalent sound levels are not measured directly but are calculated from sound power levels typically measured in dBA. The equivalent sound level (Leq) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. As such, another noise descriptor that is used primarily for the assessment of aircraft noise impacts is the Sound Exposure Level, which is also called the Single Event Level (SEL). The SEL represents the acoustic energy of a single

event (e.g., an aircraft overflight) normalized to a 1-minute even duration. This is useful for comparing the acoustical energy of different events involving different duration of the noise sources and compared with the existing noise levels of the test flight measurements in **Table 3**.

Table 4: Single Event Level, provides the modeled exterior noise levels (Leq 1-minute) during helicopter approach/departure at the Chinese Christian Church where test measurements were conducted. As shown in **Table 4**, the difference between the modeled and existing test flight measurements were approximately 1.7 dBA, thus ensuring accuracy between the model and the existing environment.

Table 4
Existing Single Event Level

Site	Modeled Future Noise Levels (24-hour CNEL)	Modeled Single Exposure Level (LAeq 1-minute)[1]	Maximum Ambient (LAeq 1-minute)[2]	Different between Existing and Modeled Noise Levels
Chinese Christian Church	51.8	83.4	81.7	+1.7

Source: SoundPLAN version 8.1
Note:
[1] Modeled hourly Leq converted in terms of a Single Exposure Level (SEL) into 1-minute event. 10log (1,440 minutes) = +31.6 dB
*[2] Refer to **Table 3.** The maximum LAeq (1-minute) of 81.7 dB.*

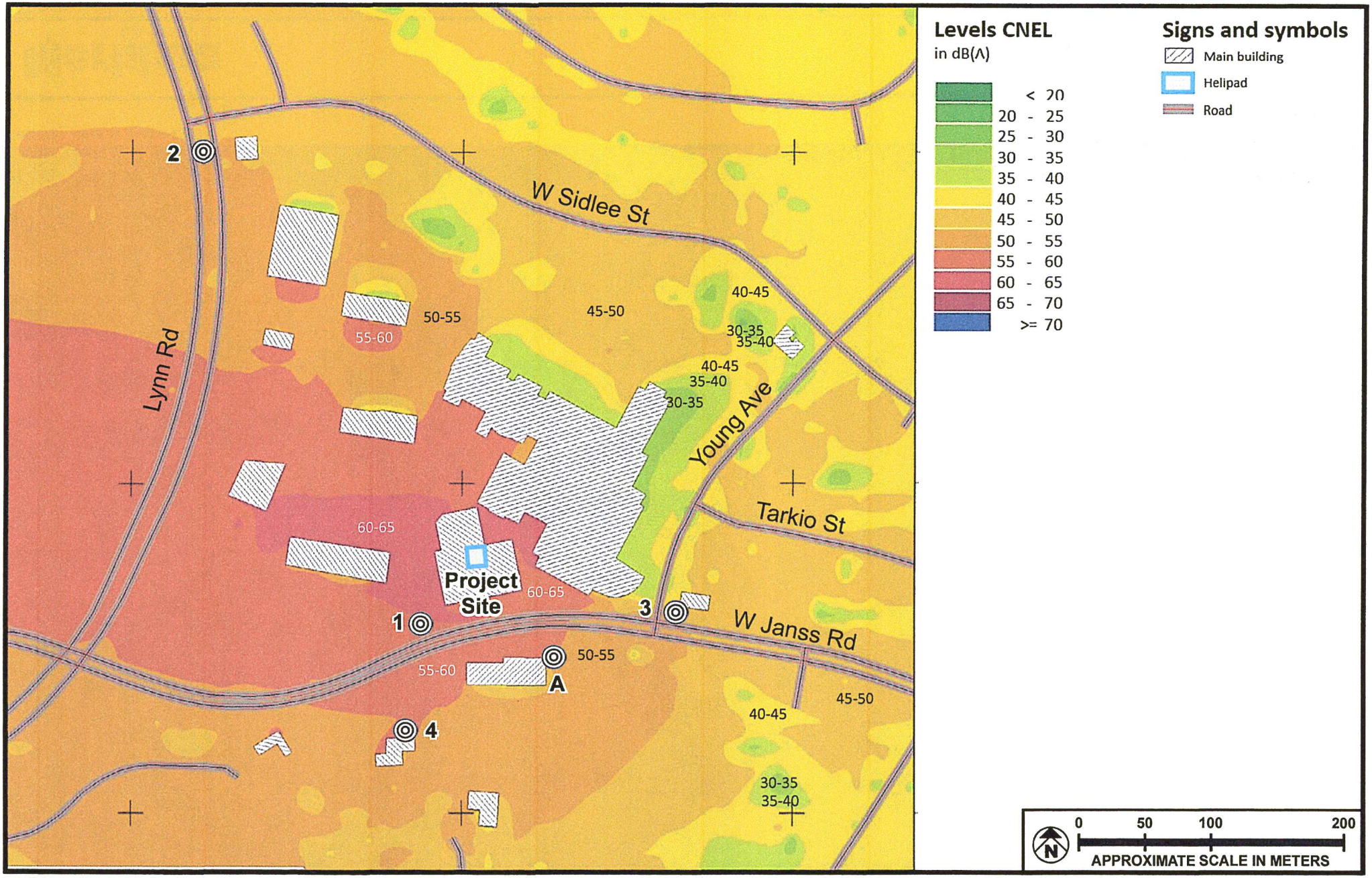
SOURCE: Google Earth - 2019

FIGURE **4**

Meridian Consultants

Ambient Noise Monitoring Locations

270-001-19



SOURCE: Google Earth - 2020

FIGURE **5**

Meridian Consultants

Modeled Existing Operations Contour Map

270-001-19

IMPACT ANALYSIS

All flights for larger weight-class helicopters, such as the Firehawk and Blackhawk helicopters, would be limited to the approach/departure patterns illustrated in **Figure 2** except or unless an emergency requires a different flight pattern (e.g. wildfires, responding to paramedic service calls, etc.). Furthermore, on-site landing areas would meet aeronautic standards and avoid the need for aviation easements except or unless an emergency requires a different flight pattern (e.g. wildfires, responding paramedic service calls, etc.).

To simulate the maximum helicopter approach/departure impacts under a worst-case scenario, it is assumed the helicopters would be operating for 30 minutes within every hour during the entire 24-hour period. In a realistic scenario, helicopter would not be operating continuously within every hour and the type of helicopter would vary. As shown in **Table 5: Flight Path to the West**, helicopter approach/departure to the west would increase off-site noise levels by a maximum of 4.2 dBA CNEL at the residential uses along Young Avenue to the east (Site 3) and the residential uses along Oberlin Avenue to the south (Site 4). When compared to the significance threshold shown in **Table 1** above, noise level increases from ambient conditions would not exceed thresholds for the surrounding sensitive receptors.

Table 5
Flight Path to the West Exterior Noise Levels

Site	Modeled Future Noise Levels (dBA CNEL)	Existing 24-hour (dBA CNEL)	Ambient + Modeled Noise (dBA CNEL)	Logarithmic Increase from Ambient (CNEL)	Significance Threshold	Exceeds Threshold?
Site 1[1]	62.4	69.4	70.1	+0.7	Equal to or greater than 1.5 decibels	**No**
Site 2	53.0	71.1	71.2	+0.1	Equal to or greater than 1.0 decibels	**No**
Site 3	47.0	44.8[2]	49.0	+4.2	Not significant for any change in noise level	**No**
Site 4	54.0	51.8[2]	56.0	+4.2	Not significant for any change in noise level	**No**

*Source: Refer to **Appendix C.2 (Flight to the West): SoundPLAN Output Sheets.***
Note:
[1] Site 1 is not considered a sensitive use as it is mostly surrounded by commercial uses.
*[2] Refer to **Figure 5** for 24-CNEL noise contour map for Sites 3 and 4 and **Appendix C.1 (Existing): SoundPLAN Output Sheets**.*

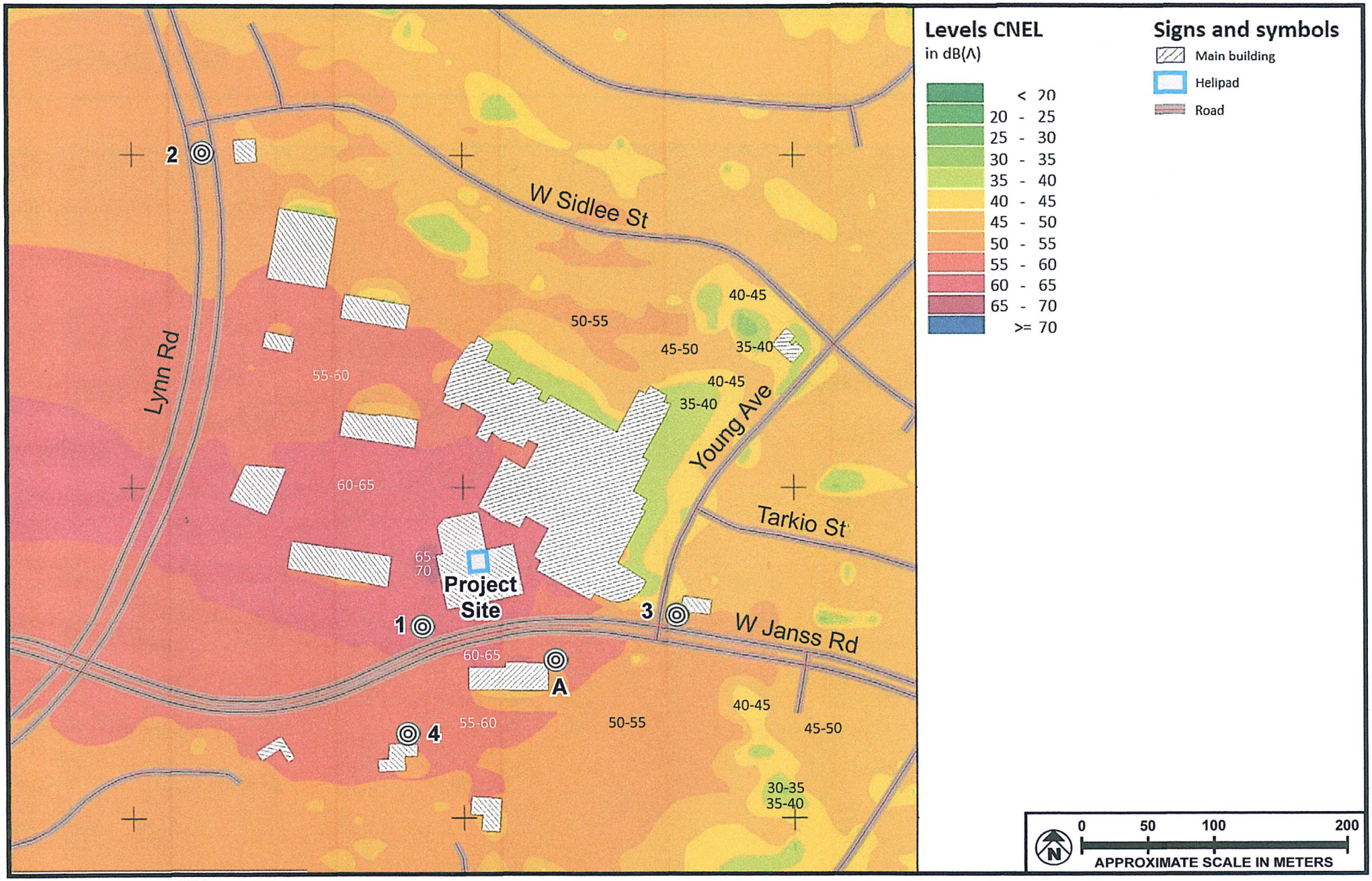
In addition, as shown in **Table 6: Flight Path to the Northwest**, approach/departure to the northwest would increase off-site noise levels by a maximum of 3.8 dBA CNEL at the residential uses along Young Avenue to the east (Site 3). When compared to the significance threshold shown in **Table 1** above, noise level increases from ambient conditions would not exceed thresholds for the surrounding sensitive receptors.

The results of the predictive modeling process are shown graphically in **Figure 6: Flight Path to the West Contour Map** and **Figure 7: Flight Path to the Northwest Contour Map**.

Table 6
Flight Path to the Northwest Exterior Noise Levels

Site	Modeled Future Noise Levels (dBA CNEL)	Existing 24-hour (dBA CNEL)	Ambient + Modeled Noise (dBA CNEL)	Logarithmic Increase from Ambient (CNEL)	Significance Threshold	Exceeds Threshold?
Site 1	61.4	69.4	70.0	+0.6	Equal to or greater than 1.5 decibels	**No**
Site 2	55.6	71.1	71.2	+0.1	Equal to or greater than 1.0 decibels	**No**
Site 3	46.2	44.8[1]	48.6	+3.8	Not significant for any change in noise level	**No**
Site 4	53.1	51.8[1]	55.5	+3.7	Not significant for any change in noise level	**No**

*Source: Refer to **Appendix C.3 (Flight to the Northwest): SoundPLAN Output Sheets.***
Note:
[1] Site 1 is not considered a sensitive use as it is mostly surrounded by commercial uses.
*[2] Refer to **Figure 5** for 24-CNEL noise contour map for Sites 3 and 4 and **Appendix C.1 (Existing): SoundPLAN Output Sheets.***



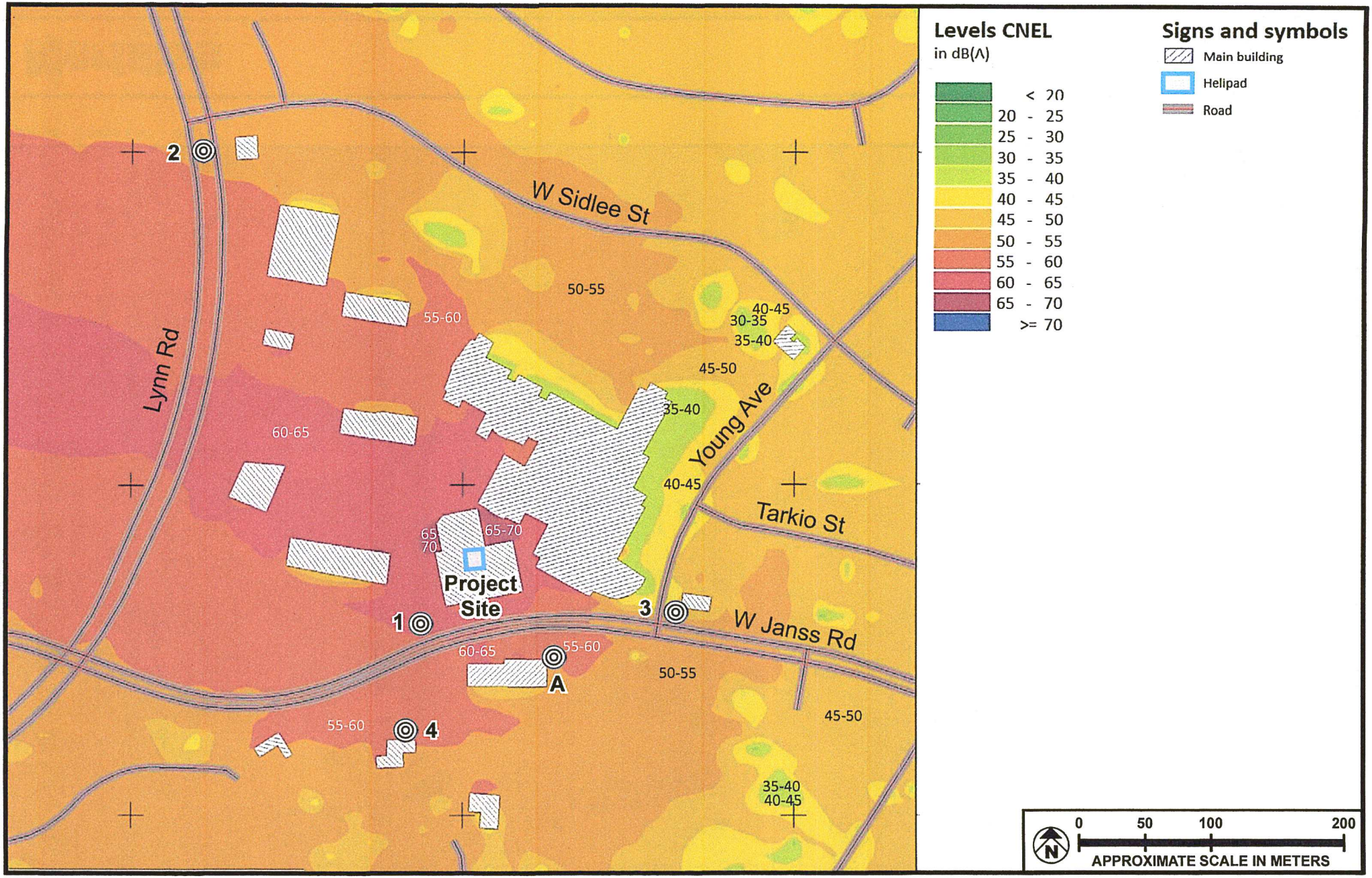
SOURCE: Google Earth - 2020

FIGURE **6**

Meridian Consultants

Flight Path to the West Contour Map

270-001-19



SOURCE: Google Earth - 2020

FIGURE **7**

Meridian Consultants

Flight Path to the Northwest Contour Map

270-001-19

APPENDIX A

24-hour Ldn-CNEL Conversion Worksheets

Meridian Consultants LLC
Date:

Los Robles Medical Center Expansion Project
Ldn/CNEL Conversion of Monitored Leq's
Existing Conditions

Rev: 11/12/2012

Monitoring Location: Site 1

Time(s): December 19 2:00 PM through December 20 2:00 PM

	Monitoring Period		Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	56.0	398107	3981072	1258925
am	1:00	100	53.2	208930	2089296	660693
	2:00	200	52.1	162181	1621810	512861
	3:00	300	52.6	181970	1819701	575440
	4:00	400	60.0	1000000	10000000	3162278
	5:00	500	59.1	812831	8128305	2570396
	6:00	600	63.5	2238721	22387211	7079458
	7:00	700	66.9	4897788	48977882	15488166
	8:00	800	67.5	5623413	56234133	17782794
	9:00	900	67.3	5370318	53703180	16982437
	10:00	1000	76.0	39810717	398107171	125892541
	11:00	1100	68.8	7585776	75857758	23988329
	12:00	1200	66.8	4786301	47863009	15135612
pm	1:00	1300	72.6	18197009	181970086	57543994
	2:00	1400	67.7	5888437	58884366	18620871
	3:00	1500	68.6	7244360	72443596	22908677
	4:00	1600	69.0	7943282	79432823	25118864
	5:00	1700	67.1	5128614	51286138	16218101
	6:00	1800	65.7	3715352	37153523	11748976
	7:00	1900	64.6	2884032	28840315	9120108
	8:00	2000	63.8	2398833	23988329	7585776
	9:00	2100	62.4	1737801	17378008	5495409
	10:00	2200	61.2	1318257	13182567	4168694
pm	11:00	2300	59.0	794328	7943282	2511886

Leq Morning Peak Hour 7:00-10:00 a.m.
67 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
67 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
59.0 dBA

Leq Daytime 7:00 am-10:00 p.m.
69.1 dBA

Leq 24-Hour
67 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
69 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
69.4 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.326604958

Meridian Consultants LLC
Date:

Los Robles Medical Center Expansion Project
Ldn/CNEL Conversion of Monitored Leq's
Existing Conditions

Rev: 11/12/2012

Monitoring Location: Site 2

Time(s): December 19 2:00 PM through December 20 2:00 PM

Monitoring Period			Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments 10 dB	5 dB
Midnight		0 / 24	59.5	891251	8912509	2818383
am	1:00	100	57.8	602560	6025596	1905461
	2:00	200	54.5	281838	2818383	891251
	3:00	300	56.7	467735	4677351	1479108
	4:00	400	58.9	776247	7762471	2454709
	5:00	500	64.4	2754229	27542287	8709636
	6:00	600	66.8	4786301	47863009	15135612
	7:00	700	70.6	11481536	114815362	36307805
	8:00	800	70.9	12302688	123026877	38904514
	9:00	900	68.9	7762471	77624712	24547089
	10:00	1000	69.3	8511380	85113804	26915348
	11:00	1100	69.2	8317638	83176377	26302680
	12:00	1200	69.4	8709636	87096359	27542287
pm	1:00	1300	70.1	10232930	102329299	32359366
	2:00	1400	69.9	9772372	97723722	30902954
	3:00	1500	70.8	12022644	120226443	38018940
	4:00	1600	71.3	13489629	134896288	42657952
	5:00	1700	71.4	13803843	138038426	43651583
	6:00	1800	69.5	8912509	89125094	28183829
	7:00	1900	67.0	5011872	50118723	15848932
	8:00	2000	66.2	4168694	41686938	13182567
	9:00	2100	65.6	3630781	36307805	11481536
	10:00	2200	64.5	2818383	28183829	8912509
pm	11:00	2300	60.9	1230269	12302688	3890451

Leq Morning Peak Hour 7:00-10:00 a.m.
70 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
70 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
62.1 dBA

Leq Daytime 7:00 am-10:00 p.m.
69.6 dBA

Leq 24-Hour
68 dBA

Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
71 dBA

CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB
71.1 dBA **adjustment between 10:00 p.m. & 7:00 a.m.**

Difference between CNEL and Ldn
CNEL - Ldn = 0.4039111

APPENDIX B

24-hour Ldn-CNEL Conversion Worksheets

Monitoring Location: Site A, Chinese Christian Church
Monitoring Date: 12/20/2019

Monitoring Period

Time	LAeq	
10:28:55	66.2	
10:29:00	62.9	
10:30:00	65.1	
10:31:00	61.8	
10:32:00	59.2	
10:33:00	68.1	
10:34:00	68.7	
10:35:00	81.0	**Helicopter Approach**
10:36:00	76.1	
10:37:00	69.8	
10:38:00	62.0	
10:39:00	65.9	
10:40:00	61.7	
10:41:00	64.7	
10:42:00	61.2	
10:43:00	65.6	
10:44:00	68.0	
10:45:00	72.9	
10:46:00	81.7	**Helicopter Departure**
10:47:00	81.3	
10:48:00	66.8	

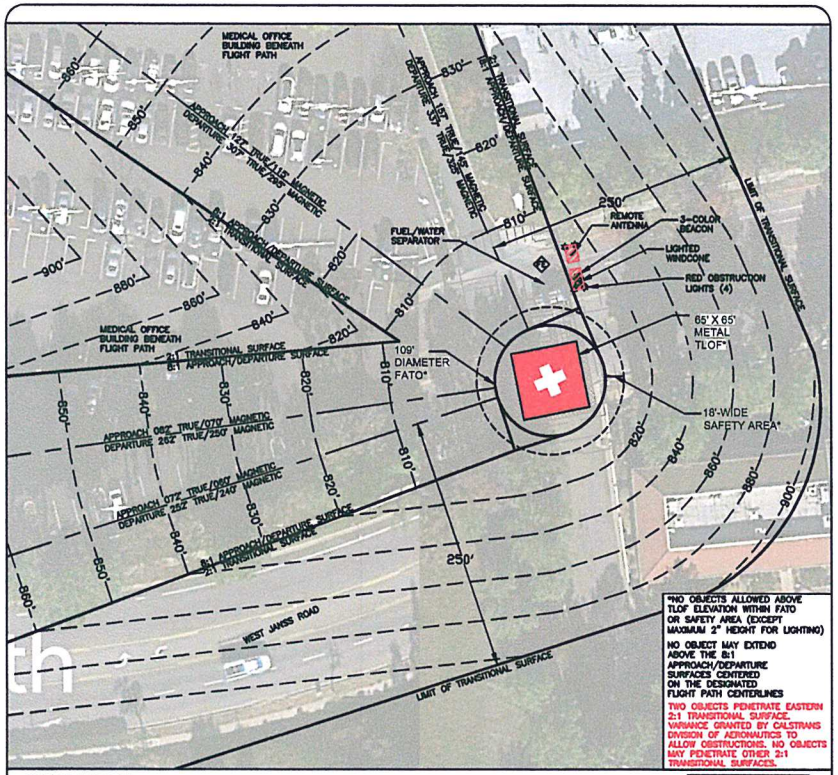
APPENDIX C

SoundPLAN Output Sheets

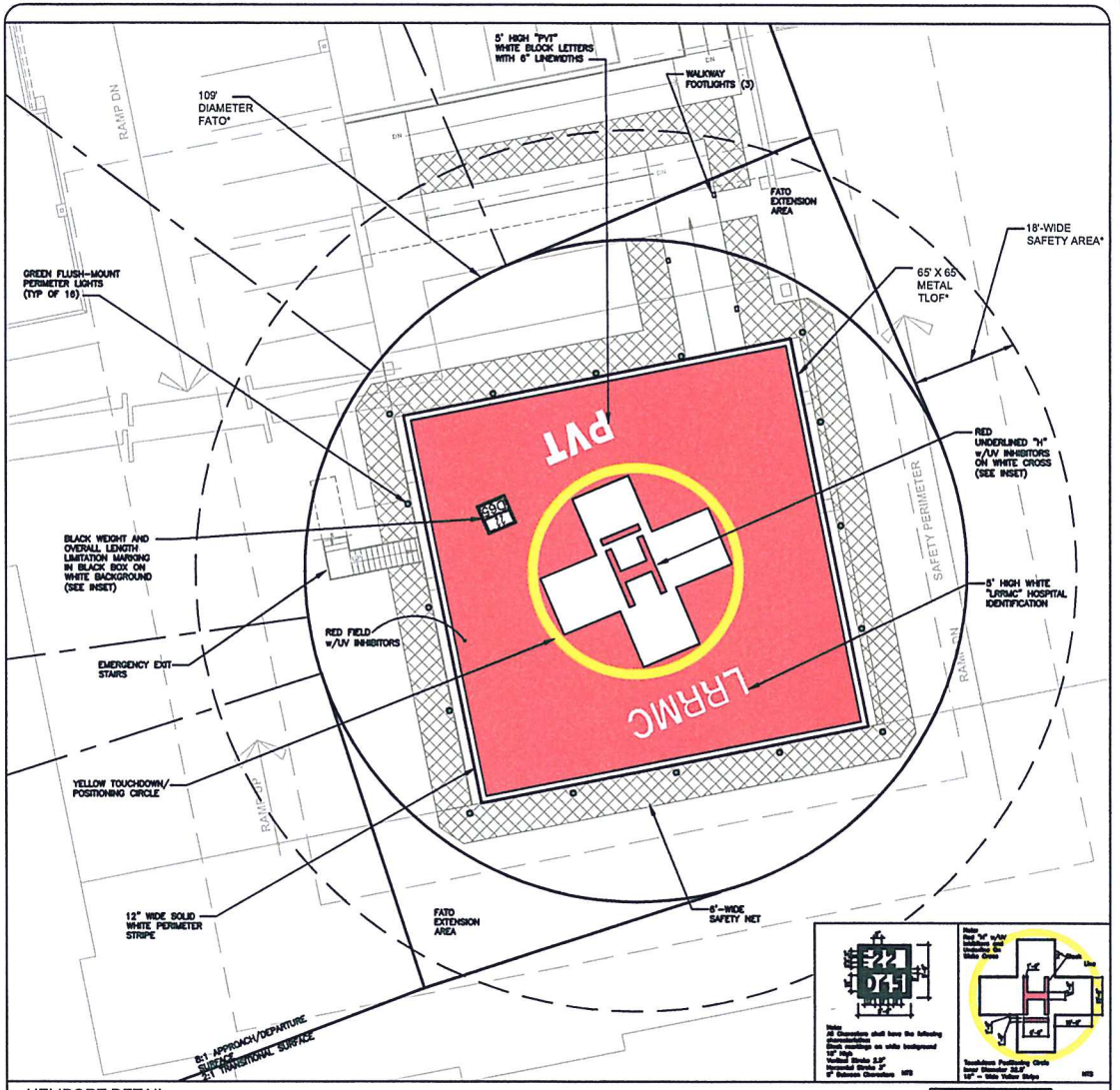
Receiver	Fl	CNEL/dB(A	Leq,d/dB(A	Leq,e/dB(A	Leq,n/dB(A)	Time slice	63Hz dB(A	125Hz dB(	250Hz dB(	500Hz dB(	1kHz dB(A	2kHz dB(A	4kHz dB(A	8kHz dB(A)
Chinese Christian Church	G	57.8	51.1	51.1	51.1	CNEL	36	37.4	46.3	54.7	52.9	47.2	36.1	23.4
						Leq,d	29.3	30.7	39.7	48.1	46.2	40.6	29.4	16.7
						Leq,e	29.3	30.7	39.7	48.1	46.2	40.6	29.4	16.7
						Leq,n	29.3	30.7	39.7	48.1	46.2	40.6	29.4	16.7
Site 1	G	60.2	53.5	53.5	53.5	CNEL	39.2	41.4	48.1	56.3	56	50.7	40.3	29.4
						Leq,d	32.5	34.7	41.5	49.6	49.3	44	33.6	22.8
						Leq,e	32.5	34.7	41.5	49.6	49.3	44	33.6	22.8
						Leq,n	32.5	34.7	41.5	49.6	49.3	44	33.6	22.8
Site 2	G	50.8	44.1	44.1	44.1	CNEL	29.6	31	39.9	47.9	45.8	39.1	23.6	-6
						Leq,d	23	24.4	33.3	41.2	39.1	32.4	16.9	-12.7
						Leq,e	23	24.4	33.3	41.2	39.1	32.4	16.9	-12.7
						Leq,n	23	24.4	33.3	41.2	39.1	32.4	16.9	-12.7
Site 3	G	44.8	38.2	38.2	38.2	CNEL	28.5	29.8	38	41.9	37.8	28.9	12.2	-10.5
						Leq,d	21.8	23.2	31.3	35.2	31.2	22.2	5.6	-17.2
						Leq,e	21.8	23.2	31.3	35.2	31.2	22.2	5.6	-17.2
						Leq,n	21.8	23.2	31.3	35.2	31.2	22.2	5.6	-17.2
Site 4	G	51.7	45.1	45.1	45.1	CNEL	35	37.1	40.5	43.2	48.5	45.5	33.2	15.8
						Leq,d	28.3	30.4	33.9	36.5	41.9	38.8	26.5	9.1
						Leq,e	28.3	30.4	33.9	36.5	41.9	38.8	26.5	9.1
						Leq,n	28.3	30.4	33.9	36.5	41.9	38.8	26.5	9.1

Receiver	Fl	CNEL/dB(A	Leq,d/dB(A	Leq,e/dB(A	Leq,n/dB(A)	Time slice	63Hz dB(A	125Hz dB(	250Hz dB(	500Hz dB(	1kHz dB(A	2kHz dB(A	4kHz dB(A	8kHz dB(A)
Chinese Christian Church	G	60	53.3	53.3	53.3	CNEL	38.2	39.6	48.5	56.9	55.1	49.4	38.3	25.6
						Leq,d	31.5	32.9	41.9	50.3	48.4	42.8	31.6	18.9
						Leq,e	31.5	32.9	41.9	50.3	48.4	42.8	31.6	18.9
						Leq,n	31.5	32.9	41.9	50.3	48.4	42.8	31.6	18.9
Site 1	G	62.4	55.7	55.7	55.7	CNEL	41.4	43.6	50.3	58.5	58.2	52.9	42.5	31.6
						Leq,d	34.7	36.9	43.7	51.8	51.5	46.2	35.8	25
						Leq,e	34.7	36.9	43.7	51.8	51.5	46.2	35.8	25
						Leq,n	34.7	36.9	43.7	51.8	51.5	46.2	35.8	25
Site 2	G	53	46.3	46.3	46.3	CNEL	31.8	33.2	42.1	50.1	48	41.3	25.8	-3.8
						Leq,d	25.2	26.6	35.5	43.4	41.3	34.6	19.1	-10.5
						Leq,e	25.2	26.6	35.5	43.4	41.3	34.6	19.1	-10.5
						Leq,n	25.2	26.6	35.5	43.4	41.3	34.6	19.1	-10.5
Site 3	G	47	40.4	40.4	40.4	CNEL	30.7	32	40.2	44.1	40	31.1	14.4	-8.3
						Leq,d	24	25.4	33.5	37.4	33.4	24.4	7.8	-15
						Leq,e	24	25.4	33.5	37.4	33.4	24.4	7.8	-15
						Leq,n	24	25.4	33.5	37.4	33.4	24.4	7.8	-15
Site 4	G	53.9	47.3	47.3	47.3	CNEL	37.2	39.3	42.7	45.4	50.7	47.7	35.4	18
						Leq,d	30.5	32.6	36.1	38.7	44.1	41	28.7	11.3
						Leq,e	30.5	32.6	36.1	38.7	44.1	41	28.7	11.3
						Leq,n	30.5	32.6	36.1	38.7	44.1	41	28.7	11.3

Receiver	Fl	CNEL/dB(A	Leq,d/dB(A	Leq,e/dB(A	Leq,n/dB(A)	Time slice	63Hz dB(A	125Hz dB(	250Hz dB(	500Hz dB(	1kHz dB(A	2kHz dB(A	4kHz dB(A	8kHz dB(A)
Chinese Christian Church	G	59.7	53	53	53	CNEL	37.9	39.3	48.3	56.7	54.8	49.1	37.9	25
						Leq,d	31.2	32.6	41.6	50	48.1	42.4	31.2	18.3
						Leq,e	31.2	32.6	41.6	50	48.1	42.4	31.2	18.3
						Leq,n	31.2	32.6	41.6	50	48.1	42.4	31.2	18.3
Site 1	G	61.4	54.7	54.7	54.7	CNEL	40.5	42.6	49.2	57.5	57.2	51.9	41.2	29.8
						Leq,d	33.8	35.9	42.5	50.9	50.6	45.2	34.6	23.1
						Leq,e	33.8	35.9	42.5	50.9	50.6	45.2	34.6	23.1
						Leq,n	33.8	35.9	42.5	50.9	50.6	45.2	34.6	23.1
Site 2	G	55.6	48.9	48.9	48.9	CNEL	34.3	35.7	44.3	52.6	50.7	44.3	30.3	6
						Leq,d	27.6	29	37.6	45.9	44	37.7	23.6	-0.7
						Leq,e	27.6	29	37.6	45.9	44	37.7	23.6	-0.7
						Leq,n	27.6	29	37.6	45.9	44	37.7	23.6	-0.7
Site 3	G	46.2	39.5	39.5	39.5	CNEL	29.9	31.3	39.8	43.2	38.9	29.9	13.5	-8.4
						Leq,d	23.2	24.6	33.1	36.6	32.2	23.2	6.9	-15.1
						Leq,e	23.2	24.6	33.1	36.6	32.2	23.2	6.9	-15.1
						Leq,n	23.2	24.6	33.1	36.6	32.2	23.2	6.9	-15.1
Site 4	G	53.1	46.4	46.4	46.4	CNEL	36.4	38.4	41.9	44.5	49.9	46.7	34.1	15.8
						Leq,d	29.7	31.7	35.2	37.8	43.2	40.1	27.4	9.1
						Leq,e	29.7	31.7	35.2	37.8	43.2	40.1	27.4	9.1
						Leq,n	29.7	31.7	35.2	37.8	43.2	40.1	27.4	9.1



SITE LAYOUT



HELIPORT DETAIL

HELIPORT DATA PANEL

Heliport name	Los Robles Regional Medical Center		Elevation	Above mean sea level (MSL)	797'
Street Address	215 West Janss Road, Thousand Oaks, CA 91360			Above ground level (AGL)	25'
Usage (public/private)	Private (Public safety use only)	Composite design helicopter	Model(s)		Sikorsky UH-60 Blackhawk
FAA airspace case number	---		Minimum main rotor diameter		54'
FAA airspace determination letter date	---		Maximum overall length		65'
FAA Heliport Design advisory circular in effect at time of design	AC 150/5390-2C		Maximum gross takeoff weight		22,000 Lbs.
FAA Heliport Design advisory circular heliport classification	Hospital		Maximum fuel capacity		354 gallons
NFPA Publication 418, Heliports, heliport classification	H-2	Heliport design criteria	FATO (final approach & takeoff area) length & width (or diameter)*		109' Diameter
State permit: Heliport Site Approval Permit number & date	---		TLOF (touchdown & liftoff area) length & width		65' x 65'
Heliport Permit number & date	---		Safety area width*		18'
Local Agency Planning Case Number & Date	---		Total unobstructed width (FATO plus safety area on each side)*		145'
Geographic coordinates (NAD 83) at heliport center: Latitude	34° 12' 25"		Fuel/water separator: minimum fuel retention capacity		---
Longitude	118° 52' 58"		TLOF surface material		Metal
Local magnetic declination (to nearest degree)	12°		TLOF surface gradient & direction		1% S
Approach course alignments (magnetic)	052° CW Thru 079° AND 115° CW Thru 145°		Center-to-center TLOF separation (where applicable)		---
Departure course alignments (magnetic)	240° CW Thru 252° AND 295° CW Thru 325°		Lighting Activation – Aviation Lighting		Pilot-controlled, 123.05 MHz
			Lighting Activation – Walkway Area Lighting		Manually Switched

VICINITY MAP
NOT TO SCALE

LEGEND

	LED internally lit windcone (FEC Heliports Model HP 0908-LED)		Green LED perimeter light equipped with infrared emitters for NVG compatibility, (FEC Heliports Model HP17900)
	LED red obstruction light (FEC Heliports Model HP17829)	-810-	Elevations and airspace contours expressed as feet above Mean Sea Level (MSL)
	3-color (green-white-yellow) LED heliport beacon (FEC Heliports Model HP0883P)		Portable Fire Extinguisher
	2:1 Transitional Surface Obstruction		

Caltrans Aeronautics Approval Box

THIS SHEET FOR GENERAL REFERENCE AND AGENCY APPROVALS ONLY. NOT FOR CONSTRUCTION.

Heliplanners Proj. Code: LLR
Drafted: DB
Checked: JWW
Checked: KDW
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Date: 11-04-2019 Rev 6:
Rev 1: 01-19-2020 Rev 7:
Rev 2: Rev 8:
Rev 3: Rev 9:
Rev 4: Rev 10:
Rev 5: Rev 11:

Client: HKS Architects, Inc.
350 N. Saint Paul Street, Ste. 100
Dallas, Texas 75201-4240
Phone: (214) 969-5599
Proj. No.: 21268

Owner: Los Robles Regional Medical Center
215 West Janss Road
Thousand Oaks, CA 91360
Project: Heliport Reconstruction
Exhibit: HP-1 Heliport Layout Plan

HELIPLANNERS heliplanners.com
Aviation Planning Consultants
41689 Enterprise Circle North, Ste 212
Temecula, California 92590 USA
Phone: (951) 693-5090