Appendix P

Meridian D-1 Project Aviation CNEL Scenarios, dated October 7, 2025

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MEMORANDUM

To:	Lauren Sotelo Principal Planner March Inland Port Airport Authority 17405 Heacock Street Moreno Valley, CA 92551
From:	Mark Storm, INCE Bd. Cert. (Dudek)
Subject:	Meridian D-1 **Aviation CNEL Scenarios – Project, Alternative 5, & Alternative 6**
Date:	October 7, 2025
Attachment(s):	A. Project Aviation CNEL Scenarios

This technical noise memorandum has been prepared in support of evaluating cargo aviation traffic noise associated with the proposed Meridian D-1 project (Project), Alternative 5, and Alternative 6. The predictive analysis provides the noise of each scenario's quantified daily flights (i.e., defining a flight "operation" as either a departure or arrival) at all eleven of the same nearest offsite residential noise-sensitive receivers as those studied in the Project Draft Environmental Impact Report (DEIR). Alternative 5 would reduce Project operations by 10% and not include any nighttime flights (i.e., flights between 10:00 p.m. and 7:00 a.m.). Alternative 6 would reduce Project operations to a daily maximum of 24 flight operations, with a limit of 7 flight operations in the evening (7:00 p.m. to 10:00 p.m.) and no nighttime flights. Additionally, Alternative 6 forgoes the Project's non-peak/peak flight distribution. Therefore, this memorandum evaluates a static daily flight maximum for Alternative 6. The daily flight operation distributions for each scenario are shown in Tables 1-3, below.

Summary

As shown in Attachment A, Alternative 6 flight operations are anticipated to result in a less than significant (LTS) aviation noise impact at all eleven of the same nearest offsite residential noise-sensitive receivers as those studied in the Project DEIR.

Alternative 6's limit of 24 daily flight operations would represent an approximate 29% reduction compared to the Project's 34 "Non-Peak" flight operations and an approximate 46% reduction compared to the Project's 44 "Peak" (a.k.a., holiday) flight operations presented in the DEIR. Alternative 6 would reduce the Project's Significant and Unavoidable aviation noise impact to LTS. These proposed substantial reductions in the expected counts of daily Project-attributed aviation noise events that contribute to CNEL values, and their constraint to daytime/evening hours, are noise reduction measures intended to benefit the surrounding community.

Table 1. Proposed Project Flight Operations (Non-Peak and Peak)

Maximum Daily Operations		Total Maximum Daily Flight Operations	Total Maximum Daily Flights
Non-Peak Season			
Arrivals		17	17
Day	14		
Evening	3		
Night	0		
Departures		17	
Day	3		
Evening	12		
Night	2[a]		
Peak Season			
Arrivals		22	22
Day	15		
Evening	7		
Night	0		
Departures		22	
Day	7		
Evening	13		
Night	2		

[a] This represents an overstatement of the maximum daily nighttime aircraft operations during non-peak hours, which is approximately 1.6 aircraft operations.

Table 2. Alternative 5 Flight Operations (Non-Peak and Peak)

Maximum Daily Operations		Total Maximum Daily Flight Operations	Total Maximum Daily Flights
Non-Peak Season			
Arrivals		15	15
Day	13		
Evening	2		
Night	0		
Departures		15	
Day	2		
Evening	13		
Night	0		
Peak Season			
Arrivals		20	20
Day	14		
Evening	6		
Night	0		
Departures		20	

Table 2. Alternative 5 Flight Operations (Non-Peak and Peak)

Maximum Daily Operations		Total Maximum Daily Flight Operations	Total Maximum Daily Flights
Day	7		
Evening	13		
Night	0		

Table 3. Alternative 6 Flight Operations

Maximum Daily Operations		Total Maximum Daily Flight Operations	Total Maximum Daily Flights
Arrivals		12	12
Day	10		
Evening	2		
Night	0		
Departures		12	
Day	7		
Evening	5		
Night	0		

Thresholds of Significance

As discussed in Table 3.11-25 of the DEIR, aviation noise impacts would be considered significant if:

- If the existing (a.k.a., baseline) aviation noise environment is less than 60 A-weighted decibels (dBA) CNEL, the added Project aviation noise contribution causes the logarithmically combined CNEL to exceed the baseline by more than 5 dB;
- If the baseline aviation noise environment is greater than 60 dBA CNEL but less than 65 dBA CNEL, the added Project aviation noise contribution causes the logarithmically combined CNEL to exceed 65 dBA CNEL, or exceed the baseline by more than 3 dB;
- If the baseline aviation noise environment is already at or greater than 65 dBA CNEL, the added Project aviation noise contribution causes a logarithmically combined CNEL to exceed the baseline by more than 1.5 dB.

Methodology

Using the Non-Peak Project scenario as described in the DEIR as a test case, a Microsoft Excel worksheet was prepared to calculate an estimated daily Project-attributed aviation CNEL value at each of the eleven studied offsite receiver positions for Alternative 5 and Alternative 6 from the following inputs:

- Flight operation quantities, expressed as either arrivals or departures, occurring during daytime, evening or nighttime hours (but in all iteration samples, these nighttime quantities were constrained to zero); and
- An estimated hourly L_{eq} value, specific to the studied position, associated with noise occurrence of a single 767-300 aircraft flight operation (arrival or departure), independent of the time when it occurs.

While the specific hour (or timing within the hour) of operation occurrence within the daytime, evening (7 p.m. to 10 p.m.), or nighttime (10 p.m. to 7 a.m.) period has no bearing on the model-predicted CNEL, the total quantities of operations within each of these three periods is meaningful, since the CNEL calculation applies a 5-dB upward adjustment (a.k.a., "penalty") to an hourly L_{eq} value during evening hours and a 10-dB increase during nighttime hours. Thus, flight operations taking place during evening and nighttime hours have more acoustical weight than those during daytime hours. Of note, Alternative 6 restricts a higher percentage of flight operations to daytime hours than the Project or Alternative 5.

Prediction Results

Attachment A details prediction results for the Project – Non-Peak, the Project – Peak, Alternative 5 – Non-Peak, Alternative 5 – Peak, and Alternative 6. The color-coded L_{eq} values, with rows of light blue cells and yellow text for daytime hours, blue cells and orange text for evening hours, and dark blue cells with white text for nighttime, shows the effect of operations quantity and the potential CNEL penalty within each of the three time periods: daytime, evening, and nighttime. The subsequent rows show steps towards determining the impact significance and are prefaced as follows:

- "Predicted Ops CNEL"– the acoustical 24-hour energy-average of the preceding L_{eq} values that have already been penalized by 5 or 10 dB depending on the time period.
- "Table 3.11-56 estimated baseline (CNEL)" – the value from the DEIR.
- "Baseline + Ops (to nearest 0.5 dB)" – the logarithmic sum of the estimated baseline value and the Predicted Operations ("Ops") CNEL value.
- "Estimated Project Contribution" – the arithmetic dB difference between the "Baseline + Ops" and the estimated baseline values, which represents the dB increase due to the Project.
- "Increase Threshold (per FICON)" – a dB value representing the appropriate FICON-based increase-over-ambient criterion: 5.0 if baseline less than 60 dBA CNEL, 3.0 if baseline is between 60 and 65 dBA CNEL, and 1.5 if the baseline is greater than 65 dBA CNEL.

- "Exceedance? (see Note)" – the result of a conditional test, as explained in the Note and in the preceding Thresholds of Significance section of this memorandum, which checks if the Project caused the Baseline + Ops to exceed 65 dBA CNEL; or, if the Increase Threshold has been exceeded.

The appearance of "no" for each of the eleven studied offsite nearest and representative noise-sensitive receivers R5 through R15 means that no threshold exceedances are expected for the scenario, and would thus be considered an LTS impact. As shown in Attachment A and the DEIR, the Project – Non-Peak and the Project – Peak are anticipated to exceed the impact significance conditions. Also, as shown in Attachment A, Alternative 5 – Non-Peak and Alternative 5 – Peak are anticipated to exceed the impact significance conditions. Alternative 6 flight operations are anticipated to have an LTS aviation noise impact.

Alternative 6 involves far fewer aviation events than those originally proposed in the DEIR Project Non-Peak and Peak scenarios, numbering 34 and 44 operations respectively and each of which has nighttime operations that Alternative 6 would exclude. Consequently, the combination of no nighttime flight operations noise generation and fewer daily flight operations to cause noise during daytime and evening hours would be considered a meaningful noise-reducing measure proposed by the Project Applicant and offered in response to received community concerns about aviation noise relating to the Project.

Should you have any questions, comments, or suggestions on how this memorandum could better suit your needs, please do not hesitate to contact me at mstorm@dudek.com.

Sincerely,

Mark Storm, INCE Bd. Cert.
Acoustic Services Manager

Modeled Receiver Position	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
estimated hourly Leq per Project cargo operation	55.7	53.7	53.7	52.7	52.7	52.7	51.7	50.7	50.7	50.7	47.7

Project - Non-Peak (DEIR)

time period	Project flight ops quantities max. arrive	max. depart	sum	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Daytime	14	3	17	68.0	66.0	66.0	65.0	65.0	65.0	64.0	63.0	63.0	63.0	60.0
Evening	3	12	15	72.5	70.5	70.5	69.5	69.5	69.5	68.5	67.5	67.5	67.5	64.5
Nighttime	0	1.6	1.6	67.7	65.7	65.7	64.7	64.7	64.7	63.7	62.7	62.7	62.7	59.7
Predicted Ops CNEL				61.0	59.0	59.0	58.0	58.0	58.0	57.0	56.0	56.0	56.0	53.0
Table 3.11-56 estimated baseline (CNEL)				65.5	64.7	65.2	64.6	64.2	64.2	63.5	63.5	63.6	63.1	57
Baseline + Ops (to nearest 0.5 dB)				67.0	65.5	66.0	65.5	65.0	65.0	64.5	64.0	64.5	64.0	58.5
Estimated Project Contribution				1.5	0.8	0.8	0.9	0.8	0.8	1.0	0.5	0.9	0.9	1.5
Increase threshold (per FICON)				1.5	3.0	1.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0
Exceedance? (see Note)				no	yes	no	yes	no	no	no	no	no	no	no

Project - Peak (DEIR)

time period	Project flight ops quantities max. arrive	max. depart	sum	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Daytime	15	7	22	69.1	67.1	67.1	66.1	66.1	66.1	65.1	64.1	64.1	64.1	61.1
Evening	7	13	20	73.7	71.7	71.7	70.7	70.7	70.7	69.7	68.7	68.7	68.7	65.7
Nighttime	0	2	2	68.7	66.7	66.7	65.7	65.7	65.7	64.7	63.7	63.7	63.7	60.7
Predicted Ops CNEL				62.1	60.1	60.1	59.1	59.1	59.1	58.1	57.1	57.1	57.1	54.1
Table 3.11-56 estimated baseline (CNEL)				65.5	64.7	65.2	64.6	64.2	64.2	63.5	63.5	63.6	63.1	57
Baseline + Ops (to nearest 0.5 dB)				67.0	66.0	66.5	65.5	65.5	65.5	64.5	64.5	64.5	64.0	59.0
Estimated Project Contribution				1.5	1.3	1.3	0.9	1.3	1.3	1.0	1.0	0.9	0.9	2.0
Increase threshold (per FICON)				1.5	3.0	1.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0
Exceedance? (see Note)				no	yes	no	yes	yes	yes	no	no	no	no	no

Alternative 5 - Non-Peak (DEIR)

time period	Project flight ops quantities max. arrive	max. depart	sum	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Daytime	13	2	15	67.5	65.5	65.5	64.5	64.5	64.5	63.5	62.5	62.5	62.5	59.5
Evening	2	13	15	72.5	70.5	70.5	69.5	69.5	69.5	68.5	67.5	67.5	67.5	64.5
Nighttime	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Ops CNEL				59.9	57.9	57.9	56.9	56.9	56.9	55.9	54.9	54.9	54.9	51.9
Table 3.11-56 estimated baseline (CNEL)				65.5	64.7	65.2	64.6	64.2	64.2	63.5	63.5	63.6	63.1	57
Baseline + Ops (to nearest 0.5 dB)				66.5	65.5	66.0	65.5	65.0	65.0	64.0	64.0	64.0	63.5	58.0
Estimated Project Contribution				1.0	0.8	0.8	0.9	0.8	0.8	0.5	0.5	0.4	0.4	1.0
Increase threshold (per FICON)				1.5	3.0	1.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0
Exceedance? (see Note)				no	yes	no	yes	no	no	no	no	no	no	no

Alternative 5 - Peak (DEIR)

time period	Project flight ops quantities max. arrive	max. depart	sum	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Daytime	14	7	21	68.9	66.9	66.9	65.9	65.9	65.9	64.9	63.9	63.9	63.9	60.9
Evening	6	13	19	73.5	71.5	71.5	70.5	70.5	70.5	69.5	68.5	68.5	68.5	65.5
Nighttime	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Ops CNEL				61.0	59.0	59.0	58.0	58.0	58.0	57.0	56.0	56.0	56.0	53.0
Table 3.11-56 estimated baseline (CNEL)				65.5	64.7	65.2	64.6	64.2	64.2	63.5	63.5	63.6	63.1	57
Baseline + Ops (to nearest 0.5 dB)				67.0	65.5	66.0	65.5	65.0	65.0	64.5	64.0	64.5	64.0	58.5
Estimated Project Contribution				1.5	0.8	0.8	0.9	0.8	0.8	1.0	0.5	0.9	0.9	1.5
Increase threshold (per FICON)				1.5	3.0	1.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0
Exceedance? (see Note)				no	yes	no	yes	no	no	no	no	no	no	no

Alternative 6

time period	Project flight ops quantities max. arrive	max. depart	sum	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Daytime	10	7	17	68.0	66.0	66.0	65.0	65.0	65.0	64.0	63.0	63.0	63.0	60.0
Evening	2	5	7	69.2	67.2	67.2	66.2	66.2	66.2	65.2	64.2	64.2	64.2	61.2
Nighttime	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Predicted Ops CNEL				57.8	55.8	55.8	54.8	54.8	54.8	53.8	52.8	52.8	52.8	49.8
Table 3.11-56 estimated baseline (CNEL)				65.5	64.7	65.2	64.6	64.2	64.2	63.5	63.5	63.6	63.1	57
Baseline + Ops (to nearest 0.5 dB)				66.0	65.0	65.5	65.0	64.5	64.5	64.0	64.0	64.0	63.5	58.0
Estimated Project Contribution				0.5	0.3	0.3	0.4	0.3	0.3	0.5	0.5	0.4	0.4	1.0
Increase threshold (per FICON)				1.5	3.0	1.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0
Exceedance? (see Note)				no	no	no	no	no	no	no	no	no	no	no

Note: Exceedance occurs if the Baseline was < 65 CNEL and the Baseline + Ops logsum is > 65 CNEL; or, if Baseline > 65 CNEL, the Project Contribution > Increase threshold.