APPENDIX J

Noise and Noise-Compatible Land Use

NEPA

Noise Technical Report

Noise Modeling Protocol

Construction Noise Technical Report

SEPA

Health Effects of Aviation Noise

APPENDIX J

Noise and Noise-Compatible Land Use

Noise Modeling Protocol

memorandum

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Project: SEA SAMP Environmental Review
Subject: SAMP Environmental Review Noise Protocol
From: Landrum & Brown, Inc.
Date: February 8, 2024

The approved noise and modeling protocol for the SEA SAMP Environmental Review had the modeling using AEDT Version 3e. The protocol was based on airframes and engines that were available in AEDT Version 3e. As part of the protocol, aircraft substitutions were required to capture forecasted aircraft, Boeing 737-7 and the Cessna 408 Sky Courier. In AEDT Version 3e, the Boeing 737-7 was substituted with the Boeing 737-8 and the Cessna 408 Sky Courier was substituted with the Shorts 330-200 Series.

On December 13, 2023, AEDT Version 3f was released and included the Boeing 737-7 and the Cessna 408 SkyCourier. As a result, the decision was made to update the noise modeling using AEDT Version 3f. The following is a summary of the differences between the Airframes, Engines and Aircraft Noise and Performance (ANP) data included in the AEDT Version 3e and AEDT Version 3f studies for the SEA SAMP Environmental Review. AEDT Version 3f studies did not require substitutions for the Boeing 737-7 and the Cessna 408 Sky Courier.

Aircraft Noise & Performance Modifications

Airframe	Engine Code	AEDT 3e Anp	AEDT 3f ANP	Existing/ Future
Airbus A320-NEO	01P20CM128	A320-271N	A320-270N	Existing \ Future
Airbus A320-NEO	01P20CM132	A320-271N	A320-270N	Existing \ Future
Gulfstream G200	7PW077	CNA750	CL600	Existing
Cessna 208 Caravan	P6114A	PA42	CNA208	Existing \ Future
Cessna 208 Caravan	PT6A36	PA42	CNA208	Existing \ Future

Airframe Modifications

AEDT 3e Airframe	AEDT 3e Engine Code	AEDT 3f Airframe	AEDT 3f Engine Code	Existing \ Future
Raytheon Super King Air 200	PT660A	Raytheon C-12 Huron	PT660A	Existing \ Future
Shorts 330-200 Series	PT6A6B	Cessna 408 SkyCourier	PT6A6B	Future
Boeing 737-8_7MAX	01P20CM136	Boeing 737-7	01P20CM136	Future

Engine Modifications

AEDT 3e Airframe	AEDT 3e Engine Code	AEDT 3f Airframe	AEDT 3f Engine Code	Existing \ Future
Boeing 787-10 Dreamliner	17GE179	Boeing 787-10 Dreamliner	01P17GE213	Existing \ Future
Bombardier CS100	01P220PW183	Bombardier CS100	04P20PW196	Existing
Bombardier CS300	01P220PW183	Bombardier CS300	04P20PW196	Existing
Bombardier CS300	01P220PW184	Bombardier CS300	04P20PW197	Existing

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Table 17 was updated to include the accurate number of 737-9 operations. See bold in table.

Table 17 Alternative 2: 2037 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

Airframe	Anp Id	Engine Code	Annual Operations
Commercial Jets			
Boeing 737-9	7378MAX	01P20CM136	1033.0
Boeing 737-9	7378MAX	01P20CM140	40723.9

Source: L&B Analysis, 2023.

Tables 22 and 23 were updated to reflect the correct day night percentages for the Narrowbody Jet.

Table 22 Alternative 1: 2037 No Action Arrival Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Narrowbody Jet	81.9%	18.1%
Grand Total	**84.7%**	**15.3%**

Source: L&B Analysis, 2023.

Table 23 Alternative 1: 2037 No Action Departure Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Narrow Body Jet	81.6%	18.4%
Grand Total	**84.5%**	**15.5%**

Source: L&B Analysis, 2023.

In addition, Tables 26 through 29 have been updated to include the Boeing 767-300 Freighter run up operations.

Table 26 Alternative 1: 2032 No Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A319-100 Series	3IA006	1.4	3.0	--	--	22,000 lbs
Airbus A320-200 Series	01P08CM105	24.6	15.8	1.5	2	25,000 lbs
Airbus A320-200 Series	1CM009	2.9	69.5	--	--	25,000 lbs
Airbus A320-200 Series	3CM026	2.9	15.5	--	--	25,000 lbs
Airbus A321-200 Series	3CM025	4.3	36.7	--	--	30,000 lbs
Airbus A321-NEO	01P20CM132	--	--	1.5	2	30,000 lbs
Airbus A330-200 Series	9PW094	8.7	27.7	--	--	71,100 lbs
Airbus A330-300 Series	4GE080	1.4	37.0	--	--	67,500 lbs
Airbus A330-900N Series (Neo)	02P23RR141	1.4	26.0	--	--	71,100 lbs
Boeing 737-700 Series	3CM031	5.8	26.8	--	--	24,000 lbs
Boeing 737-700 Series	3CM032	7.2	56.4	--	--	24,000 lbs
Boeing 737-800 Series	01P11CM122	1.4	10.0	--	--	26,300 lbs
Boeing 737-800 Series	3CM032	20.3	27.6	--	--	26,300 lbs
Boeing 737-800 Series	3CM034	1.4	9.0	--	--	26,300 lbs
Boeing 737-800 Series	8CM051	2.9	40.5	--	--	26,300 lbs
Boeing 737-800 Series	8CM066	4.3	33.0	--	--	26,300 lbs
Boeing 737-9	01P20CM140	13.0	14.6	--	--	26,400 lbs

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Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Boeing 737-900-ER	01P11CM116	14.5	20.2	--	--	26,300 lbs
Boeing 737-900-ER	01P11CM121	1.4	4.0	--	--	13,150 lbs
Boeing 737-900-ER	01P11CM121	23.2	25.1	--	--	26,300 lbs
Boeing MD-11 Freighter	1GE031	--	--	1.5	2	61,500 lbs
Embraer ERJ175-LR	01P08GE197	1.4	6.0	--	--	6,900 lbs
Embraer ERJ175-LR	01P08GE197	5.8	28.0	--	--	13,800 lbs
Tango X Location						
Airbus A330-200 Series	9PW094	1.4	38.0	--	--	71,100 lbs
South Flow Primary Location						
Airbus A319-100 Series	3IA006	1.4	15.0	--	--	22,000 lbs
Airbus A319-100 Series	3IA007	1.4	26.0	1.5	11	22,000 lbs
Airbus A320-200 Series	01P08CM105	2.9	6.0	--	--	12,500 lbs
Airbus A320-200 Series	01P08CM105	40.6	12.9	--	--	25,000 lbs
Airbus A320-200 Series	1CM009	7.2	31.6	--	--	25,000 lbs
Airbus A321-NEO	01P20CM132	2.9	12.5	--	--	30,000 lbs
Airbus A330-200 Series	2RR023	1.4	6.0	--	--	71,100 lbs
Airbus A330-200 Series	9PW094	1.4	26.0	--	--	35,550 lbs
Airbus A330-200 Series	9PW094	11.6	14.9	--	--	71,100 lbs
Airbus A330-300 Series	4GE080	4.3	10.7	--	--	67,500 lbs
Airbus A330-900N Series (Neo)	02P23RR141	4.3	26.7	--	--	71,100 lbs
Boeing 737-700 Series	3CM031	1.4	20.0	1.5	2	12,000 lbs
Boeing 737-700 Series	3CM031	23.2	17.6	--	--	24,000 lbs
Boeing 737-700 Series	3CM032	5.8	31.5	--	--	24,000 lbs
Boeing 737-800 Series	3CM032	4.3	18.3	--	--	13,150 lbs
Boeing 737-800 Series	3CM032	60.8	18.3	--	--	26,300 lbs
Boeing 737-800 Series	8CM051	15.9	21.0	--	--	26,300 lbs
Boeing 737-800 Series	8CM065	1.4	6.0	--	--	26,300 lbs
Boeing 737-800 Series	8CM066	1.4	3.0	1.5	2	13,150 lbs
Boeing 737-800 Series	8CM066	34.8	10.7	--	--	26,300 lbs
Boeing 737-9	01P20CM140	1.4	9.0	--	--	13,200 lbs
Boeing 737-9	01P20CM140	30.4	10.4	--	--	26,400 lbs
Boeing 737-900-ER	01P11CM116	1.4	3.0	--	--	13,150 lbs
Boeing 737-900-ER	01P11CM116	30.4	15.7	2.9	2	26,300 lbs
Boeing 737-900-ER	01P11CM121	1.4	8.0	--	--	13,150 lbs
Boeing 737-900-ER	01P11CM121	78.2	25.5	--	--	26,300 lbs
Boeing 767-200 Series Freighter	1GE012	1.4	6.0	--	--	48,000 lbs
Boeing 767-300 ER Freighter	1GE030	4.3	21.0	--	--	60,000 lbs
Boeing MD-11 Freighter	1GE031	2.9	44.5	--	--	61,500 lbs
Embraer ERJ175-LR	01P08GE197	10.1	11.2	--	--	13,800 lbs
	Total	**543.3**	**--**	**11.6**	**--**	

Notes: Totals may not equal sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

TABLE 27 ALTERNATIVE 2: 2032 PROPOSED ACTION AIRCRAFT RUN-UP ACTIVITY

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A319-100 Series	3IA006	1.5	3.0	--	--	22,000 lbs
Airbus A320-200 Series	01P08CM105	25.1	15.8	1.5	2.0	25,000 lbs
Airbus A320-200 Series	1CM009	3.0	69.5	--	--	25,000 lbs
Airbus A320-200 Series	3CM026	3.0	15.5	--	--	25,000 lbs
Airbus A321-200 Series	3CM025	4.4	36.7	--	--	30,000 lbs
Airbus A321-NEO	01P20CM132			1.5	2.0	30,000 lbs
Airbus A330-200 Series	9PW094	8.9	27.7	--	--	71,100 lbs
Airbus A330-300 Series	4GE080	1.5	37.0	--	--	67,500 lbs
Airbus A330-900N Series (Neo)	02P23RR141	1.5	26.0	--	--	71,100 lbs
Boeing 737-700 Series	3CM031	5.9	26.8	--	--	24,000 lbs
Boeing 737-700 Series	3CM032	7.4	56.4	--	--	24,000 lbs
Boeing 737-800 Series	01P11CM122	1.5	10.0	--	--	26,300 lbs
Boeing 737-800 Series	3CM032	20.7	27.6	--	--	26,300 lbs
Boeing 737-800 Series	3CM034	1.5	9.0	--	--	26,300 lbs
Boeing 737-800 Series	8CM051	3.0	40.5	--	--	26,300 lbs
Boeing 737-800 Series	8CM066	4.4	33.0	--	--	26,300 lbs
Boeing 737-9	01P20CM140	13.3	14.6	--	--	26,400 lbs
Boeing 737-900-ER	01P11CM116	14.8	20.2	--	--	26,300 lbs
Boeing 737-900-ER	01P11CM121	1.5	4.0	--	--	13,150 lbs
Boeing 737-900-ER	01P11CM121	23.6	25.1	--	--	26,300 lbs
Boeing MD-11 Freighter	1GE031	--	--	1.5	2.0	61,500 lbs
Embraer ERJ175-LR	01P08GE197	1.5	6.0	--	--	6,900 lbs
Embraer ERJ175-LR	01P08GE197	5.9	28.0	--	--	13,800 lbs
North Flow Secondary Location						
Airbus A330-200 Series	9PW094	1.5	38.0	--	--	71,100 lbs
South Flow Primary Location						
Airbus A319-100 Series	3IA006	1.5	15.0	--	--	22,000 lbs
Airbus A319-100 Series	3IA007	1.5	26.0	1.5	11.0	22,000 lbs
Airbus A320-200 Series	01P08CM105	3.0	6.0	--	--	12,500 lbs
Airbus A320-200 Series	01P08CM105	41.3	12.9	--	--	25,000 lbs
Airbus A320-200 Series	1CM009	7.4	31.6	--	--	25,000 lbs
Airbus A321-NEO	01P20CM132	3.0	12.5	--	--	30,000 lbs
Airbus A330-200 Series	2RR023	1.5	6.0	--	--	71,100 lbs
Airbus A330-200 Series	9PW094	1.5	26.0	--	--	35,550 lbs
Airbus A330-200 Series	9PW094	11.8	14.9	--	--	71,100 lbs
Airbus A330-300 Series	4GE080	4.4	10.7	--	--	67,500 lbs
Airbus A330-900N Series (Neo)	02P23RR141	4.4	26.7	--	--	71,100 lbs
Boeing 737-700 Series	3CM031	1.5	20.0	1.5	2.0	12,000 lbs
Boeing 737-700 Series	3CM031	23.6	17.6	--	--	24,000 lbs
Boeing 737-700 Series	3CM032	5.9	31.5	--	--	24,000 lbs
Boeing 737-800 Series	3CM032	4.4	18.3	--	--	13,150 lbs
Boeing 737-800 Series	3CM032	62.0	18.3	--	--	26,300 lbs

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Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Boeing 737-800 Series	8CM051	16.2	21.0	--	--	26,300 lbs
Boeing 737-800 Series	8CM065	1.5	6.0			26,300 lbs
Boeing 737-800 Series	8CM066	1.5	3.0	1.5	2.0	13,150 lbs
Boeing 737-800 Series	8CM066	35.4	10.7	--	--	26,300 lbs
Boeing 737-9	01P20CM140	1.5	9.0	--	--	13,200 lbs
Boeing 737-9	01P20CM140	31.0	10.4	--	--	26,400 lbs
Boeing 737-900-ER	01P11CM116	1.5	3.0	--	--	13,150 lbs
Boeing 737-900-ER	01P11CM116	31.0	15.7	3.0	2.0	26,300 lbs
Boeing 737-900-ER	01P11CM121	1.5	8.0	--	--	13,150 lbs
Boeing 737-900-ER	01P11CM121	79.7	25.5	--	--	26,300 lbs
Boeing 767-200 Series Freighter	1GE012	1.5	6.0	--	--	48,000 lbs
Boeing 767-300 ER Freighter	1GE030	4.4	21.0	--	--	60,000 lbs
Boeing MD-11 Freighter	1GE031	3.0	44.5	--	--	61,500 lbs
Embraer ERJ175-LR	01P08GE197	10.3	11.2	--	--	13,800 lbs
	Total	**553.46**	**--**	**11.85**	**--**	**--**

Notes: Totals may not equal sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

Table 28 Alternative 1: 2037 No Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A320-200 Series	01P08CM105	25.4	15.8	2.0	2.0	25,000 lbs.
Airbus A320-200 Series	1CM009	3.0	69.5	--	--	25,000 lbs.
Airbus A320-200 Series	3CM026	3.0	15.5	--	--	25,000 lbs.
Airbus A321-200 Series	3CM025	4.5	36.7	--	--	30,000 lbs.
Airbus A321-NEO	01P20CM132	--	--	2.0	2.0	30,000 lbs.
Airbus A330-200 Series	9PW094	9.0	27.7	--	--	71,100 lbs.
Airbus A330-300 Series	4GE080	1.5	37.0	--	--	67,500 lbs.
Airbus A330-900N Series (Neo)	02P23RR141	1.5	26.0	--	--	71,100 lbs.
Boeing 737-700 Series	3CM031	6.0	26.8	--	--	24,000 lbs.
Boeing 737-700 Series	3CM032	7.5	56.4	--	--	24,000 lbs.
Boeing 737-800 Series	01P11CM122	1.5	10.0	--	--	26,300 lbs.
Boeing 737-800 Series	3CM032	20.9	27.6	--	--	26,300 lbs.
Boeing 737-800 Series	3CM034	1.5	9.0	--	--	26,300 lbs.
Boeing 737-800 Series	8CM051	3.0	40.5	--	--	26,300 lbs.
Boeing 737-800 Series	8CM066	4.5	33.0	--	--	26,300 lbs.
Boeing 737-9	01P20CM140	13.4	14.6	--	--	26,400 lbs.
Boeing 737-900-ER	01P11CM116	14.9	20.2	--	--	26,300 lbs.
Boeing 737-900-ER	01P11CM121	23.9	25.1	--	--	13,150 lbs.
Boeing 737-900-ER	01P11CM121	1.5	4.0	--	--	26,300 lbs.
Embraer ERJ175-LR	01P08GE197	1.5	6.0	--	--	6,900 lbs.
Embraer ERJ175-LR	01P08GE197	6.0	28.0	--	--	13,800 lbs.

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Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Tango X Location						
Airbus A330-200 Series	9PW094	1.5	38.0	--	--	71,100 lbs.
South Flow Primary Location						
Airbus A320-200 Series	01P08CM105	3.0	6.0	--	--	12,500 lbs.
Airbus A320-200 Series	01P08CM105	41.8	12.9	--	--	25,000 lbs.
Airbus A320-200 Series	1CM009	7.5	31.6	--	--	25,000 lbs.
Airbus A321-NEO	01P20CM132	3.0	12.5	--	--	30,000 lbs.
Airbus A330-200 Series	2RR023	1.5	6.0	--	--	71,100 lbs.
Airbus A330-200 Series	9PW094	1.5	26.0	--	--	35,550 lbs.
Airbus A330-200 Series	9PW094	11.9	14.9	--	--	71,100 lbs.
Airbus A330-300 Series	4GE080	4.5	10.7	--	--	67,500 lbs.
Airbus A330-900N Series (Neo)	02P23RR141	4.5	26.7	--	--	71,100 lbs.
Boeing 737-700 Series	3CM031	1.5	20.0	2.0	2.0	12,000 lbs.
Boeing 737-700 Series	3CM031	23.9	17.6	--	--	24,000 lbs.
Boeing 737-700 Series	3CM032	6.0	31.5	--	--	24,000 lbs.
Boeing 737-700 Series	3CM032	62.7	18.3	--	--	26,300 lbs.
Boeing 737-800 Series	3CM032	4.5	18.3	--	--	13,150 lbs.
Boeing 737-800 Series	8CM051	16.4	21.0	--	--	26,300 lbs.
Boeing 737-800 Series	8CM065	1.5	6.0	--	--	26,300 lbs.
Boeing 737-800 Series	8CM066	1.5	3.0	2.0	2.0	13,150 lbs.
Boeing 737-800 Series	8CM066	35.8	10.7	--	--	26,300 lbs.
Boeing 737-9	01P20CM140	1.5	9.0	--	--	13,200 lbs.
Boeing 737-9	01P20CM140	31.4	10.4	--	--	26,400 lbs.
Boeing 737-900-ER	01P11CM116	1.5	3.0	--	--	13,150 lbs.
Boeing 737-900-ER	01P11CM116	31.4	15.7	3.9	2.0	26,300 lbs.
Boeing 737-900-ER	01P11CM121	1.5	8.0	--	--	13,150 lbs.
Boeing 737-900-ER	01P11CM121	80.6	25.5	--	--	26,300 lbs.
Boeing 767-200 Series Freighter	1GE012	1.5	6.0	--	--	48,000 lbs.
Boeing 767-300 ER Freighter	1GE030	4.5	21.0	--	--	60,000 lbs.
Embraer ERJ175-LR	01P08GE197	10.5	11.1	--	--	13,800 lbs.
	Total	**552.6**	**--**	**11.8**	**--**	**--**

Notes: Totals may not equal sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

Table 29 Alternative 2: 2037 Proposed Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A320-200 Series	01P08CM105	27.3	15.8	2.1	2.0	25,000 lbs.
Airbus A320-200 Series	1CM009	3.2	69.5	--	--	25,000 lbs.
Airbus A320-200 Series	3CM026	3.2	15.5	--	--	25,000 lbs.
Airbus A321-200 Series	3CM025	4.8	36.7	--	--	30,000 lbs.
Airbus A321-NEO	01P20CM132			2.1	2.0	30,000 lbs.

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Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Airbus A330-200 Series	9PW094	9.6	27.7	--	--	71,100 lbs.
Airbus A330-300 Series	4GE080	1.6	37.0	--	--	67,500 lbs.
Airbus A330-900N Series (Neo)	02P23RR141	1.6	26.0	--	--	71,100 lbs.
Boeing 737-700 Series	3CM031	6.4	26.8	--	--	24,000 lbs.
Boeing 737-700 Series	3CM032	8.0	56.4	--	--	24,000 lbs.
Boeing 737-800 Series	01P11CM122	1.6	10.0	--	--	26,300 lbs.
Boeing 737-800 Series	3CM032	22.4	27.6	--	--	26,300 lbs.
Boeing 737-800 Series	3CM034	1.6	9.0	--	--	26,300 lbs.
Boeing 737-800 Series	8CM051	3.2	40.5	--	--	26,300 lbs.
Boeing 737-800 Series	8CM066	4.8	33.0	--	--	26,300 lbs.
Boeing 737-9	01P20CM140	14.4	14.6	--	--	26,400 lbs.
Boeing 737-900-ER	01P11CM116	16.0	20.2	--	--	26,300 lbs.
Boeing 737-900-ER	01P11CM121	1.6	4.0	--	--	13,150 lbs.
Boeing 737-900-ER	01P11CM121	25.7	25.1	--	--	26,300 lbs.
Embraer ERJ175-LR	01P08GE197	1.6	6.0	--	--	6,900 lbs.
Embraer ERJ175-LR	01P08GE197	6.4	28.0	--	--	13,800 lbs.
North Flow Secondary Location						
Airbus A330-200 Series	9PW094	1.6	38.0	--	--	71,100 lbs.
South Flow Primary Location						
Airbus A320-200 Series	01P08CM105	3.2	6.0	--	--	12,500 lbs.
Airbus A320-200 Series	01P08CM105	44.9	12.9	--	--	25,000 lbs.
Airbus A320-200 Series	1CM009	8.0	31.6	--	--	25,000 lbs.
Airbus A321-NEO	01P20CM132	3.2	12.5	--	--	30,000 lbs.
Airbus A330-200 Series	2RR023	1.6	6.0	--	--	71,100 lbs.
Airbus A330-200 Series	9PW094	1.6	26.0	--	--	35,550 lbs.
Airbus A330-200 Series	9PW094	12.8	14.9	--	--	71,100 lbs.
Airbus A330-300 Series	4GE080	4.8	10.7	--	--	67,500 lbs.
Airbus A330-900N Series (Neo)	02P23RR141	4.8	26.7	--	--	71,100 lbs.
Boeing 737-700 Series	3CM031	1.6	20.0	2.1	2.0	12,000 lbs.
Boeing 737-700 Series	3CM031	25.7	17.6	--	--	24,000 lbs.
Boeing 737-700 Series	3CM032	6.4	31.5	--	--	24,000 lbs.
Boeing 737-700 Series	3CM032	67.3	18.3	--	--	26,300 lbs.
Boeing 737-800 Series	3CM032	4.8	18.3	--	--	13,150 lbs.
Boeing 737-800 Series	8CM051	17.6	21.0	--	--	26,300 lbs.
Boeing 737-800 Series	8CM065	1.6	6.0	--	--	26,300 lbs.
Boeing 737-800 Series	8CM066	1.6	3.0	2.1	2.0	13,150 lbs.
Boeing 737-800 Series	8CM066	38.5	10.7	--	--	26,300 lbs.
Boeing 737-9	01P20CM140	1.6	9.0	--	--	13,200 lbs.
Boeing 737-9	01P20CM140	33.7	10.4	--	--	26,400 lbs.
Boeing 737-900-ER	01P11CM116	1.6	3.0	--	--	13,150 lbs.
Boeing 737-900-ER	01P11CM116	33.7	15.7	4.2	2.0	26,300 lbs.
Boeing 737-900-ER	01P11CM121	1.6	8.0	--	--	13,150 lbs.
Boeing 737-900-ER	01P11CM121	86.6	25.5	--	--	26,300 lbs.
Boeing 767-200 Series Freighter	1GE012	1.6	6.0	--	--	48,000 lbs.
Boeing 767-300 ER Freighter	1GE030	4.8	21.0	--	--	60,000 lbs.

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Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Embraer ERJ175-LR	01P08GE197	11.2	11.2	--	--	13,800 lbs.
	Total	**593.3**	**--**	**12.7**	**--**	**--**

Notes: Totals may not equal sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

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Noise Modeling Protocol
Existing and Future Conditions

FINAL – September 2023

PREPARED FOR
Port of Seattle

PREPARED BY
Landrum & Brown, Incorporated

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1 Existing Condition Noise Modeling Methodology

For aviation noise analyses, the Federal Aviation Administration (FAA) has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of annual Day-Night Sound Equivalent (DNL), the FAA's primary noise metric. To evaluate aircraft noise, the FAA has an approved computer model, the Aviation Environmental Design Tool (AEDT) that simulates aircraft activity at an airport. AEDT replaced the Integrated Noise Model (INM), as the tool for environmental modeling of FAA actions to determine if significant noise impacts would result. The analysis of the noise exposure for the existing conditions and the future alternatives around Seattle-Tacoma International Airport (SEA or Airport) will be prepared using the FAA's AEDT Version 3e.

The noise pattern calculated by the AEDT for an airport is a function of several factors, including: the number of aircraft operations during the period evaluated, the types of aircraft flown, the time of day when they are flown, the way they are flown, how frequently each runway is used for landing and takeoff, and the routes of flight used to and from the runways. Substantial variations in any one of these factors may, when extended over a long period of time, cause marked changes to the noise pattern.

The following sections present the methodology and modeling input assumptions for the Existing (2022) condition. The methodology and modeling input assumptions for the future conditions are presented later in this document.

1.1 Aircraft Activity Levels and Fleet Mix

According to the FAA's Air Traffic Activity System (ATADS), there were 401,351 total annual operations at SEA from January 2022 through December 2022. Specific aircraft types and times of operation were obtained from the Port of Seattle's 2022 EnvironmentalVue Flight Track Monitoring System data. Additionally, specific airframe and engine combinations were developed from the EnvironmentalVue Flight Track Monitoring System data at SEA and an airline fleet database downloaded from Diio Mi[1]. **Table 1** presents the Existing (2022) condition fleet operations at SEA by airframe and engine code for each aircraft category. Missed approach operational totals are included in Table 1. For more information on missed approaches including time of day, runway use, flight track location and allocation input parameters, see **Appendix B**.

Table 1 Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Commercial Jets			
Airbus A319-100 Series	A319-131	01P10IA020	10.1
Airbus A319-100 Series	A319-131	3CM028	87.8
Airbus A319-100 Series	A319-131	3IA006	1,977.1
Airbus A319-100 Series	A319-131	3IA007	1,058.7
Airbus A319-100 Series	A319-131	4CM035	78.7
Airbus A319-100 Series	A319-131	8IA09	36.3
Airbus A320-200 Series	A320-211	01P08CM105	13,637.0
Airbus A320-200 Series	A320-232	01P10IA021	1,224.2
Airbus A320-200 Series	A320-232	01P10IA022	264.4
Airbus A320-200 Series	A320-211	1CM008	333.1
Airbus A320-200 Series	A320-211	1CM009	1,351.4
Airbus A320-200 Series	A320-232	1IA003	2,575.6
Airbus A320-200 Series	A320-211	3CM026	1,466.4
Airbus A320-200 Series	A320-232	8IA010	2.0
Airbus A320-NEO	A320-271N	01P20CM128	679.2
Airbus A320-NEO	A320-271N	01P22PW163	1,077.9
Airbus A321-200 Series	A321-232	01P08CM104	994.1
Airbus A321-200 Series	A321-232	01P10IA025	6,031.3

[1] Diio Mi: Market Intelligence for the Aviation Industry, Accessed on February 3, 2022, https://mi.diio.net. Diio Mi is a standard airline industry source of information.

Table 1 Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Airbus A321-200 Series	A321-232	3CM025	1,026.4
Airbus A321-NEO	A321-232	01P18PW157	1,612.8
Airbus A321-NEO	A321-232	01P20CM132	4,783.8
Airbus A330-200 Series	A330-343	2RR023	1,834.8
Airbus A330-200 Series	A330-343	9PW094	26.2
Airbus A330-300 Series	A330-343	2RR023	486.5
Airbus A330-300 Series	A330-301	4GE080	493.5
Airbus A330-300 Series	A330-343	7PW082	66.6
Airbus A330-300 Series	A330-301	9PW094	1,393.8
Airbus A330-300 Series	A330-301	9PW095	327.0
Airbus A330-900N Series (Neo)	A330-343	02P23RR141	2,659.4
Airbus A340-300 Series	A340-211	2CM015	53.5
Airbus A350-1000 Series	A350-941	18RR080	4.0
Airbus A350-900 series	A350-941	01P18RR124	764.0
Boeing 717-200 Series	717200	4BR002	1.0
Boeing 737-300 Series	737300	1CM004	6.1
Boeing 737-300 Series	737300	1CM005	8.1
Boeing 737-700 Series	737700	3CM030	424.9
Boeing 737-700 Series	737700	3CM031	14,350.5
Boeing 737-700 Series	737700	3CM032	2,611.9
Boeing 737-700 Series	737700	8CM051	10.1
Boeing 737-700 Series	737700	8CM062	104.0
Boeing 737-700 Series	737700	8CM063	2,434.3
Boeing 737-8	7378MAX	01P20CM135	41.4
Boeing 737-8	7378MAX	01P20CM136	1,340.3
Boeing 737-8	7378MAX	01P20CM140	1,236.3
Boeing 737-800 Series	737800	01P11CM114	399.7
Boeing 737-800 Series	737800	01P11CM116	5,439.9
Boeing 737-800 Series	737800	01P11CM122	2,968.2
Boeing 737-800 Series	737800	01P11CM125	660.0
Boeing 737-800 Series	737800	01P11CM126	62.6
Boeing 737-800 Series	737800	3CM032	16,652.6
Boeing 737-800 Series	737800	3CM034	1,607.7
Boeing 737-800 Series	737800	8CM051	22795.9
Boeing 737-800 Series	737800	8CM064	165.5
Boeing 737-800 Series	737800	8CM065	2,128.5
Boeing 737-800 Series	737800	8CM066	9,996.6
Boeing 737-800BCF	737800	3CM034	137.3
Boeing 737-9	7378MAX	01P20CM136	517.7
Boeing 737-9	7378MAX	01P20CM140	20,410.0
Boeing 737-900 Series	737800	01P11CM114	806.4
Boeing 737-900 Series	737800	8CM051	9,114.5
Boeing 737-900-ER	737800	01P11CM116	19,205.0
Boeing 737-900-ER	737800	01P11CM121	54527.4
Boeing 737-900-ER_MA	737800_MA	01P11CM121_MA	1554.5
Boeing 737-900-ER	737800	01P11CM125	167.5
Boeing 737-900-ER	737800	3CM034	773.1
Boeing 737-900-ER	737800	8CM065	861.9
Boeing 757-200 Series	757PW	4PW072	5,722.4
Boeing 757-200 Series	757PW	4PW073	197.8
Boeing 757-200 Series	757RR	5RR038	567.2
Boeing 757-200 Series	757RR	5RR039	37.3
Boeing 757-300 Series	757300	3RR028	2.0
Boeing 757-300 Series	757300	5RR039	10.1
Boeing 757-300 Series	757300	XPW204	1,741.0

Table 1 Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Boeing 767-300 ER	7673ER	12PW102	12.1
Boeing 767-300 ER	7673ER	1GE029	75.7
Boeing 767-300 ER	7673ER	1GE030	752.9
Boeing 767-300 ER	7673ER	1PW043	543.0
Boeing 767-300 ER	7673ER	1RR011	1.0
Boeing 767-300 ER	7673ER	2GE055	303.8
Boeing 767-400 ER	767400	8GE101	263.4
Boeing 777-200-ER	777200	10PW099	81.7
Boeing 777-200-ER	777200	2RR027	287.6
Boeing 777-200-ER	777200	3GE060	127.2
Boeing 777-200-ER	777200	3GE064	2.0
Boeing 777-200-ER	777200	8GE100	132.2
Boeing 777-200-LR	777300	01P21GE216	50.5
Boeing 777-200-LR	777300	01P21GE217	188.7
Boeing 777-300 ER	7773ER	01P21GE217	1,389.7
Boeing 787-10 Dreamliner	7879	01P17GE211	132.2
Boeing 787-10 Dreamliner	7879	02P23RR134	144.3
Boeing 787-10 Dreamliner	7879	17GE179	285.6
Boeing 787-8 Dreamliner	7878R	01P17GE206	120.1
Boeing 787-8 Dreamliner	7878R	01P17GE210	4.0
Boeing 787-8 Dreamliner	7878R	11GE137	189.7
Boeing 787-8 Dreamliner	7878R	11GE138	466.3
Boeing 787-9 Dreamliner	7879	01P17GE211	890.2
Boeing 787-9 Dreamliner	7879	01P17GE214	6.1
Boeing 787-9 Dreamliner	7879	02P23RR131	200.8
Boeing 787-9 Dreamliner	7879	12RR067	919.4
Boeing 787-9 Dreamliner	7879	12RR068	387.6
Bombardier CRJ-900-ER	CRJ9-ER	01P08GE190	22.2
Bombardier CS100	737700	01P20PW183	9,770.5
Bombardier CS300	737700	01P20PW183	97.9
Bombardier CS300	737700	01P20PW184	2,180.0
Bombardier Global Express	BD-700-1A10	01P04BR013	4.3
Embraer ERJ175-LR	EMB175	01P08GE197	67693.6
Embraer ERJ175-LR_MA	EMB175_MA	01P08GE197_MA	839.5
		Subtotal	***338,782.9***
Cargo Jets			
Airbus A300F4-600 Series	A300-622R	1GE020	3.0
Airbus A300F4-600 Series	A300-622R	1PW048	85.8
Airbus A300F4-600 Series	A300-622R	3GE056	155.4
Boeing 747-400 ERF	747400RN	12PW102	88.8
Boeing 747-400 Series	747400	1GE024	790.2
Boeing 747-400 Series Freighter	747400	01P03GE187	76.7
Boeing 747-400 Series Freighter	747400	1GE024	6.1
Boeing 747-400 Series Freighter	747400	1PW041	7.1
Boeing 747-400 Series Freighter	747400	4RR037	74.7
Boeing 747-400BCF	747400	1GE024	249.3
Boeing 747-400BCF	747400	1PW041	10.1
Boeing 747-8F	7478	01P17GE215	280.6
Boeing 747-8F	7478	13GE156	74.7
Boeing 747-8F	7478	8GENX1	242.2
Boeing 757-200 Series Freighter	757RR	3RR028	101.9
Boeing 757-200 Series Freighter	757PW	4PW072	48.4
Boeing 757-200 Series Freighter	757PW	4PW073	49.5
Boeing 757-200 Series Freighter	757RR	5RR039	2.0
Boeing 767-200 Series Freighter	767CF6	1GE010	259.4

Table 1 Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Boeing 767-200 Series Freighter	767CF6	1GE012	129.2
Boeing 767-200 Series Freighter	767JT9	1PW026	23.2
Boeing 767-300 ER Freighter	7673ER	1GE030	5,679.0
Boeing 767-300 ER Freighter	7673ER	2GE055	559.1
Boeing 767-300BCF	767300	2GE055	57.5
Boeing 777 Freighter	777200	01P21GE216	1,016.3
Boeing 777 Freighter	777300	01P21GE217	24.2
Boeing 777-200-LR_C	777300_C	01P21GE216_C	40.4
Boeing MD-10-30	DC1030	3GE074	64.6
Boeing MD-11 Freighter	MD11PW	12PW102	296.7
Boeing MD-11 Freighter	MD11GE	1GE031	1,489.7
Boeing MD-11 Freighter	MD11PW	1PW052	484.4
		Subtotal	***12,470.3***
Regional Jets			
Bombardier CRJ-200-LR	CL600	01P05GE189	6.5
Bombardier CRJ-700	CRJ9-ER	01P08GE192	6.1
Bombardier CRJ-700-ER	CRJ9-ER	01P08GE190	12.1
Bombardier CRJ-700-ER	CRJ9-ER	01P08GE192	94.9
Bombardier CRJ-700-ER	CRJ9-ER	5GE083	47.4
		Subtotal	***166.9***
Turboprop			
Bombardier de Havilland Dash 8 Q400	DHC830	PW150A	44,587.6
Raytheon Beech 99	DHC6	PT6A27	10.8
Raytheon Beech 99	DHC6	PT6A36	596.2
Raytheon Super King Air 200	C12	PT660A	4.3
Raytheon Super King Air 200	DHC6	PT6A42	2.2
		Subtotal	***45,201.0***
Cargo Prop			
Cessna 208 Caravan	PA42	P6114A	1,162.3
Cessna 208 Caravan	CNA208	PT6A14	1,146.2
Raytheon Super King Air 300	DHC6	PT660A	72.1
		Subtotal	***2,380.6***
GA Jets			
Bombardier Challenger 300	CL600	01P14HN011	36.6
Bombardier Challenger 300	CL600	11HN003	37.7
Bombardier Challenger 350	CL600	01P14HN011	142.1
Bombardier Challenger 600	CL600	01P05GE189	37.7
Bombardier Challenger 600	CL601	1GE034	25.8
Bombardier Global 5000	BD-700-1A11	01P04BR013	28.0
Bombardier Global 5500	BD-700-1A11	01P20BR015	2.2
Bombardier Learjet 35A/36A (C-21A)	C21A	1AS001	3.2
Bombardier Learjet 40	LEAR35	TFE731	5.4
Bombardier Learjet 45	LEAR35	1AS001	14.0
Bombardier Learjet 45	LEAR35	TFE731	36.6
Bombardier Learjet 60	LEAR35	7PW077	22.6
Bombardier Learjet 70	LEAR35	1AS002	2.2
Cessna 560 Citation Encore	CNA560E	PW530	10.8
Cessna 560 Citation Excel	CNA560XL	PW530	36.6
Cessna 560 Citation Ultra	CNA560U	1PW038	8.6
Cessna 560 Citation XLS	CNA560XL	PW530	59.7
Cessna 680 Citation Sovereign	CNA680	03P14PW194	15.8
Cessna 680 Citation Sovereign	CNA680	7PW078	31.7
Cessna 680-A Citation Latitude	CNA680	7PW078	83.9
Cessna 700 Citation Longitude	CNA680	01P18HN013	15.1
Cessna 750 Citation X	CNA750	6AL024	82.8

Table 1 Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Cessna CitationJet CJ2 (Cessna 525A)	CNA525C	1PW036	31.2
Cessna CitationJet CJ3 (Cessna 525B)	CNA525C	1PW038	66.7
Dassault Falcon 2000	CNA750	CF700D	58.1
Dassault Falcon 50	FAL900EX	1AS002	196.5
Embraer Legacy 450 (EMB-545)	CNA510	01P14HN014	49.5
Embraer Phenom 300 (EMB-505)	CNA55B	PW530	42.1
Gulfstream G200	CNA750	7PW077	24.8
Gulfstream G450	GIV	11RR048	29.1
Gulfstream G650	G650ER	01P11BR016	23.7
Gulfstream G650ER	G650ER	01P11BR016	15.1
Gulfstream IV-SP	GIV	11RR048	7.5
Gulfstream V-SP	GV	01P06BR014	29.1
Honda HA-420 Hondajet	CNA680	PW610F	18.7
Raytheon Beechjet 400	MU3001	1PW037	23.7
Raytheon Hawker 800	LEAR35	1AS002	36.0
		Subtotal	***1,390.5***
GA Prop			
Beechcraft Bonanza 35 (FAS)	GASEPV	TIO540	22.3
Cessna 150 Series	GASEPF	O200	18.0
Cessna 152 (FAS)	GASEPF	O200	70.5
Cessna 172 Skyhawk	CNA172	IO320	461.8
Cessna 182	CNA182	IO360	97.2
Cessna 206	CNA20T	TIO540	15.1
Cirrus SR22 Turbo (FAS)	COMSEP	TIO540	69.1
Mooney M20-K	GASEPV	TSIO36	16.6
Pilatus PC-12	CNA208	PT6A67	54.7
Piper PA-28 Cherokee Series	GASEPF	IO320	59.7
Raytheon Beech Bonanza 36	GASEPV	TIO540	18.7
		Subtotal	***903.7***
Military			
Embraer Phenom 300 (EMB-505)_M	CNA55B_M	PW530_M	40.0
Raytheon Super King Air 200_M	C12_M	PT660A_M	14.0
Cessna 172 Skyhawk_M	CNA172_M	IO320_M	1.0
		Subtotal	***55.0***
		Grand Total	**401,351.0**

Note: Totals may not sum due to rounding.
Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

1.2 Day/Night Operating Characteristics

Through analysis of the EnvironmentalVue Flight Track Monitoring System data, 10 operator categories were developed for aircraft operating at SEA. **Table 2** and **Table 3** presents the assumed day and night operating characteristics assumptions for the Existing (2022) condition per operator category.

Table 2 Arrival Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	87.7%	12.3%
Narrow Body Jet	85.2%	14.8%
Regional Jet	95.1%	4.9%
Turboprop	89.1%	10.9%
Cargo		
Heavy Jet	59.3%	40.7%
Narrow Body Jet	96.0%	4.0%
Prop	100.0%	0.0%
General Aviation		
Jet	95.6%	4.4%
Turboprop	100.0%	0.0%
Prop	85.3%	14.7%
Grand Total	**85.1%**	**14.9%**

Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

Table 3 Departure Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	91.0%	9.0%
Narrow Body Jet	82.7%	17.3%
Regional Jet	68.8%	31.2%
Turboprop	87.4%	12.6%
Cargo		
Heavy Jet	62.5%	37.5%
Narrow Body Jet	11.0%	89.0%
Prop	97.6%	2.4%
General Aviation		
Jet	95.2%	4.8%
Turboprop	99.7%	0.3%
Prop	94.8%	5.2%
Grand Total	**83.0%**	**17.0%**

Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

1.3 Aircraft Runup Activity Levels

Depending on the frequency, engine run-ups may influence the size and location of noise exposure contours. **Exhibit 1** shows the North and South primary and secondary aircraft run-up locations at SEA. Aircraft utilizing the North Flow Primary location are oriented at 340 degrees, while aircraft utilizing the South Flow Primary location are oriented at 160 degrees. Aircraft run-up activity logs were utilized to determine the amount of run-up operations, the location of the run-up, average duration and the associated airframe and engine. A total of 477 run-up operations were reported in the run-up activity logs at SEA in 2022. **Table 4** presents the amount of run-up operations, average duration and thrust settings per airframe and engine type that occurred at each SEA run-up location in 2022. The AEDT run-up fleet mix below is representative of all run-ups occurring at SEA. There are a total of 23 different AEDT airframes that were identified, AEDT engine codes were assigned based on airline.

Exhibit 1: Aircraft Run-up Locations

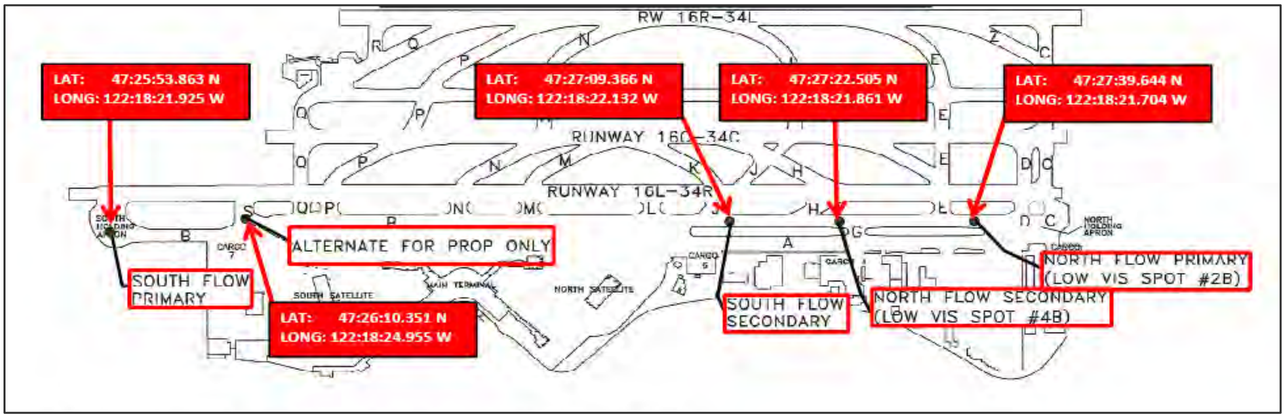


Table 4 Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings (lbs.)
North Flow Primary Location						
Airbus A319-100 Series	3IA006	1.0	3.0	--	--	22000
Airbus A320-200 Series	01P08CM105	17.0	15.8	1.0	2.0	25000
Airbus A320-200 Series	1CM009	2.0	69.5	--	--	25000
Airbus A320-200 Series	3CM026	2.0	15.5	--	--	25000
Airbus A321-200 Series	3CM025	3.0	36.7	--	--	30000
Airbus A321-NEO	01P20CM132	--	--	1.0	2.0	30000
Airbus A330-200 Series	9PW094	6.0	27.7	--	--	71100
Airbus A330-300 Series	4GE080	1.0	37.0	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	1.0	26.0	--	--	71100
Boeing 737-700 Freighter	3CM031	5.0	16.8	--	--	24000
Boeing 737-700 Series	3CM031	4.0	26.8	--	--	24000
Boeing 737-700 Series	3CM032	5.0	56.4	--	--	24000
Boeing 737-800 Series	01P11CM122	1.0	10.0	--	--	26300
Boeing 737-800 Series	3CM032	14.0	27.6	--	--	26300
Boeing 737-800 Series	3CM034	1.0	9.0	--	--	26300
Boeing 737-800 Series	8CM051	2.0	40.5	--	--	26300
Boeing 737-800 Series	8CM066	3	33.0	--	--	26300
Boeing 737-9	01P20CM140	9.0	14.6	--	--	26400
Boeing 737-900 Series	8CM051	10.0	8.0	--	--	26300
Boeing 737-900-ER	01P11CM116	10.0	20.2	--	--	26300
Boeing 737-900-ER	01P11CM121	16.0	25.1	--	--	26300
Boeing 737-900-ER	01P11CM121	1.0	4.0	--	--	13150
Boeing MD-11 Freighter	1GE031	--	--	1.0	2.0	61500
Bombardier de Havilland Dash 8 Q400	PW150A	7.0	15.9	--	--	4918
Cessna 560 Citation Encore	PW530	1.0	15.0	--	--	3313
Embraer ERJ175-LR	01P08GE197	4.0	28.0	--	--	13800
Embraer ERJ175-LR	01P08GE197	1.0	6.0	--	--	6900
South Primary Location						
Airbus A319-100 Series	3IA006	1.0	15.0	--	--	22000
Airbus A319-100 Series	3IA007	1.0	26.0	1.0	11.0	22000
Airbus A320-200 Series	01P08CM105	28.0	12.9	--	--	25000
Airbus A320-200 Series	01P08CM105	2.0	6.0	--	--	12500
Airbus A320-200 Series	1CM009	5.0	31.6	--	--	25000
Airbus A321-NEO	01P20CM132	2.0	12.5	--	--	30000
Airbus A330-200 Series	2RR023	1.0	6.0	--	--	71100
Airbus A330-200 Series	9PW094	8.0	14.9	--	--	71100
Airbus A330-200 Series	9PW094	1.0	26.0	--	--	35550
Airbus A330-300 Series	4GE080	3.0	10.7	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	3.0	26.7	--	--	71100

Table 4 Aircraft Run-up Activity (Continued)

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings (lbs.)
Boeing 737-700 Freighter	3CM031	11.0	27.8	--	--	24000
Boeing 737-700 Freighter	3CM031	1.0	5.0	--	--	12000
Boeing 737-700 Series	3CM031	16.0	17.6	--	--	24000
Boeing 737-700 Series	3CM031	1.0	20.0	1.0	2.0	12000
Boeing 737-700 Series	3CM032	4.0	31.5	--	--	24000
Boeing 737-800 Series	3CM032	42.0	18.3	--	--	26300
Boeing 737-800 Series	3CM032	3.0	18.3	--	--	13150
Boeing 737-800 Series	8CM051	11.0	21.0	--	--	26300
Boeing 737-800 Series	8CM065	1.0	6.0	--	--	26300
Boeing 737-800 Series	8CM066	24.0	10.7	--	--	26300
Boeing 737-800 Series	8CM066	1.0	3.0	1.0	2.0	13150
Boeing 737-800BCF	3CM034	1.0	11.0	--	--	26300
Boeing 737-9	01P20CM140	21.0	10.4	--	--	26400
Boeing 737-9	01P20CM140	1.0	9.0	--	--	13200
Boeing 737-900 Series	01P11CM114	1.0	4.0	--	--	26300
Boeing 737-900 Series	8CM051	22.0	8.7	--	--	26300
Boeing 737-900 Series	8CM051	1.0	26.0	2.0	2.0	13150
Boeing 737-900-ER	01P11CM116	21.0	15.7	2.0	2.0	26300
Boeing 737-900-ER	01P11CM116	1.0	3.0	--	--	13150
Boeing 737-900-ER	01P11CM121	54.0	25.5	--	--	26300
Boeing 737-900-ER	01P11CM121	1.0	8.0	--	--	13150
Boeing 757-200 Series	4PW072	2.0	36.5	--	--	38300
Boeing 757-300 Series	XPW204	4.0	27.0	--	--	43100
Boeing 767-200 Series Freighter	1GE012	1.0	6.0	--	--	48000
Boeing 767-300 ER Freighter	1GE030	3.0	21.0	--	--	60000
Boeing MD-11 Freighter	1GE031	2.0	44.5	--	--	61500
Bombardier de Havilland Dash 8 Q400	PW150A	23.0	15.2	--	--	4918
Bombardier de Havilland Dash 8 Q400	PW150A	1.0	10.0	--	--	2459
Bombardier Learjet 60	7PW077	1.0	9.0	--	--	3500
Cessna 560 Citation Encore	PW530	1.0	4.0	--	--	3313
Embraer ERJ175-LR	01P08GE197	7.0	11.1	--	--	13800
Tango X Location						
Airbus A330-200 Series	9PW094	1.0	38.0	--	--	71100
	Total	**467.0**		**10.0**		

Source: SEA Runup log 2022, L&B Analysis, 2023.

1.4 Runway Definition

SEA is a commercial service airport that currently encompasses 2,500 acres (approximately 3.9 square miles) in King County. The airfield system consists of 3 runways, (16L/34R, 16C/34C, 16R/34L) oriented in a north-south direction. **Table 5** provides the length and width of the current runways at SEA used in AEDT.

Table 5 Runways

Runway	Length (feet)	Width (feet)
16R/34L	8,500	150
16C/34C	9,425	150
16L/34R	11,899	150

Source: AEDT Version 3e.

Table 6 provides the coordinates, elevation, crossing height and glide slope of the current runway ends at SEA used in AEDT:

Table 6 Runway End Definition

Runway End	Latitude	Longitude	Elevation (feet)	Crossing Height (feet)	Glide Slope (degrees)
16L	47.4637952222	-122.307750222	432.3	76	3
34R	47.4311722778	-122.30803825	346.7	81	2.75*
16C	47.4638098611	-122.31098375	429.4	71	3
34C	47.4379712778	-122.311209833	362.9	73	3
16R	47.4638363611	-122.317856833	414.8	69	3
34L	47.4405338056	-122.318058056	356.2	75	3

*AEDT utilizes a standard 3.0-degree glide on arrival profiles. Runway 34R glide slope of 2.75 is modeled as a 3.0-degree glide slope until threshold crossing.
Source: AEDT Version 3e.

1.5 Runway End Utilization

Average-annual day runway end utilization was derived from EnvironmentalVue Flight Track Monitoring System data from January 2022 through December 2022. The Airport primarily operates in a south flow configuration due to the prevailing winds. A review of EnvironmentalVue Flight Track Monitoring System 2022 data shows that SEA operated in south flow configuration approximately 70 percent of the time, and in north flow configuration approximately 30 percent of the time.

Table 7 and **Table 8** present the assumed arrival and departure runway utilization for the existing (2022) condition that was developed from the EnvironmentalVue Flight Track Monitoring System data. The runway utilization was developed for each of the 10 operator categories occurring at SEA.

Table 7 Arrival Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	0.4%	54.6%	16.0%	0.3%	7.1%	21.6%	100.0%
Narrow Body Jet	1.0%	2.7%	66.2%	0.6%	28.2%	1.3%	100.0%
Regional Jet	0.0%	4.9%	68.1%	0.0%	26.9%	0.0%	100.0%
Turboprop	0.4%	1.5%	70.4%	0.3%	26.8%	0.6%	100.0%
Cargo							
Heavy Jet	3.8%	47.0%	20.7%	2.5%	8.3%	17.7%	100.0%
Narrow Body Jet	1.0%	9.0%	62.0%	0.0%	26.0%	2.0%	100.0%
Prop	0.5%	9.4%	59.7%	0.5%	29.6%	0.4%	100.0%
General Aviation							
Jet	0.6%	1.7%	63.6%	0.3%	32.9%	0.9%	100.0%
Turboprop	0.3%	29.7%	39.6%	0.3%	19.7%	10.4%	100.0%
Prop	6.1%	7.0%	49.7%	3.5%	19.9%	13.8%	100.0%
Overall Arrival Total	**1.0%**	**6.1%**	**63.1%**	**0.6%**	**26.6%**	**2.6%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: SEA Environmental Vue 2022, L&B Analysis, 2023.

Table 8 Departure Runway Utilization per Operator Category

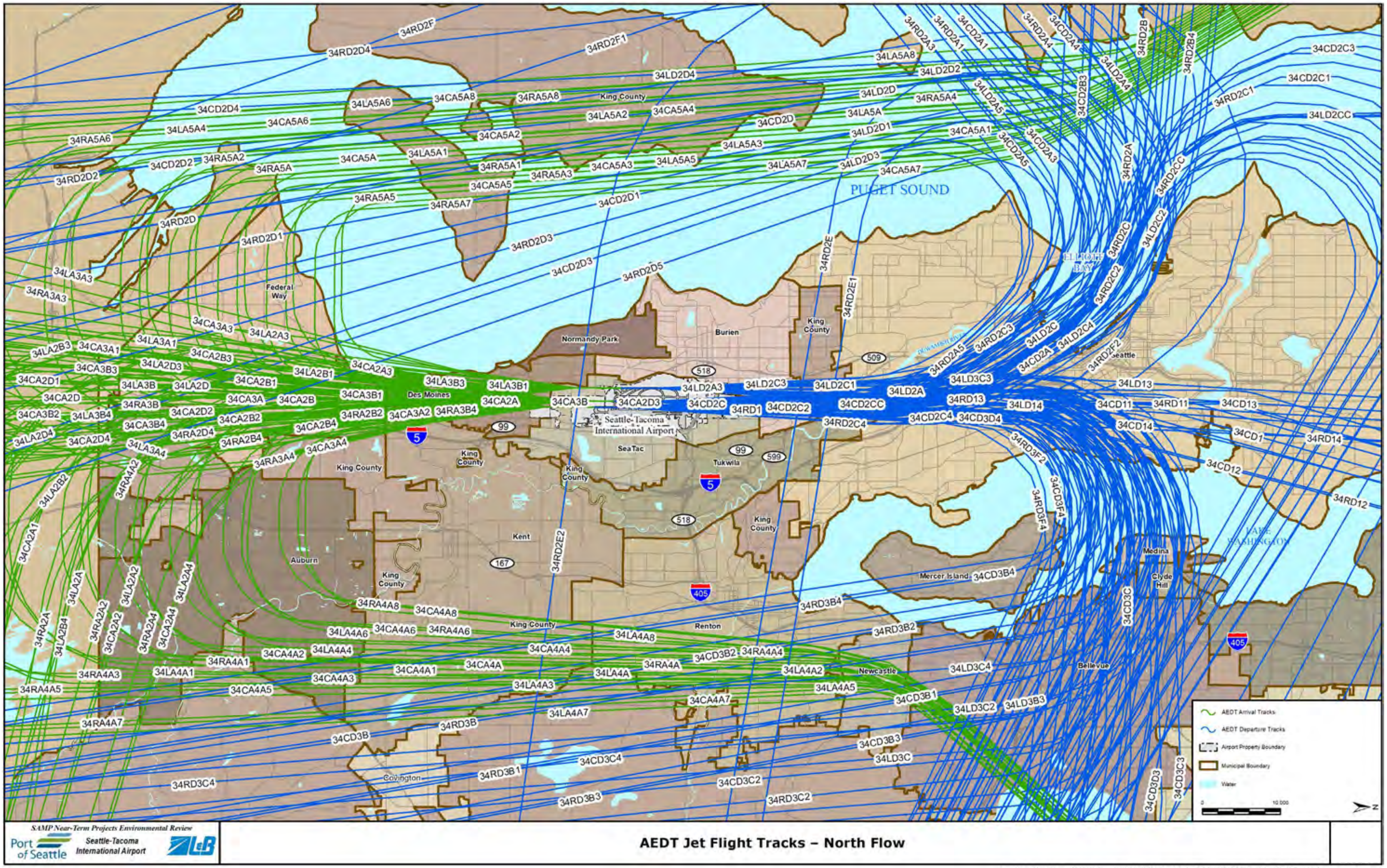
Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	0.6%	68.6%	0.0%	0.3%	0.0%	30.5%	100.0%
Narrow Body Jet	4.4%	66.4%	0.0%	0.8%	0.0%	28.4%	100.0%
Regional Jet	2.4%	71.0%	0.0%	0.0%	0.0%	26.6%	100.0%
Turboprop	8.9%	63.0%	0.0%	1.8%	0.0%	26.3%	100.0%
Cargo							
Heavy Jet	2.5%	70.4%	0.0%	1.6%	0.0%	25.5%	100.0%
Narrow Body Jet	0.0%	63.0%	0.0%	0.0%	0.0%	37.0%	100.0%
Prop	30.4%	47.7%	0.1%	2.7%	0.0%	19.1%	100.0%
General Aviation							
Jet	63.9%	5.2%	0.0%	30.1%	0.1%	0.7%	100.0%
Turboprop	12.1%	63.4%	0.0%	1.4%	0.0%	23.2%	100.0%
Prop	42.7%	11.5%	8.1%	33.1%	4.6%	0.0%	100.0%
Overall Departure Total	**5.1%**	**65.8%**	**0.0%**	**1.1%**	**0.0%**	**28.0%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

1.6 Flight Tracks

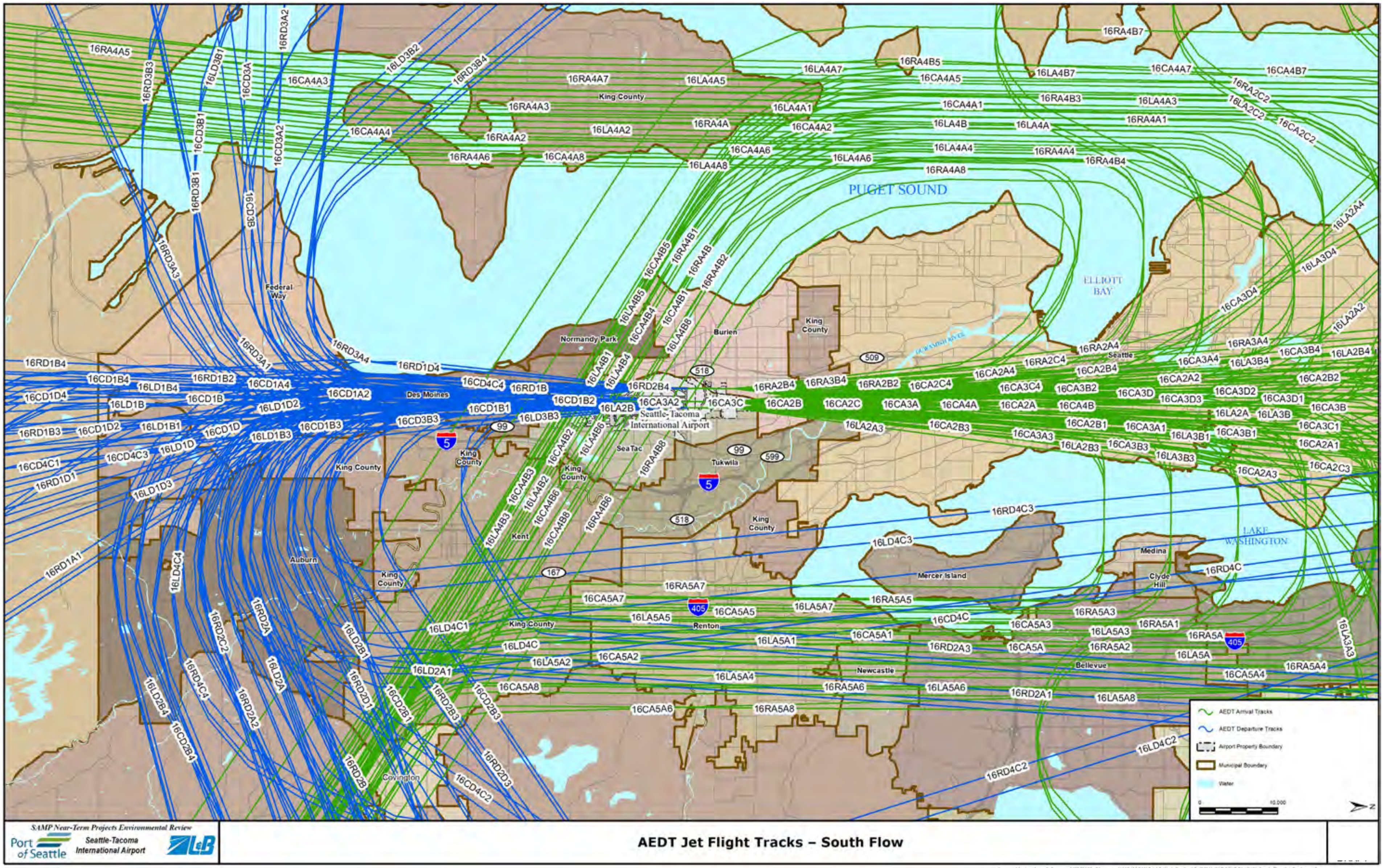
There are two components to flight tracks used for noise modeling, flight track definition/location and percentage of use. Flight track definition and percent utilization was based on EnvironmentalVue Flight Track Monitoring System data from the months of January, February, March, April, May, July, September and October of 2022 and previous studies. The North Flow and South Flow Jet flight tracks are presented in Exhibit 2 and Exhibit 3. The North Flow and South Flow Turboprop and Prop flight tracks are presented in **Exhibit 2** and **Exhibit 3**. Flight tracks for missed approaches are provided in **Exhibit 4** and **Exhibit 5**. Flight track utilization percentages are presented in **Appendix A**.

Exhibit 2: North Flow Jet Flight Tracks



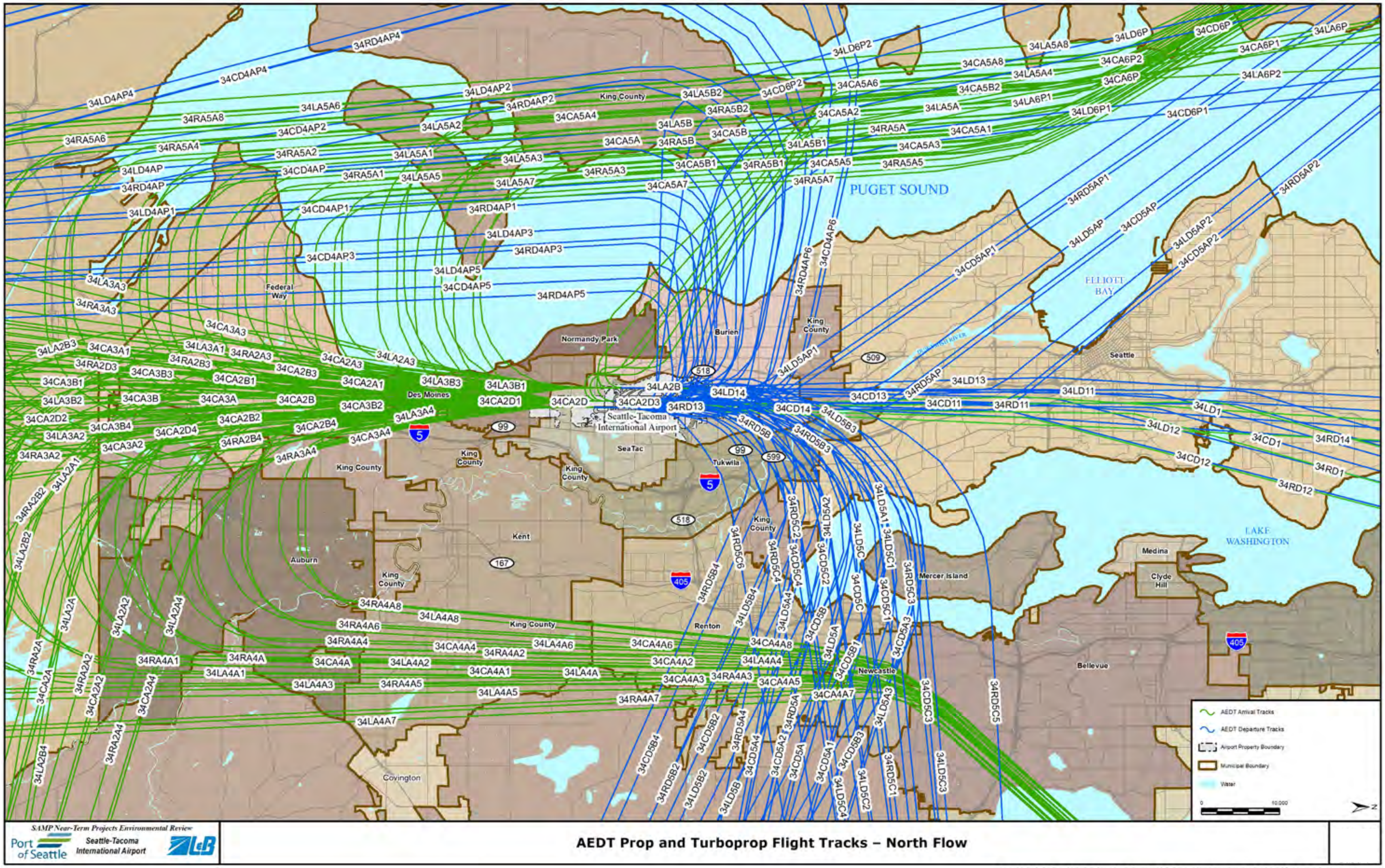
Source: Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

Exhibit 3: South Flow Jet Flight Tracks



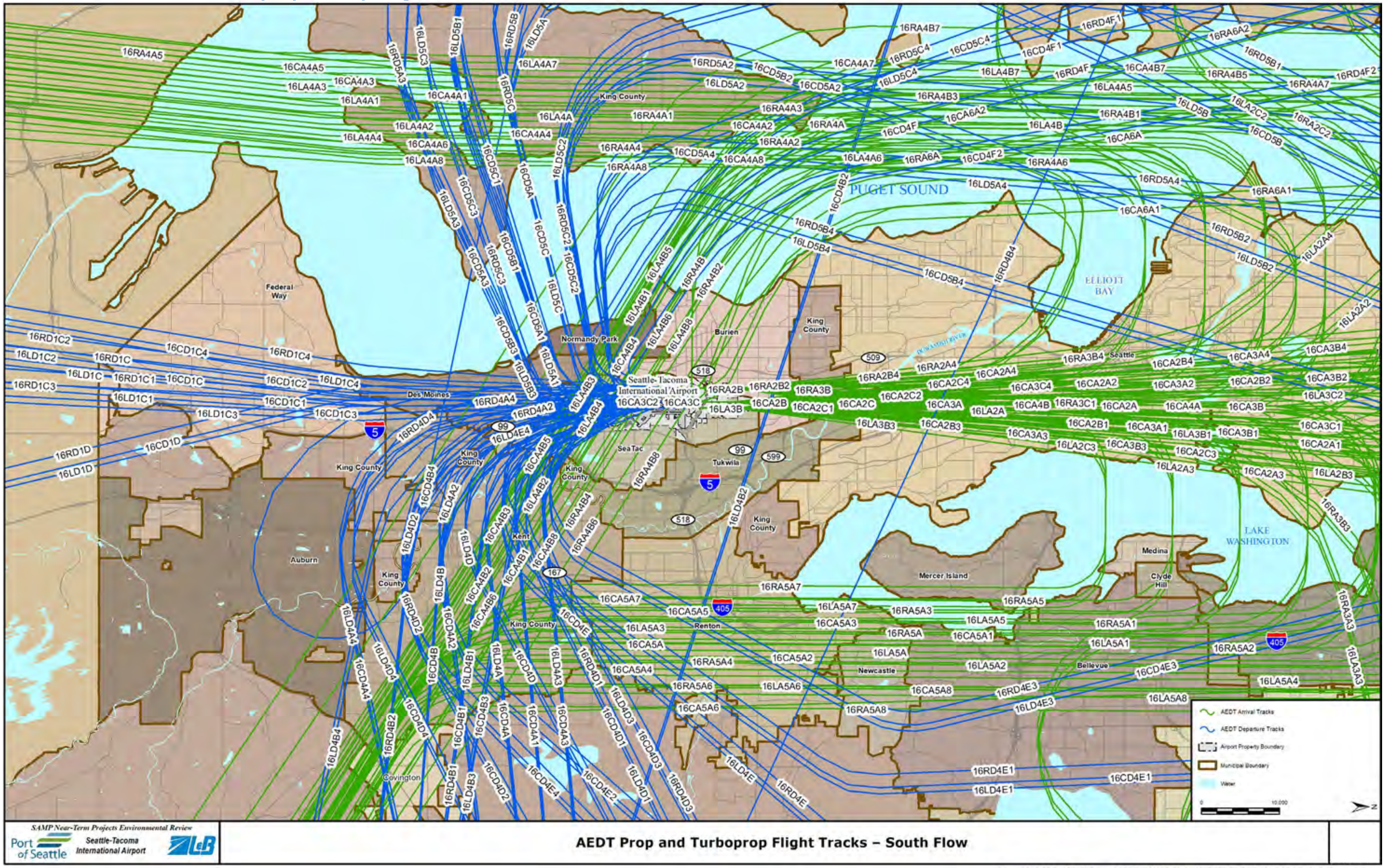
Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

Exhibit 4: North Flow Turboprop & Prop Flight Tracks



Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

Exhibit 5: South Flow Turboprop & Prop Flight Tracks



Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

1.7 Aircraft Weight, Trip Length

Aircraft weight during departure is a factor in the dispersion of noise because it impacts the rate at which an aircraft is able to climb. Generally, the heavier an aircraft is, the slower the rate of climb and the wider the dispersion of noise along its route of flight. Where specific aircraft weights are unknown, the AEDT uses the distance flown to the first stop as a surrogate for the weight, by assuming that the weight has a direct relationship with the fuel load necessary to reach the first destination. The AEDT groups trip lengths into nine categories; these categories are provided in **Table 9**.

Table 9 Daytime Stage Length Distribution

Category	Stage Length
1	0-500 nautical miles
2	500-1000 nautical miles
3	1000-1500 nautical miles
4	1500-2500 nautical miles
5	2500-3500 nautical miles
6	3500-4500 nautical miles
7	4500-5500 nautical miles
8	5500-6500 nautical miles
9	6500-11000 nautical miles
M	Maximum range at maximum take-off weight

Source: L&B Analysis, 2023

The trip lengths modeled for the Existing (2022) condition are based upon the distance to destinations from SEA that were reported in the EnvironmentalVue Flight Track Monitoring System data from January 2022 through December of 2022. **Table 10** and **Table 11** present the assumed daytime and nighttime stage length distributions for each of the 10 operator categories.

Table 10 Daytime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	1.8%	0.5%	1.8%	25.2%	1.4%	52.9%	10.2%	1.3%	4.9%	100.0%
Narrow Body Jet	17.2%	44.7%	15.1%	22.7%	0.3%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	5.6%	94.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	7.2%	38.9%	8.8%	31.8%	0.0%	1.7%	11.6%	0.0%	0.0%	100.0%
Narrow Body Jet	18.2%	54.5%	0.0%	27.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
General Aviation										
Jet	85.2%	5.3%	3.7%	5.0%	0.0%	0.3%	0.5%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Note: Totals may not sum due to rounding.
Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

Table 11 Nighttime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	1.0%	0.8%	5.3%	18.6%	0.0%	5.4%	68.8%	0.1%	0.0%	100.0%
Narrow Body Jet	20.3%	28.9%	20.4%	30.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	2.3%	3.8%	19.4%	55.8%	0.0%	5.1%	13.4%	0.0%	0.0%	100.0%
Narrow Body Jet	0.0%	0.0%	1.1%	98.9%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
General Aviation										
Jet	74.4%	16.4%	2.0%	7.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Note: Totals may not sum due to rounding.
Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

1.8 Atmospheric Conditions

Weather is an important factor in the performance of aircraft and the amount of noise generated on landing and takeoff. AEDT default weather parameters are based on Integrated Surface Data (ISD)[2] average weather data (2012 -2021) from the National Oceanic and Atmospheric Administration. **Table 12** shows the default AEDT atmospheric settings for SEA:

Table 12 Atmospheric Conditions

Atmospheric Element	AEDT SEA Value - Default
Temperature	52.67° Fahrenheit
Sea Level Pressure	1,018.13 millibars
Static Pressure	1,001.43 millibars
Dew Point	43.82° Fahrenheit
Relative Humidity	71.79%
Wind Speed	6.74 knots

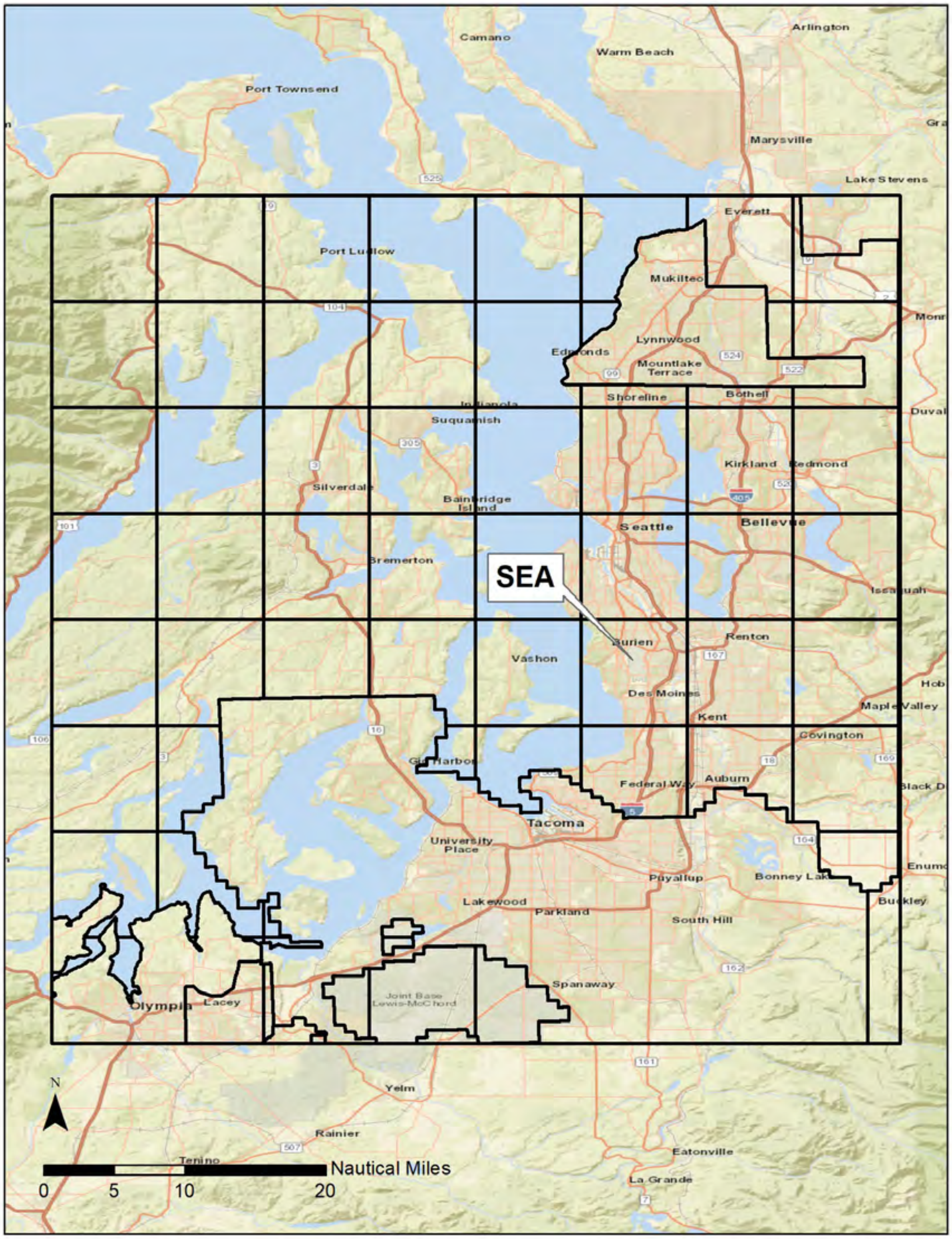
Source: AEDT Version 3e.

1.9 Topographic Data

High resolution topographic data will be utilized from the United States Geological Survey (USGS) National Elevation Dataset[3] repository for the areas surrounding SEA. The topographic data is in GeoTIFF format with a resolution of 1/3 Arc Second (approximately 32.8 feet or 10 meters). The topographic data was published on June 8, 2023. **Exhibit 6** shows the extent of the topographic data that will be utilized in the modeling.

[2] https://www.ncdc.noaa.gov/isd, provided in AEDT Version 3e.
[3] https://www.usgs.gov/core-science-systems/ngp/tnm-delivery

Exhibit 6: Topographic Data Extent



2 Future Conditions Noise Modeling Methodology

This report presents the inputs used to model the three alternatives analyzed in the Sustainable Airport Master Plan (SAMP) Near-Term Projects (NTPs) Environmental Assessment (EA) at Seattle-Tacoma International Airport (SEA) for the years 2032 and 2037. The alternatives included in the EA are Alternative 1: 2032 and 2037 No Action, Alternative 2: 2032 and 2037 Proposed Action, Alternative 3: 2032 and 2037 Hybrid Terminal Option. The Proposed Action and the Hybrid Terminal Option for 2032 and 2037 have the same inputs for noise modeling. As a result, only the Proposed Action inputs are presented in this protocol.

Table 13 presents the annual-average day operations for each alternative in 2032 and 2037.

Table 13 Future Annual Operations

Alternative	Total Operations
2032	
Alternative 1: No Action	466,900
Alternative 2: Proposed Action	475,655
2037	
Alternative 1: No Action	474,874
Alternative 2: Proposed Action	509,892

Source: Aviation Activity Forecast Update, prepared by Leigh Fisher, September 2023, Constrained Operations Growth Scenario; prepared by Landrum & Brown, July 2023.

2.1 Aircraft Activity Levels and Fleet Mix

Fleet mix percentages for the future activity levels were derived from the Aviation Activity Forecast Update, Table 5. Engine codes were assigned based on the engine codes from the Existing (2022) condition. The fleet mix for each alternative in 2032 and 2037 is presented in **Tables 14, 15, 16,** and **17,** respectively.

Table 14 Alternative 1: 2032 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Commercial Jets			
Airbus A220-100	737700	16PW111	19113.9
Airbus A220-300	737700	16PW111	5507.9
Airbus A220-300	737700	16PW112	2712.8
Airbus A319-100 Series	A319-131	01P10IA020	3.9
Airbus A319-100 Series	A319-131	3CM028	33.7
Airbus A319-100 Series	A319-131	3IA006	759.9
Airbus A319-100 Series	A319-131	3IA007	406.9
Airbus A319-100 Series	A319-131	4CM035	30.3
Airbus A319-100 Series	A319-131	8IA09	14.0
Airbus A320-200 Series	A320-211	01P08CM105	5826.4
Airbus A320-200 Series	A320-232	01P10IA021	523.0
Airbus A320-200 Series	A320-232	01P10IA022	113.0
Airbus A320-200 Series	A320-211	1CM008	142.3
Airbus A320-200 Series	A320-211	1CM009	577.4
Airbus A320-200 Series	A320-232	1IA003	1100.4
Airbus A320-200 Series	A320-211	3CM026	626.5
Airbus A320-200 Series	A320-232	8IA010	0.9
Airbus A320-NEO	A320-271N	01P20CM128	3389.8
Airbus A320-NEO	A320-271N	01P22PW163	5379.4
Airbus A321-200 Series	A321-232	01P08CM104	1034.9
Airbus A321-200 Series	A321-232	01P10IA025	6278.9
Airbus A321-200 Series	A321-232	3CM025	1068.5

Table 14 Alternative 1: 2032 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Airbus A321-NEO	A321-232	01P18PW157	5185.0
Airbus A321-NEO	A321-232	01P20CM132	15379.9
Boeing 737-700 Series	737700	3CM030	94.6
Boeing 737-700 Series	737700	3CM031	3195.1
Boeing 737-700 Series	737700	3CM032	581.5
Boeing 737-700 Series	737700	8CM051	2.2
Boeing 737-700 Series	737700	8CM062	23.1
Boeing 737-700 Series	737700	8CM063	542.0
Boeing 737-8	7378MAX	01P20CM135	282.3
Boeing 737-8	7378MAX	01P20CM136	9143.8
Boeing 737-8	7378MAX	01P20CM140	8434.6
Boeing 737-8_MAX7	7378MAX_MAX7	01P20CM136_MAX7	1089.7
Boeing 737-800 Series	737800	01P11CM114	425.1
Boeing 737-800 Series	737800	01P11CM116	5786.0
Boeing 737-800 Series	737800	01P11CM122	3157.1
Boeing 737-800 Series	737800	01P11CM125	702.0
Boeing 737-800 Series	737800	01P11CM126	66.6
Boeing 737-800 Series	737800	3CM032	17712.2
Boeing 737-800 Series	737800	3CM034	1710.0
Boeing 737-800 Series	737800	8CM051	24246.4
Boeing 737-800 Series	737800	8CM064	176.0
Boeing 737-800 Series	737800	8CM065	2263.9
Boeing 737-800 Series	737800	8CM066	10632.7
Boeing 737-9	7378MAX	01P20CM136	440.9
Boeing 737-9	7378MAX	01P20CM140	17382.6
Boeing 737-900-ER	737800	01P11CM116	29580.5
Boeing 737-900-ER	737800	01P11CM121	84571.7
Boeing 737-900-ER_MA	737800	01P11CM121_MA	1808.4
Boeing 737-900-ER	737800	01P11CM125	258.0
Boeing 737-900-ER	737800	3CM034	1190.7
Boeing 737-900-ER	737800	8CM065	1327.5
Airbus A330-200 Series	A330-343	2RR023	2478.1
Airbus A330-200 Series	A330-343	9PW094	35.4
Airbus A330-300 Series	A330-343	2RR023	536.8
Airbus A330-300 Series	A330-301	4GE080	544.6
Airbus A330-300 Series	A330-343	7PW082	73.5
Airbus A330-300 Series	A330-301	9PW094	1538.1
Airbus A330-300 Series	A330-301	9PW095	360.8
Airbus A330-900N Series (Neo)	A330-343	02P23RR141	5007.1
Airbus A350-900 series	A350-941	01P18RR124	1874.2
Boeing 767-400 ER	767400	8GE101	357.8
Boeing 777-200-ER	777200	10PW099	120.3
Boeing 777-200-ER	777200	2RR027	423.2
Boeing 777-200-ER	777200	3GE060	187.1
Boeing 777-200-ER	777200	3GE064	3.0
Boeing 777-200-ER	777200	8GE100	194.5
Boeing 777-300 ER	7773ER	01P21GE217	1259.5
Boeing 787-10 Dreamliner	7879	01P17GE211	334.0
Boeing 787-10 Dreamliner	7879	02P23RR134	364.6
Boeing 787-10 Dreamliner	7879	17GE179	721.6
Boeing 787-8 Dreamliner	7878R	01P17GE206	1055.2
Boeing 787-8 Dreamliner	7878R	01P17GE210	35.5

Table 14 Alternative 1: 2032 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Boeing 787-8 Dreamliner	7878R	11GE137	1667.0
Boeing 787-8 Dreamliner	7878R	11GE138	4096.5
Boeing 787-9 Dreamliner	7879	01P17GE211	2081.3
Boeing 787-9 Dreamliner	7879	01P17GE214	14.2
Boeing 787-9 Dreamliner	7879	02P23RR131	469.6
Boeing 787-9 Dreamliner	7879	12RR067	2149.7
Boeing 787-9 Dreamliner	7879	12RR068	906.1
		Subtotal	***330,926.5***
Cargo Jets			
Airbus A300F4-600 Series	A300-622R	1GE020	4.7
Airbus A300F4-600 Series	A300-622R	1PW048	133.1
Airbus A300F4-600 Series	A300-622R	3GE056	241.2
Boeing 747-400 ERF	747400RN	12PW102	590.0
Boeing 747-400BCF	747400	01P03GE187	590.0
Boeing 747-8F	7478	01P17GE215	288.8
Boeing 747-8F	7478	13GE156	76.9
Boeing 747-8F	7478	8GENX1	249.3
Boeing 767-200 Series Freighter	767CF6	1GE010	2866.1
Boeing 767-200 Series Freighter	767CF6	1GE012	1427.5
Boeing 767-200 Series Freighter	767JT9	1PW026	256.5
Boeing 767-300 ER Freighter	7673ER	1GE030	4142.2
Boeing 767-300 ER Freighter	7673ER	2GE055	407.8
Boeing 777 Freighter	777200	01P21GE216	2415.4
Boeing 777 Freighter	777300	01P21GE217	57.6
Boeing MD-11 Freighter	MD11PW	12PW102	249.3
Boeing MD-11 Freighter	MD11GE	1GE031	1251.6
Boeing MD-11 Freighter	MD11PW	1PW052	407.0
		Subtotal	***15,655.0***
Regional Jets			
Embraer ERJ175-LR	EMB175	01P08GE197	113894.7
Embraer ERJ175-LR_MA	EMB175_MA	01P08GE197_MA	976.6
		Subtotal	***114,871.3***
Cargo Prop			
ATR 72-600 Freighter	DHC830	PW127F	204.0
Cessna 208 Caravan	PA42	P6114A	1162.6
Cessna 208 Caravan	CNA208	PT6A14	1146.4
Raytheon Beech 99	DHC6	PT6A27	3.3
Raytheon Beech 99	DHC6	PT6A36	181.7
Shorts 330-200 Series	SD330	PT6A6B	204.0
		Subtotal	***2,902.0***
Other			
Cessna 208 Caravan_O	PA42_O	P6114A_O	201.4
Cessna 208 Caravan_O	PA42_O	PT6A14_O	198.6
Boeing 737-900-ER_O	737800_O	01P11CM116_O	149.5
Boeing 737-900-ER_O	737800_O	01P11CM121_O	436.5
Boeing 737-900-ER_O	737800_O	01P11CM125_O	1.3
Boeing 737-900-ER_O	737800_O	3CM034_O	6.0
Boeing 737-900-ER_O	737800_O	8CM065_O	6.7
		Subtotal	***1,000.0***
GA Jet			
Bombardier Challenger 350	CL600	01P14HN011	554.5
Dassault Falcon 50	FAL900EX	1AS002	554.5

Table 14 Alternative 1: 2032 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Embraer Phenom 300 (EMB-505)	CNA55B	PW530	126.0
		Subtotal	***1,235.0***
GA Prop			
Raytheon Super King Air 200	C12	PT660A	61.0
Cessna 172 Skyhawk	CNA172	IO320	132.0
Piper PA-31 Navajo	BEC58P	TIO540	17.0
		Subtotal	***210.0***
Military			
Embraer Phenom 300 (EMB-505)_M	CNA55B_M	PW530_M	72.0
Raytheon Super King Air 200_M	C12_M	PT660A_M	26.0
Cessna 172 Skyhawk_M	CNA172_M	IO320_M	2.0
		Subtotal	***100.0***
		Grand Total	***466,899.8***

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 15 Alternative 2: 2032 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Commercial Jets			
Airbus A220-100	737700	16PW111	19489.2
Airbus A220-300	737700	16PW111	5616.0
Airbus A220-300	737700	16PW112	2766.1
Airbus A319-100 Series	A319-131	01P10IA020	4.0
Airbus A319-100 Series	A319-131	3CM028	34.4
Airbus A319-100 Series	A319-131	3IA006	774.8
Airbus A319-100 Series	A319-131	3IA007	414.9
Airbus A319-100 Series	A319-131	4CM035	30.8
Airbus A319-100 Series	A319-131	8IA09	14.2
Airbus A320-200 Series	A320-211	01P08CM105	5940.8
Airbus A320-200 Series	A320-232	01P10IA021	533.3
Airbus A320-200 Series	A320-232	01P10IA022	115.2
Airbus A320-200 Series	A320-211	1CM008	145.1
Airbus A320-200 Series	A320-211	1CM009	588.7
Airbus A320-200 Series	A320-232	1IA003	1122.0
Airbus A320-200 Series	A320-211	3CM026	638.8
Airbus A320-200 Series	A320-232	8IA010	0.9
Airbus A320-NEO	A320-271N	01P20CM128	3456.4
Airbus A320-NEO	A320-271N	01P22PW163	5485.0
Airbus A321-200 Series	A321-232	01P08CM104	1055.2
Airbus A321-200 Series	A321-232	01P10IA025	6402.2
Airbus A321-200 Series	A321-232	3CM025	1089.5
Airbus A321-NEO	A321-232	01P18PW157	5286.9
Airbus A321-NEO	A321-232	01P20CM132	15681.9
Boeing 737-700 Series	737700	3CM030	96.5
Boeing 737-700 Series	737700	3CM031	3257.8
Boeing 737-700 Series	737700	3CM032	593.0
Boeing 737-700 Series	737700	8CM051	2.3
Boeing 737-700 Series	737700	8CM062	23.6
Boeing 737-700 Series	737700	8CM063	552.6
Boeing 737-8	7378MAX	01P20CM135	287.8

Table 15 Alternative 2: 2032 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Boeing 737-8	7378MAX	01P20CM136	9323.4
Boeing 737-8	7378MAX	01P20CM140	8600.2
Boeing 737-8_MAX7	7378MAX_MAX7	01P20CM136_MAX7	1111.1
Boeing 737-800 Series	737800	01P11CM114	433.4
Boeing 737-800 Series	737800	01P11CM116	5899.6
Boeing 737-800 Series	737800	01P11CM122	3219.1
Boeing 737-800 Series	737800	01P11CM125	715.8
Boeing 737-800 Series	737800	01P11CM126	67.9
Boeing 737-800 Series	737800	3CM032	18060.0
Boeing 737-800 Series	737800	3CM034	1743.6
Boeing 737-800 Series	737800	8CM051	24722.5
Boeing 737-800 Series	737800	8CM064	179.5
Boeing 737-800 Series	737800	8CM065	2308.4
Boeing 737-800 Series	737800	8CM066	10841.5
Boeing 737-9	7378MAX	01P20CM136	449.6
Boeing 737-9	7378MAX	01P20CM140	17723.9
Boeing 737-900-ER	737800	01P11CM116	30161.3
Boeing 737-900-ER	737800	01P11CM121	86233.9
Boeing 737-900-ER_MA	737800_MA	01P11CM121_MA	1842.3
Boeing 737-900-ER	737800	01P11CM125	263.1
Boeing 737-900-ER	737800	3CM034	1214.1
Boeing 737-900-ER	737800	8CM065	1353.6
Airbus A330-200 Series	A330-343	2RR023	2526.7
Airbus A330-200 Series	A330-343	9PW094	36.1
Airbus A330-300 Series	A330-343	2RR023	547.4
Airbus A330-300 Series	A330-301	4GE080	555.3
Airbus A330-300 Series	A330-343	7PW082	74.9
Airbus A330-300 Series	A330-301	9PW094	1568.3
Airbus A330-300 Series	A330-301	9PW095	367.9
Airbus A330-900N Series (Neo)	A330-343	02P23RR141	5106.3
Airbus A350-900 series	A350-941	01P18RR124	1911.1
Boeing 767-400 ER	767400	8GE101	364.8
Boeing 777-200-ER	777200	10PW099	122.6
Boeing 777-200-ER	777200	2RR027	431.5
Boeing 777-200-ER	777200	3GE060	190.8
Boeing 777-200-ER	777200	3GE064	3.0
Boeing 777-200-ER	777200	8GE100	198.3
Boeing 777-300 ER	7773ER	01P21GE217	1284.2
Boeing 787-10 Dreamliner	7879	01P17GE211	340.6
Boeing 787-10 Dreamliner	7879	02P23RR134	371.8
Boeing 787-10 Dreamliner	7879	17GE179	735.8
Boeing 787-8 Dreamliner	7878R	01P17GE206	1075.9
Boeing 787-8 Dreamliner	7878R	01P17GE210	36.2
Boeing 787-8 Dreamliner	7878R	11GE137	1699.7
Boeing 787-8 Dreamliner	7878R	11GE138	4176.9
Boeing 787-9 Dreamliner	7879	01P17GE211	2122.2
Boeing 787-9 Dreamliner	7879	01P17GE214	14.4
Boeing 787-9 Dreamliner	7879	02P23RR131	478.8
Boeing 787-9 Dreamliner	7879	12RR067	2191.9
Boeing 787-9 Dreamliner	7879	12RR068	923.9
		Subtotal	***337,425.5***

Table 15 Alternative 2: 2032 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Cargo Jets			
Airbus A300F4-600 Series	A300-622R	1GE020	4.7
Airbus A300F4-600 Series	A300-622R	1PW048	133.1
Airbus A300F4-600 Series	A300-622R	3GE056	241.2
Boeing 747-400 ERF	747400RN	12PW102	590.0
Boeing 747-400BCF	747400	01P03GE187	590.0
Boeing 747-8F	7478	01P17GE215	288.8
Boeing 747-8F	7478	13GE156	76.9
Boeing 747-8F	7478	8GENX1	249.3
Boeing 767-200 Series Freighter	767CF6	1GE010	2866.1
Boeing 767-200 Series Freighter	767CF6	1GE012	1427.5
Boeing 767-200 Series Freighter	767JT9	1PW026	256.5
Boeing 767-300 ER Freighter	7673ER	1GE030	4142.2
Boeing 767-300 ER Freighter	7673ER	2GE055	407.8
Boeing 777 Freighter	777200	01P21GE216	2415.4
Boeing 777 Freighter	777300	01P21GE217	57.6
Boeing MD-11 Freighter	MD11PW	12PW102	249.3
Boeing MD-11 Freighter	MD11GE	1GE031	1251.6
Boeing MD-11 Freighter	MD11PW	1PW052	407.0
		Subtotal	***15,655.0***
Regional Jets			
Embraer ERJ175-LR	EMB175	01P08GE197	116132.0
Embraer ERJ175-LR_MA	EMB175_MA	01P08GE197_MA	994.9
		Subtotal	***117,126.9***
Cargo Prop			
ATR 72-600 Freighter	DHC830	PW127F	204.0
Cessna 208 Caravan	PA42	P6114A	1162.6
Cessna 208 Caravan	CNA208	PT6A14	1146.4
Raytheon Beech 99	DHC6	PT6A27	3.3
Raytheon Beech 99	DHC6	PT6A36	181.7
Shorts 330-200 Series	SD330	PT6A6B	204.0
		Subtotal	***2,902.0***
Other			
Cessna 208 Caravan_O	PA42_O	P6114A_O	201.4
Cessna 208 Caravan_O	PA42_O	PT6A14_O	198.6
Boeing 737-900-ER_O	737800_O	01P11CM116_O	149.5
Boeing 737-900-ER_O	737800_O	01P11CM121_O	436.5
Boeing 737-900-ER_O	737800_O	01P11CM125_O	1.3
Boeing 737-900-ER_O	737800_O	3CM034_O	6.0
Boeing 737-900-ER_O	737800_O	8CM065_O	6.7
		Subtotal	***1,000.0***
GA Jets			
Bombardier Challenger 350	CL600	01P14HN011	554.5
Dassault Falcon 50	FAL900EX	1AS002	554.5
Embraer Phenom 300 (EMB-505)	CNA55B	PW530	126.0
		Subtotal	***1,235.0***
GA Prop			
Raytheon Super King Air 200	C12	PT660A	61.0
Cessna 172 Skyhawk	CNA172	IO320	132.0
Piper PA-31 Navajo	BEC58P	TIO540	17.0
		Subtotal	***210.0***

Table 15 Alternative 2: 2032 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Military			
Embraer Phenom 300 (EMB-505)_M	CNA55B_M	PW530_M	72.0
Raytheon Super King Air 200_M	C12_M	PT660A_M	26.0
Cessna 172 Skyhawk_M	CNA172_M	IO320_M	2.0
		Subtotal	***100.00***
		Grand Total	**475,654.4**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 16 Alternative 1: 2037 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Commercial Jets			
Airbus A220-100	737700	16PW111	25278.7
Airbus A220-300	737700	16PW111	8743.4
Airbus A220-300	737700	16PW112	4306.4
Airbus A320-200 Series	A320-211	01P08CM105	2008.6
Airbus A320-200 Series	A320-232	01P10IA021	180.3
Airbus A320-200 Series	A320-232	01P10IA022	38.9
Airbus A320-200 Series	A320-211	1CM008	49.1
Airbus A320-200 Series	A320-211	1CM009	199.0
Airbus A320-200 Series	A320-232	1IA003	379.4
Airbus A320-200 Series	A320-211	3CM026	216.0
Airbus A320-200 Series	A320-232	8IA010	0.3
Airbus A320-NEO	A320-271N	01P20CM128	5744.3
Airbus A320-NEO	A320-271N	01P22PW163	9115.7
Airbus A321-200 Series	A321-232	01P08CM104	324.3
Airbus A321-200 Series	A321-232	01P10IA025	1967.7
Airbus A321-200 Series	A321-232	3CM025	334.9
Airbus A321-NEO	A321-232	01P18PW157	7082.1
Airbus A321-NEO	A321-232	01P20CM132	21006.9
Boeing 737-700 Series	737700	3CM030	19.3
Boeing 737-700 Series	737700	3CM031	650.6
Boeing 737-700 Series	737700	3CM032	118.4
Boeing 737-700 Series	737700	8CM051	0.5
Boeing 737-700 Series	737700	8CM062	4.7
Boeing 737-700 Series	737700	8CM063	110.4
Boeing 737-8	7378MAX	01P20CM135	643.2
Boeing 737-8	7378MAX	01P20CM136	20834.7
Boeing 737-8	7378MAX	01P20CM140	19218.7
Boeing 737-8_MAX7	7378MAX_MAX7	01P20CM136_MAX7	1690.9
Boeing 737-800 Series	737800	01P11CM114	283.7
Boeing 737-800 Series	737800	01P11CM116	3861.1
Boeing 737-800 Series	737800	01P11CM122	2106.8
Boeing 737-800 Series	737800	01P11CM125	468.5
Boeing 737-800 Series	737800	01P11CM126	44.4
Boeing 737-800 Series	737800	3CM032	11819.7
Boeing 737-800 Series	737800	3CM034	1141.1
Boeing 737-800 Series	737800	8CM051	16180.1
Boeing 737-800 Series	737800	8CM064	117.5
Boeing 737-800 Series	737800	8CM065	1510.8
Boeing 737-800 Series	737800	8CM066	7095.4
Boeing 737-9	7378MAX	01P20CM136	958.8
Boeing 737-9	7378MAX	01P20CM140	37795.0

Table 16 Alternative 1: 2037 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Boeing 737-900-ER	737800	01P11CM116	25141.9
Boeing 737-900-ER	737800	01P11CM121	71579.3
Boeing 737-900-ER_MA	737800_MA	01P11CM121_MA	1839.3
Boeing 737-900-ER	737800	01P11CM125	219.3
Boeing 737-900-ER	737800	3CM034	1012.1
Boeing 737-900-ER	737800	8CM065	1128.3
Airbus A330-200 Series	A330-343	2RR023	2514.0
Airbus A330-200 Series	A330-343	9PW094	36.0
Airbus A330-300 Series	A330-343	2RR023	544.5
Airbus A330-300 Series	A330-301	4GE080	552.5
Airbus A330-300 Series	A330-343	7PW082	74.6
Airbus A330-300 Series	A330-301	9PW094	1560.2
Airbus A330-300 Series	A330-301	9PW095	366.0
Airbus A330-900N Series (Neo)	A330-343	02P23RR141	5503.2
Airbus A350-900 series	A350-941	01P18RR124	3247.4
Boeing 787-10 Dreamliner	7879	01P17GE211	445.2
Boeing 787-10 Dreamliner	7879	02P23RR134	486.0
Boeing 787-10 Dreamliner	7879	17GE179	961.8
Boeing 787-8 Dreamliner	7878R	01P17GE206	1418.2
Boeing 787-8 Dreamliner	7878R	01P17GE210	47.7
Boeing 787-8 Dreamliner	7878R	11GE137	2240.5
Boeing 787-8 Dreamliner	7878R	11GE138	5505.9
Boeing 787-9 Dreamliner	7879	01P17GE211	3449.3
Boeing 787-9 Dreamliner	7879	01P17GE214	23.5
Boeing 787-9 Dreamliner	7879	02P23RR131	778.2
Boeing 787-9 Dreamliner	7879	12RR067	3562.7
Boeing 787-9 Dreamliner	7879	12RR068	1501.7
		Subtotal	***349,389.2***
Cargo Jets			
Boeing 747-400 ERF	747400RN	12PW102	577.0
Boeing 747-400BCF	747400	01P03GE187	577.0
Boeing 747-8F	7478	01P17GE215	315.1
Boeing 747-8F	7478	13GE156	83.9
Boeing 747-8F	7478	8GENX1	272.0
Boeing 767-200 Series Freighter	767CF6	1GE010	3718.6
Boeing 767-200 Series Freighter	767CF6	1GE012	1852.1
Boeing 767-200 Series Freighter	767JT9	1PW026	332.8
Boeing 767-300 ER Freighter	7673ER	1GE030	5221.4
Boeing 767-300 ER Freighter	7673ER	2GE055	514.1
Boeing 777 Freighter	777200	01P21GE216	3690.1
Boeing 777 Freighter	777300	01P21GE217	87.9
		Subtotal	***17,242.0***
Regional Jets			
Embraer ERJ175-LR	EMB175	01P08GE197	101505.5
Embraer ERJ175-LR_MA	EMB175_MA	01P08GE197_MA	993.2
		Subtotal	***102,498.7***

Table 16 Alternative 1: 2037 No Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Cargo Prop			
ATR 72-600 Freighter	DHC830	PW127F	323.0
Cessna 208 Caravan	PA42	P6114A	1147.0
Cessna 208 Caravan	CNA208	PT6A14	1131.0
Raytheon Beech 99	DHC6	PT6A27	4.2
Raytheon Beech 99	DHC6	PT6A36	234.8
Shorts 330-200 Series	SD330	PT6A6B	323.0
		Subtotal	***3,163.0***
Other			
Cessna 208 Caravan_O	PA42_O	P6114A_O	201.4
Cessna 208 Caravan_O	PA42_O	PT6A14_O	198.6
Boeing 737-900-ER_O	737800_O	01P11CM116_O	149.5
Boeing 737-900-ER_O	737800_O	01P11CM121_O	436.5
Boeing 737-900-ER_O	737800_O	01P11CM125_O	1.3
Boeing 737-900-ER_O	737800_O	3CM034_O	6.0
Boeing 737-900-ER_O	737800_O	8CM065_O	6.7
		Subtotal	***1,000.0***
GA Jets			
Bombardier Challenger 350	CL600	01P14HN011	572.0
Dassault Falcon 50	FAL900EX	1AS002	572.0
Embraer Phenom 300 (EMB-505)	CNA55B	PW530	136.0
		Subtotal	***1,280.0***
GA Prop			
Raytheon Super King Air 200	C12	PT660A	67.0
Cessna 172 Skyhawk	CNA172	IO320	120.0
Piper PA-31 Navajo	BEC58P	TIO540	14.0
		Subtotal	***201.0***
Military			
Embraer Phenom 300 (EMB-505)_M	CNA55B_M	PW530_M	72.0
Raytheon Super King Air 200_M	C12_M	PT660A_M	26.0
Cessna 172 Skyhawk_M	CNA172_M	IO320_M	2.0
		Subtotal	***100.0***
		Grand Total	**474,874.0**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 17 Alternative 2: 2037 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Commercial Jets			
Airbus A220-100	737700	16PW111	27237.6
Airbus A220-300	737700	16PW111	9420.9
Airbus A220-300	737700	16PW112	4640.2
Airbus A320-200 Series	A320-211	01P08CM105	2164.2
Airbus A320-200 Series	A320-232	01P10IA021	194.3
Airbus A320-200 Series	A320-232	01P10IA022	42.0
Airbus A320-200 Series	A320-211	1CM008	52.9
Airbus A320-200 Series	A320-211	1CM009	214.5
Airbus A320-200 Series	A320-232	1IA003	408.8
Airbus A320-200 Series	A320-211	3CM026	232.7
Airbus A320-200 Series	A320-232	8IA010	0.3
Airbus A320-NEO	A320-271N	01P20CM128	6189.4
Airbus A320-NEO	A320-271N	01P22PW163	9822.1
Airbus A321-200 Series	A321-232	01P08CM104	349.5

Table 17 Alternative 2: 2037 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Airbus A321-200 Series	A321-232	01P10IA025	2120.2
Airbus A321-200 Series	A321-232	3CM025	360.8
Airbus A321-NEO	A321-232	01P18PW157	7630.9
Airbus A321-NEO	A321-232	01P20CM132	22634.8
Boeing 737-700 Series	737700	3CM030	20.8
Boeing 737-700 Series	737700	3CM031	701.0
Boeing 737-700 Series	737700	3CM032	127.6
Boeing 737-700 Series	737700	8CM051	0.5
Boeing 737-700 Series	737700	8CM062	5.1
Boeing 737-700 Series	737700	8CM063	118.9
Boeing 737-8	7378MAX	01P20CM135	693.1
Boeing 737-8	7378MAX	01P20CM136	22449.2
Boeing 737-8	7378MAX	01P20CM140	20708.1
Boeing 737-8_MAX7	7378MAX_MAX7	01P20CM136_MAX7	1822.0
Boeing 737-800 Series	737800	01P11CM114	305.7
Boeing 737-800 Series	737800	01P11CM116	4160.3
Boeing 737-800 Series	737800	01P11CM122	2270.0
Boeing 737-800 Series	737800	01P11CM125	504.8
Boeing 737-800 Series	737800	01P11CM126	47.9
Boeing 737-800 Series	737800	3CM032	12735.6
Boeing 737-800 Series	737800	3CM034	1229.6
Boeing 737-800 Series	737800	8CM051	17433.9
Boeing 737-800 Series	737800	8CM064	126.6
Boeing 737-800 Series	737800	8CM065	1627.8
Boeing 737-800 Series	737800	8CM066	7645.2
Boeing 737-9	7378MAX	01P20CM136	45.2
Boeing 737-9	7378MAX	01P20CM140	1780.5
Boeing 737-900-ER	737800	01P11CM116	27090.2
Boeing 737-900-ER	737800	01P11CM121	77133.1
Boeing 737-900-ER_MA	737800_MA	01P11CM121_MA	1975.0
Boeing 737-900-ER	737800	01P11CM125	236.3
Boeing 737-900-ER	737800	3CM034	1090.5
Boeing 737-900-ER	737800	8CM065	1215.8
Airbus A330-200 Series	A330-343	2RR023	2708.8
Airbus A330-200 Series	A330-343	9PW094	38.7
Airbus A330-300 Series	A330-343	2RR023	586.7
Airbus A330-300 Series	A330-301	4GE080	595.3
Airbus A330-300 Series	A330-343	7PW082	80.3
Airbus A330-300 Series	A330-301	9PW094	1681.1
Airbus A330-300 Series	A330-301	9PW095	394.4
Airbus A330-900N Series (Neo)	A330-343	02P23RR141	5929.6
Airbus A350-900 series	A350-941	01P18RR124	3499.1
Boeing 787-10 Dreamliner	7879	01P17GE211	479.7
Boeing 787-10 Dreamliner	7879	02P23RR134	523.7
Boeing 787-10 Dreamliner	7879	17GE179	1036.3
Boeing 787-8 Dreamliner	7878R	01P17GE206	1528.1
Boeing 787-8 Dreamliner	7878R	01P17GE210	51.4
Boeing 787-8 Dreamliner	7878R	11GE137	2414.1
Boeing 787-8 Dreamliner	7878R	11GE138	5932.6
Boeing 787-9 Dreamliner	7879	01P17GE211	3716.6
Boeing 787-9 Dreamliner	7879	01P17GE214	25.3
Boeing 787-9 Dreamliner	7879	02P23RR131	838.5
Boeing 787-9 Dreamliner	7879	12RR067	3838.8

Table 17 Alternative 2: 2037 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Boeing 787-9 Dreamliner	7879	12RR068	1618.1
		Subtotal	***376,464.5***
Cargo Jets			
Boeing 747-400 ERF	747400RN	12PW102	577.0
Boeing 747-400BCF	747400	01P03GE187	577.0
Boeing 747-8F	7478	01P17GE215	315.1
Boeing 747-8F	7478	13GE156	83.9
Boeing 747-8F	7478	8GENX1	272.0
Boeing 767-200 Series Freighter	767CF6	1GE010	3718.6
Boeing 767-200 Series Freighter	767CF6	1GE012	1852.1
Boeing 767-200 Series Freighter	767JT9	1PW026	332.8
Boeing 767-300 ER Freighter	7673ER	1GE030	5221.4
Boeing 767-300 ER Freighter	7673ER	2GE055	514.1
Boeing 777 Freighter	777200	01P21GE216	3690.1
Boeing 777 Freighter	777300	01P21GE217	87.9
		Subtotal	***17,242.0***
Regional Jets			
Embraer ERJ175-LR	EMB175	01P08GE197	109375.2
Embraer ERJ175-LR_MA	EMB175_MA	01P08GE197_MA	1066.5
		Subtotal	***110,441.7***
Cargo Prop			
ATR 72-600 Freighter	DHC830	PW127F	323.0
Cessna 208 Caravan	PA42	P6114A	1147.0
Cessna 208 Caravan	CNA208	PT6A14	1131.0
Raytheon Beech 99	DHC6	PT6A27	4.2
Raytheon Beech 99	DHC6	PT6A36	234.8
Shorts 330-200 Series	SD330	PT6A6B	323.0
		Subtotal	***3,163.0***
Other			
Cessna 208 Caravan_O	PA42_O	P6114A_O	201.4
Cessna 208 Caravan_O	PA42_O	PT6A14_O	198.6
Boeing 737-900-ER_O	737800_O	01P11CM116_O	149.5
Boeing 737-900-ER_O	737800_O	01P11CM121_O	436.5
Boeing 737-900-ER_O	737800_O	01P11CM125_O	1.3
Boeing 737-900-ER_O	737800_O	3CM034_O	6.0
Boeing 737-900-ER_O	737800_O	8CM065_O	6.7
		Subtotal	***1,000.0***
GA Jets			
Bombardier Challenger 350	CL600	01P14HN011	572.0
Dassault Falcon 50	FAL900EX	1AS002	572.0
Embraer Phenom 300 (EMB-505)	CNA55B	PW530	136.0
		Subtotal	***1,280.0***
GA Prop			
Raytheon Super King Air 200	C12	PT660A	67.0
Cessna 172 Skyhawk	CNA172	IO320	120.0
Piper PA-31 Navajo	BEC58P	TIO540	14.0
		Subtotal	***201.0***

Table 17 Alternative 2: 2037 Proposed Action Fleet Mix (Airframe, ANP ID, and AEDT Engine Code) and Operations (Continued)

AIRFRAME	ANP ID	ENGINE CODE	ANNUAL OPERATIONS
Military			
Raytheon Super King Air 200_M	CNA55B_M	PT660A_M	26.0
Embraer Phenom 300 (EMB-505)_M	C12_M	PW530_M	72.0
Cessna 172 Skyhawk_M	CNA172_M	IO320_M	2.0
		Subtotal	***100.0***
		Grand Total	**509,892.2**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

2.2 Day/Night Operating Characteristics

Table 18 through Table 25 present the day and night percentages per operator category for each alternative in 2032 and 2037. The day and night percentages were calculated using operational output from the Total Airspace and Airport Modeler (TAAM) airfield simulation modeling.[4]

Table 18 Alternative 1: 2032 No Action Arrival Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	99.0%	1.0%
Narrow Body Jet	79.9%	20.1%
Regional Jet	89.1%	10.9%
Cargo		
Heavy Jet	61.6%	38.4%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	55.7%	44.3%
Grand Total	**82.9%**	**17.1%**

Source: L&B Analysis, 2023.

Table 19 Alternative 1: 2032 No Action Departure Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	95.1%	4.9%
Narrow Body Jet	81.5%	18.5%
Regional Jet	91.2%	8.8%
Cargo		
Heavy Jet	79.9%	20.1%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	100.0%	0.0%
Grand Total	**84.9%**	**15.1%**

Source: L&B Analysis, 2023.

[4] See Appendix A, Forecast and Operational Assumptions for more information regarding the TAAM modeling results.

Table 20 Alternative 2: 2032 Proposed Action Arrival Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	99.2%	0.8%
Narrow Body Jet	80.3%	19.7%
Regional Jet	89.7%	10.3%
Cargo		
Heavy Jet	61.6%	38.4%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	55.7%	44.3%
Grand Total	**83.3%**	**16.7%**

Source: L&B Analysis, 2023.

Table 21 Alternative 2: 2032 Proposed Action Departure Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	95.1%	4.9%
Narrow Body Jet	81.8%	18.2%
Regional Jet	89.0%	11.0%
Cargo		
Heavy Jet	79.9%	20.1%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	100.0%	0.0%
Grand Total	**84.5%**	**15.5%**

Source: L&B Analysis, 2023.

Table 22 Alternative 1: 2037 No Action Arrival Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	99.2%	0.8%
Narrow Body Jet	82.5%	17.5%
Regional Jet	90.5%	9.5%
Cargo		
Heavy Jet	66.1%	33.9%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	55.2%	44.8%
Grand Total	**85.1%**	**14.9%**

Source: L&B Analysis, 2023.

Table 23 Alternative 1: 2037 No Action Departure Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	96.9%	3.1%
Narrow Body Jet	81.8%	18.2%
Regional Jet	89.2%	10.8%
Cargo		
Heavy Jet	79.7%	20.3%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	100.0%	0.0%
Grand Total	**84.6%**	**15.4%**

Source: L&B Analysis, 2023.

Table 24 Alternative 2: 2037 Proposed Action Arrival Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	99.3%	0.7%
Narrow Body Jet	80.9%	19.1%
Regional Jet	89.7%	10.3%
Cargo		
Heavy Jet	67.2%	32.8%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	55.2%	44.8%
Grand Total	**83.8%**	**16.2%**

Source: L&B Analysis, 2023.

Table 25 Alternative 2: 2037 Proposed Action Departure Day/Night Split per Operator Category

Operator Category	Day	Night
Passenger		
Heavy Jet	96.9%	3.1%
Narrow Body Jet	81.5%	18.5%
Regional Jet	89.0%	11.0%
Cargo		
Heavy Jet	80.8%	19.2%
Prop	100.0%	0.0%
General Aviation		
Jet	100.0%	0.0%
Turboprop	100.0%	0.0%
Prop	100.0%	0.0%
Grand Total	**84.4%**	**15.6%**

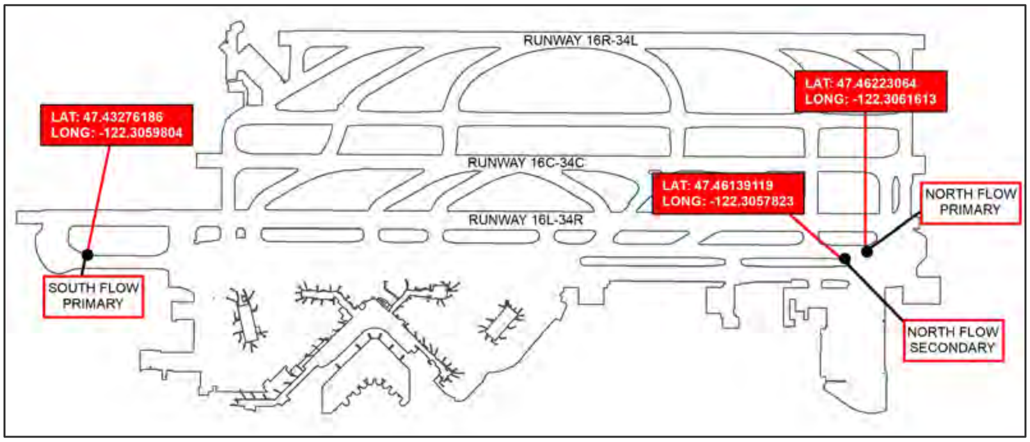
Source: L&B Analysis, 2023.

2.3 Aircraft Run Up Activity Levels

No changes to run-up locations would occur in Alternative 1: 2032 and 2037 No Action conditions. Therefore, the run-up locations discussed for the Existing (2022) condition would remain the same for Alternative 1. The number of engine run-up operations were determined for Alternative 1: 2032 and 2037 No Action conditions by scaling the engine run-ups from 2022 for the number of total operations, assuming the same distribution across aircraft type.

In Alternative 2: 2032 and 2037 Proposed Action conditions, changes to run-up locations would occur due to changes in the taxiways and new passenger terminal facilities. As a result, the locations would be located towards the north and south ends of the airfield. **Exhibit 7: *Proposed Action Run-up Locations*** shows the future location of the run-ups. In Alternative 2, the number of engine run-up operations were scaled up from 2022 levels assuming the same distribution across aircraft types.

Exhibit 7: Proposed Action Run-up Locations



Tables 26 through 29 present the amount of run-up operations, average duration and thrust settings per airframe and engine type that occurred at each SEA run-up location for each alternative in the future conditions.

Table 26 Alternative 1: 2032 No Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings (lbs)
North Flow Primary Location						
Airbus A319-100 Series	3IA006	1.5	3.0	--	--	22000
Airbus A320-200 Series	01P08CM105	24.8	15.8	1.5	2.0	25000
Airbus A320-200 Series	1CM009	2.9	69.5	--	--	25000
Airbus A320-200 Series	3CM026	2.9	15.5	--	--	25000
Airbus A321-200 Series	3CM025	4.4	36.7	--	--	30000
Airbus A321-NEO	01P20CM132	--	--	1.5	2.0	30000
Airbus A330-200 Series	9PW094	8.8	27.7	--	--	71100
Airbus A330-300 Series	4GE080	1.5	37.0	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	1.5	26.0	--	--	71100
Boeing 737-700 Series	3CM031	5.8	26.8	--	--	24000
Boeing 737-700 Series	3CM032	7.3	56.4	--	--	24000
Boeing 737-800 Series	01P11CM122	1.5	10.0	--	--	26300
Boeing 737-800 Series	3CM032	20.4	27.6	--	--	26300
Boeing 737-800 Series	3CM034	1.5	9.0	--	--	26300
Boeing 737-800 Series	8CM051	2.9	40.5	--	--	26300
Boeing 737-800 Series	8CM066	4.4	33.0	--	--	26300
Boeing 737-9	01P20CM140	13.1	14.6	--	--	26400
Boeing 737-900-ER	01P11CM116	14.6	20.2	--	--	26300
Boeing 737-900-ER	01P11CM121	23.4	25.1	--	--	26300
Boeing 737-900-ER	01P11CM121	1.5	4.0	--	--	13150
Boeing MD-11 Freighter	1GE031	--	--	1.5	2.0	61500
Embraer ERJ175-LR	01P08GE197	5.8	28.0	--	--	13800
Embraer ERJ175-LR	01P08GE197	1.5	6.0	--	--	6900

Table 26 Alternative 1: 2032 No Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings (lbs)
South Flow Primary Location						
Airbus A319-100 Series	3IA006	1.5	15.0	--	--	22000
Airbus A319-100 Series	3IA007	1.5	26.0	1.5	11.0	22000
Airbus A320-200 Series	01P08CM105	40.9	12.9	--	--	25000
Airbus A320-200 Series	01P08CM105	2.9	6.0	--	--	12500
Airbus A320-200 Series	1CM009	7.3	31.6	--	--	25000
Airbus A321-NEO	01P20CM132	2.9	12.5	--	--	30000
Airbus A330-200 Series	2RR023	1.5	6.0	--	--	71100
Airbus A330-200 Series	9PW094	11.7	14.9	--	--	71100
Airbus A330-200 Series	9PW094	1.5	26.0	--	--	35550
Airbus A330-300 Series	4GE080	4.4	10.7	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	4.4	26.7	--	--	71100
Boeing 737-700 Series	3CM031	23.4	17.6	--	--	24000
Boeing 737-700 Series	3CM031	1.5	20.0	1.5	2.0	12000
Boeing 737-700 Series	3CM032	5.8	31.5	--	--	24000
Boeing 737-800 Series	3CM032	61.3	18.3	--	--	26300
Boeing 737-800 Series	3CM032	4.4	18.3	--	--	13150
Boeing 737-800 Series	8CM051	16.1	21.0	--	--	26300
Boeing 737-800 Series	8CM065	1.5	6.0	--	--	26300
Boeing 737-800 Series	8CM066	35.0	10.7	--	--	26300
Boeing 737-800 Series	8CM066	1.5	3.0	1.5	2.0	13150
Boeing 737-9	01P20CM140	30.7	10.4	--	--	26400
Boeing 737-9	01P20CM140	1.5	9.0	--	--	13200
Boeing 737-900-ER	01P11CM116	30.7	15.7	2.9	2.0	26300
Boeing 737-900-ER	01P11CM116	1.5	3.0	--	--	13150
Boeing 737-900-ER	01P11CM121	78.9	25.5	--	--	26300
Boeing 737-900-ER	01P11CM121	1.5	8.0	--	--	13150
Boeing 767-200 Series Freighter	1GE012	1.5	6.0	--	--	48000
Boeing MD-11 Freighter	1GE031	2.9	44.5	--	--	61500
Embraer ERJ175-LR	01P08GE197	10.2	11.1	--	--	13800
North Flow Secondary Location						
Airbus A330-200 Series	9PW094	1.4	38.0	--	--	71100
	Total	**543.3**	**--**	**11.6**	**--**	**--**

Notes: Totals may not sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

Table 27 Alternative 2: 2032 Proposed Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A319-100 Series	3IA006	1.5	3.0	--	--	22000
Airbus A320-200 Series	01P08CM105	25.3	15.8	1.5	2.0	25000
Airbus A320-200 Series	1CM009	3.0	69.5	--	--	25000
Airbus A320-200 Series	3CM026	3.0	15.5	--	--	25000
Airbus A321-200 Series	3CM025	4.5	36.7	--	--	30000
Airbus A321-NEO	01P20CM132	--	--	1.5	2.0	30000
Airbus A330-200 Series	9PW094	8.9	27.7	--	--	71100
Airbus A330-300 Series	4GE080	1.5	37.0	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	1.5	26.0	--	--	71100
Boeing 737-700 Series	3CM031	6.0	26.8	--	--	24000

Table 27 Alternative 2: 2032 Proposed Action Aircraft Run-up Activity (Continued)

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Boeing 737-700 Series	3CM032	7.4	56.4	--	--	24000
Boeing 737-800 Series	01P11CM122	1.5	10.0	--	--	26300
Boeing 737-800 Series	3CM032	20.8	27.6	--	--	26300
Boeing 737-800 Series	3CM034	1.5	9.0	--	--	26300
Boeing 737-800 Series	8CM051	3.0	40.5	--	--	26300
Boeing 737-800 Series	8CM066	4.5	33.0	--	--	26300
Boeing 737-9	01P20CM140	13.4	14.6	--	--	26400
Boeing 737-900-ER	01P11CM116	14.9	20.2	--	--	26300
Boeing 737-900-ER	01P11CM121	23.8	25.1	--	--	26300
Boeing 737-900-ER	01P11CM121	1.5	4.0	--	--	13150
Boeing MD-11 Freighter	1GE031	--	--	1.5	2.0	61500
Embraer ERJ175-LR	01P08GE197	6.0	28.0	--	--	13800
Embraer ERJ175-LR	01P08GE197	1.5	6.0	--	--	6900
South Flow Primary Location						
Airbus A319-100 Series	3IA006	1.5	15.0	--	--	22000
Airbus A319-100 Series	3IA007	1.5	26.0	1.5	11.0	22000
Airbus A320-200 Series	01P08CM105	41.7	12.9	--	--	25000
Airbus A320-200 Series	01P08CM105	3.0	6.0	--	--	12500
Airbus A320-200 Series	1CM009	7.4	31.6	--	--	25000
Airbus A321-NEO	01P20CM132	3.0	12.5	--	--	30000
Airbus A330-200 Series	2RR023	1.5	6.0	--	--	71100
Airbus A330-200 Series	9PW094	11.9	14.9	--	--	71100
Airbus A330-200 Series	9PW094	1.5	26.0	--	--	35550
Airbus A330-300 Series	4GE080	4.5	10.7	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	4.5	26.7	--	--	71100
Boeing 737-700 Series	3CM031	23.8	17.6	--	--	24000
Boeing 737-700 Series	3CM031	1.5	20.0	1.5	2.0	12000
Boeing 737-700 Series	3CM032	6.0	31.5	--	--	24000
Boeing 737-800 Series	3CM032	62.5	18.3	--	--	26300
Boeing 737-800 Series	3CM032	4.5	18.3	--	--	13150
Boeing 737-800 Series	8CM051	16.4	21.0	--	--	26300
Boeing 737-800 Series	8CM065	1.5	6.0	--	--	26300
Boeing 737-800 Series	8CM066	35.7	10.7	--	--	26300
Boeing 737-800 Series	8CM066	1.5	3.0	1.5	2.0	13150
Boeing 737-9	01P20CM140	31.2	10.4	--	--	26400
Boeing 737-9	01P20CM140	1.5	9.0	--	--	13200
Boeing 737-900-ER	01P11CM116	31.2	15.7	3.0	2.0	26300
Boeing 737-900-ER	01P11CM116	1.5	3.0	--	--	13150
Boeing 737-900-ER	01P11CM121	80.3	25.5	--	--	26300
Boeing 737-900-ER	01P11CM121	1.5	8.0	--	--	13150
Boeing 767-200 Series Freighter	1GE012	1.5	6.0	--	--	48000
Boeing MD-11 Freighter	1GE031	3.0	44.5	--	--	61500
Embraer ERJ175-LR	01P08GE197	10.4	11.1	--	--	13800
North Flow Secondary Location						
Airbus A330-200 Series	9PW094	1.5	38.0		--	71100
	Total	**553.5**	**--**	**11.9**	**--**	**--**

Notes: Totals may not sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

Table 28 Alternative 1: 2037 No Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A320-200 Series	01P08CM105	25.6	15.8	2.0	2.0	25000
Airbus A320-200 Series	1CM009	3.0	69.5	--	--	25000
Airbus A320-200 Series	3CM026	3.0	15.5	--	--	25000
Airbus A321-200 Series	3CM025	4.5	36.7	--	--	30000
Airbus A321-NEO	01P20CM132	--	--	2.0	2.0	30000
Airbus A330-200 Series	9PW094	9.0	27.7	--	--	71100
Airbus A330-300 Series	4GE080	1.5	37.0	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	1.5	26.0	--	--	71100
Boeing 737-700 Series	3CM031	6.0	26.8	--	--	24000
Boeing 737-700 Series	3CM032	7.5	56.4	--	--	24000
Boeing 737-800 Series	01P11CM122	1.5	10.0	--	--	26300
Boeing 737-800 Series	3CM032	21.1	27.6	--	--	26300
Boeing 737-800 Series	3CM034	1.5	9.0	--	--	26300
Boeing 737-800 Series	8CM051	3.0	40.5	--	--	26300
Boeing 737-800 Series	8CM066	4.5	33.0	--	--	26300
Boeing 737-9	01P20CM140	13.6	14.6	--	--	26400
Boeing 737-900-ER	01P11CM116	15.1	20.2	--	--	26300
Boeing 737-900-ER	01P11CM121	24.1	25.1	--	--	26300
Boeing 737-900-ER	01P11CM121	1.5	4.0	--	--	13150
Embraer ERJ175-LR	01P08GE197	6.0	28.0	--	--	13800
Embraer ERJ175-LR	01P08GE197	1.5	6.0	--	--	6900
South Flow Primary Location						
Airbus A320-200 Series	01P08CM105	42.2	12.9	--	--	25000
Airbus A320-200 Series	01P08CM105	3.0	6.0	--	--	12500
Airbus A320-200 Series	1CM009	7.5	31.6	--	--	25000
Airbus A321-NEO	01P20CM132	3.0	12.5	--	--	30000
Airbus A330-200 Series	2RR023	1.5	6.0	--	--	71100
Airbus A330-200 Series	9PW094	12.0	14.9	--	--	71100
Airbus A330-200 Series	9PW094	1.5	26.0	--	--	35550
Airbus A330-300 Series	4GE080	4.5	10.7	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	4.5	26.7	--	--	71100
Boeing 737-700 Series	3CM031	24.1	17.6	--	--	24000
Boeing 737-700 Series	3CM031	1.5	20.0	2.0	2.0	12000
Boeing 737-700 Series	3CM032	6.0	31.5	--	--	24000
Boeing 737-800 Series	3CM032	63.2	18.3	--	--	26300
Boeing 737-800 Series	3CM032	4.5	18.3	--	--	13150
Boeing 737-800 Series	8CM051	16.6	21.0	--	--	26300
Boeing 737-800 Series	8CM065	1.5	6.0	--	--	26300
Boeing 737-800 Series	8CM066	36.1	10.7	--	--	26300
Boeing 737-800 Series	8CM066	1.5	3.0	2.0	2.0	13150
Boeing 737-9	01P20CM140	31.6	10.4	--	--	26400
Boeing 737-9	01P20CM140	1.5	9.0	--	--	13200
Boeing 737-900-ER	01P11CM116	31.6	15.7	3.9	2.0	26300
Boeing 737-900-ER	01P11CM116	1.5	3.0	--	--	13150
Boeing 737-900-ER	01P11CM121	81.3	25.5	--	--	26300
Boeing 737-900-ER	01P11CM121	1.5	8.0	--	--	13150
Boeing 767-200 Series Freighter	1GE012	1.5	6.0	--	--	48000

Table 28 Alternative 1: 2037 No Action Aircraft Run-up Activity (Continued)

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Embraer ERJ175-LR	01P08GE197	10.5	11.1	--	--	13800
North Flow Secondary Location						
Airbus A330-200 Series	9PW094	1.5	38.0	--	--	71100
Total		**552.5**	**--**	**11.8**	**--**	**--**

Notes: Totals may not sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

Table 29 Alternative 2: 2037 Proposed Action Aircraft Run-up Activity

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
North Flow Primary Location						
Airbus A320-200 Series	01P08CM105	27.5	15.8	2.1	2.0	25000
Airbus A320-200 Series	1CM009	3.2	69.5	--	--	25000
Airbus A320-200 Series	3CM026	3.2	15.5	--	--	25000
Airbus A321-200 Series	3CM025	4.8	36.7	--	--	30000
Airbus A321-NEO	01P20CM132	--	--	2.1	2.0	30000
Airbus A330-200 Series	9PW094	9.7	27.7	--	--	71100
Airbus A330-300 Series	4GE080	1.6	37.0	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	1.6	26.0	--	--	71100
Boeing 737-700 Series	3CM031	6.5	26.8	--	--	24000
Boeing 737-700 Series	3CM032	8.1	56.4	--	--	24000
Boeing 737-800 Series	01P11CM122	1.6	10.0	--	--	26300
Boeing 737-800 Series	3CM032	22.6	27.6	--	--	26300
Boeing 737-800 Series	3CM034	1.6	9.0	--	--	26300
Boeing 737-800 Series	8CM051	3.2	40.5	--	--	26300
Boeing 737-800 Series	8CM066	4.8	33.0	--	--	26300
Boeing 737-9	01P20CM140	14.5	14.6	--	--	26400
Boeing 737-900-ER	01P11CM116	16.2	20.2	--	--	26300
Boeing 737-900-ER	01P11CM121	25.9	25.1	--	--	26300
Boeing 737-900-ER	01P11CM121	1.6	4.0	--	--	13150
Embraer ERJ175-LR	01P08GE197	6.5	28.0	--	--	13800
Embraer ERJ175-LR	01P08GE197	1.6	6.0	--	--	6900
South Flow Primary Location						
Airbus A320-200 Series	01P08CM105	45.3	12.9	--	--	25000
Airbus A320-200 Series	01P08CM105	3.2	6.0	--	--	12500
Airbus A320-200 Series	1CM009	8.1	31.6	--	--	25000
Airbus A321-NEO	01P20CM132	3.2	12.5	--	--	30000
Airbus A330-200 Series	2RR023	1.6	6.0	--	--	71100
Airbus A330-200 Series	9PW094	12.9	14.9	--	--	71100
Airbus A330-200 Series	9PW094	1.6	26.0	--	--	35550
Airbus A330-300 Series	4GE080	4.8	10.7	--	--	67500
Airbus A330-900N Series (Neo)	02P23RR141	4.8	26.7	--	--	71100
Boeing 737-700 Series	3CM031	25.9	17.6	--	--	24000
Boeing 737-700 Series	3CM031	1.6	20.0	2.1	2.0	12000
Boeing 737-700 Series	3CM032	6.5	31.5	--	--	24000
Boeing 737-800 Series	3CM032	67.9	18.3	--	--	26300
Boeing 737-800 Series	3CM032	4.8	18.3	--	--	13150

Table 29 Alternative 2: 2037 Proposed Action Aircraft Run-up Activity (Continued)

Airframe	Engine Code	Annual Daytime Operations	Average Duration Daytime (minutes)	Annual Nighttime Operations	Average Duration Nighttime (minutes)	Thrust Settings
Boeing 737-800 Series	8CM051	17.8	21.0	--	--	26300
Boeing 737-800 Series	8CM065	1.6	6.0	--	--	26300
Boeing 737-800 Series	8CM066	38.8	10.7	--	--	26300
Boeing 737-800 Series	8CM066	1.6	3.0	2.1	2.0	13150
Boeing 737-9	01P20CM140	33.9	10.4	--	--	26400
Boeing 737-9	01P20CM140	1.6	9.0	--	--	13200
Boeing 737-900-ER	01P11CM116	33.9	15.7	4.2	2.0	26300
Boeing 737-900-ER	01P11CM116	1.6	3.0	--	--	13150
Boeing 737-900-ER	01P11CM121	87.3	25.5	--	--	26300
Boeing 737-900-ER	01P11CM121	1.6	8.0	--	--	13150
Boeing 767-200 Series Freighter	1GE012	1.6	6.0	--	--	48000
Embraer ERJ175-LR	01P08GE197	11.3	11.1	--	--	13800
North Flow Secondary Location						
Airbus A330-200 Series	9PW094	1.5	38.0	--	--	71100
Total		**593.3**	**--**	**12.7**	**--**	**--**

Notes: Totals may not sum total due to rounding.
Daytime = 7:00am – 9:59pm, Nighttime = 10:00pm – 6:59am.

2.4 Runway Definition

No changes to the runway location or definition would occur in any of the alternatives. Therefore, the runway definition discussed for the Existing (2022) condition would remain the same for the alternatives in 2032 and 2037.

2.5 Runway End Utilization

The runway end utilization for the alternatives was estimated using operational output from the TAAM airfield simulation modeling. The runway end utilization under the alternatives in 2032 and 2037 would be influenced by airfield congestion and the total number of operations occurring at the Airport. Several taxiway improvements designed to enhance efficiency of the airfield influence Alternative 2. **Table 30 through Table 37** present the assumed arrival and departure runway utilization by operator category for the alternatives in 2032 and 2037.

Table 30 Alternative 1: 2032 No Action Arrival Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	1.0%	55.0%	15.0%	0.5%	6.5%	22.0%	100.0%
Narrow Body Jet	1.0%	5.0%	65.0%	0.5%	26.5%	2.0%	100.0%
Regional Jet	1.0%	5.0%	65.0%	0.5%	26.5%	2.0%	100.0%
Cargo							
Heavy Jet	1.0%	55.0%	15.0%	0.5%	6.5%	22.0%	100.0%
Prop	1.4%	23.4%	46.1%	0.9%	26.5%	1.6%	100.0%
General Aviation							
Jet	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Turboprop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Prop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Overall Arrival Total	**1.0%**	**10.0%**	**60.0%**	**0.5%**	**24.6%**	**3.9%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 31 Alternative 1: 2032 No Action Departure Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Narrow Body Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Regional Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Cargo							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Prop	32.3%	36.1%	2.6%	12.8%	1.8%	14.4%	100.0%
General Aviation							
Jet	33.0%	35.0%	3.0%	14.5%	2.0%	12.5%	100.0%
Turboprop	33.0%	35.0%	3.0%	14.5%	2.0%	12.5%	100.0%
Prop	33.0%	35.0%	3.0%	14.5%	2.0%	12.5%	100.0%
Overall Departure Total	**25.7%**	**45.3%**	**0.0%**	**1.1%**	**0.0%**	**27.9%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 32 Alternative 2: 2032 Proposed Action Arrival Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	1.0%	55.0%	15.0%	1.0%	8.0%	20.0%	100.0%
Narrow Body Jet	1.0%	5.0%	65.0%	1.0%	26.0%	2.0%	100.0%
Regional Jet	1.0%	5.0%	65.0%	1.0%	26.0%	2.0%	100.0%
Cargo							
Heavy Jet	1.0%	55.0%	15.0%	1.0%	8.0%	20.0%	100.0%
Prop	1.4%	23.4%	46.1%	1.0%	26.4%	1.6%	100.0%
General Aviation							
Jet	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Turboprop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Prop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Overall Arrival Total	**1.0%**	**10.0%**	**60.0%**	**1.0%**	**24.3%**	**3.7%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 33 Alternative 2: 2032 Proposed Action Departure Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Narrow Body Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Regional Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Cargo							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Prop	32.7%	35.7%	2.6%	12.8%	1.8%	14.4%	100.0%
General Aviation							
Jet	33.5%	34.5%	3.0%	14.5%	2.0%	12.5%	100.0%
Turboprop	33.5%	34.5%	3.0%	14.5%	2.0%	12.5%	100.0%
Prop	33.5%	34.5%	3.0%	14.5%	2.0%	12.5%	100.0%
Overall Departure Total	**25.7%**	**45.2%**	**0.0%**	**1.1%**	**0.0%**	**27.9%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 34 Alternative 1: 2037 No Action Arrival Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	1.0%	55.0%	15.0%	0.5%	6.5%	22.0%	100.0%
Narrow Body Jet	1.0%	5.0%	65.0%	0.5%	26.5%	2.0%	100.0%
Regional Jet	1.0%	5.0%	65.0%	0.5%	26.5%	2.0%	100.0%
Cargo							
Heavy Jet	1.0%	55.0%	15.0%	0.5%	6.5%	22.0%	100.0%
Prop	1.4%	22.2%	47.4%	0.9%	26.5%	1.6%	100.0%
General Aviation							
Jet	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Turboprop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Prop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Overall Arrival Total	**1.0%**	**10.7%**	**59.3%**	**0.5%**	**24.3%**	**4.2%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 35 Alternative 1: 2037 No Action Departure Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Narrow Body Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Regional Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Cargo							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Prop	24.5%	44.0%	2.5%	12.1%	1.6%	15.3%	100.0%
General Aviation							
Jet	24.0%	44.0%	3.0%	14.5%	2.0%	12.5%	100.0%
Turboprop	24.0%	44.0%	3.0%	14.5%	2.0%	12.5%	100.0%
Prop	24.0%	44.0%	3.0%	14.5%	2.0%	12.5%	100.0%
Overall Departure Total	**25.4%**	**45.5%**	**0.0%**	**1.1%**	**0.0%**	**27.9%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 36 Alternative 2: 2037 Proposed Action Arrival Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	1.0%	55.0%	15.0%	1.0%	7.0%	21.0%	100.0%
Narrow Body Jet	1.0%	5.0%	65.0%	1.0%	26.0%	2.0%	100.0%
Regional Jet	1.0%	5.0%	65.0%	1.0%	26.0%	2.0%	100.0%
Cargo							
Heavy Jet	1.0%	55.0%	15.0%	1.0%	7.0%	21.0%	100.0%
Prop	1.5%	24.1%	45.4%	1.0%	26.5%	1.5%	100.0%
General Aviation							
Jet	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Turboprop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Prop	1.5%	26.0%	43.5%	1.0%	26.5%	1.5%	100.0%
Overall Arrival Total	**1.0%**	**10.6%**	**59.4%**	**1.0%**	**24.0%**	**4.0%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 37 Alternative 2: 2037 Proposed Action Departure Runway Utilization per Operator Category

Operator Category	16C	16L	16R	34C	34L	34R	Total
Passenger							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Narrow Body Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Regional Jet	27.0%	44.0%	0.0%	1.0%	0.0%	28.0%	100.0%
Cargo							
Heavy Jet	13.0%	58.0%	0.0%	0.5%	0.0%	28.5%	100.0%
Prop	32.9%	35.4%	2.7%	13.3%	1.8%	13.9%	100.0%
General Aviation							
Jet	33.5%	34.5%	3.0%	14.5%	2.0%	12.5%	100.0%
Turboprop	33.5%	34.5%	3.0%	14.5%	2.0%	12.5%	100.0%
Prop	33.5%	34.5%	3.0%	14.5%	2.0%	12.5%	100.0%
Overall Departure Total	**25.5%**	**45.4%**	**0.0%**	**1.1%**	**0.0%**	**27.9%**	**100.0%**

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

2.6 Flight Tracks

Flight track locations for the alternatives in 2032 and 2037 would not change. As such, the flight tracks for Alternative 1 and Alternative 2 in 2032 and 2037 are expected to be the same as the Existing (2022) condition.[5]

2.7 Aircraft Weight, Trip Length

Table 38 through Table 45 presents the departure stage length distributions for each of the alternatives. The stage length was estimated for each alternative in 2032 and 2037 by using operational output from the TAAM airfield simulation modeling.

Table 38 Alternative 1: 2032 No Action Daytime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	6.4%	0.0%	2.0%	0.0%	38.3%	53.3%	0.0%	0.0%	100.0%
Narrow Body Jet	3.9%	53.5%	17.4%	25.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	72.8%	23.2%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	22.8%	27.4%	22.0%	0.0%	19.8%	8.1%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
General Aviation										
Jet	57.6%	0.0%	0.0%	42.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

[5] In Alternative 2, it is expected that the Runway 34R arrival profile will be slightly higher due to the relocation of the glide slope. This higher Runway 34R arrival profile was not specifically included in this analysis because AEDT does not provide a function to reflect this minor change. Furthermore, by not including the change in Runway 34R arrival profile this analysis represents a conservative evaluation of noise impacts.

Table 39 Alternative 1: 2032 No Action Nighttime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	0.0%	25.5%	0.0%	0.0%	0.0%	74.5%	0.0%	0.0%	100.0%
Narrow Body Jet	4.4%	33.4%	24.2%	38.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	0.0%	24.1%	63.4%	0.0%	0.0%	12.5%	0.0%	0.0%	100.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General Aviation										
Jet	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Turboprop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 40 Alternative 2: 2032 Proposed Action Daytime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	5.1%	0.0%	2.0%	0.0%	40.4%	52.4%	0.0%	0.0%	100.0%
Narrow Body Jet	3.8%	52.0%	17.9%	26.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	72.7%	23.4%	3.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	22.8%	27.4%	22.0%	0.0%	19.8%	8.1%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
General Aviation										
Jet	57.6%	0.0%	0.0%	42.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 41 Alternative 2: 2032 Proposed Action Nighttime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	0.0%	25.5%	0.0%	0.0%	0.0%	74.5%	0.0%	0.0%	100.0%
Narrow Body Jet	4.5%	33.9%	24.5%	37.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	85.7%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	0.0%	24.1%	63.4%	0.0%	0.0%	12.5%	0.0%	0.0%	100.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General Aviation										
Jet	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Turboprop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 42 Alternative 1: 2037 No Action Daytime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	8.3%	0.0%	1.7%	0.0%	37.7%	52.3%	0.0%	0.0%	100.0%
Narrow Body Jet	4.0%	51.0%	14.8%	30.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	74.5%	21.3%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	16.7%	25.5%	22.7%	0.0%	27.5%	7.7%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
General Aviation										
Jet	57.7%	0.0%	0.0%	42.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 43 Alternative 1: 2037 No Action Nighttime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Narrow Body Jet	2.2%	36.2%	22.4%	39.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	88.2%	11.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	0.0%	32.8%	56.2%	0.0%	0.0%	11.0%	0.0%	0.0%	100.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General Aviation										
Jet	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Turboprop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 44 Alternative 2: 2037 Proposed Action Daytime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	6.6%	0.0%	2.1%	0.0%	41.2%	50.1%	0.0%	0.0%	100.0%
Narrow Body Jet	3.8%	52.7%	15.4%	28.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	74.7%	21.2%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	13.7%	30.6%	21.0%	0.0%	27.1%	7.6%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
General Aviation										
Jet	57.7%	0.0%	0.0%	42.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Turboprop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Prop	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Table 45 Alternative 2: 2037 Proposed Action Nighttime Stage Length Distribution

Operator Category	1	2	3	4	5	6	7	8	9	Total
Passenger										
Heavy Jet	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Narrow Body Jet	3.6%	33.0%	21.4%	42.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regional Jet	88.9%	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cargo										
Heavy Jet	0.0%	0.0%	28.9%	59.5%	0.0%	0.0%	11.6%	0.0%	0.0%	100.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General Aviation										
Jet	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Turboprop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note: Totals may not sum due to rounding.
Source: L&B Analysis, 2023.

Appendix A

Table A-1 Arrival and Departure Flight Track Utilization

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	16C	16CA2A	1.57%	1.78%	--	Jet, Turbo
A	16C	16CA2A1	0.52%	2.07%	--	Jet, Turbo
A	16C	16CA2A2	0.71%	0.36%	--	Jet, Turbo
A	16C	16CA2A3	0.43%	0.06%	--	Jet, Turbo
A	16C	16CA2A4	0.34%	0.59%	--	Jet, Turbo
A	16C	16CA2B	4.67%	3.55%	--	Jet, Turbo
A	16C	16CA2B1	1.09%	2.61%	--	Jet, Turbo
A	16C	16CA2B2	1.09%	2.61%	--	Jet, Turbo
A	16C	16CA2B3	0.41%	2.43%	--	Jet, Turbo
A	16C	16CA2B4	0.52%	2.37%	--	Jet, Turbo
A	16C	16CA2C	0.40%	0.18%	--	Jet, Turbo
A	16C	16CA2C1	0.29%	0.53%	--	Jet, Turbo
A	16C	16CA2C2	0.09%	0.30%	--	Jet, Turbo
A	16C	16CA2C3	0.11%	0.41%	--	Jet, Turbo
A	16C	16CA2C4	0.02%	0.30%	--	Jet, Turbo
A	16C	16CA3A	2.09%	1.54%	--	Jet, Turbo
A	16C	16CA3A1	0.71%	1.78%	--	Jet, Turbo
A	16C	16CA3A2	1.65%	1.78%	--	Jet, Turbo
A	16C	16CA3A3	0.24%	1.48%	--	Jet, Turbo
A	16C	16CA3A4	0.71%	0.59%	--	Jet, Turbo
A	16C	16CA3B	4.72%	5.33%	--	Jet, Turbo
A	16C	16CA3B1	2.78%	5.92%	--	Jet, Turbo
A	16C	16CA3B2	2.78%	2.96%	--	Jet, Turbo
A	16C	16CA3B3	0.90%	2.96%	--	Jet, Turbo
A	16C	16CA3B4	0.52%	1.48%	--	Jet, Turbo
A	16C	16CA3C	2.37%	2.13%	--	Jet, Turbo
A	16C	16CA3C1	0.71%	0.59%	--	Jet, Turbo
A	16C	16CA3C2	1.47%	1.78%	--	Jet, Turbo
A	16C	16CA3C3	0.15%	0.59%	--	Jet, Turbo
A	16C	16CA3C4	0.24%	0.87%	--	Jet, Turbo
A	16C	16CA3D	0.75%	--	--	Jet Only
A	16C	16CA3D1	0.38%	--	--	Jet Only
A	16C	16CA3D2	0.38%	--	--	Jet Only
A	16C	16CA3D3	0.38%	--	--	Jet Only
A	16C	16CA3D4	0.38%	--	--	Jet Only
A	16C	16CA4A	6.57%	5.91%	--	Jet, Turbo
A	16C	16CA4A1	5.61%	3.55%	--	Jet, Turbo
A	16C	16CA4A2	5.61%	3.55%	--	Jet, Turbo
A	16C	16CA4A3	5.04%	2.37%	--	Jet, Turbo
A	16C	16CA4A4	5.04%	4.74%	--	Jet, Turbo
A	16C	16CA4A5	4.67%	2.37%	--	Jet, Turbo
A	16C	16CA4A6	4.67%	4.74%	--	Jet, Turbo
A	16C	16CA4A7	1.65%	2.37%	--	Jet, Turbo
A	16C	16CA4A8	1.65%	1.18%	--	Jet, Turbo
A	16C	16CA4B	0.54%	0.31%	--	Jet, Turbo
A	16C	16CA4B1	0.09%	0.14%	--	Jet, Turbo
A	16C	16CA4B2	0.09%	0.14%	--	Jet, Turbo
A	16C	16CA4B3	0.04%	0.09%	--	Jet, Turbo
A	16C	16CA4B4	0.04%	0.09%	--	Jet, Turbo
A	16C	16CA4B5	0.02%	0.05%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	16C	16CA4B6	0.02%	0.05%	--	Jet, Turbo
A	16C	16CA4B7	0.04%	0.02%	--	Jet, Turbo
A	16C	16CA4B8	0.04%	0.02%	--	Jet, Turbo
A	16C	16CA5A	7.49%	4.73%	--	Jet, Turbo
A	16C	16CA5A1	1.28%	2.37%	--	Jet, Turbo
A	16C	16CA5A2	5.61%	3.55%	--	Jet, Turbo
A	16C	16CA5A3	0.52%	1.78%	--	Jet, Turbo
A	16C	16CA5A4	5.61%	1.78%	--	Jet, Turbo
A	16C	16CA5A5	0.09%	0.89%	--	Jet, Turbo
A	16C	16CA5A6	0.90%	0.89%	--	Jet, Turbo
A	16C	16CA5A7	0.05%	0.18%	--	Jet, Turbo
A	16C	16CA5A8	0.43%	0.18%	--	Jet, Turbo
A	16C	16CA5B	--	--	--	Not In Use
A	16C	16CA5B1	--	--	--	Not In Use
A	16C	16CA5B2	--	--	--	Not In Use
A	16C	16CA5B3	--	--	--	Not In Use
A	16C	16CA5B4	--	--	--	Not In Use
A	16C	16CA5B5	--	--	--	Not In Use
A	16C	16CA5B6	--	--	--	Not In Use
A	16C	16CA5B7	--	--	--	Not In Use
A	16C	16CA5B8	--	--	--	Not In Use
A	16C	16CA6A	--	--	67.74%	Prop Only
A	16C	16CA6A1	--	--	16.13%	Prop Only
A	16C	16CA6A2	--	--	16.13%	Prop Only
A	16L	16LA2A	1.57%	1.78%	--	Jet, Turbo
A	16L	16LA2A1	0.52%	2.07%	--	Jet, Turbo
A	16L	16LA2A2	0.71%	0.36%	--	Jet, Turbo
A	16L	16LA2A3	0.43%	0.06%	--	Jet, Turbo
A	16L	16LA2A4	0.34%	0.59%	--	Jet, Turbo
A	16L	16LA2B	4.67%	3.55%	--	Jet, Turbo
A	16L	16LA2B1	1.09%	2.61%	--	Jet, Turbo
A	16L	16LA2B2	1.09%	2.61%	--	Jet, Turbo
A	16L	16LA2B3	0.41%	2.43%	--	Jet, Turbo
A	16L	16LA2B4	0.52%	2.37%	--	Jet, Turbo
A	16L	16LA2C	0.40%	0.18%	--	Jet, Turbo
A	16L	16LA2C1	0.29%	0.53%	--	Jet, Turbo
A	16L	16LA2C2	0.09%	0.30%	--	Jet, Turbo
A	16L	16LA2C3	0.11%	0.41%	--	Jet, Turbo
A	16L	16LA2C4	0.02%	0.30%	--	Jet, Turbo
A	16L	16LA3A	2.09%	1.54%	50.00%	Jet, Turbo, Prop
A	16L	16LA3A1	0.71%	1.78%	20.00%	Jet, Turbo, Prop
A	16L	16LA3A2	1.65%	1.78%	20.00%	Jet, Turbo, Prop
A	16L	16LA3A3	0.24%	1.48%	10.00%	Jet, Turbo, Prop
A	16L	16LA3A4	0.71%	0.59%	10.00%	Jet, Turbo, Prop
A	16L	16LA3B	4.72%	5.33%	--	Jet, Turbo
A	16L	16LA3B1	2.78%	5.92%	--	Jet, Turbo
A	16L	16LA3B2	2.78%	2.96%	--	Jet, Turbo
A	16L	16LA3B3	0.90%	2.96%	--	Jet, Turbo
A	16L	16LA3B4	0.52%	1.48%	--	Jet, Turbo
A	16L	16LA3C	2.37%	2.13%	--	Jet, Turbo
A	16L	16LA3C1	0.71%	0.59%	--	Jet, Turbo
A	16L	16LA3C2	1.47%	1.78%	--	Jet, Turbo
A	16L	16LA3C3	0.15%	0.59%	--	Jet, Turbo
A	16L	16LA3C4	0.24%	0.87%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	16L	16LA3D	0.75%		--	Jet Only
A	16L	16LA3D1	0.38%		--	Jet Only
A	16L	16LA3D2	0.38%		--	Jet Only
A	16L	16LA3D3	0.38%		--	Jet Only
A	16L	16LA3D4	0.38%		--	Jet Only
A	16L	16LA4A	6.57%	5.91%	--	Jet, Turbo
A	16L	16LA4A1	5.61%	3.55%	--	Jet, Turbo
A	16L	16LA4A2	5.61%	3.55%	--	Jet, Turbo
A	16L	16LA4A3	5.04%	2.37%	--	Jet, Turbo
A	16L	16LA4A4	5.04%	4.74%	--	Jet, Turbo
A	16L	16LA4A5	4.67%	2.37%	--	Jet, Turbo
A	16L	16LA4A6	4.67%	4.74%	--	Jet, Turbo
A	16L	16LA4A7	1.65%	2.37%	--	Jet, Turbo
A	16L	16LA4A8	1.65%	1.18%	--	Jet, Turbo
A	16L	16LA4B	0.54%	0.31%	--	Jet, Turbo
A	16L	16LA4B1	0.09%	0.14%	--	Jet, Turbo
A	16L	16LA4B2	0.09%	0.14%	--	Jet, Turbo
A	16L	16LA4B3	0.04%	0.09%	--	Jet, Turbo
A	16L	16LA4B4	0.04%	0.09%	--	Jet, Turbo
A	16L	16LA4B5	0.02%	0.05%	--	Jet, Turbo
A	16L	16LA4B6	0.02%	0.05%	--	Jet, Turbo
A	16L	16LA4B7	0.04%	0.02%	--	Jet, Turbo
A	16L	16LA4B8	0.04%	0.02%	--	Jet, Turbo
A	16L	16LA5A	7.49%	4.73%	--	Jet, Turbo
A	16L	16LA5A1	1.28%	2.37%	--	Jet, Turbo
A	16L	16LA5A2	5.61%	3.55%	--	Jet, Turbo
A	16L	16LA5A3	0.52%	1.78%	--	Jet, Turbo
A	16L	16LA5A4	5.61%	1.78%	--	Jet, Turbo
A	16L	16LA5A5	0.09%	0.89%	--	Jet, Turbo
A	16L	16LA5A6	0.90%	0.89%	--	Jet, Turbo
A	16L	16LA5A7	0.05%	0.18%	--	Jet, Turbo
A	16L	16LA5A8	0.43%	0.18%	--	Jet, Turbo
A	16L	16LA5B	--	--	--	Not In Use
A	16L	16LA5B1	--	--	--	Not In Use
A	16L	16LA5B2	--	--	--	Not In Use
A	16L	16LA5B3	--	--	--	Not In Use
A	16L	16LA5B4	--	--	--	Not In Use
A	16L	16LA5B5	--	--	--	Not In Use
A	16L	16LA5B6	--	--	--	Not In Use
A	16L	16LA5B7	--	--	--	Not In Use
A	16L	16LA5B8	--	--	--	Not In Use
A	16R	16RA2A	1.62%	1.78%	12.10%	Jet, Turbo, Prop
A	16R	16RA2A1	0.56%	2.07%	5.10%	Jet, Turbo, Prop
A	16R	16RA2A2	0.75%	0.36%	5.10%	Jet, Turbo, Prop
A	16R	16RA2A3	0.47%	0.06%	3.18%	Jet, Turbo, Prop
A	16R	16RA2A4	0.38%	0.59%	3.18%	Jet, Turbo, Prop
A	16R	16RA2B	4.71%	3.55%	--	Jet, Turbo
A	16R	16RA2B1	1.13%	2.61%	--	Jet, Turbo
A	16R	16RA2B2	1.13%	2.61%	--	Jet, Turbo
A	16R	16RA2B3	0.45%	2.43%	--	Jet, Turbo
A	16R	16RA2B4	0.56%	2.37%	--	Jet, Turbo
A	16R	16RA2C	0.44%	0.18%	--	Jet, Turbo
A	16R	16RA2C1	0.33%	0.53%	--	Jet, Turbo
A	16R	16RA2C2	0.13%	0.30%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	16R	16RA2C3	0.15%	0.41%	--	Jet, Turbo
A	16R	16RA2C4	0.06%	0.30%	--	Jet, Turbo
A	16R	16RA3A	2.14%	1.54%	6.37%	Jet, Turbo, Prop
A	16R	16RA3A1	0.75%	1.78%	5.10%	Jet, Turbo, Prop
A	16R	16RA3A2	1.69%	1.78%	5.10%	Jet, Turbo, Prop
A	16R	16RA3A3	0.28%	1.48%	1.91%	Jet, Turbo, Prop
A	16R	16RA3A4	0.75%	0.59%	1.91%	Jet, Turbo, Prop
A	16R	16RA3B	4.76%	5.33%	--	Jet, Turbo
A	16R	16RA3B1	2.82%	5.92%	--	Jet, Turbo
A	16R	16RA3B2	2.82%	2.96%	--	Jet, Turbo
A	16R	16RA3B3	0.94%	2.96%	--	Jet, Turbo
A	16R	16RA3B4	0.56%	1.48%	--	Jet, Turbo
A	16R	16RA3C	2.41%	2.13%	--	Jet, Turbo
A	16R	16RA3C1	0.75%	0.59%	--	Jet, Turbo
A	16R	16RA3C2	1.51%	1.78%	--	Jet, Turbo
A	16R	16RA3C3	0.19%	0.59%	--	Jet, Turbo
A	16R	16RA3C4	0.28%	0.87%	--	Jet, Turbo
A	16R	16RA4A	6.61%	5.91%	5.73%	Jet, Turbo, Prop
A	16R	16RA4A1	5.65%	3.55%	1.27%	Jet, Turbo, Prop
A	16R	16RA4A2	5.65%	3.55%	1.27%	Jet, Turbo, Prop
A	16R	16RA4A3	5.08%	2.37%	--	Jet, Turbo
A	16R	16RA4A4	5.08%	4.74%	--	Jet, Turbo
A	16R	16RA4A5	4.71%	2.37%	--	Jet, Turbo
A	16R	16RA4A6	4.71%	4.74%	--	Jet, Turbo
A	16R	16RA4A7	1.69%	2.37%	--	Jet, Turbo
A	16R	16RA4A8	1.69%	1.18%	--	Jet, Turbo
A	16R	16RA4B	0.58%	0.31%	--	Jet, Turbo
A	16R	16RA4B1	0.13%	0.14%	--	Jet, Turbo
A	16R	16RA4B2	0.13%	0.14%	--	Jet, Turbo
A	16R	16RA4B3	0.08%	0.09%	--	Jet, Turbo
A	16R	16RA4B4	0.08%	0.09%	--	Jet, Turbo
A	16R	16RA4B5	0.07%	0.05%	--	Jet, Turbo
A	16R	16RA4B6	0.07%	0.05%	--	Jet, Turbo
A	16R	16RA4B7	0.04%	0.02%	--	Jet, Turbo
A	16R	16RA4B8	0.04%	0.02%	--	Jet, Turbo
A	16R	16RA5A	7.53%	4.73%	--	Jet, Turbo
A	16R	16RA5A1	1.32%	2.37%	--	Jet, Turbo
A	16R	16RA5A2	5.65%	3.55%	--	Jet, Turbo
A	16R	16RA5A3	0.56%	1.78%	--	Jet, Turbo
A	16R	16RA5A4	5.65%	1.78%	--	Jet, Turbo
A	16R	16RA5A5	0.13%	0.89%	--	Jet, Turbo
A	16R	16RA5A6	0.94%	0.89%	--	Jet, Turbo
A	16R	16RA5A7	0.09%	0.18%	--	Jet, Turbo
A	16R	16RA5A8	0.47%	0.18%	--	Jet, Turbo
A	16R	16RA5B	--	--	--	Not In Use
A	16R	16RA5B1	--	--	--	Not In Use
A	16R	16RA5B2	--	--	--	Not In Use
A	16R	16RA5B3	--	--	--	Not In Use
A	16R	16RA5B4	--	--	--	Not In Use
A	16R	16RA5B5	--	--	--	Not In Use
A	16R	16RA5B6	--	--	--	Not In Use
A	16R	16RA5B7	--	--	--	Not In Use
A	16R	16RA5B8	--	--	--	Not In Use
A	16R	16RA6A	--	--	28.66%	Prop Only

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	16R	16RA6A1	--	--	7.01%	Prop Only
A	16R	16RA6A2	--	--	7.01%	Prop Only
A	34C	34CA2A	1.60%	0.97%	2.82%	Jet, Turbo, Prop
A	34C	34CA2A1	1.89%	1.36%	1.79%	Jet, Turbo, Prop
A	34C	34CA2A2	0.81%	0.58%	1.79%	Jet, Turbo, Prop
A	34C	34CA2A3	1.89%	1.36%	0.46%	Jet, Turbo, Prop
A	34C	34CA2A4	0.81%	0.58%	0.46%	Jet, Turbo, Prop
A	34C	34CA2B	4.29%	2.73%	--	Jet, Turbo
A	34C	34CA2B1	2.71%	1.95%	--	Jet, Turbo
A	34C	34CA2B2	2.71%	1.95%	--	Jet, Turbo
A	34C	34CA2B3	2.17%	1.56%	--	Jet, Turbo
A	34C	34CA2B4	2.17%	1.56%	--	Jet, Turbo
A	34C	34CA2C	--	--	--	Not In Use
A	34C	34CA2C1	--	--	--	Not In Use
A	34C	34CA2C2	--	--	--	Not In Use
A	34C	34CA2C3	--	--	--	Not In Use
A	34C	34CA2C4	--	--	--	Not In Use
A	34C	34CA2D	1.60%	0.97%	--	Jet, Turbo
A	34C	34CA2D1	0.81%	0.58%	--	Jet, Turbo
A	34C	34CA2D2	1.89%	1.36%	--	Jet, Turbo
A	34C	34CA2D3	0.81%	0.58%	--	Jet, Turbo
A	34C	34CA2D4	1.89%	1.36%	--	Jet, Turbo
A	34C	34CA3A	14.17%	11.61%	2.82%	Jet, Turbo, Prop
A	34C	34CA3A1	8.86%	7.23%	1.79%	Jet, Turbo, Prop
A	34C	34CA3A2	8.86%	7.23%	1.79%	Jet, Turbo, Prop
A	34C	34CA3A3	2.29%	1.87%	0.46%	Jet, Turbo, Prop
A	34C	34CA3A4	2.29%	1.87%	0.46%	Jet, Turbo, Prop
A	34C	34CA3B	0.94%	0.89%	--	Jet, Turbo
A	34C	34CA3B1	0.94%	0.89%	--	Jet, Turbo
A	34C	34CA3B2	0.94%	0.89%	--	Jet, Turbo
A	34C	34CA3B3	0.94%	0.89%	--	Jet, Turbo
A	34C	34CA3B4	0.94%	0.89%	--	Jet, Turbo
A	34C	34CA3C	--	--	--	Not In Use
A	34C	34CA3C1	--	--	--	Not In Use
A	34C	34CA3C2	--	--	--	Not In Use
A	34C	34CA3C3	--	--	--	Not In Use
A	34C	34CA3C4	--	--	--	Not In Use
A	34C	34CA4A	4.21%	5.50%	7.58%	Jet, Turbo, Prop
A	34C	34CA4A1	4.21%	5.50%	6.52%	Jet, Turbo, Prop
A	34C	34CA4A2	3.19%	4.34%	6.52%	Jet, Turbo, Prop
A	34C	34CA4A3	3.19%	4.34%	4.13%	Jet, Turbo, Prop
A	34C	34CA4A4	1.85%	2.89%	4.13%	Jet, Turbo, Prop
A	34C	34CA4A5	1.85%	2.89%	1.95%	Jet, Turbo, Prop
A	34C	34CA4A6	0.82%	1.45%	1.95%	Jet, Turbo, Prop
A	34C	34CA4A7	0.82%	1.45%	0.68%	Jet, Turbo, Prop
A	34C	34CA4A8	0.41%	0.58%	0.68%	Jet, Turbo, Prop
A	34C	34CA5A	1.95%	3.82%	--	Jet, Turbo
A	34C	34CA5A1	1.23%	3.30%	--	Jet, Turbo
A	34C	34CA5A2	2.25%	3.30%	--	Jet, Turbo
A	34C	34CA5A3	0.61%	2.08%	--	Jet, Turbo
A	34C	34CA5A4	1.95%	2.08%	--	Jet, Turbo
A	34C	34CA5A5	0.20%	0.87%	--	Jet, Turbo
A	34C	34CA5A6	1.23%	0.87%	--	Jet, Turbo
A	34C	34CA5A7	0.20%	0.35%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	34C	34CA5A8	0.61%	0.17%	--	Jet, Turbo
A	34C	34CA5B	--	0.17%	--	Turbo Only
A	34C	34CA5B1	--	0.17%	--	Turbo Only
A	34C	34CA5B2	--	0.17%	--	Turbo Only
A	34C	34CA5C	--	--	--	Not In Use
A	34C	34CA5C1	--	--	--	Not In Use
A	34C	34CA5C2	--	--	--	Not In Use
A	34C	34CA5C3	--	--	--	Not In Use
A	34C	34CA5C4	--	--	--	Not In Use
A	34C	34CA5C5	--	--	--	Not In Use
A	34C	34CA5C6	--	--	--	Not In Use
A	34C	34CA5C7	--	--	--	Not In Use
A	34C	34CA5C8	--	--	--	Not In Use
A	34C	34CA6P	--	--	34.70%	Prop Only
A	34C	34CA6P1	--	--	8.26%	Prop Only
A	34C	34CA6P2	--	--	8.26%	Prop Only
A	34L	34LA2A	1.60%	0.97%	2.82%	Jet, Turbo, Prop
A	34L	34LA2A1	1.89%	1.36%	1.79%	Jet, Turbo, Prop
A	34L	34LA2A2	0.81%	0.58%	1.79%	Jet, Turbo, Prop
A	34L	34LA2A3	1.89%	1.36%	0.46%	Jet, Turbo, Prop
A	34L	34LA2A4	0.81%	0.58%	0.46%	Jet, Turbo, Prop
A	34L	34LA2B	4.29%	2.73%	--	Jet, Turbo
A	34L	34LA2B1	2.71%	1.95%	--	Jet, Turbo
A	34L	34LA2B2	2.71%	1.95%	--	Jet, Turbo
A	34L	34LA2B3	2.17%	1.56%	--	Jet, Turbo
A	34L	34LA2B4	2.17%	1.56%	--	Jet, Turbo
A	34L	34LA2C	--	--	--	Not In Use
A	34L	34LA2C1	--	--	--	Not In Use
A	34L	34LA2C2	--	--	--	Not In Use
A	34L	34LA2C3	--	--	--	Not In Use
A	34L	34LA2C4	--	--	--	Not In Use
A	34L	34LA2D	1.60%	0.97%	--	Jet, Turbo
A	34L	34LA2D1	0.81%	0.58%	--	Jet, Turbo
A	34L	34LA2D2	1.89%	1.36%	--	Jet, Turbo
A	34L	34LA2D3	0.81%	0.58%	--	Jet, Turbo
A	34L	34LA2D4	1.89%	1.36%	--	Jet, Turbo
A	34L	34LA3A	14.17%	11.61%	2.82%	Jet, Turbo, Prop
A	34L	34LA3A1	8.86%	7.23%	1.79%	Jet, Turbo, Prop
A	34L	34LA3A2	8.86%	7.23%	1.79%	Jet, Turbo, Prop
A	34L	34LA3A3	2.29%	1.87%	0.46%	Jet, Turbo, Prop
A	34L	34LA3A4	2.29%	1.87%	0.46%	Jet, Turbo, Prop
A	34L	34LA3B	0.94%	0.89%	--	Jet, Turbo
A	34L	34LA3B1	0.94%	0.89%	--	Jet, Turbo
A	34L	34LA3B2	0.94%	0.89%	--	Jet, Turbo
A	34L	34LA3B3	0.94%	0.89%	--	Jet, Turbo
A	34L	34LA3B4	0.94%	0.89%	--	Jet, Turbo
A	34L	34LA3C	--	--	--	Not In Use
A	34L	34LA3C1	--	--	--	Not In Use
A	34L	34LA3C2	--	--	--	Not In Use
A	34L	34LA3C3	--	--	--	Not In Use
A	34L	34LA3C4	--	--	--	Not In Use
A	34L	34LA4A	4.21%	5.50%	7.58%	Jet, Turbo, Prop
A	34L	34LA4A1	4.21%	5.50%	6.52%	Jet, Turbo, Prop
A	34L	34LA4A2	3.19%	4.34%	6.52%	Jet, Turbo, Prop

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	34L	34LA4A3	3.19%	4.34%	4.13%	Jet, Turbo, Prop
A	34L	34LA4A4	1.85%	2.89%	4.13%	Jet, Turbo, Prop
A	34L	34LA4A5	1.85%	2.89%	1.95%	Jet, Turbo, Prop
A	34L	34LA4A6	0.82%	1.45%	1.95%	Jet, Turbo, Prop
A	34L	34LA4A7	0.82%	1.45%	0.68%	Jet, Turbo, Prop
A	34L	34LA4A8	0.41%	0.58%	0.68%	Jet, Turbo, Prop
A	34L	34LA5A	1.95%	3.82%	--	Jet, Turbo
A	34L	34LA5A1	1.23%	3.30%	--	Jet, Turbo
A	34L	34LA5A2	2.25%	3.30%	--	Jet, Turbo
A	34L	34LA5A3	0.61%	2.08%	--	Jet, Turbo
A	34L	34LA5A4	1.95%	2.08%	--	Jet, Turbo
A	34L	34LA5A5	0.20%	0.87%	--	Jet, Turbo
A	34L	34LA5A6	1.23%	0.87%	--	Jet, Turbo
A	34L	34LA5A7	0.20%	0.35%	--	Jet, Turbo
A	34L	34LA5A8	0.61%	0.17%	--	Jet, Turbo
A	34L	34LA5B	--	0.17%	--	Turbo Only
A	34L	34LA5B1	--	0.17%	--	Turbo Only
A	34L	34LA5B2	--	0.17%	--	Turbo Only
A	34L	34LA5C	--	--	--	Not In Use
A	34L	34LA5C1	--	--	--	Not In Use
A	34L	34LA5C2	--	--	--	Not In Use
A	34L	34LA5C3	--	--	--	Not In Use
A	34L	34LA5C4	--	--	--	Not In Use
A	34L	34LA5C5	--	--	--	Not In Use
A	34L	34LA5C6	--	--	--	Not In Use
A	34L	34LA5C7	--	--	--	Not In Use
A	34L	34LA5C8	--	--	--	Not In Use
A	34L	34LA6P	--	--	34.70%	Prop Only
A	34L	34LA6P1	--	--	8.26%	Prop Only
A	34L	34LA6P2	--	--	8.26%	Prop Only
A	34R	34RA2A	1.60%	0.97%	3.51%	Jet, Turbo, Prop
A	34R	34RA2A1	1.89%	1.36%	2.22%	Jet, Turbo, Prop
A	34R	34RA2A2	0.81%	0.58%	2.22%	Jet, Turbo, Prop
A	34R	34RA2A3	1.89%	1.36%	0.57%	Jet, Turbo, Prop
A	34R	34RA2A4	0.81%	0.58%	0.57%	Jet, Turbo, Prop
A	34R	34RA2B	4.29%	2.73%	--	Jet, Turbo
A	34R	34RA2B1	2.71%	1.95%	--	Jet, Turbo
A	34R	34RA2B2	2.71%	1.95%	--	Jet, Turbo
A	34R	34RA2B3	2.17%	1.56%	--	Jet, Turbo
A	34R	34RA2B4	2.17%	1.56%	--	Jet, Turbo
A	34R	34RA2C	--	--	--	Not In Use
A	34R	34RA2C1	--	--	--	Not In Use
A	34R	34RA2C2	--	--	--	Not In Use
A	34R	34RA2C3	--	--	--	Not In Use
A	34R	34RA2C4	--	--	--	Not In Use
A	34R	34RA2D	1.60%	0.97%	--	Jet, Turbo
A	34R	34RA2D1	0.81%	0.58%	--	Jet, Turbo
A	34R	34RA2D2	1.89%	1.36%	--	Jet, Turbo
A	34R	34RA2D3	0.81%	0.58%	--	Jet, Turbo
A	34R	34RA2D4	1.89%	1.36%	--	Jet, Turbo
A	34R	34RA3A	14.17%	11.61%	3.51%	Jet, Turbo, Prop
A	34R	34RA3A1	8.86%	7.23%	2.22%	Jet, Turbo, Prop
A	34R	34RA3A2	8.86%	7.23%	2.22%	Jet, Turbo, Prop
A	34R	34RA3A3	2.29%	1.87%	0.57%	Jet, Turbo, Prop

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
A	34R	34RA3A4	2.29%	1.87%	0.57%	Jet, Turbo, Prop
A	34R	34RA3B	0.94%	0.89%	--	Jet, Turbo
A	34R	34RA3B1	0.94%	0.89%	--	Jet, Turbo
A	34R	34RA3B2	0.94%	0.89%	--	Jet, Turbo
A	34R	34RA3B3	0.94%	0.89%	--	Jet, Turbo
A	34R	34RA3B4	0.94%	0.89%	--	Jet, Turbo
A	34R	34RA3C	--	--	--	Not In Use
A	34R	34RA3C1	--	--	--	Not In Use
A	34R	34RA3C2	--	--	--	Not In Use
A	34R	34RA3C3	--	--	--	Not In Use
A	34R	34RA3C4	--	--	--	Not In Use
A	34R	34RA4A	4.21%	5.50%	18.16%	Jet, Turbo, Prop
A	34R	34RA4A1	4.21%	5.50%	15.63%	Jet, Turbo, Prop
A	34R	34RA4A2	3.19%	4.34%	15.63%	Jet, Turbo, Prop
A	34R	34RA4A3	3.19%	4.34%	9.90%	Jet, Turbo, Prop
A	34R	34RA4A4	1.85%	2.89%	9.90%	Jet, Turbo, Prop
A	34R	34RA4A5	1.85%	2.89%	4.66%	Jet, Turbo, Prop
A	34R	34RA4A6	0.82%	1.45%	4.66%	Jet, Turbo, Prop
A	34R	34RA4A7	0.82%	1.45%	1.64%	Jet, Turbo, Prop
A	34R	34RA4A8	0.41%	0.58%	1.64%	Jet, Turbo, Prop
A	34R	34RA5A	1.95%	3.82%	--	Jet, Turbo
A	34R	34RA5A1	1.23%	3.30%	--	Jet, Turbo
A	34R	34RA5A2	2.25%	3.30%	--	Jet, Turbo
A	34R	34RA5A3	0.61%	2.08%	--	Jet, Turbo
A	34R	34RA5A4	1.95%	2.08%	--	Jet, Turbo
A	34R	34RA5A5	0.20%	0.87%	--	Jet, Turbo
A	34R	34RA5A6	1.23%	0.87%	--	Jet, Turbo
A	34R	34RA5A7	0.20%	0.35%	--	Jet, Turbo
A	34R	34RA5A8	0.61%	0.17%	--	Jet, Turbo
A	34R	34RA5B	--	0.17%	--	Turbo Only
A	34R	34RA5B1	--	0.17%	--	Turbo Only
A	34R	34RA5B2	--	0.17%	--	Turbo Only
A	34R	34RA5C	--	--	--	Not In Use
A	34R	34RA5C1	--	--	--	Not In Use
A	34R	34RA5C2	--	--	--	Not In Use
A	34R	34RA5C3	--	--	--	Not In Use
A	34R	34RA5C4	--	--	--	Not In Use
A	34R	34RA5C5	--	--	--	Not In Use
A	34R	34RA5C6	--	--	--	Not In Use
A	34R	34RA5C7	--	--	--	Not In Use
A	34R	34RA5C8	--	--	--	Not In Use
D	16C	16CD1A	6.52%	--	--	Jet Only
D	16C	16CD1A1	0.84%	--	--	Jet Only
D	16C	16CD1A2	0.84%	--	--	Jet Only
D	16C	16CD1A3	0.21%	--	--	Jet Only
D	16C	16CD1A4	0.21%	--	--	Jet Only
D	16C	16CD1B	2.99%	--	--	Jet Only
D	16C	16CD1B1	0.42%	--	--	Jet Only
D	16C	16CD1B2	0.42%	--	--	Jet Only
D	16C	16CD1B3	0.21%	--	--	Jet Only
D	16C	16CD1B4	0.21%	--	--	Jet Only
D	16C	16CD1C	0.00%	10.75%	--	Jet, Turbo
D	16C	16CD1C1	0.00%	2.37%	--	Jet, Turbo
D	16C	16CD1C2	0.00%	3.95%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	16C	16CD1C3	0.00%	7.91%	--	Jet, Turbo
D	16C	16CD1C4	0.00%	2.37%	--	Jet, Turbo
D	16C	16CD1D	10.53%	1.98%	--	Jet, Turbo
D	16C	16CD1D1	4.21%	--	--	Jet Only
D	16C	16CD1D2	4.21%	--	--	Jet Only
D	16C	16CD1D3	2.10%	--	--	Jet Only
D	16C	16CD1D4	2.10%	--	--	Jet Only
D	16C	16CD2A	1.09%	--	--	Jet Only
D	16C	16CD2A1	0.84%	--	--	Jet Only
D	16C	16CD2A2	0.84%	--	--	Jet Only
D	16C	16CD2A3	0.21%	--	--	Jet Only
D	16C	16CD2A4	0.21%	--	--	Jet Only
D	16C	16CD2B	1.25%	--	--	Jet Only
D	16C	16CD2B1	0.53%	--	--	Jet Only
D	16C	16CD2B2	0.53%	--	--	Jet Only
D	16C	16CD2B3	0.32%	--	--	Jet Only
D	16C	16CD2B4	0.32%	--	--	Jet Only
D	16C	16CD2C	0.42%	--	--	Jet Only
D	16C	16CD2C1	0.32%	--	--	Jet Only
D	16C	16CD2C2	0.11%	--	--	Jet Only
D	16C	16CD2C3	0.32%	--	--	Jet Only
D	16C	16CD2C4	0.11%	--	--	Jet Only
D	16C	16CD2D	13.05%	--	--	Jet Only
D	16C	16CD2D1	6.40%	--	--	Jet Only
D	16C	16CD2D2	2.10%	--	--	Jet Only
D	16C	16CD2D3	6.40%	--	--	Jet Only
D	16C	16CD2D4	2.10%	--	--	Jet Only
D	16C	16CD3A	11.11%	--	--	Jet Only
D	16C	16CD3A1	0.63%	--	--	Jet Only
D	16C	16CD3A2	0.63%	--	--	Jet Only
D	16C	16CD3A3	0.21%	--	--	Jet Only
D	16C	16CD3A4	0.21%	--	--	Jet Only
D	16C	16CD3B	8.42%	--	--	Jet Only
D	16C	16CD3B1	0.21%	--	--	Jet Only
D	16C	16CD3B2	2.53%	--	--	Jet Only
D	16C	16CD3B3	0.21%	--	--	Jet Only
D	16C	16CD3B4	0.84%	--	--	Jet Only
D	16C	16CD4A	--	7.92%	--	Turbo Only
D	16C	16CD4A1	--	2.57%	--	Turbo Only
D	16C	16CD4A2	--	2.57%	--	Turbo Only
D	16C	16CD4A3	--	1.98%	--	Turbo Only
D	16C	16CD4A4	--	1.98%	--	Turbo Only
D	16C	16CD4B	--	14.68%	--	Turbo Only
D	16C	16CD4B1	--	0.79%	--	Turbo Only
D	16C	16CD4B2	--	2.57%	--	Turbo Only
D	16C	16CD4B3	--	0.40%	--	Turbo Only
D	16C	16CD4B4	--	0.79%	--	Turbo Only
D	16C	16CD4C	0.54%	--	--	Jet Only
D	16C	16CD4C1	0.21%	--	--	Jet Only
D	16C	16CD4C2	0.42%	--	--	Jet Only
D	16C	16CD4C3	0.08%	--	--	Jet Only
D	16C	16CD4C4	0.27%	--	--	Jet Only
D	16C	16CD4D	--	6.42%	8.75%	Turbo, Prop
D	16C	16CD4D1	--	2.47%	2.50%	Turbo, Prop

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	16C	16CD4D2	--	1.48%	2.50%	Turbo, Prop
D	16C	16CD4D3	--	2.47%	10.00%	Turbo, Prop
D	16C	16CD4D4	--	1.48%	10.00%	Turbo, Prop
D	16C	16CD4E	--	2.43%	--	Turbo Only
D	16C	16CD4E1	--	1.48%	--	Turbo Only
D	16C	16CD4E2	--	1.48%	--	Turbo Only
D	16C	16CD4E3	--	0.99%	--	Turbo Only
D	16C	16CD4E4	--	0.99%	--	Turbo Only
D	16C	16CD4F			35.00%	Prop Only
D	16C	16CD4F1			18.75%	Prop Only
D	16C	16CD4F2			12.50%	Prop Only
D	16C	16CD5A	--	0.47%	--	Turbo Only
D	16C	16CD5A1	--	0.16%	--	Turbo Only
D	16C	16CD5A2	--	0.16%	--	Turbo Only
D	16C	16CD5A3	--	0.10%	--	Turbo Only
D	16C	16CD5A4	--	0.10%	--	Turbo Only
D	16C	16CD5B	--	2.65%	--	Turbo Only
D	16C	16CD5B1	--	1.48%	--	Turbo Only
D	16C	16CD5B2	--	1.48%	--	Turbo Only
D	16C	16CD5B3	--	0.99%	--	Turbo Only
D	16C	16CD5B4	--	0.99%	--	Turbo Only
D	16C	16CD5C	--	1.58%	--	Turbo Only
D	16C	16CD5C1	--	0.79%	--	Turbo Only
D	16C	16CD5C2	--	0.79%	--	Turbo Only
D	16C	16CD5C3	--	0.49%	--	Turbo Only
D	16C	16CD5C4	--	0.49%	--	Turbo Only
D	16L	16LD1A	6.52%	--	--	Jet Only
D	16L	16LD1A1	0.84%	--	--	Jet Only
D	16L	16LD1A2	0.84%	--	--	Jet Only
D	16L	16LD1A3	0.21%	--	--	Jet Only
D	16L	16LD1A4	0.21%	--	--	Jet Only
D	16L	16LD1B	2.99%	--	--	Jet Only
D	16L	16LD1B1	0.42%	--	--	Jet Only
D	16L	16LD1B2	0.42%	--	--	Jet Only
D	16L	16LD1B3	0.21%	--	--	Jet Only
D	16L	16LD1B4	0.21%	--	--	Jet Only
D	16L	16LD1C	--	10.75%	--	Turbo Only
D	16L	16LD1C1	--	2.37%	--	Turbo Only
D	16L	16LD1C2	--	3.95%	--	Turbo Only
D	16L	16LD1C3	--	7.91%	--	Turbo Only
D	16L	16LD1C4	--	2.37%	--	Turbo Only
D	16L	16LD1D	10.53%	1.98%	--	Jet, Turbo
D	16L	16LD1D1	4.21%	--	--	Jet Only
D	16L	16LD1D2	4.21%	--	--	Jet Only
D	16L	16LD1D3	2.10%	--	--	Jet Only
D	16L	16LD1D4	2.10%	--	--	Jet Only
D	16L	16LD2A	1.09%	--	--	Jet Only
D	16L	16LD2A1	0.84%	--	--	Jet Only
D	16L	16LD2A2	0.84%	--	--	Jet Only
D	16L	16LD2A3	0.21%	--	--	Jet Only
D	16L	16LD2A4	0.21%	--	--	Jet Only
D	16L	16LD2B	1.25%	--	--	Jet Only
D	16L	16LD2B1	0.53%	--	--	Jet Only
D	16L	16LD2B2	0.53%	--	--	Jet Only

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	16L	16LD2B3	0.32%	--	--	Jet Only
D	16L	16LD2B4	0.32%	--	--	Jet Only
D	16L	16LD2C	0.42%	--	--	Jet Only
D	16L	16LD2C1	0.32%	--	--	Jet Only
D	16L	16LD2C2	0.11%	--	--	Jet Only
D	16L	16LD2C3	0.32%	--	--	Jet Only
D	16L	16LD2C4	0.11%	--	--	Jet Only
D	16L	16LD2D	13.05%	--	--	Jet Only
D	16L	16LD2D1	6.40%	--	--	Jet Only
D	16L	16LD2D2	2.10%	--	--	Jet Only
D	16L	16LD2D3	6.40%	--	--	Jet Only
D	16L	16LD2D4	2.10%	--	--	Jet Only
D	16L	16LD3A	11.11%	--	--	Jet Only
D	16L	16LD3A1	0.63%	--	--	Jet Only
D	16L	16LD3A2	0.63%	--	--	Jet Only
D	16L	16LD3A3	0.21%	--	--	Jet Only
D	16L	16LD3A4	0.21%	--	--	Jet Only
D	16L	16LD3B	8.42%	--	--	Jet Only
D	16L	16LD3B1	0.21%	--	--	Jet Only
D	16L	16LD3B2	2.53%	--	--	Jet Only
D	16L	16LD3B3	0.21%	--	--	Jet Only
D	16L	16LD3B4	0.84%	--	--	Jet Only
D	16L	16LD4A	--	7.92%	--	Turbo Only
D	16L	16LD4A1	--	2.57%	--	Turbo Only
D	16L	16LD4A2	--	2.57%	--	Turbo Only
D	16L	16LD4A3	--	1.98%	--	Turbo Only
D	16L	16LD4A4	--	1.98%	--	Turbo Only
D	16L	16LD4B	--	14.68%	--	Turbo Only
D	16L	16LD4B1	--	0.79%	--	Turbo Only
D	16L	16LD4B2	--	2.57%	--	Turbo Only
D	16L	16LD4B3	--	0.40%	--	Turbo Only
D	16L	16LD4B4	--	0.79%	--	Turbo Only
D	16L	16LD4C	0.54%	--	--	Jet Only
D	16L	16LD4C1	0.21%	--	--	Jet Only
D	16L	16LD4C2	0.42%	--	--	Jet Only
D	16L	16LD4C3	0.08%	--	--	Jet Only
D	16L	16LD4C4	0.27%	--	--	Jet Only
D	16L	16LD4D	--	6.42%	61.45%	Turbo, Prop
D	16L	16LD4D1	--	2.47%	13.25%	Turbo, Prop
D	16L	16LD4D2	--	1.48%	6.02%	Turbo, Prop
D	16L	16LD4D3	--	2.47%	13.25%	Turbo, Prop
D	16L	16LD4D4	--	1.48%	6.02%	Turbo, Prop
D	16L	16LD4E	--	2.43%	--	Turbo Only
D	16L	16LD4E1	--	1.48%	--	Turbo Only
D	16L	16LD4E2	--	1.48%	--	Turbo Only
D	16L	16LD4E3	--	0.99%	--	Turbo Only
D	16L	16LD4E4	--	0.99%	--	Turbo Only
D	16L	16LD5A	--	0.47%	--	Turbo Only
D	16L	16LD5A1	--	0.16%	--	Turbo Only
D	16L	16LD5A2	--	0.16%	--	Turbo Only
D	16L	16LD5A3	--	0.10%	--	Turbo Only
D	16L	16LD5A4	--	0.10%	--	Turbo Only
D	16L	16LD5B	--	2.65%	--	Turbo Only
D	16L	16LD5B1	--	1.48%	--	Turbo Only

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	16L	16LD5B2	--	1.48%	--	Turbo Only
D	16L	16LD5B3	--	0.99%	--	Turbo Only
D	16L	16LD5B4	--	0.99%	--	Turbo Only
D	16L	16LD5C	--	1.58%	--	Turbo Only
D	16L	16LD5C1	--	0.79%	--	Turbo Only
D	16L	16LD5C2	--	0.79%	--	Turbo Only
D	16L	16LD5C3	--	0.49%	--	Turbo Only
D	16L	16LD5C4	--	0.49%	--	Turbo Only
D	16R	16RD1A	6.52%	--	--	Jet Only
D	16R	16RD1A1	0.84%	--	--	Jet Only
D	16R	16RD1A2	0.84%	--	--	Jet Only
D	16R	16RD1A3	0.21%	--	--	Jet Only
D	16R	16RD1A4	0.21%	--	--	Jet Only
D	16R	16RD1B	2.99%	--	--	Jet Only
D	16R	16RD1B1	0.42%	--	--	Jet Only
D	16R	16RD1B2	0.42%	--	--	Jet Only
D	16R	16RD1B3	0.21%	--	--	Jet Only
D	16R	16RD1B4	0.21%	--	--	Jet Only
D	16R	16RD1C	--	10.75%	--	Turbo Only
D	16R	16RD1C1	--	2.37%	--	Turbo Only
D	16R	16RD1C2	--	3.95%	--	Turbo Only
D	16R	16RD1C3	--	7.91%	--	Turbo Only
D	16R	16RD1C4	--	2.37%	--	Turbo Only
D	16R	16RD1D	10.53%	1.98%	--	Jet, Turbo
D	16R	16RD1D1	4.21%	--	--	Jet Only
D	16R	16RD1D2	4.21%	--	--	Jet Only
D	16R	16RD1D3	2.10%	--	--	Jet Only
D	16R	16RD1D4	2.10%	--	--	Jet Only
D	16R	16RD2A	1.09%	--	--	Jet Only
D	16R	16RD2A1	0.84%	--	--	Jet Only
D	16R	16RD2A2	0.84%	--	--	Jet Only
D	16R	16RD2A3	0.21%	--	--	Jet Only
D	16R	16RD2A4	0.21%	--	--	Jet Only
D	16R	16RD2B	1.25%	--	--	Jet Only
D	16R	16RD2B1	0.53%	--	--	Jet Only
D	16R	16RD2B2	0.53%	--	--	Jet Only
D	16R	16RD2B3	0.32%	--	--	Jet Only
D	16R	16RD2B4	0.32%	--	--	Jet Only
D	16R	16RD2C	0.42%	--	--	Jet Only
D	16R	16RD2C1	0.32%	--	--	Jet Only
D	16R	16RD2C2	0.11%	--	--	Jet Only
D	16R	16RD2C3	0.32%	--	--	Jet Only
D	16R	16RD2C4	0.11%	--	--	Jet Only
D	16R	16RD2D	13.05%	--	--	Jet Only
D	16R	16RD2D1	6.40%	--	--	Jet Only
D	16R	16RD2D2	2.10%	--	--	Jet Only
D	16R	16RD2D3	6.40%	--	--	Jet Only
D	16R	16RD2D4	2.10%	--	--	Jet Only
D	16R	16RD3A	11.11%	--	--	Jet Only
D	16R	16RD3A1	0.63%	--	--	Jet Only
D	16R	16RD3A2	0.63%	--	--	Jet Only
D	16R	16RD3A3	0.21%	--	--	Jet Only
D	16R	16RD3A4	0.21%	--	--	Jet Only
D	16R	16RD3B	8.42%	--	--	Jet Only

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	16R	16RD3B1	0.21%	--	--	Jet Only
D	16R	16RD3B2	2.53%	--	--	Jet Only
D	16R	16RD3B3	0.21%	--	--	Jet Only
D	16R	16RD3B4	0.84%	--	--	Jet Only
D	16R	16RD4A	--	7.92%	--	Turbo Only
D	16R	16RD4A1	--	2.57%	--	Turbo Only
D	16R	16RD4A2	--	2.57%	--	Turbo Only
D	16R	16RD4A3	--	1.98%	--	Turbo Only
D	16R	16RD4A4	--	1.98%	--	Turbo Only
D	16R	16RD4B	--	14.68%	--	Turbo Only
D	16R	16RD4B1	--	0.79%	--	Turbo Only
D	16R	16RD4B2	--	2.57%	--	Turbo Only
D	16R	16RD4B3	--	0.40%	--	Turbo Only
D	16R	16RD4B4	--	0.79%	--	Turbo Only
D	16R	16RD4C	0.54%	--	--	Jet Only
D	16R	16RD4C1	0.21%	--	--	Jet Only
D	16R	16RD4C2	0.42%	--	--	Jet Only
D	16R	16RD4C3	0.08%	--	--	Jet Only
D	16R	16RD4C4	0.27%	--	--	Jet Only
D	16R	16RD4D	--	6.42%	--	Turbo Only
D	16R	16RD4D1	--	2.47%	--	Turbo Only
D	16R	16RD4D2	--	1.48%	--	Turbo Only
D	16R	16RD4D3	--	2.47%	--	Turbo Only
D	16R	16RD4D4	--	1.48%	--	Turbo Only
D	16R	16RD4E	--	2.43%	--	Turbo Only
D	16R	16RD4E1	--	1.48%	--	Turbo Only
D	16R	16RD4E2	--	1.48%	--	Turbo Only
D	16R	16RD4E3	--	0.99%	--	Turbo Only
D	16R	16RD4E4	--	0.99%	--	Turbo Only
D	16R	16RD4F	--	--	42.86%	Prop Only
D	16R	16RD4F1	--	--	28.57%	Prop Only
D	16R	16RD4F2	--	--	28.57%	Prop Only
D	16R	16RD5A	--	0.47%	--	Turbo Only
D	16R	16RD5A1	--	0.16%	--	Turbo Only
D	16R	16RD5A2	--	0.16%	--	Turbo Only
D	16R	16RD5A3	--	0.10%	--	Turbo Only
D	16R	16RD5A4	--	0.10%	--	Turbo Only
D	16R	16RD5B	--	2.65%	--	Turbo Only
D	16R	16RD5B1	--	1.48%	--	Turbo Only
D	16R	16RD5B2	--	1.48%	--	Turbo Only
D	16R	16RD5B3	--	0.99%	--	Turbo Only
D	16R	16RD5B4	--	0.99%	--	Turbo Only
D	16R	16RD5C	--	1.58%	--	Turbo Only
D	16R	16RD5C1	--	0.79%	--	Turbo Only
D	16R	16RD5C2	--	0.79%	--	Turbo Only
D	16R	16RD5C3	--	0.49%	--	Turbo Only
D	16R	16RD5C4	--	0.49%	--	Turbo Only
D	34C	34CD1	1.42%	0.80%	--	Jet, Turbo
D	34C	34CD11	0.71%	0.60%	--	Jet, Turbo
D	34C	34CD12	0.71%	0.60%	--	Jet, Turbo
D	34C	34CD13	0.37%	7.10%	--	Jet, Turbo
D	34C	34CD14	0.39%	7.10%	--	Jet, Turbo
D	34C	34CD2A	12.21%	--	--	Jet Only
D	34C	34CD2A1	0.50%	--	--	Jet Only

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34C	34CD2A2	0.50%	--	--	Jet Only
D	34C	34CD2A3	0.50%	--	--	Jet Only
D	34C	34CD2A4	0.50%	--	--	Jet Only
D	34C	34CD2A5	0.50%	--	--	Jet Only
D	34C	34CD2B	15.00%	--	--	Jet Only
D	34C	34CD2B1	0.37%	--	--	Jet Only
D	34C	34CD2B2	0.37%	--	--	Jet Only
D	34C	34CD2B3	0.35%	--	--	Jet Only
D	34C	34CD2B4	0.35%	--	--	Jet Only
D	34C	34CD2C	1.55%	--	--	Jet Only
D	34C	34CD2C1	0.39%	--	--	Jet Only
D	34C	34CD2C2	0.39%	--	--	Jet Only
D	34C	34CD2C3	0.37%	--	--	Jet Only
D	34C	34CD2C4	0.37%	--	--	Jet Only
D	34C	34CD2CC	2.98%	--	--	Jet Only
D	34C	34CD2D	3.52%	--	--	Jet Only
D	34C	34CD2D1	1.08%	--	--	Jet Only
D	34C	34CD2D2	1.08%	--	--	Jet Only
D	34C	34CD2D3	0.73%	--	--	Jet Only
D	34C	34CD2D4	0.71%	--	--	Jet Only
D	34C	34CD3A	2.55%	--	--	Jet Only
D	34C	34CD3A1	1.40%	--	--	Jet Only
D	34C	34CD3A2	2.55%	--	--	Jet Only
D	34C	34CD3A3	1.40%	--	--	Jet Only
D	34C	34CD3A4	0.90%	--	--	Jet Only
D	34C	34CD3B	7.51%	--	--	Jet Only
D	34C	34CD3B1	2.16%	--	--	Jet Only
D	34C	34CD3B2	2.16%	--	--	Jet Only
D	34C	34CD3B3	1.21%	--	--	Jet Only
D	34C	34CD3B4	1.21%	--	--	Jet Only
D	34C	34CD3C	1.42%	--	--	Jet Only
D	34C	34CD3C1	1.08%	--	--	Jet Only
D	34C	34CD3C2	1.08%	--	--	Jet Only
D	34C	34CD3C3	1.08%	--	--	Jet Only
D	34C	34CD3C4	1.42%	--	--	Jet Only
D	34C	34CD3D	1.75%	--	--	Jet Only
D	34C	34CD3D1	1.75%	--	--	Jet Only
D	34C	34CD3D2	1.75%	--	--	Jet Only
D	34C	34CD3D3	1.75%	--	--	Jet Only
D	34C	34CD3D4	1.75%	--	--	Jet Only
D	34C	34CD3E	1.08%	--	--	Jet Only
D	34C	34CD3E1	1.08%	--	--	Jet Only
D	34C	34CD3E2	1.08%	--	--	Jet Only
D	34C	34CD3E3	1.08%	--	--	Jet Only
D	34C	34CD3E4	1.08%	--	--	Jet Only
D	34C	34CD3F	2.55%	--	--	Jet Only
D	34C	34CD3F1	1.40%	--	--	Jet Only
D	34C	34CD3F2	2.55%	--	--	Jet Only
D	34C	34CD3F3	1.40%	--	--	Jet Only
D	34C	34CD3F4	0.90%	--	--	Jet Only
D	34C	34CD4A	--	--	--	Not In Use
D	34C	34CD4A1	--	--	--	Not In Use
D	34C	34CD4A2	--	--	--	Not In Use
D	34C	34CD4A3	--	--	--	Not In Use

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34C	34CD4A4	--	--	--	Not In Use
D	34C	34CD4AP	--	6.90%	--	Turbo Only
D	34C	34CD4AP1	--	4.50%	--	Turbo Only
D	34C	34CD4AP2	--	6.80%	--	Turbo Only
D	34C	34CD4AP3	--	4.50%	--	Turbo Only
D	34C	34CD4AP4	--	3.30%	--	Turbo Only
D	34C	34CD4AP5	--	3.30%	--	Turbo Only
D	34C	34CD4AP6	--	1.50%	--	Turbo Only
D	34C	34CD4B	--	--	--	Not In Use
D	34C	34CD4B1	--	--	--	Not In Use
D	34C	34CD4B2	--	--	--	Not In Use
D	34C	34CD4B3	--	--	--	Not In Use
D	34C	34CD4B4	--	--	--	Not In Use
D	34C	34CD4BP	--	--	--	Not In Use
D	34C	34CD4BP1	--	--	--	Not In Use
D	34C	34CD4BP2	--	--	--	Not In Use
D	34C	34CD4BP3	--	--	--	Not In Use
D	34C	34CD4BP4	--	--	--	Not In Use
D	34C	34CD4C	--	--	--	Not In Use
D	34C	34CD4C1	--	--	--	Not In Use
D	34C	34CD4C2	--	--	--	Not In Use
D	34C	34CD4C3	--	--	--	Not In Use
D	34C	34CD4C4	--	--	--	Not In Use
D	34C	34CD4CP	--	--	--	Not In Use
D	34C	34CD4CP1	--	--	--	Not In Use
D	34C	34CD4CP2	--	--	--	Not In Use
D	34C	34CD4CP3	--	--	--	Not In Use
D	34C	34CD4CP4	--	--	--	Not In Use
D	34C	34CD5A	--	7.00%	--	Turbo Only
D	34C	34CD5A1	--	5.00%	--	Turbo Only
D	34C	34CD5A2	--	5.00%	--	Turbo Only
D	34C	34CD5A3	--	1.00%	--	Turbo Only
D	34C	34CD5A4	--	1.00%	--	Turbo Only
D	34C	34CD5AP	--	2.20%	--	Turbo Only
D	34C	34CD5AP1	--	1.70%	--	Turbo Only
D	34C	34CD5AP2	--	1.70%	--	Turbo Only
D	34C	34CD5B	--	7.50%	--	Turbo Only
D	34C	34CD5B1	--	4.70%	--	Turbo Only
D	34C	34CD5B2	--	4.70%	--	Turbo Only
D	34C	34CD5B3	--	1.75%	--	Turbo Only
D	34C	34CD5B4	--	1.75%	--	Turbo Only
D	34C	34CD5C	--	3.00%	--	Turbo Only
D	34C	34CD5C1	--	2.00%	--	Turbo Only
D	34C	34CD5C2	--	2.00%	--	Turbo Only
D	34C	34CD5C3	--	0.50%	--	Turbo Only
D	34C	34CD5C4	--	0.50%	--	Turbo Only
D	34C	34CD6P	--	--	34.00%	Prop Only
D	34C	34CD6P1	--	--	33.00%	Prop Only
D	34C	34CD6P2	--	--	33.00%	Prop Only
D	34L	34LD1	1.42%	0.80%	--	Jet, Turbo
D	34L	34LD11	0.71%	0.60%	--	Jet, Turbo
D	34L	34LD12	0.71%	0.60%	--	Jet, Turbo
D	34L	34LD13	0.37%	7.10%	--	Jet, Turbo
D	34L	34LD14	0.39%	7.10%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34L	34LD2A	12.21%	--	--	Jet Only
D	34L	34LD2A1	0.50%	--	--	Jet Only
D	34L	34LD2A2	0.50%	--	--	Jet Only
D	34L	34LD2A3	0.50%	--	--	Jet Only
D	34L	34LD2A4	0.50%	--	--	Jet Only
D	34L	34LD2A5	0.50%	--	--	Jet Only
D	34L	34LD2B	15.00%	--	--	Jet Only
D	34L	34LD2B1	0.37%	--	--	Jet Only
D	34L	34LD2B2	0.37%	--	--	Jet Only
D	34L	34LD2B3	0.35%	--	--	Jet Only
D	34L	34LD2B4	0.35%	--	--	Jet Only
D	34L	34LD2C	1.55%	--	--	Jet Only
D	34L	34LD2C1	0.39%	--	--	Jet Only
D	34L	34LD2C2	0.39%	--	--	Jet Only
D	34L	34LD2C3	0.37%	--	--	Jet Only
D	34L	34LD2C4	0.37%	--	--	Jet Only
D	34L	34LD2CC	2.98%	--	--	Jet Only
D	34L	34LD2D	3.52%	--	--	Jet Only
D	34L	34LD2D1	1.08%	--	--	Jet Only
D	34L	34LD2D2	1.08%	--	--	Jet Only
D	34L	34LD2D3	0.73%	--	--	Jet Only
D	34L	34LD2D4	0.71%	--	--	Jet Only
D	34L	34LD3A	2.55%	--	--	Jet Only
D	34L	34LD3A1	1.40%	--	--	Jet Only
D	34L	34LD3A2	2.55%	--	--	Jet Only
D	34L	34LD3A3	1.40%	--	--	Jet Only
D	34L	34LD3A4	0.90%	--	--	Jet Only
D	34L	34LD3B	7.51%	--	--	Jet Only
D	34L	34LD3B1	2.16%	--	--	Jet Only
D	34L	34LD3B2	2.16%	--	--	Jet Only
D	34L	34LD3B3	1.21%	--	--	Jet Only
D	34L	34LD3B4	1.21%	--	--	Jet Only
D	34L	34LD3C	1.42%	--	--	Jet Only
D	34L	34LD3C1	1.08%	--	--	Jet Only
D	34L	34LD3C2	1.08%	--	--	Jet Only
D	34L	34LD3C3	1.08%	--	--	Jet Only
D	34L	34LD3C4	1.42%	--	--	Jet Only
D	34L	34LD3D	1.75%	--	--	Jet Only
D	34L	34LD3D1	1.75%	--	--	Jet Only
D	34L	34LD3D2	1.75%	--	--	Jet Only
D	34L	34LD3D3	1.75%	--	--	Jet Only
D	34L	34LD3D4	1.75%	--	--	Jet Only
D	34L	34LD3E	1.08%	--	--	Jet Only
D	34L	34LD3E1	1.08%	--	--	Jet Only
D	34L	34LD3E2	1.08%	--	--	Jet Only
D	34L	34LD3E3	1.08%	--	--	Jet Only
D	34L	34LD3E4	1.08%	--	--	Jet Only
D	34L	34LD3F	2.55%	--	--	Jet Only
D	34L	34LD3F1	1.40%	--	--	Jet Only
D	34L	34LD3F2	2.55%	--	--	Jet Only
D	34L	34LD3F3	1.40%	--	--	Jet Only
D	34L	34LD3F4	0.90%	--	--	Jet Only
D	34L	34LD4A	--	--	--	Not In Use
D	34L	34LD4A1	--	--	--	Not In Use

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34L	34LD4A2	--	--	--	Not In Use
D	34L	34LD4A3	--	--	--	Not In Use
D	34L	34LD4A4	--	--	--	Not In Use
D	34L	34LD4AP	--	6.90%	--	Turbo Only
D	34L	34LD4AP1	--	4.50%	--	Turbo Only
D	34L	34LD4AP2	--	6.80%	--	Turbo Only
D	34L	34LD4AP3	--	4.50%	--	Turbo Only
D	34L	34LD4AP4	--	3.30%	--	Turbo Only
D	34L	34LD4AP5	--	3.30%	--	Turbo Only
D	34L	34LD4AP6	--	1.50%	--	Turbo Only
D	34L	34LD4B	--	--	--	Not In Use
D	34L	34LD4B1	--	--	--	Not In Use
D	34L	34LD4B2	--	--	--	Not In Use
D	34L	34LD4B3	--	--	--	Not In Use
D	34L	34LD4B4	--	--	--	Not In Use
D	34L	34LD4BP	--	--	--	Not In Use
D	34L	34LD4BP1	--	--	--	Not In Use
D	34L	34LD4BP2	--	--	--	Not In Use
D	34L	34LD4BP3	--	--	--	Not In Use
D	34L	34LD4BP4	--	--	--	Not In Use
D	34L	34LD4C	--	--	--	Not In Use
D	34L	34LD4C1	--	--	--	Not In Use
D	34L	34LD4C2	--	--	--	Not In Use
D	34L	34LD4C3	--	--	--	Not In Use
D	34L	34LD4C4	--	--	--	Not In Use
D	34L	34LD4CP	--	--	--	Not In Use
D	34L	34LD4CP1	--	--	--	Not In Use
D	34L	34LD4CP2	--	--	--	Not In Use
D	34L	34LD4CP3	--	--	--	Not In Use
D	34L	34LD4CP4	--	--	--	Not In Use
D	34L	34LD5A	--	7.00%	--	Turbo Only
D	34L	34LD5A1	--	5.00%	--	Turbo Only
D	34L	34LD5A2	--	5.00%	--	Turbo Only
D	34L	34LD5A3	--	1.00%	--	Turbo Only
D	34L	34LD5A4	--	1.00%	--	Turbo Only
D	34L	34LD5AP	--	2.20%	--	Turbo Only
D	34L	34LD5AP1	--	1.70%	--	Turbo Only
D	34L	34LD5AP2	--	1.70%	--	Turbo Only
D	34L	34LD5B	--	7.50%	--	Turbo Only
D	34L	34LD5B1	--	4.70%	--	Turbo Only
D	34L	34LD5B2	--	4.70%	--	Turbo Only
D	34L	34LD5B3	--	1.75%	--	Turbo Only
D	34L	34LD5B4	--	1.75%	--	Turbo Only
D	34L	34LD5C	--	3.00%	--	Turbo Only
D	34L	34LD5C1	--	2.00%	--	Turbo Only
D	34L	34LD5C2	--	2.00%	--	Turbo Only
D	34L	34LD5C3	--	0.50%	--	Turbo Only
D	34L	34LD5C4	--	0.50%	--	Turbo Only
D	34L	34LD6P	--	--	34.00%	Prop Only
D	34L	34LD6P1	--	--	33.00%	Prop Only
D	34L	34LD6P2	--	--	33.00%	Prop Only
D	34R	34RD1	1.42%	0.80%	--	Jet, Turbo
D	34R	34RD11	0.71%	0.60%	--	Jet, Turbo
D	34R	34RD12	0.71%	0.60%	--	Jet, Turbo

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34R	34RD13	0.37%	7.10%	--	Jet, Turbo
D	34R	34RD14	0.39%	7.10%	--	Jet, Turbo
D	34R	34RD2A	6.00%	--	--	Jet Only
D	34R	34RD2A1	2.00%	--	--	Jet Only
D	34R	34RD2A2	3.00%	--	--	Jet Only
D	34R	34RD2A3	2.00%	--	--	Jet Only
D	34R	34RD2A4	0.86%	--	--	Jet Only
D	34R	34RD2A5	0.85%	--	--	Jet Only
D	34R	34RD2B	15.00%	--	--	Jet Only
D	34R	34RD2B1	0.37%	--	--	Jet Only
D	34R	34RD2B2	0.37%	--	--	Jet Only
D	34R	34RD2B3	0.35%	--	--	Jet Only
D	34R	34RD2B4	0.35%	--	--	Jet Only
D	34R	34RD2C	1.55%	--	--	Jet Only
D	34R	34RD2C1	0.39%	--	--	Jet Only
D	34R	34RD2C2	0.39%	--	--	Jet Only
D	34R	34RD2C3	0.37%	--	--	Jet Only
D	34R	34RD2C4	0.37%	--	--	Jet Only
D	34R	34RD2CC	2.98%	--	--	Jet Only
D	34R	34RD2D	2.82%	--	--	Jet Only
D	34R	34RD2D1	0.86%	--	--	Jet Only
D	34R	34RD2D2	0.86%	--	--	Jet Only
D	34R	34RD2D3	0.54%	--	--	Jet Only
D	34R	34RD2D4	0.54%	--	--	Jet Only
D	34R	34RD2D5	0.08%	--	--	Jet Only
D	34R	34RD2E	0.28%	--	--	Jet Only
D	34R	34RD2E1	0.04%	--	--	Jet Only
D	34R	34RD2E2	0.04%	--	--	Jet Only
D	34R	34RD2F	0.53%	--	--	Jet Only
D	34R	34RD2F1	0.27%	--	--	Jet Only
D	34R	34RD2F2	0.27%	--	--	Jet Only
D	34R	34RD3A	2.55%	--	--	Jet Only
D	34R	34RD3A1	1.40%	--	--	Jet Only
D	34R	34RD3A2	2.55%	--	--	Jet Only
D	34R	34RD3A3	1.40%	--	--	Jet Only
D	34R	34RD3A4	0.90%	--	--	Jet Only
D	34R	34RD3B	7.51%	--	--	Jet Only
D	34R	34RD3B1	2.16%	--	--	Jet Only
D	34R	34RD3B2	2.16%	--	--	Jet Only
D	34R	34RD3B3	1.21%	--	--	Jet Only
D	34R	34RD3B4	1.21%	--	--	Jet Only
D	34R	34RD3C	1.42%	--	--	Jet Only
D	34R	34RD3C1	1.08%	--	--	Jet Only
D	34R	34RD3C2	1.08%	--	--	Jet Only
D	34R	34RD3C3	1.08%	--	--	Jet Only
D	34R	34RD3C4	1.42%	--	--	Jet Only
D	34R	34RD3D	1.75%	--	--	Jet Only
D	34R	34RD3D1	1.75%	--	--	Jet Only
D	34R	34RD3D2	1.75%	--	--	Jet Only
D	34R	34RD3D3	1.75%	--	--	Jet Only
D	34R	34RD3D4	1.75%	--	--	Jet Only
D	34R	34RD3E	1.08%	--	--	Jet Only
D	34R	34RD3E1	1.08%	--	--	Jet Only
D	34R	34RD3E2	1.08%	--	--	Jet Only

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34R	34RD3E3	1.08%	--	--	Jet Only
D	34R	34RD3E4	1.08%	--	--	Jet Only
D	34R	34RD3F	2.55%	--	--	Jet Only
D	34R	34RD3F1	1.40%	--	--	Jet Only
D	34R	34RD3F2	2.55%	--	--	Jet Only
D	34R	34RD3F3	1.40%	--	--	Jet Only
D	34R	34RD3F4	0.90%	--	--	Jet Only
D	34R	34RD4A	--	--	--	Not In Use
D	34R	34RD4A1	--	--	--	Not In Use
D	34R	34RD4A2	--	--	--	Not In Use
D	34R	34RD4A3	--	--	--	Not In Use
D	34R	34RD4A4	--	--	--	Not In Use
D	34R	34RD4AP	--	6.90%	--	Turbo Only
D	34R	34RD4AP1	--	4.50%	--	Turbo Only
D	34R	34RD4AP2	--	6.80%	--	Turbo Only
D	34R	34RD4AP3	--	4.50%	--	Turbo Only
D	34R	34RD4AP4	--	3.30%	--	Turbo Only
D	34R	34RD4AP5	--	3.30%	--	Turbo Only
D	34R	34RD4AP6	--	1.50%	--	Turbo Only
D	34R	34RD4B	--	--	--	Not In Use
D	34R	34RD4B1	--	--	--	Not In Use
D	34R	34RD4B2	--	--	--	Not In Use
D	34R	34RD4B3	--	--	--	Not In Use
D	34R	34RD4B4	--	--	--	Not In Use
D	34R	34RD4BP	--	--	--	Not In Use
D	34R	34RD4BP1	--	--	--	Not In Use
D	34R	34RD4BP2	--	--	--	Not In Use
D	34R	34RD4BP3	--	--	--	Not In Use
D	34R	34RD4BP4	--	--	--	Not In Use
D	34R	34RD4C	--	--	--	Not In Use
D	34R	34RD4C1	--	--	--	Not In Use
D	34R	34RD4C2	--	--	--	Not In Use
D	34R	34RD4C3	--	--	--	Not In Use
D	34R	34RD4C4	--	--	--	Not In Use
D	34R	34RD4CP	--	--	--	Not In Use
D	34R	34RD4CP1	--	--	--	Not In Use
D	34R	34RD4CP2	--	--	--	Not In Use
D	34R	34RD4CP3	--	--	--	Not In Use
D	34R	34RD4CP4	--	--	--	Not In Use
D	34R	34RD5A	--	7.00%	--	Turbo Only
D	34R	34RD5A1	--	5.00%	--	Turbo Only
D	34R	34RD5A2	--	5.00%	--	Turbo Only
D	34R	34RD5A3	--	1.00%	--	Turbo Only
D	34R	34RD5A4	--	1.00%	--	Turbo Only
D	34R	34RD5AP	--	2.20%	--	Turbo Only
D	34R	34RD5AP1	--	1.70%	--	Turbo Only
D	34R	34RD5AP2	--	1.70%	--	Turbo Only
D	34R	34RD5B	--	7.50%	--	Turbo Only
D	34R	34RD5B1	--	4.70%	--	Turbo Only
D	34R	34RD5B2	--	4.70%	--	Turbo Only
D	34R	34RD5B3	--	1.75%	--	Turbo Only
D	34R	34RD5B4	--	1.75%	--	Turbo Only
D	34R	34RD5C	--	3.00%	38.00%	Turbo, Prop
D	34R	34RD5C1	--	2.00%	24.00%	Turbo, Prop

Operation Type	Runway	Track Name	Jet Track %	Turboprop Track %	Prop Track %	Notes
D	34R	34RD5C2	--	2.00%	24.00%	Turbo, Prop
D	34R	34RD5C3	--	0.50%	5.50%	Turbo, Prop
D	34R	34RD5C4	--	0.50%	5.50%	Turbo, Prop
D	34R	34RD5C5	--	--	1.50%	Prop Only

Source: SEA EnvironmentalVue 2022, L&B Analysis, 2023.

Appendix B

This appendix provides information on the methodology for modeling missed approach operations in the existing and future conditions. The development of the user-defined profiles and missed approach flight tracks was coordinated with the FAA/AEE. The methodology approved by the FAA/AEE is shown in **Exhibit B-1**. FAA/AEE approval of the user-defined profiles and flight tracks was received on August 2, 2023 as shown in **Exhibit B-2**.

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Project: Sustainable Airport Master Plan (SAMP) Near Term Projects (NTP) Environmental Assessment (EA)

To: Kandice Krull, FAA; Steve Rybolt, Port of Seattle

From: Landrum & Brown

Date: August 15, 2023

Subject: Missed Approach Operations

SECTION 1 – INTRODUCTION

Landrum & Brown (L&B) is currently assisting the Port of Seattle (Port) with preparing an Environmental Assessment (EA) for the Airport Sustainable Master Plan (SAMP) Near Term Projects (NTP) at Seattle-Tacoma International Airport (SEA or Airport). The EA is using 2022 as the existing condition year. The Day-Night Average Sound Level (DNL) noise contours will be generated using the latest version of AEDT Version 3e. This memo provides information on the aircraft types, Aircraft Noise and Performance (ANP) IDs, flight paths, operation, time of day and runway distribution, proposed user-defined profiles and AEDT flight tracks for the missed approach operations. Landrum & Brown is seeking FAA concurrence based on the recommendations in this memorandum for modeling missed approaches in the SAMP NTP EA.

SECTION 2 – STATEMENT OF BENEFIT

Currently, AEDT Version 3e does not have missed approach profiles that accurately represent the missed approach traffic at SEA. Due to the unique nature of the ground track geometry and vertical profiles for aircraft performing missed approach procedures at SEA, user-defined profiles are proposed to accurately model the noise exposure from these operations.

SECTION 3 – SUPPORTING DOCUMENTATION

Table 1 provides the 2022 missed approach operations for the selected AEDT representative Airframe, ANP ID and Engine Code from AEDT. A total of 58 airframe and engine combinations were identified in the missed approach log file. Of these 58 combinations, 29 different aircraft types with ANP data in AEDT Version 3e were identified. The ANP data is provided by aircraft manufacturers to calculate aircraft trajectories and noise by utilizing aircraft performance and noise-power-distance (NPD). In total 798 (2.2 average annual day) missed approaches occurred at SEA in 2022 based on the log file.

TABLE 1, 2022 TOTAL MISSED APPROACHES BY AIRFRAME AND ENGINE

AEDT Airframe	AEDT Engine	ANP ID	Total Missed Approaches
Airbus A300F4-600 Series	1GE020	A300-622R	1
Airbus A319-100 Series	3IA007	A319-131	5
Airbus A319-100 Series	3CM028	A319-131	1
Airbus A320-200 Series	01P08CM105	A320-211	22
Airbus A320-200 Series	1IA003	A320-232	3
Airbus A320-200 Series	01P10IA021	A320-232	2
Airbus A320-200 Series	1CM009	A320-211	2
Airbus A320-200 Series	01P10IA022	A320-232	1
Airbus A320-NEO	01P22PW163	A320-271N	3
Airbus A321-200 Series	01P10IA025	A321-232	14
Airbus A321-200 Series	01P08CM104	A321-232	6
Airbus A321-NEO	01P18PW157	A321-232	8
Airbus A321-NEO	01P20CM132	A321-232	5
Airbus A330-200 Series	2RR023	A330-343	2
Airbus A330-300 Series	2RR023	A330-343	2
Airbus A330-300 Series	4GE080	A330-301	1
Airbus A330-300 Series	9PW094	A330-301	1
Airbus A330-300 Series	9PW095	A330-301	1
Airbus A330-900N Series (Neo)	02P23RR141	A330-343	1
Airbus A350-900 series	01P18RR124	A350-941	3

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AEDT Airframe	AEDT Engine	ANP ID	Total Missed Approaches
Boeing 737-300 Series	1CM005	737300	1
Boeing 737-700 Series	8CM063	737700	20
Boeing 737-700 Series	3CM031	737700	10
Boeing 737-700 Series	3CM032	737700	2
Boeing 737-8	01P20CM136	7378MAX	3
Boeing 737-8	01P20CM140	7378MAX	2
Boeing 737-800 Series	**3CM034**	**737800**	**62**
Boeing 737-800 Series	**8CM051**	**737800**	**61**
Boeing 737-800 Series	**01P11CM116**	**737800**	**7**
Boeing 737-9	01P20CM140	7378MAX	36
Boeing 737-9	01P20CM136	7378MAX	2
Boeing 737-900-ER	**01P11CM121**	**737800**	**164**
Boeing 737-900-ER	**01P11CM125**	**737800**	**6**
Boeing 747-400 Series	1GE024	747400	5
Boeing 747-400BCF	1GE024	747400	2
Boeing 747-8F	8GENX1	7478	1
Boeing 757-200 Series	4PW072	757PW	8
Boeing 757-300 Series	XPW204	757300	5
Boeing 767-300 ER	1PW043	7673ER	1
Boeing 767-300 ER	2GE055	7673ER	1
Boeing 767-300 ER Freighter	1GE030	7673ER	10
Boeing 777 Freighter	01P21GE216	777200	2
Boeing 777-300 ER	01P21GE217	7773ER	3
Boeing 787-10 Dreamliner	17GE179	7879	2
Boeing 787-10 Dreamliner	02P23RR134	7879	1
Boeing 787-8 Dreamliner	11GE138	7878R	4
Boeing 787-9 Dreamliner	12RR067	7879	1
Boeing 787-9 Dreamliner	02P23RR131	7879	1
Boeing 787-9 Dreamliner	12RR068	7879	1
Boeing MD-11 Freighter	1GE031	MD11GE	4
Bombardier Challenger 350	01P14HN011	CL600	1
Bombardier CS100	01P20PW183	737700	26
Bombardier CS300	01P20PW184	737700	7
Bombardier de Havilland Dash 8 Q400	PW150A	DHC830	84
Cessna 208 Caravan	PT6A14	CNA208	3
Embraer ERJ175-LR	**01P08GE197**	**EMB175**	**162**
Honda HA-420 Hondajet	PW610F	CNA680	2
Raytheon Beech 99	PT6A36	DHC6	1
Grand Total			**798**

Source: SEA and L&B (2023)

As shown in **Table 2**, the ANP ID 737800 accounted for 300 annual missed approach operations (0.8 average annual day operations) and the EMB175 accounted for 162 annual missed approach operations (0.4 average annual day operations). L&B is proposing the creation of user-defined profiles for the 737800 and EMB175, given they represent the majority of missed approaches compared to other aircraft types and because these ANP IDs represent the most noise-dominant group of operations compared to the remaining missed approaches performed by other aircraft types.

TABLE 2, 2022 MISSED APPROACHES BY ANP ID

ANP ID	Annual Missed Approaches	Average Annual Day Operations
737800	**300**	**0.8**
EMB175	**162**	**0.4**
DHC830	84	0.2
737700	65	0.2
7378MAX	43	0.1
A321-232	33	0.1
A320-211	24	0.1
7673ER	12	0.0

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ANP ID	Annual Missed Approaches	Average Annual Day Operations
757PW	8	0.0
747400	7	0.0
7879	6	0.0
A320-232	6	0.0
A319-131	6	0.0
757300	5	0.0
A330-343	5	0.0
7878R	4	0.0
MD11GE	4	0.0
A320-271N	3	0.0
7773ER	3	0.0
CNA208	3	0.0
A330-301	3	0.0
A350-941	3	0.0
777200	2	0.0
CNA680	2	0.0
A300-622R	1	0.0
7478	1	0.0
737300	1	0.0
CL600	1	0.0
DHC6	1	0.0
Grand Total	**798**	**2.2**

Source: SEA and L&B (2023)

The annual missed approach operations on each runway during the daytime and nighttime hours are provided in **Table 3**. As shown, a majority of the operations occurred on Runways 16R and 34L, therefore L&B is recommending modeling the 2.2 average annual day missed approach operations on these two runways.

TABLE 3, 2022 DAY/NIGHT SPLIT BY RUNWAY

Runway	Daytime	Nighttime	Total
16C	9	4	13
16L	27	6	33
16R	**549**	**40**	**589**
34C	2	1	3
34L	**145**	**4**	**149**
34R	8	3	11
Grand Total	**740**	**58**	**798**

Source: SEA and L&B (2023)

Exhibit 1 shows missed approach radar data from the Port of Seattle EnvironmentalVue Noise Monitoring System and proposed representative AEDT flight tracks on Runway 16R. **Exhibit 2** shows missed approach radar data and proposed representative AEDT flight tracks on Runway 34L. This radar data is a sample set of data for daytime and nighttime operations at SEA in 2022 and was utilized to propose representative AEDT flight tracks and user-defined profiles. **Table 4** lists the percentage utilization per missed approach track.

TABLE 4, AEDT TRACK PERCENTAGE UTILIZATIOIN

Track Name	% Utilization
16R_MA_A	18.9%
16R_MA_B	25.0%
16R_MA_C	19.3%
16R_MA_D	17.5%
16R_MA_E	19.3%
34L_MA_A	32.0%
34L_MA_B	60.0%
34L_MA_C	8.0%

Source: SEA and L&B (2023)

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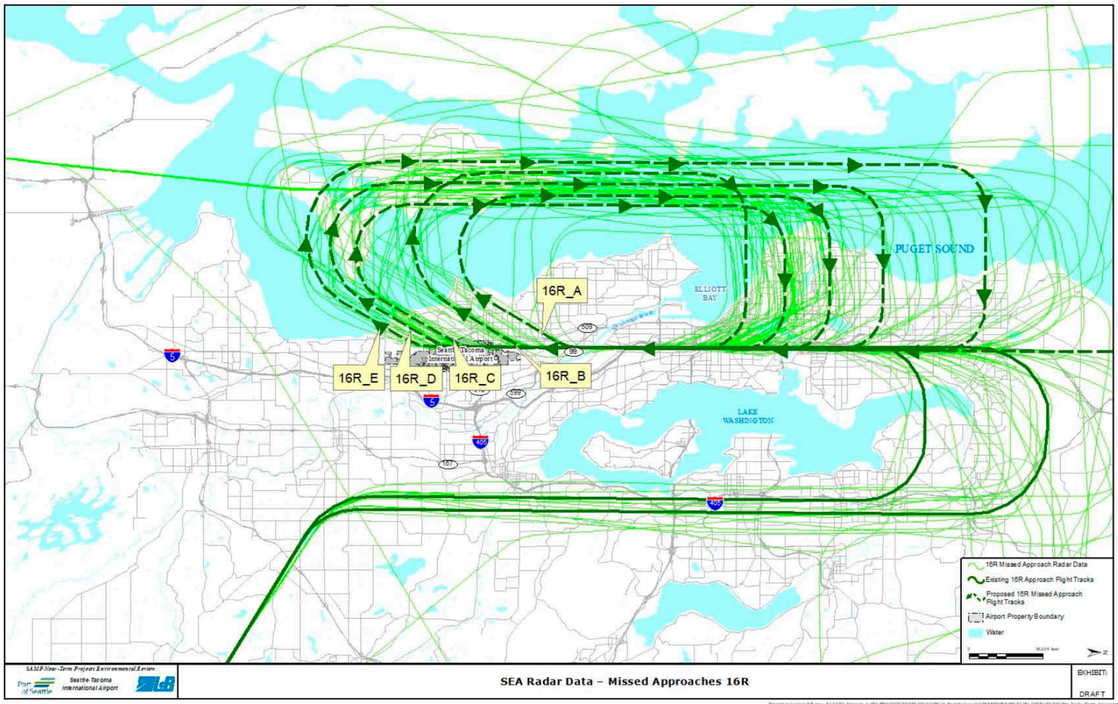
Exhibit 1: SEA 16R Missed Approaches



Source: SEA and L&B (2023)

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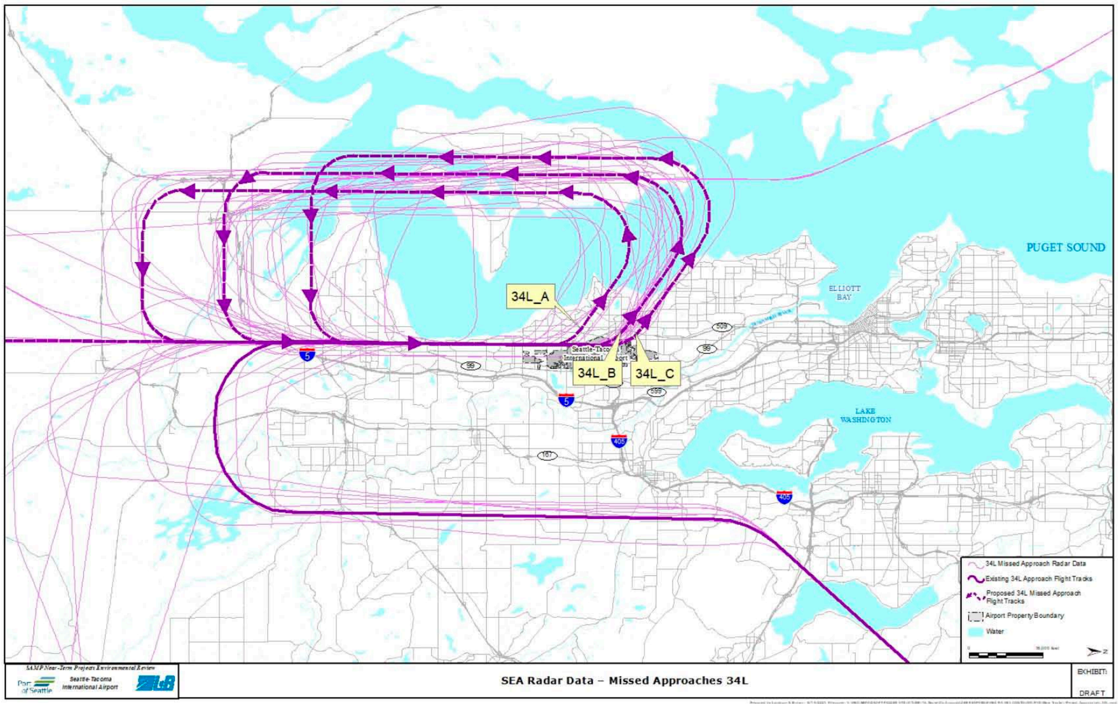
Exhibit 2: SEA 34L Missed Approaches



Source: SEA and L&B (2023)

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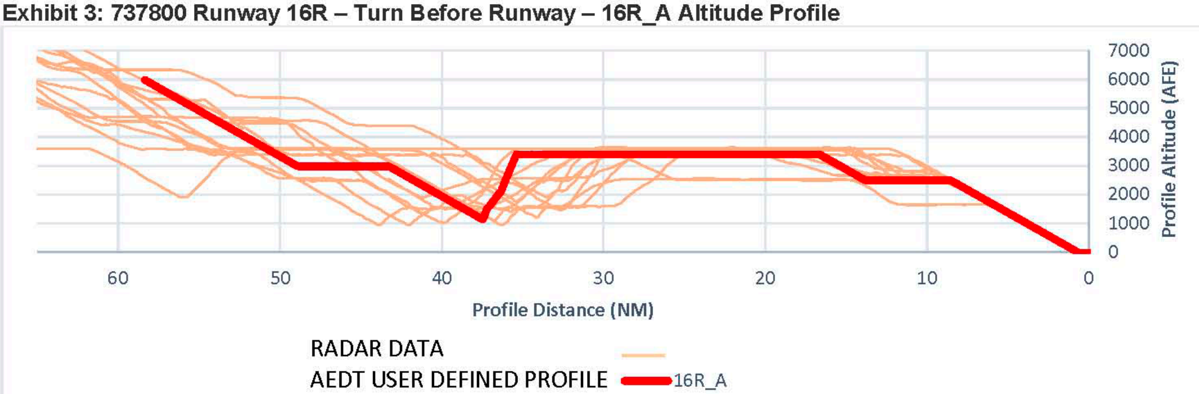
SECTION 3.1 – AIRCRAFT PROFILES

The following information provides L&B's proposed user-defined profiles assigned to the corresponding proposed AEDT flight tracks, shown in Exhibit 1 and Exhibit 2, for each ANP ID (737800 and EMB175). The proposed missed approach profiles are generally based on the STANDARD arrival procedure for the initial arrival portion and the STANDARD Circuit and Touch and Go profiles for the climb and level segments for the 737800 and the EMB175. User-defined profiles are based on altitude, speed and thrust data. Altitudes were obtained using actual missed approach altitudes collected by the Port of Seattle EnvironmentalVue Noise Monitoring System. Speed data and thrust data was obtained from AEDT flight performance calculations because the Port of Seattle EnvironmentalVue Noise Monitoring System does not provide reliable speed and thrust data. Note that the length of the radar tracks downwind segments varied. Therefore, the focus each of the user-defined profiles was to represent the missed approach (decision point) altitude, downwind level segment altitude, and step-down altitude prior to final descent of the radar tracks in the vicinity of the AEDT tracks at the initial turn to the west. The length of the downwind level segment was estimated to cover the wide range of downwind segment lengths and base leg turn locations. Similarly, the focus of the AEDT missed approach backbone track geometry was to cover the location of the initial turns to the west and to cover the wide range of the remaining radar track geometry. Additionally, in order to best represent the wide dispersion of the missed approach radar tracks, multiple backbone AEDT missed approach tracks were developed. Given the radar coverage of the AEDT representative backbone tracks, subtracks were not developed.

<u>**737800 16R Graphs – Turn Before Runway**</u>

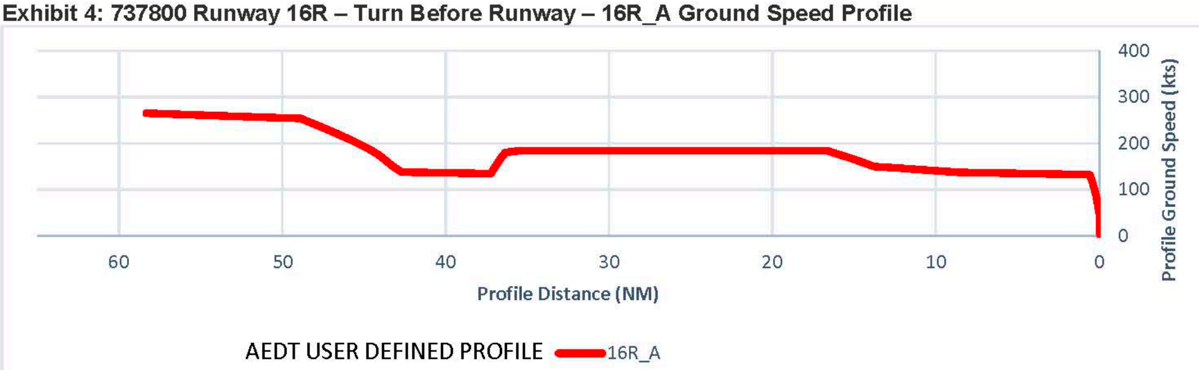
This section of graphs shows the vertical profiles of radar missed approaches on Runway 16R starting the missed approach turn before the runway. The following graphs show the 737800 proposed user-defined profile for AEDT flight track 16R_A. **Exhibit 3** compares the radar flight track altitudes and the proposed 16R_A user-defined profile. **Exhibit 4** shows the ground speeds and **Exhibit 5** shows the thrust values calculated by AEDT for the 16R_A user-defined profile based on the parameters in **Table 5**.

Exhibit 3: 737800 Runway 16R – Turn Before Runway – 16R_A Altitude Profile



Source: SEA and L&B (2023)

Exhibit 4: 737800 Runway 16R – Turn Before Runway – 16R_A Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

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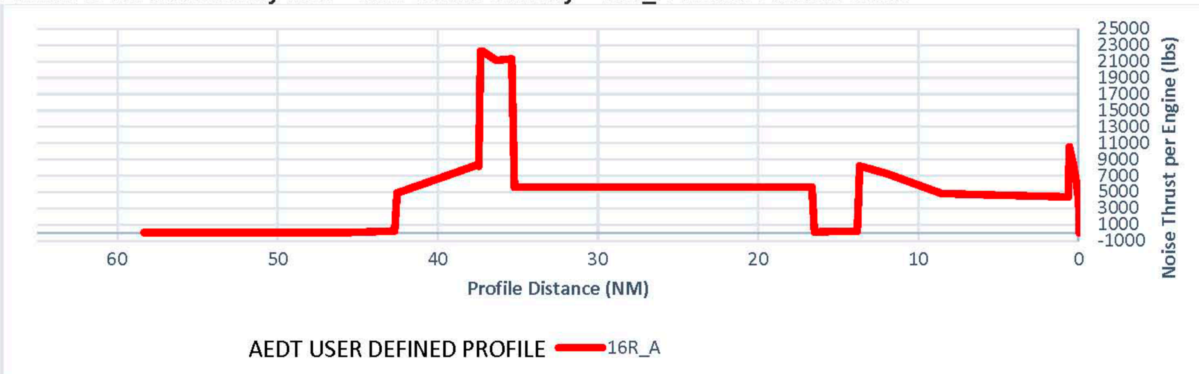
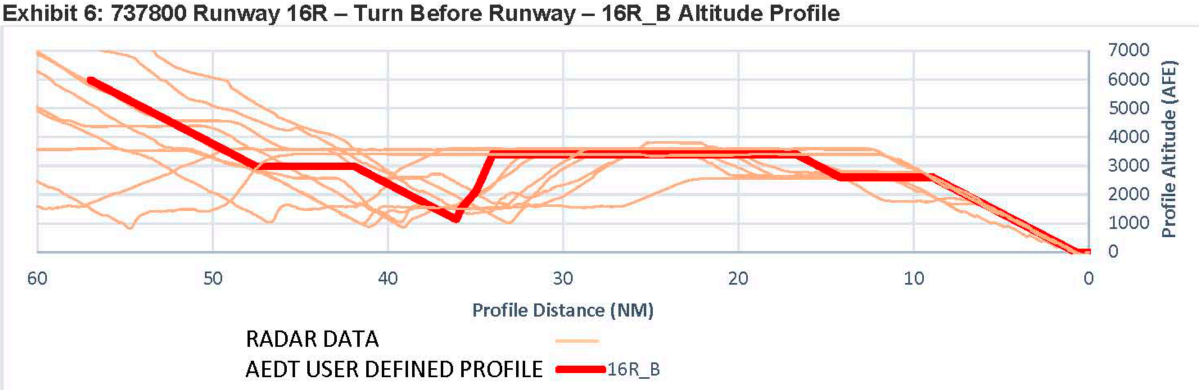
Exhibit 5: 737800 Runway 16R – Turn Before Runway – 16R_A Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

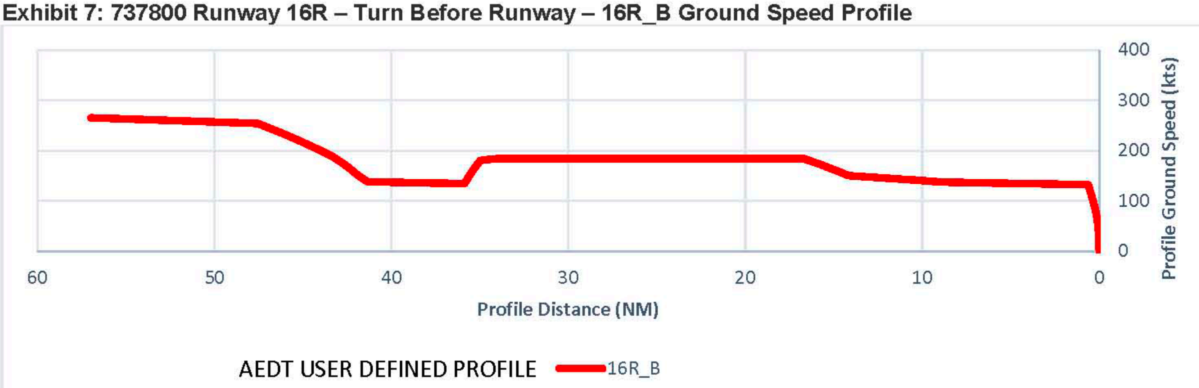
The following graphs show the 737800 proposed user-defined profile for AEDT flight track 16R_B. **Exhibit 6** compares the radar flight track altitudes and the proposed 16R_B user-defined profile. **Exhibit 7** shows the ground speeds and **Exhibit 8** shows the thrust values calculated by AEDT for the 16R_B user-defined profile based on the parameters in **Table 5**.

Exhibit 6: 737800 Runway 16R – Turn Before Runway – 16R_B Altitude Profile



Source: SEA and L&B (2023)

Exhibit 7: 737800 Runway 16R – Turn Before Runway – 16R_B Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

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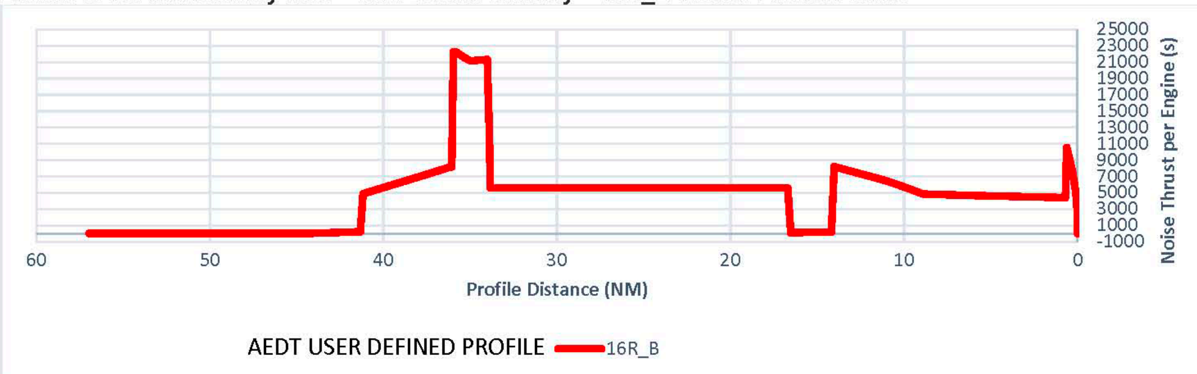
Exhibit 8: 737800 Runway 16R – Turn Before Runway – 16R_B Thrust Values Profile

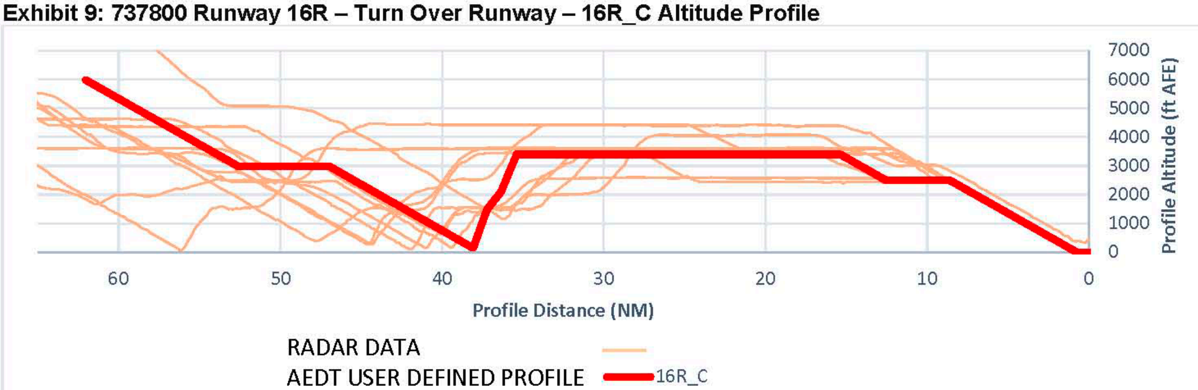


Source: AEDT Version 3e and L&B (2023)

737800 16R Graphs – Turn Over Runway

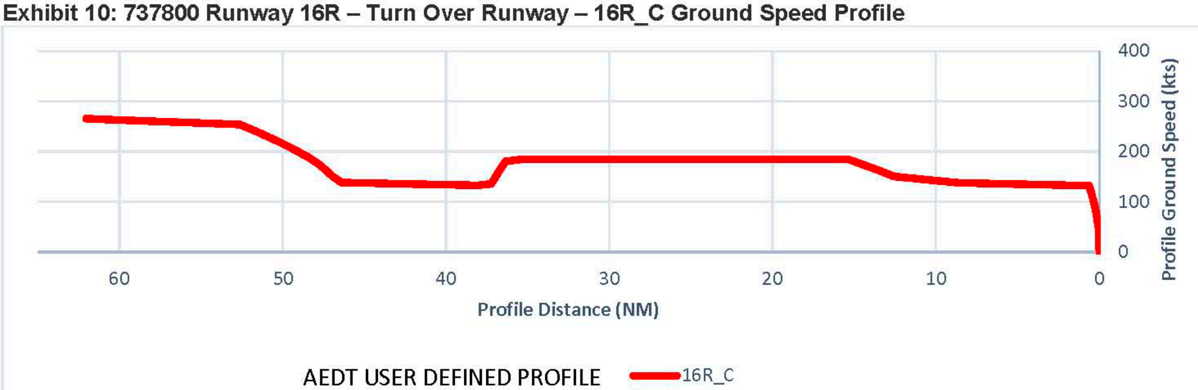
This section of graphs shows the vertical profiles of radar missed approaches on Runway 16R starting the missed approach turn over the runway. The following graphs show the 737800 proposed user-defined profile for AEDT flight track 16R_C. **Exhibit 9** compares the radar flight track altitudes and the proposed 16R_C user-defined profile. **Exhibit 10** shows the ground speeds and **Exhibit 11** shows the thrust values calculated by AEDT for the 16R_C user-defined profile based on the parameters in **Table 5**.

Exhibit 9: 737800 Runway 16R – Turn Over Runway – 16R_C Altitude Profile



Source: SEA and L&B (2023)

Exhibit 10: 737800 Runway 16R – Turn Over Runway – 16R_C Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

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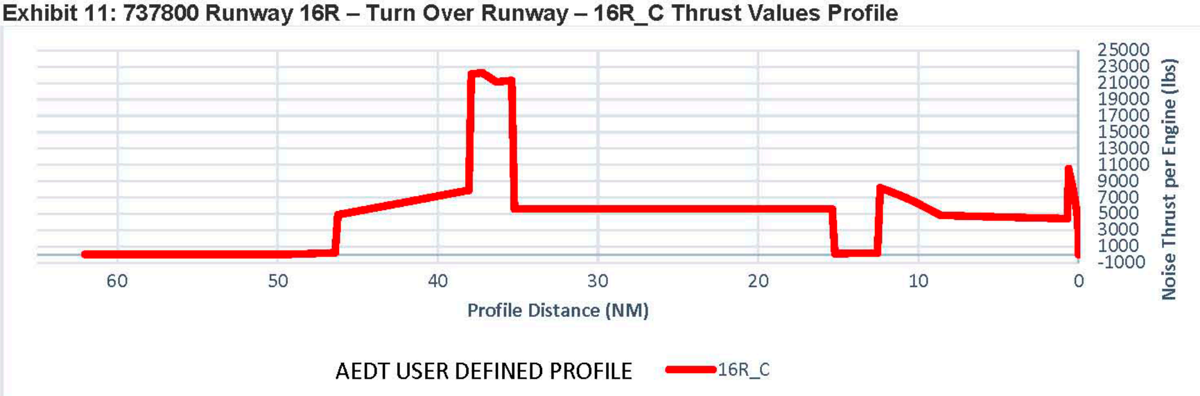
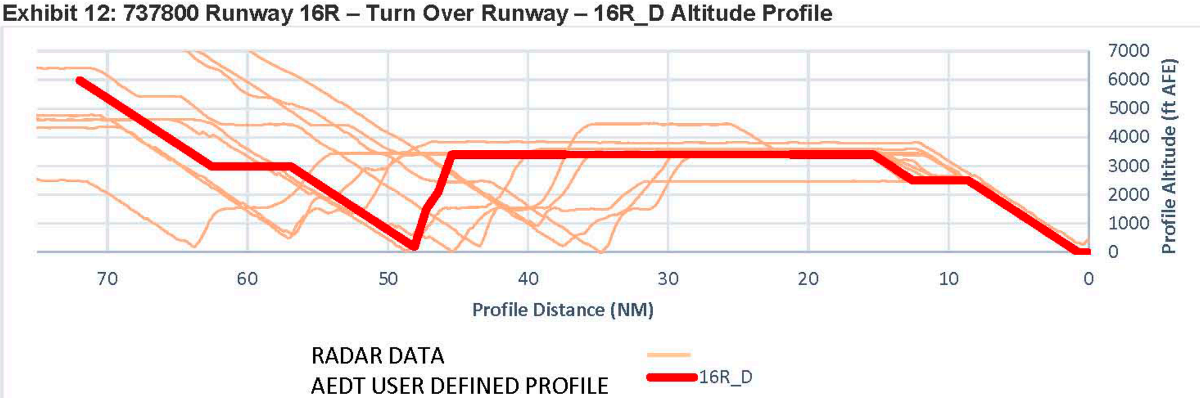
Exhibit 11: 737800 Runway 16R – Turn Over Runway – 16R_C Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

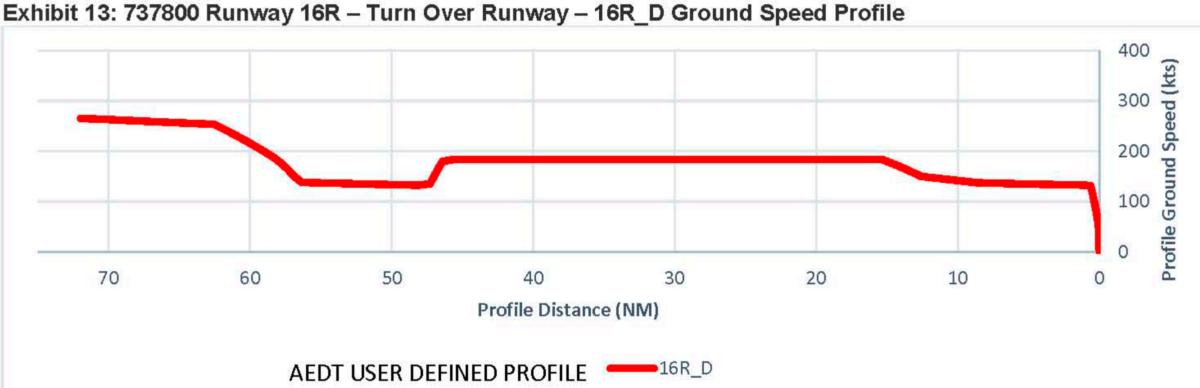
The following graphs show the 737800 proposed user-defined profile for AEDT flight track 16R_D. **Exhibit 12** compares the radar flight track altitudes and the proposed 16R_D user-defined profile. **Exhibit 13** shows the ground speeds and **Exhibit 14** shows the thrust values calculated by AEDT for the 16R_D user-defined profile based on the parameters in **Table 5**.

Exhibit 12: 737800 Runway 16R – Turn Over Runway – 16R_D Altitude Profile



Source: SEA and L&B (2023)

Exhibit 13: 737800 Runway 16R – Turn Over Runway – 16R_D Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

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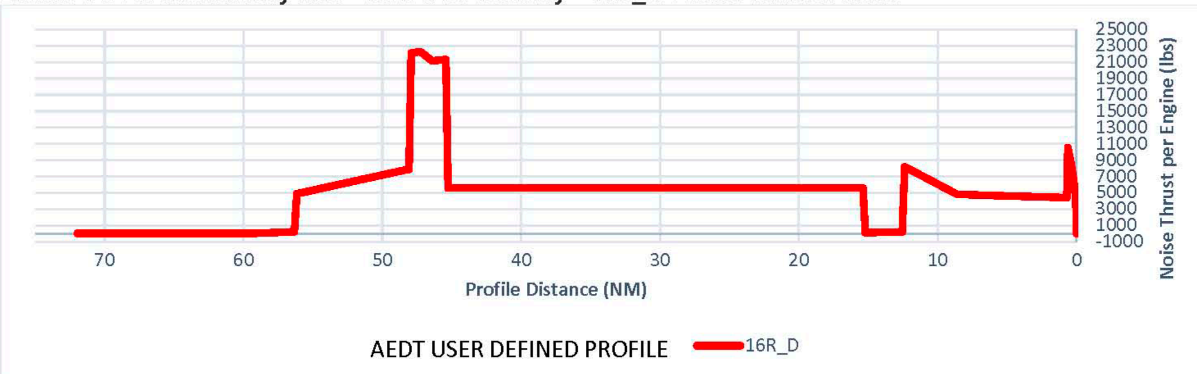
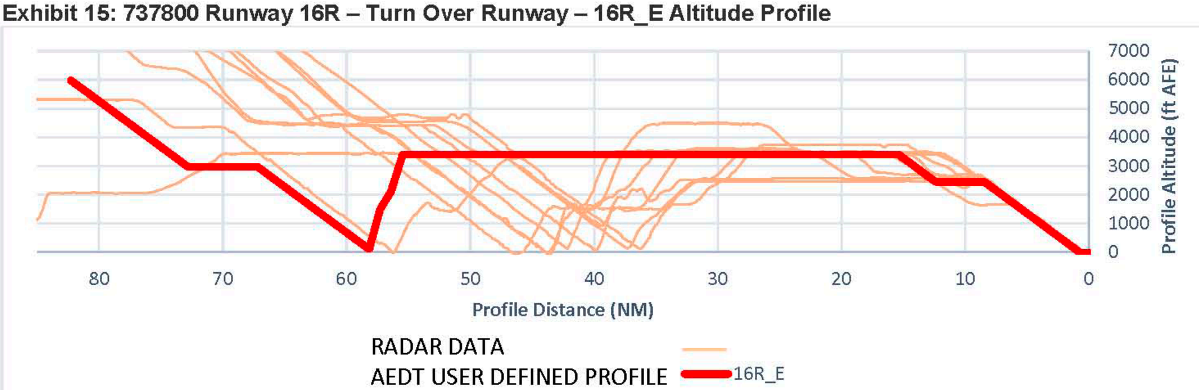
Exhibit 14: 737800 Runway 16R – Turn Over Runway – 16R_D Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

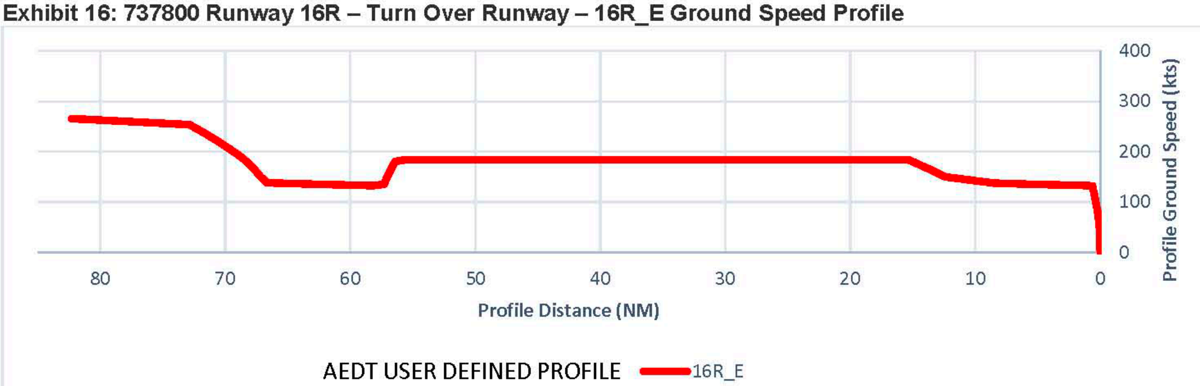
The following graphs show the 737800 proposed user-defined profile for AEDT flight track 16R_E. **Exhibit 15** compares the radar flight track altitudes and the proposed 16R_E user-defined profile. **Exhibit 16** shows the ground speeds and **Exhibit 17** shows the thrust values calculated by AEDT for the 16R_E user-defined profile based on the parameters in **Table 5**.

Exhibit 15: 737800 Runway 16R – Turn Over Runway – 16R_E Altitude Profile



Source: SEA and L&B (2023)

Exhibit 16: 737800 Runway 16R – Turn Over Runway – 16R_E Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

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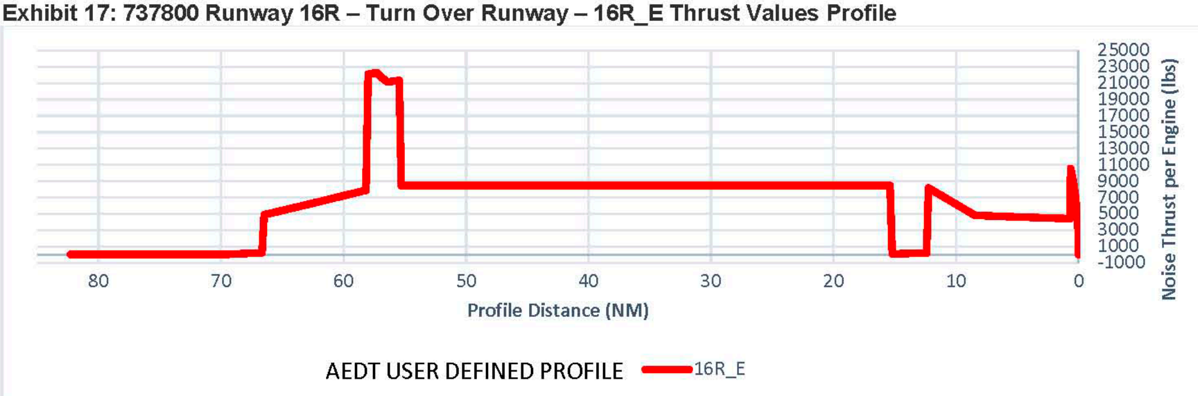
Exhibit 17: 737800 Runway 16R – Turn Over Runway – 16R_E Thrust Values Profile

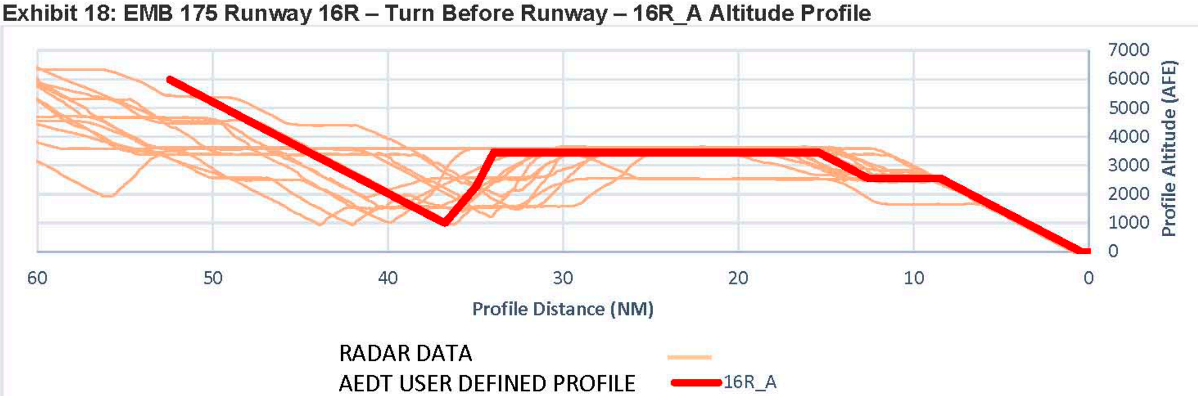


Source: AEDT Version 3e and L&B (2023)

EMB175 16R Graphs Before Runway

This section of graphs shows the vertical profiles of radar missed approaches on Runway 16R starting the missed approach turn before the runway. The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 16R_A. **Exhibit 18** compares the radar flight track altitudes and the proposed 16R_A user-defined profile. **Exhibit 19** shows the ground speeds and **Exhibit 20** shows the thrust values calculated by AEDT for the 16R_A user-defined profile based on the parameters in **Table 5**.

Exhibit 18: EMB 175 Runway 16R – Turn Before Runway – 16R_A Altitude Profile



Source: SEA and L&B (2023)

Exhibit 19: EMB 175 Runway 16R – Turn Before Runway – 16R_A Ground Speed Profile

Source: AEDT Version 3e and L&B (2023)

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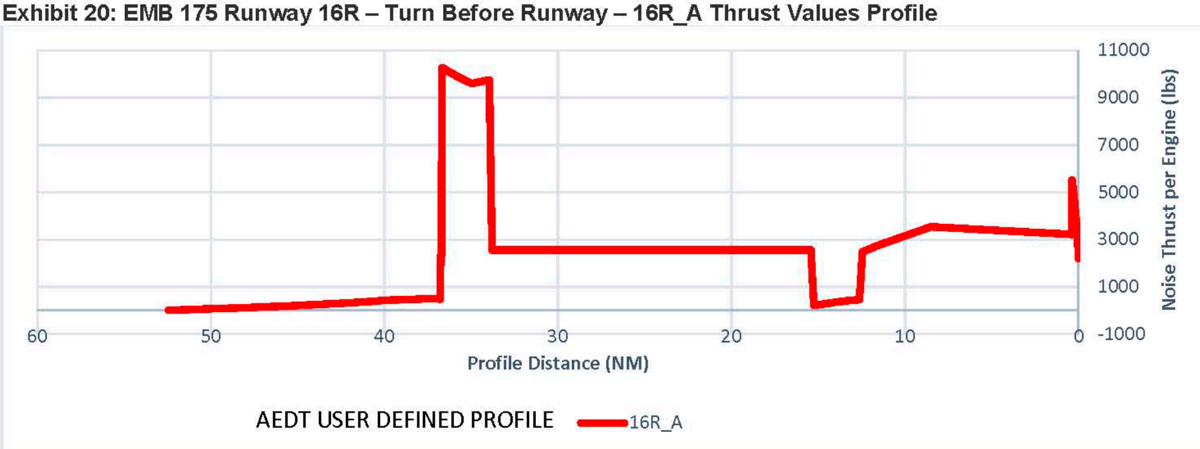
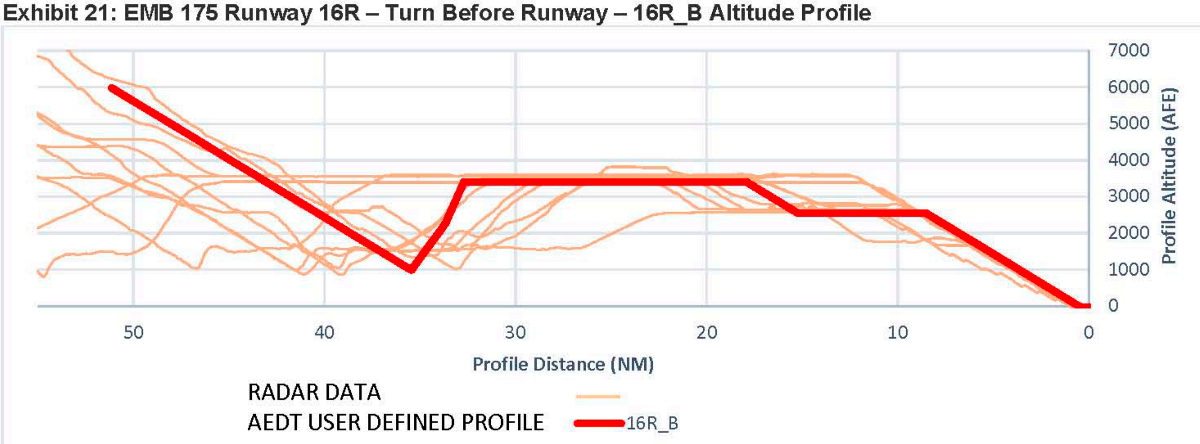
Exhibit 20: EMB 175 Runway 16R – Turn Before Runway – 16R_A Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 16R_B. **Exhibit 21** compares the radar flight track altitudes and the proposed 16R_B user-defined profile. **Exhibit 22** shows the ground speeds and **Exhibit 23** shows the thrust values calculated by AEDT for the 16R_B user-defined profile based on the parameters in **Table 5**.

Exhibit 21: EMB 175 Runway 16R – Turn Before Runway – 16R_B Altitude Profile



Source: SEA and L&B (2023)

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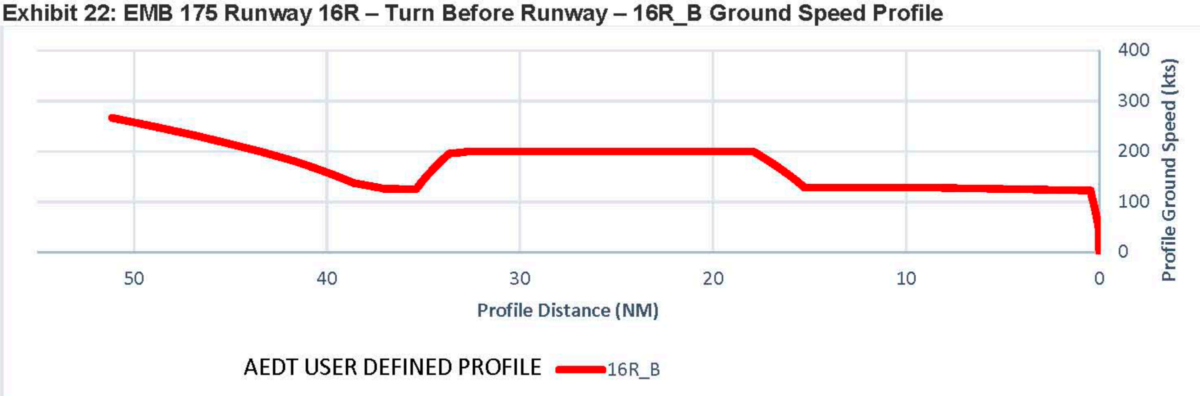
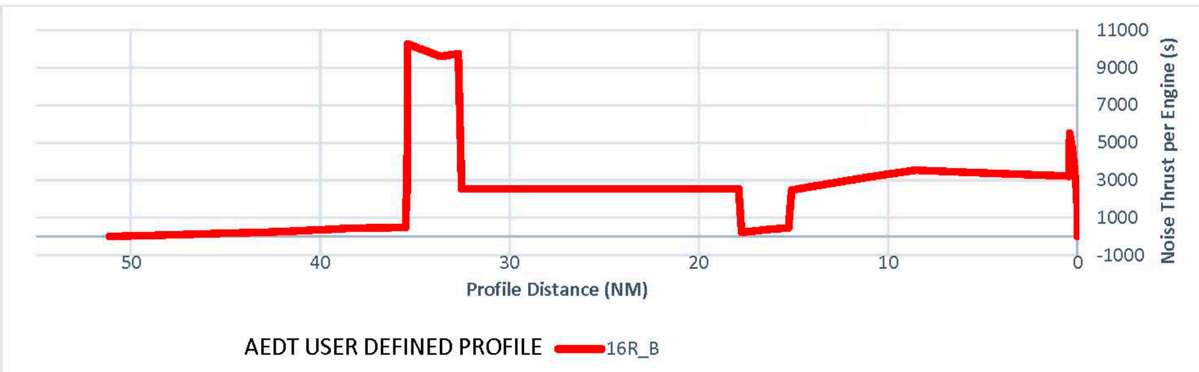
Exhibit 22: EMB 175 Runway 16R – Turn Before Runway – 16R_B Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

Exhibit 23: EMB 175 Runway 16R – Turn Before Runway – 16R_B Thrust Values Profile

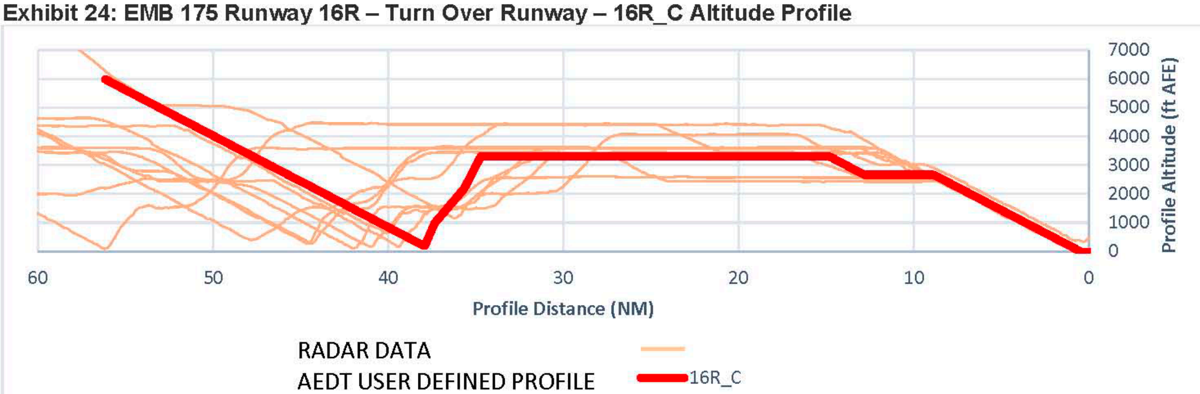


Source: AEDT Version 3e and L&B (2023)

__EMB175 16R Graphs – Turn Over Runway__

This section of graphs shows the vertical profiles of radar missed approaches on Runway 16R starting the missed approach turn over the runway. The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 16R_C. **Exhibit 24** compares the radar flight track altitudes and the proposed 16R_C user-defined profile. **Exhibit 25** shows the ground speeds and **Exhibit 26** shows the thrust values calculated by AEDT for the 16R_C user-defined profile based on the parameters in **Table 5**.

Exhibit 24: EMB 175 Runway 16R – Turn Over Runway – 16R_C Altitude Profile



Source: SEA and L&B (2023)

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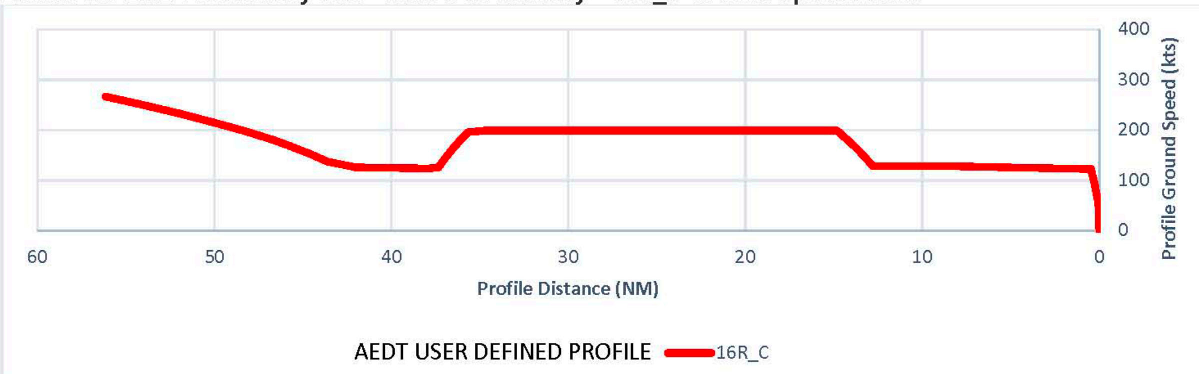
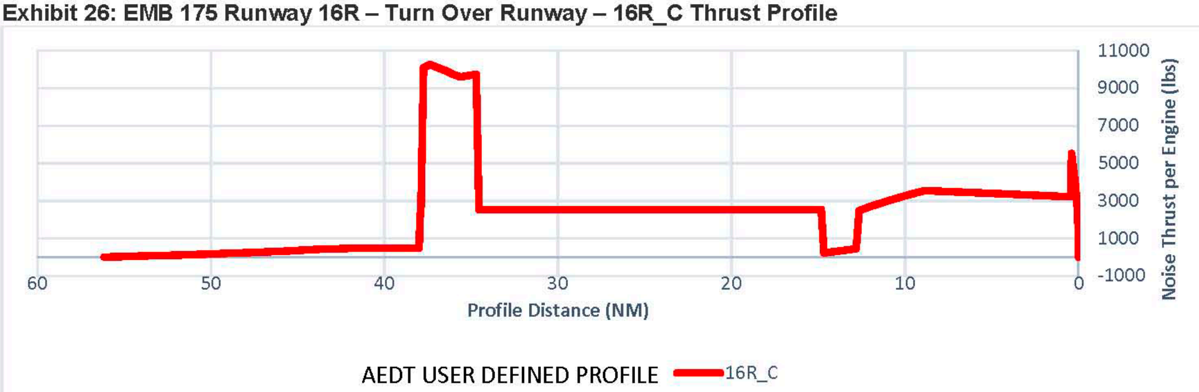
Exhibit 25: EMB 175 Runway 16R – Turn Over Runway – 16R_C Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

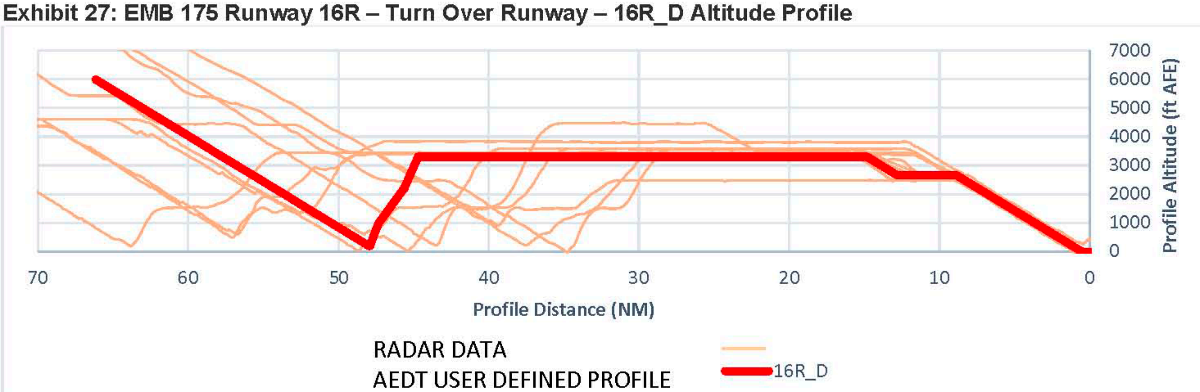
Exhibit 26: EMB 175 Runway 16R – Turn Over Runway – 16R_C Thrust Profile



Source: AEDT Version 3e and L&B (2023)

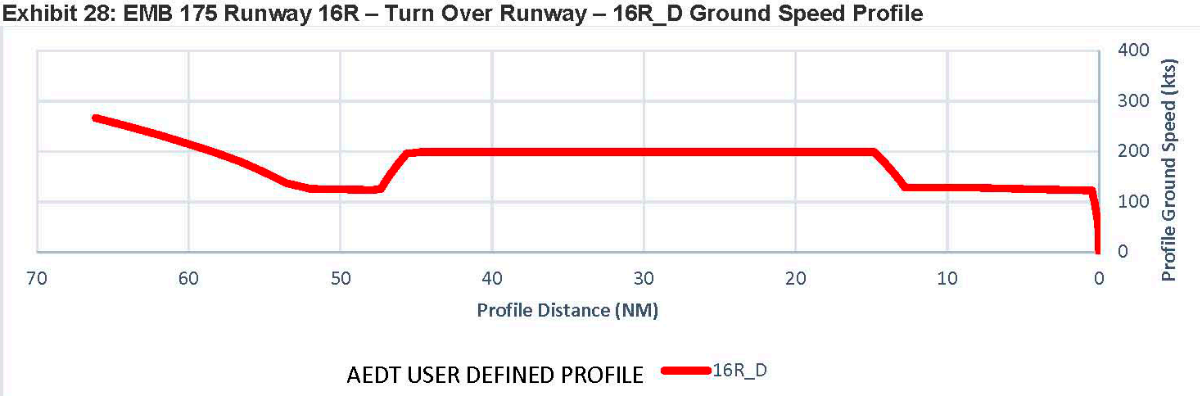
The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 16R_D. **Exhibit 27** compares the radar flight track altitudes and the proposed 16R_D user-defined profile. **Exhibit 28** shows the ground speeds and **Exhibit 29** shows the thrust values calculated by AEDT for the 16R_D user-defined profile based on the parameters in **Table 5**.

Exhibit 27: EMB 175 Runway 16R – Turn Over Runway – 16R_D Altitude Profile



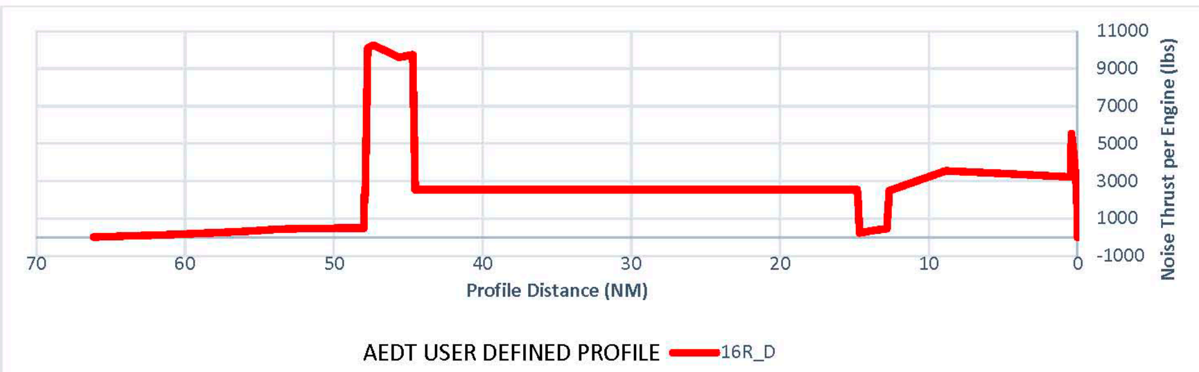
Source: SEA and L&B (2023)

Exhibit 28: EMB 175 Runway 16R – Turn Over Runway – 16R_D Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

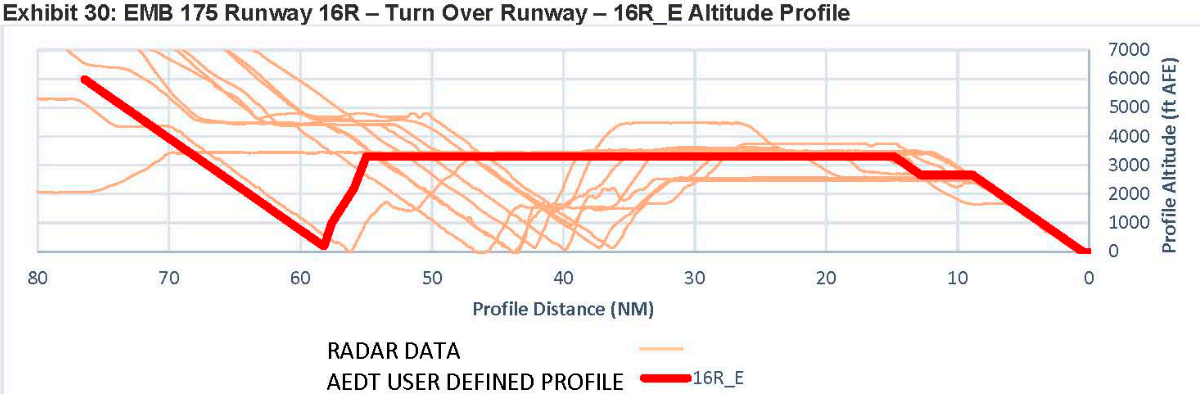
Exhibit 29: EMB 175 Runway 16R – Turn Over Runway – 16R_D Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 16R_E. **Exhibit 30** compares the radar flight track altitudes and the proposed 16R_E user-defined profile. **Exhibit 31** shows the ground speeds and **Exhibit 32** shows the thrust values calculated by AEDT for the 16R_E user-defined profile based on the parameters in **Table 5**.

Exhibit 30: EMB 175 Runway 16R – Turn Over Runway – 16R_E Altitude Profile



Source: SEA and L&B (2023)

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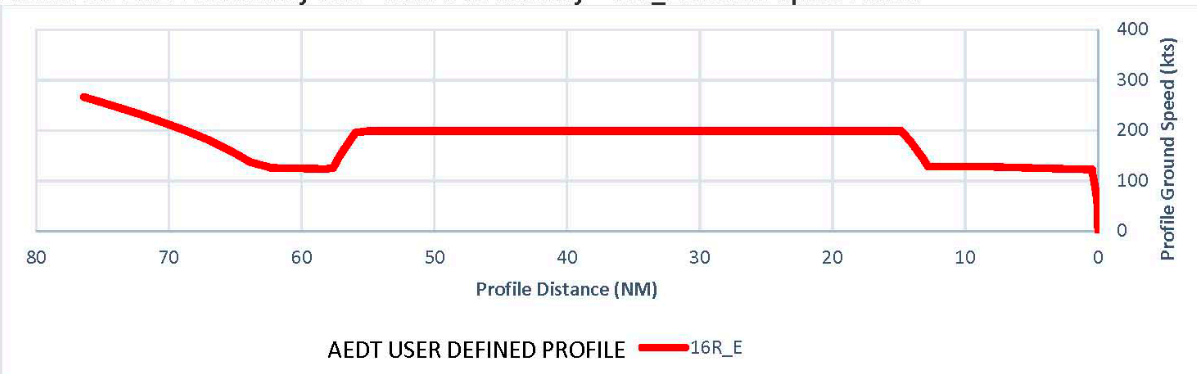
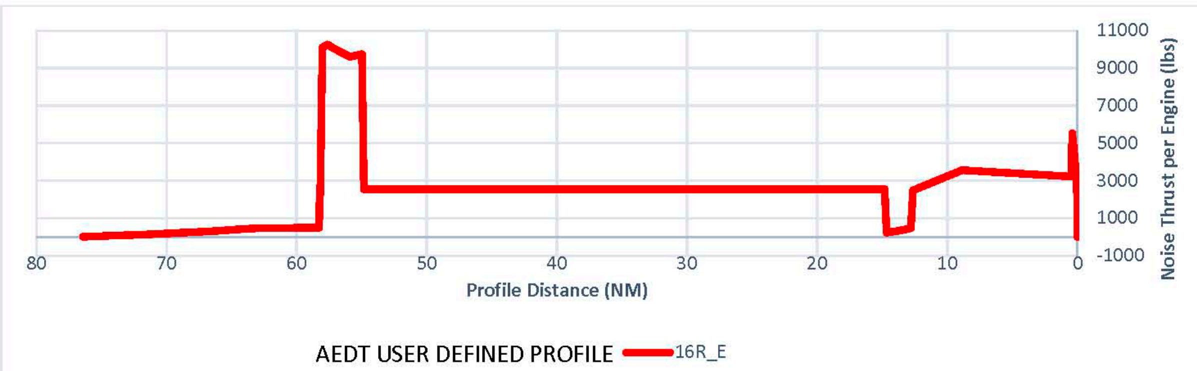
Exhibit 31: EMB 175 Runway 16R – Turn Over Runway – 16R_E Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

Exhibit 32: EMB 175 Runway 16R – Turn Over Runway – 16R_E Thrust Values Profile

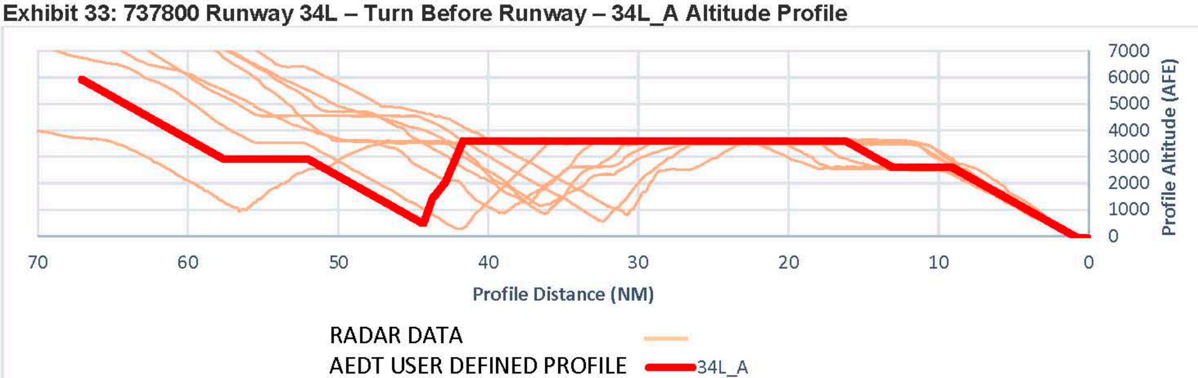


Source: AEDT Version 3e and L&B (2023)

737800 34L Graphs - Turn Before Runway

This section of graphs shows the vertical profiles of radar missed approaches on Runway 34L starting the missed approach turn before the runway The following graphs show the 737800 proposed user-defined profile for AEDT flight track 34L_A. **Exhibit 33** compares the radar flight track altitudes and the proposed 34L_A user-defined profile. **Exhibit 34** shows the ground speeds and **Exhibit 35** shows the thrust values calculated by AEDT for the 34L_A user-defined profile based on the parameters in **Table 5**.

Exhibit 33: 737800 Runway 34L – Turn Before Runway – 34L_A Altitude Profile



Source: SEA and L&B (2023)

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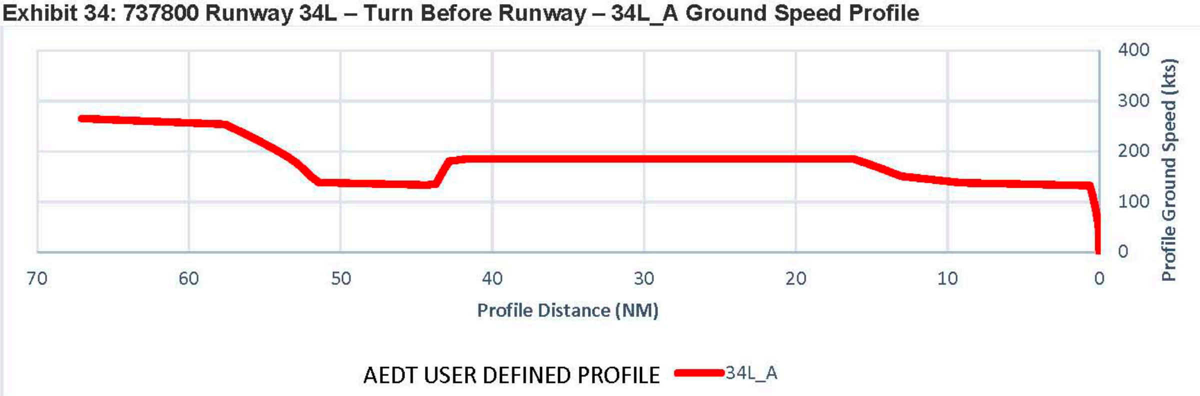
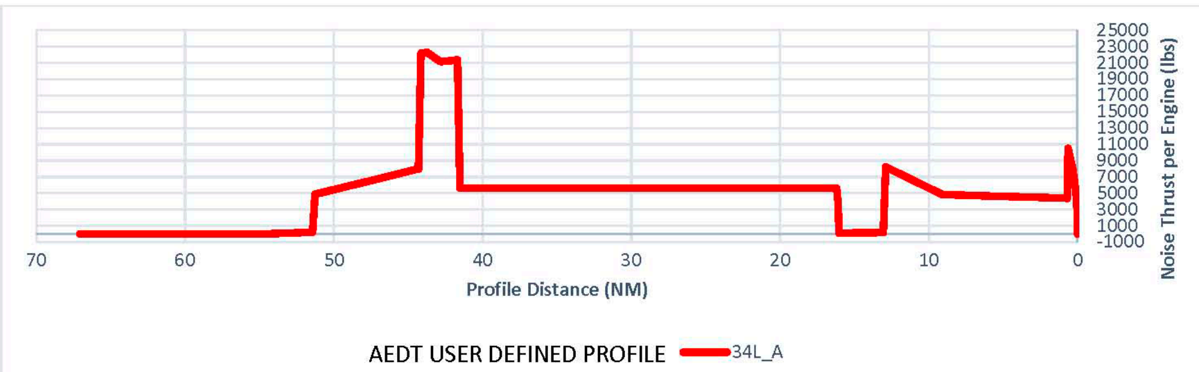
Exhibit 34: 737800 Runway 34L – Turn Before Runway – 34L_A Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

Exhibit 35: 737800 Runway 34L – Turn Before Runway – 34L_A Thrust Values Profile

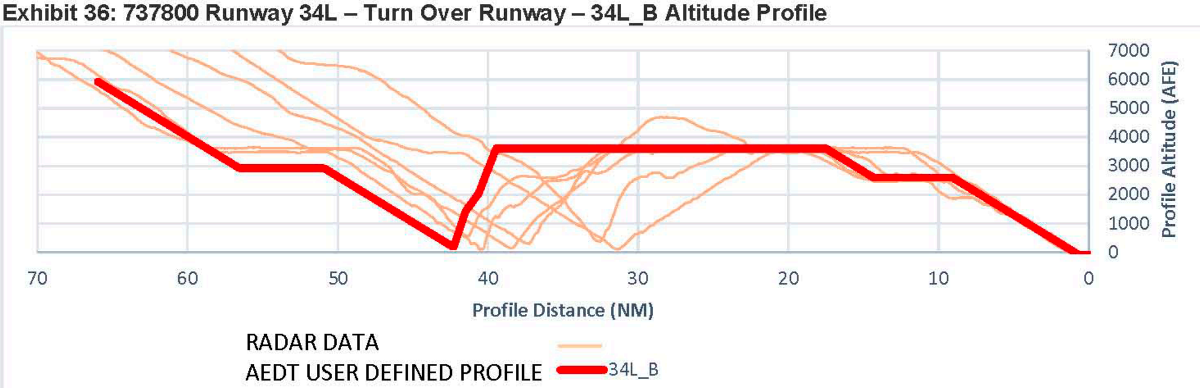


Source: AEDT Version 3e and L&B (2023)

<u>**737800 34L Graphs – Turn Over Runway**</u>

This section of graphs shows the vertical profiles of radar missed approaches on Runway 34L starting the missed approach turn over the runway. The following graphs show the 737800 proposed user-defined profile for AEDT flight track 34L_B. **Exhibit 36** compares the radar flight track altitudes and the proposed 34L_B user-defined profile. **Exhibit 37** shows the ground speeds and **Exhibit 38** shows the thrust values calculated by AEDT for the 34L_B user-defined profile based on the parameters in **Table 5**.

Exhibit 36: 737800 Runway 34L – Turn Over Runway – 34L_B Altitude Profile



Source: SEA and L&B (2023)

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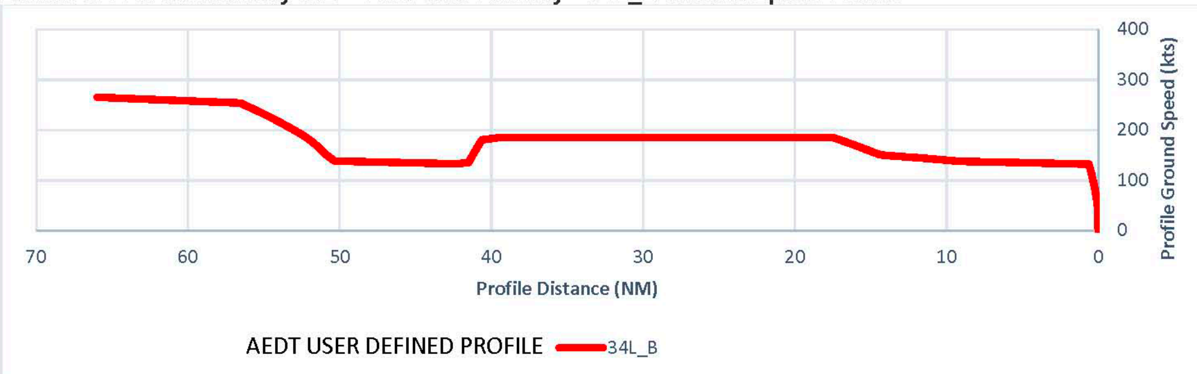
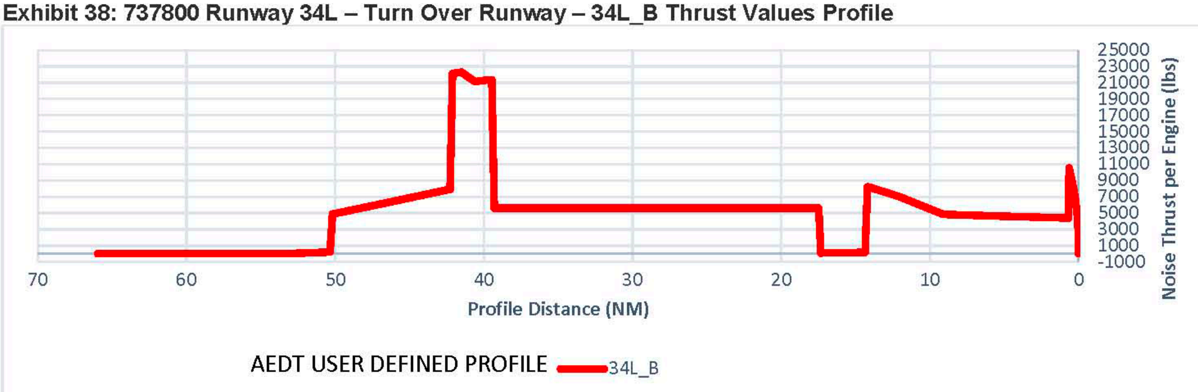
Exhibit 37: 737800 Runway 34L – Turn Over Runway – 34L_B Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

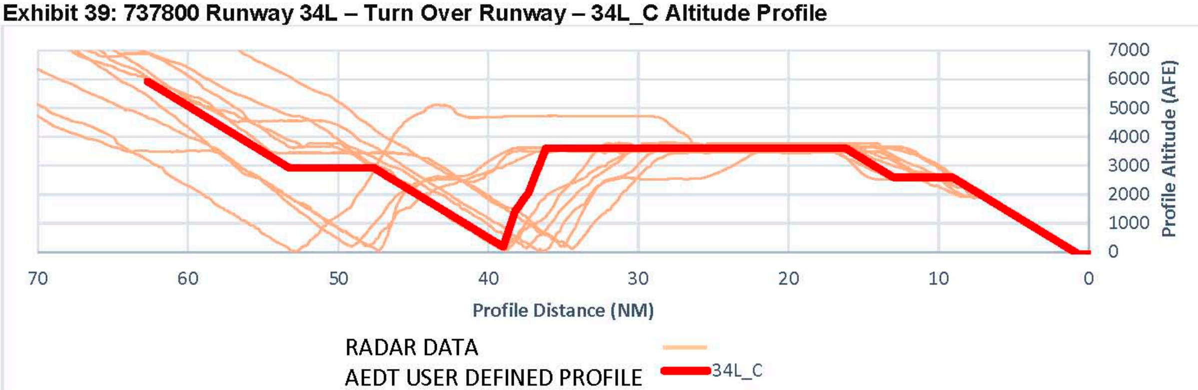
Exhibit 38: 737800 Runway 34L – Turn Over Runway – 34L_B Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

The following graphs show the 737800 proposed user-defined profile for AEDT flight track 34L_C. **Exhibit 39** compares the radar flight track altitudes and the proposed 34L_C user-defined profile. **Exhibit 40** shows the ground speeds and **Exhibit 41** shows the thrust values calculated by AEDT for the 34L_C user-defined profile based on the parameters in **Table 5**.

Exhibit 39: 737800 Runway 34L – Turn Over Runway – 34L_C Altitude Profile



Source: SEA and L&B (2023)

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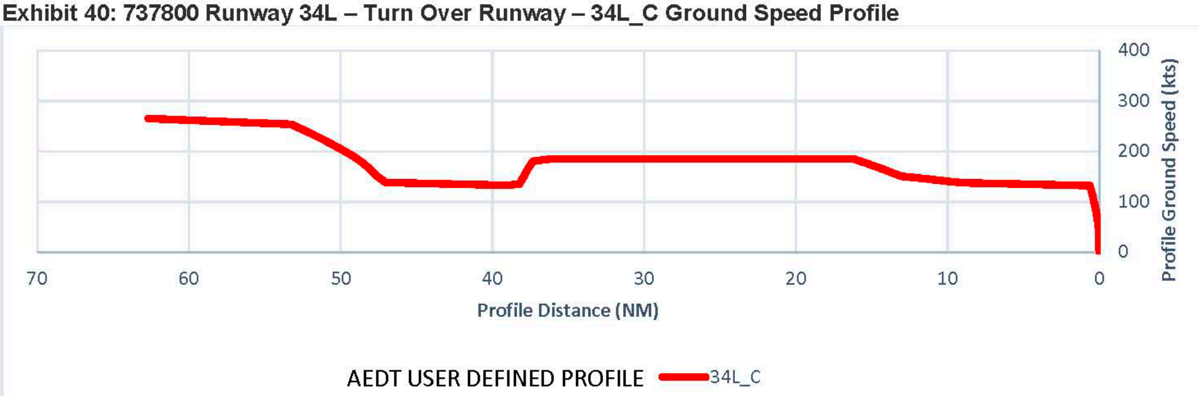
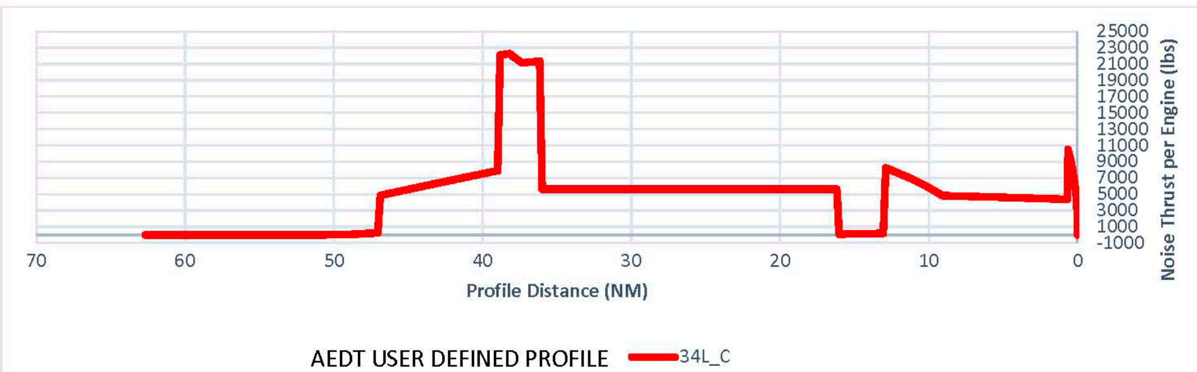
Exhibit 40: 737800 Runway 34L – Turn Over Runway – 34L_C Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

Exhibit 41: 737800 Runway 34L – Turn Over Runway – 34L_C Thrust Values Profile

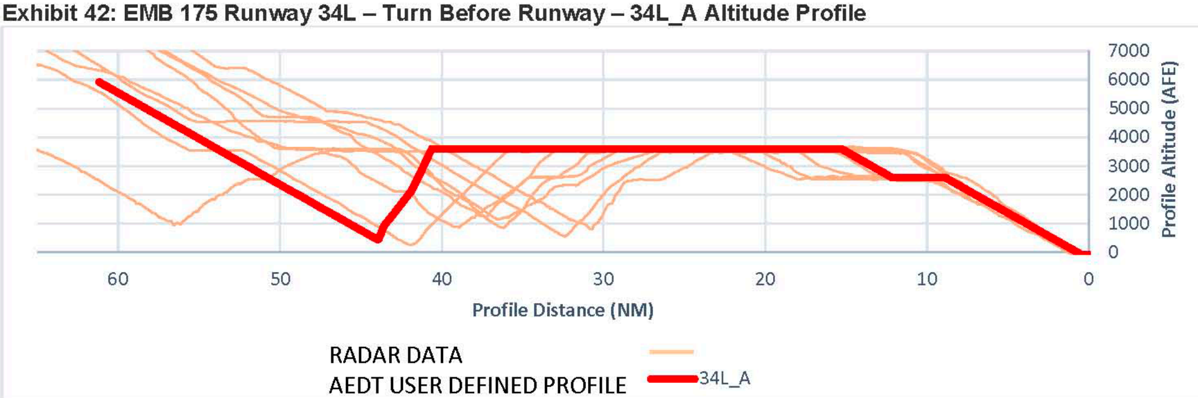


Source: AEDT Version 3e and L&B (2023)

<u>EMB175 34L Graphs – Turn Before Runway</u>

This section of graphs shows the vertical profiles of radar missed approaches on Runway 34L starting the missed approach turn before the runway. The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 34L_A. **Exhibit 42** compares the radar flight track altitudes and the proposed 34L_A user-defined profile. **Exhibit 43** shows the ground speeds and **Exhibit 44** shows the thrust values calculated by AEDT for the 34L_A user-defined profile based on the parameters in **Table 5**.

Exhibit 42: EMB 175 Runway 34L – Turn Before Runway – 34L_A Altitude Profile



Source: SEA and L&B (2023)

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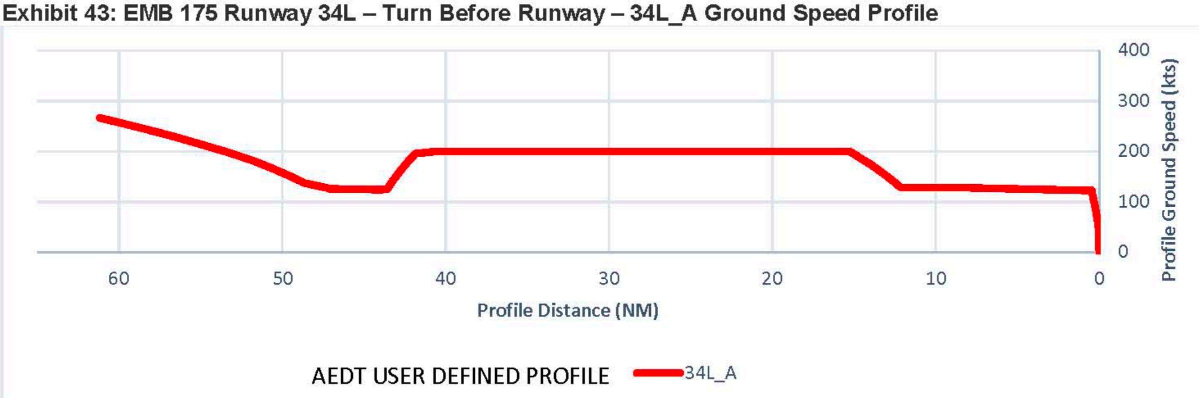
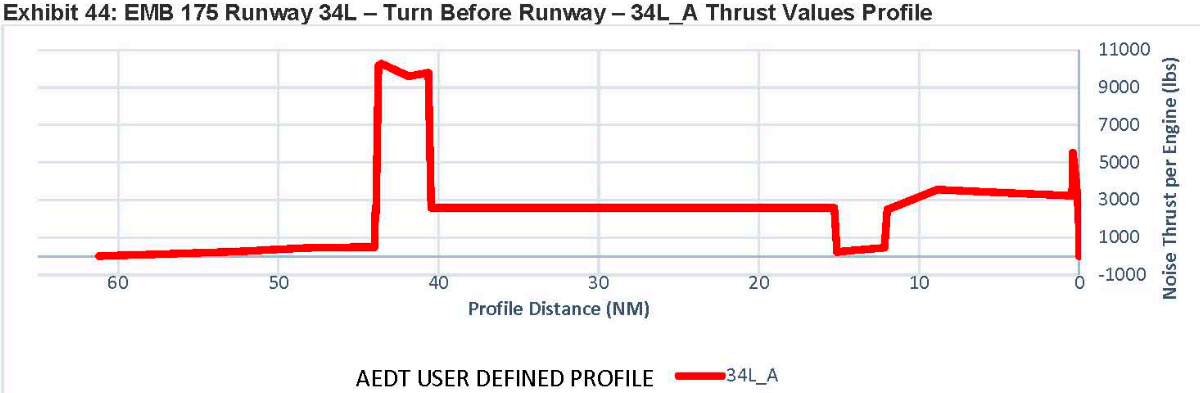
Exhibit 43: EMB 175 Runway 34L – Turn Before Runway – 34L_A Ground Speed Profile



Source: AEDT Version 3e and L&B (2023)

Exhibit 44: EMB 175 Runway 34L – Turn Before Runway – 34L_A Thrust Values Profile

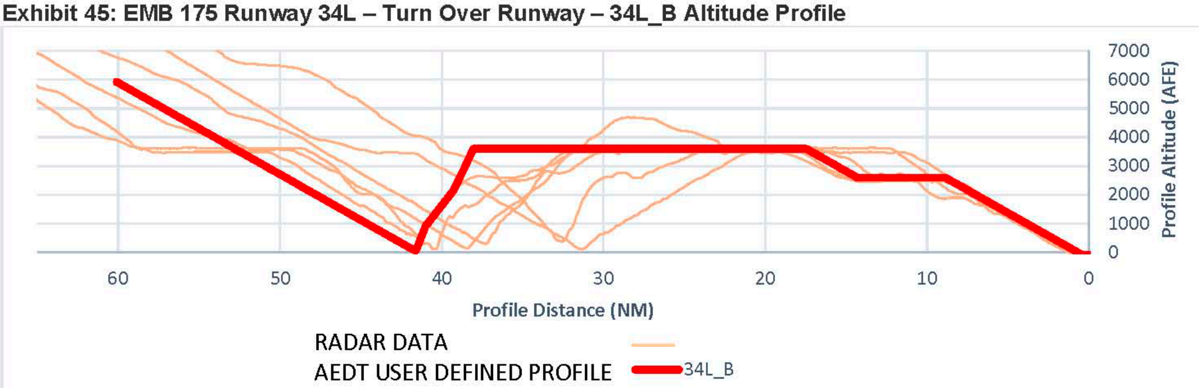


Source: AEDT Version 3e and L&B (2023)

<u>EMB175 34L Graphs – Turn Over Runway</u>

This section of graphs shows the vertical profiles of radar missed approaches on Runway 34L starting the missed approach turn over the runway. The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 34L_B. **Exhibit 45** compares the radar flight track altitudes and the proposed 34L_B user-defined profile. **Exhibit 46** shows the ground speeds and **Exhibit 47** shows the thrust values calculated by AEDT for the 34L_B user-defined profile based on the parameters in **Table 5**.

Exhibit 45: EMB 175 Runway 34L – Turn Over Runway – 34L_B Altitude Profile



Source: SEA and L&B (2023)

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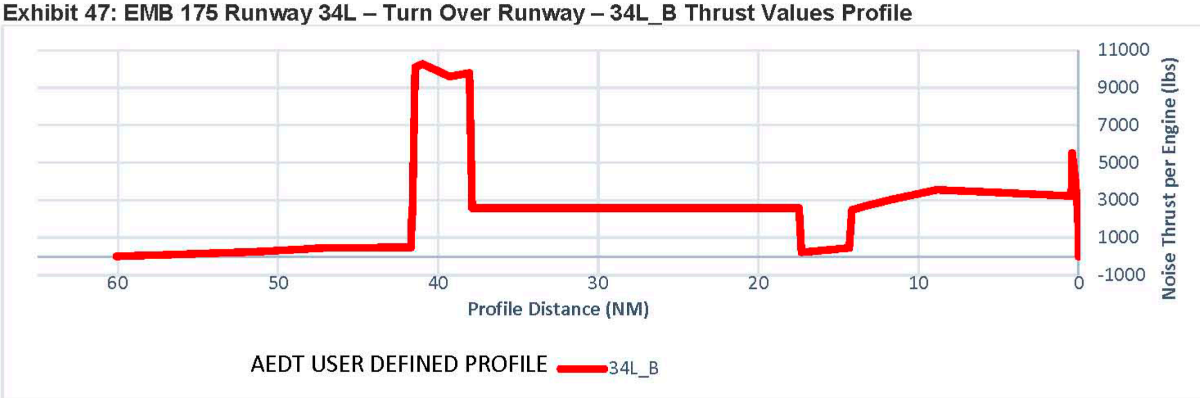
Exhibit 46: EMB 175 Runway 34L – Turn Over Runway – 34L_B Ground Speed Profile

Source: AEDT Version 3e and L&B (2023)

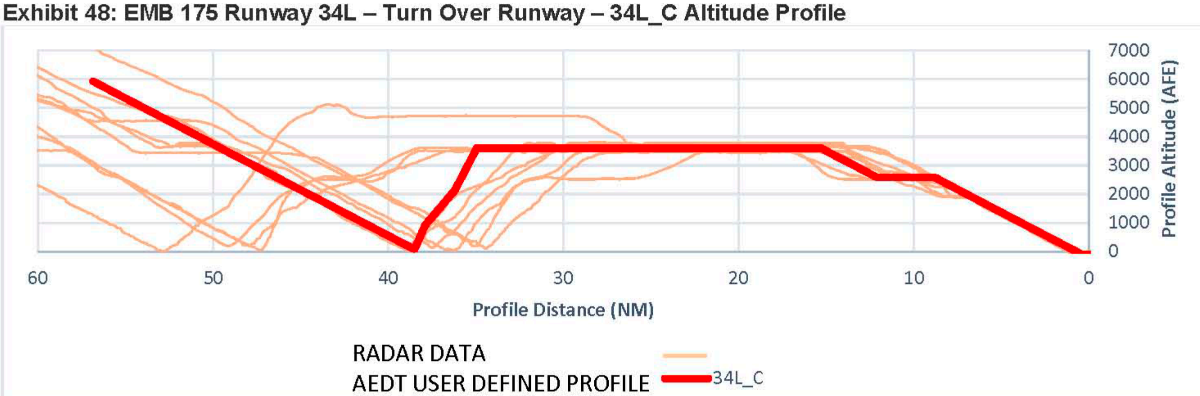
Exhibit 47: EMB 175 Runway 34L – Turn Over Runway – 34L_B Thrust Values Profile



Source: AEDT Version 3e and L&B (2023)

The following graphs show the EMB175 proposed user-defined profile for AEDT flight track 34L_C. **Exhibit 48** compares the radar flight track altitudes and the proposed 34L_C user-defined profile. **Exhibit 49** shows the ground speeds and **Exhibit 50** shows the thrust values calculated by AEDT for the 34L_C user-defined profile based on the parameters in **Table 5**.

Exhibit 48: EMB 175 Runway 34L – Turn Over Runway – 34L_C Altitude Profile



Source: SEA and L&B (2023)

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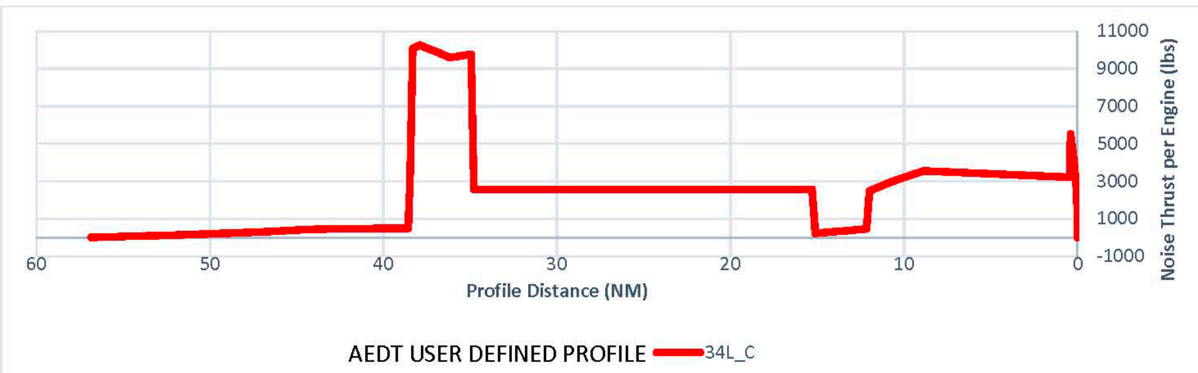
Exhibit 49: EMB 175 Runway 34L – Turn Over Runway – 34L_C Ground Speed Profile

Source: AEDT Version 3e and L&B (2023)

Exhibit 50: EMB 175 Runway 34L – Turn Over Runway – 34L_C Thrust Profile



Source: AEDT Version 3e and L&B (2023)

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AEDT Missed Approach Procedure Profile Segments

Table 5 lists the procedure profile steps used to create the proposed user-defined profiles for the 737800 and the EMB175.

TABLE 5, MISSED APPROACH PROCEDURE SEGMENTS

ACFT_ID	OP_ TYPE	PROF_ID1	PROF_ ID2	STEP_ NUM	FLAP_ ID	STEP_ TYPE	THR_ TYPE	PARAM1	PARAM2	PARAM3
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	6	A_30	D		2817	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	7	A_30	V		1168	139.11	500
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	10	T_05	C	T	3418	0	0
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	11	T_05	V	NULL	3418	181.7	113840
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	12	A_15	F		3418	181.7	3
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	13	A_15	V	NULL	2518	151.41	32000
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	14	A_30	D		2518	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_16R_A_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	6	A_30	D		2817	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	7	A_30	V		1168	139.11	500
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	10	T_05	C	T	3418	0	0
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	11	T_05	V	NULL	3418	181.7	105200
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	12	A_15	F		3418	181.7	3
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	13	A_15	V	NULL	2618	151.41	32000
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	14	A_30	D		2618	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_16R_B_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	6	A_30	D		2817	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	7	A_30	V		188	139.11	500
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	10	T_05	C	T	3418	0	0
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	11	T_05	V	NULL	3418	181.7	121550
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	12	A_15	F		3418	181.7	3
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	13	A_15	V		2518	151.41	24000
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	14	A_30	D		2518	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_16R_C_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	6	A_30	D	NULL	2817	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	7	A_30	V	NULL	218	139.11	500
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	10	T_05	C	T	3418	0	0

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ACFT_ID	OP_TYPE	PROF_ID1	PROF_ID2	STEP_NUM	FLAP_ID	STEP_TYPE	THR_TYPE	PARAM1	PARAM2	PARAM3
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	11	T_05	V	NULL	3418	181.7	182600
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	12	A_15	F		3418	181.7	3
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	13	A_15	V		2518	151.41	24000
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	14	A_30	D		2518	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_16R_D_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	6	A_30	D	NULL	2817	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	7	A_30	V	NULL	141	139.11	500
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	10	T_05	C	T	3418	0	0
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	11	A_15	V	NULL	3418	181.7	243500
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	12	A_15	F		3418	181.7	3
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	13	A_15	V		2473	151.41	24000
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	14	A_30	D		2473	139.11	3
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_16R_E_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	6	A_30	D		2817	139.11	3
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	7	A_30	V		577	139.11	500
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	10	T_05	C	T	3677	0	0
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	11	T_05	V	NULL	3677	181.7	154850
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	12	A_15	F		3677	181.7	3
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	13	A_15	V		2677	151.41	24000
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	14	A_30	D		2677	139.11	3
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_34L_A_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	6	A_30	D		2817	139.11	3
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	7	A_30	V		277	139.11	500
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	8	T_05	C	T	1500	0	0
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	10	T_05	C	T	3677	0	0
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	11	T_05	V	NULL	3677	181.7	133450
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	12	A_15	F		3677	181.7	3
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	13	A_15	V		2677	151.41	31900
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	14	A_30	D		2677	139.11	3
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_34L_B_X2	1	17	NULL	B	L	0	30	10
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	1	A_00	F		6000	248.93	3
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	2	A_00	W	I	3000	249.5	25437
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	3	A_01	W	I	3000	187.18	3671
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	4	A_05	W	I	3000	174.66	5209
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	5	A_15	F		3000	151.41	3
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	6	A_30	D		2817	139.11	3
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	7	A_30	V		277	139.11	500
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	8	T_05	C	T	1500	0	0

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ACFT_ID	OP_ TYPE	PROF_ID1	PROF_ ID2	STEP_ NUM	FLAP_ ID	STEP_ TYPE	THR_ TYPE	PARAM1	PARAM2	PARAM3
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	9	T_05	A	T	1885.7	181.7	0
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	10	T_05	C	T	3677	0	0
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	11	T_05	V	NULL	3677	181.7	121350
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	12	A_15	F		3677	181.7	3
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	13	A_15	V		2677	151.41	24000
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	14	A_30	D		2677	139.11	3
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	15	A_30	L	I	393.8	0	0
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	16	NULL	B	V	3837.5	139	40
737800MA_A_X2	A	STANDARDMA_34L_C_X2	1	17	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	5	ZERO	V		1019	130	500
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	8	ZERO	C	C	3469	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	9	ZERO	V	NULL	3469	196	112600
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	10	NULL	F	I	3469	196	3
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	11	ZERO	V		2577	130	25000
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	12	FULL	D	I	2577	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_16R_A_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	5	ZERO	V		1019	130	500
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	8	ZERO	C	C	3419	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	9	ZERO	V	NULL	3419	196	89900
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	10	NULL	F	I	3419	196	3
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	11	ZERO	V		2577	130	40800
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	12	FULL	D	I	2577	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_16R_B_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	5	ZERO	V		219	130	500
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	8	ZERO	C	C	3319	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	9	ZERO	V	NULL	3319	196	120800
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	10	NULL	F	I	3319	196	3
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	11	ZERO	V		2677	130	24000
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	12	FULL	D	I	2677	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_16R_C_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	5	ZERO	V		219	130	500

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ACFT_ID	OP_TYPE	PROF_ID1	PROF_ID2	STEP_NUM	FLAP_ID	STEP_TYPE	THR_TYPE	PARAM1	PARAM2	PARAM3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	8	ZERO	C	C	3319	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	9	ZERO	V	NULL	3319	196	181500
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	10	NULL	F	I	3319	196	3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	11	ZERO	V		2677	130	24000
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	12	FULL	D	I	2677	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_16R_D_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	5	ZERO	V		219	130	500
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	8	ZERO	C	C	3319	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	9	ZERO	V	NULL	3319	196	244000
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	10	NULL	F	I	3319	196	3
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	11	ZERO	V		2677	130	24000
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	12	FULL	D	I	2677	130	3
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_16R_E_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	5	ZERO	V		527	130	500
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	8	ZERO	C	C	3677	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	9	ZERO	V	NULL	3677	196	153900
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	10	NULL	F	I	3677	196	3
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	11	ZERO	V		2677	130	20000
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	12	FULL	D	I	2677	130	3
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_34L_A_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	3	NULL	F	I	2000	140	3
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	5	ZERO	V		137	130	500
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	8	ZERO	C	C	3677	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	9	ZERO	V	NULL	3677	196	125000
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	10	NULL	F	I	3677	196	3
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	11	ZERO	V		2677	130	33200
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	12	FULL	D	I	2677	130	3
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_34L_B_Y2	1	15	NULL	B	L	0	30	10
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	1	1	F		6000	250	3
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	2	NULL	F	I	3000	180	3
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	3	NULL	F	I	2000	140	3

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ACFT_ID	OP_TYPE	PROF_ID1	PROF_ID2	STEP_NUM	FLAP_ID	STEP_TYPE	THR_TYPE	PARAM1	PARAM2	PARAM3
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	4	NULL	F	I	1500	130	3
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	5	ZERO	V		177	130	500
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	6	ZERO	C	C	1000	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	7	ZERO	A	C	1900	196	0
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	8	ZERO	C	C	3677	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	9	ZERO	V	NULL	3677	196	119400
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	10	NULL	F	I	3677	196	3
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	11	ZERO	V		2677	130	20000
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	12	FULL	D	I	2677	130	3
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	13	FULL	L		276.3	0	0
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	14	FULL	B	L	2487	120	40
EMB175_MA_Y2	A	STANDARD_MA_34L_C_Y2	1	15	NULL	B	L	0	30	10

Source: L&B (2023)

AEDT Missed Approach Flight Track Segments

Table 6 lists the AEDT flight track segments for the flight tracks associated with the proposed user-defined profiles.

TABLE 6, MISSED APPROACH FLIGHT TRACK SEGMENTS

TRACK_NAME	SEGMENT_NUM	SEGMENT_TYPE	PARAM_1	PARAM_2
16R_MA_A	1	S	607611.5	NULL
16R_MA_A	2	R	9114.173	30
16R_MA_A	3	S	17827.32	NULL
16R_MA_A	4	R	12152.23	150
16R_MA_A	5	S	58938.32	NULL
16R_MA_A	6	R	9114.173	90
16R_MA_A	7	S	14582.68	NULL
16R_MA_A	8	R	9114.173	90
16R_MA_A	9	S	66837.27	NULL
16R_MA_B	1	S	607611.5	NULL
16R_MA_B	2	R	9114.173	30
16R_MA_B	3	S	16211.08	NULL
16R_MA_B	4	R	15190.29	150
16R_MA_B	5	S	47697.51	NULL
16R_MA_B	6	R	9114.173	90
16R_MA_B	7	S	19443.57	NULL
16R_MA_B	8	R	9114.173	90
16R_MA_B	9	S	48608.92	NULL
16R_MA_C	1	S	607611.5	NULL
16R_MA_C	2	R	9114.173	30
16R_MA_C	3	S	18228.35	NULL
16R_MA_C	4	R	10937.01	150
16R_MA_C	5	S	72913.39	NULL
16R_MA_C	6	R	9114.173	90
16R_MA_C	7	S	12510.72	NULL
16R_MA_C	8	R	9114.173	90
16R_MA_C	9	S	57115.49	NULL
16R_MA_D	1	S	607611.5	NULL
16R_MA_D	2	R	9114.173	30
16R_MA_D	3	S	18228.35	NULL
16R_MA_D	4	R	13367.45	150
16R_MA_D	5	S	97217.85	NULL
16R_MA_D	6	R	9114.173	90
16R_MA_D	7	S	17050.92	NULL
16R_MA_D	8	R	9114.173	90
16R_MA_D	9	S	78394.04	NULL
16R_MA_E	1	S	607611.5	NULL

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TRACK_NAME	SEGMENT_NUM	SEGMENT_TYPE	PARAM_1	PARAM_2
16R_MA_E	2	R	13367.45	30
16R_MA_E	3	S	15190.29	NULL
16R_MA_E	4	R	16405.51	150
16R_MA_E	5	S	121522.3	NULL
16R_MA_E	6	R	9114.173	90
16R_MA_E	7	S	21770.72	NULL
16R_MA_E	8	R	9114.173	90
16R_MA_E	9	S	100468.6	NULL
34L_MA_A	1	S	607611.5	NULL
34L_MA_A	2	L	9114.173	55
34L_MA_A	3	S	13975.07	NULL
34L_MA_A	4	L	11240.81	125
34L_MA_A	5	S	85065.62	NULL
34L_MA_A	6	L	9114.173	90
34L_MA_A	7	S	14794.13	NULL
34L_MA_A	8	L	9114.173	90
34L_MA_A	9	S	85065.62	NULL
34L_MA_B	1	S	607611.5	NULL
34L_MA_B	2	L	9114.173	55
34L_MA_B	3	S	17013.12	NULL
34L_MA_B	4	L	12152.23	125
34L_MA_B	5	S	77774.28	NULL
34L_MA_B	6	L	9114.173	90
34L_MA_B	7	S	18716.95	NULL
34L_MA_B	8	L	9114.173	90
34L_MA_B	9	S	67384.12	NULL
34L_MA_C	1	S	607611.5	NULL
34L_MA_C	2	L	9114.173	55
34L_MA_C	3	S	21609.1	NULL
34L_MA_C	4	L	12152.23	125
34L_MA_C	5	S	65014.44	NULL
34L_MA_C	6	L	9114.173	90
34L_MA_C	7	S	22481.63	NULL
34L_MA_C	8	L	9114.173	90
34L_MA_C	9	S	48608.92	NULL

Source: L&B (2023)

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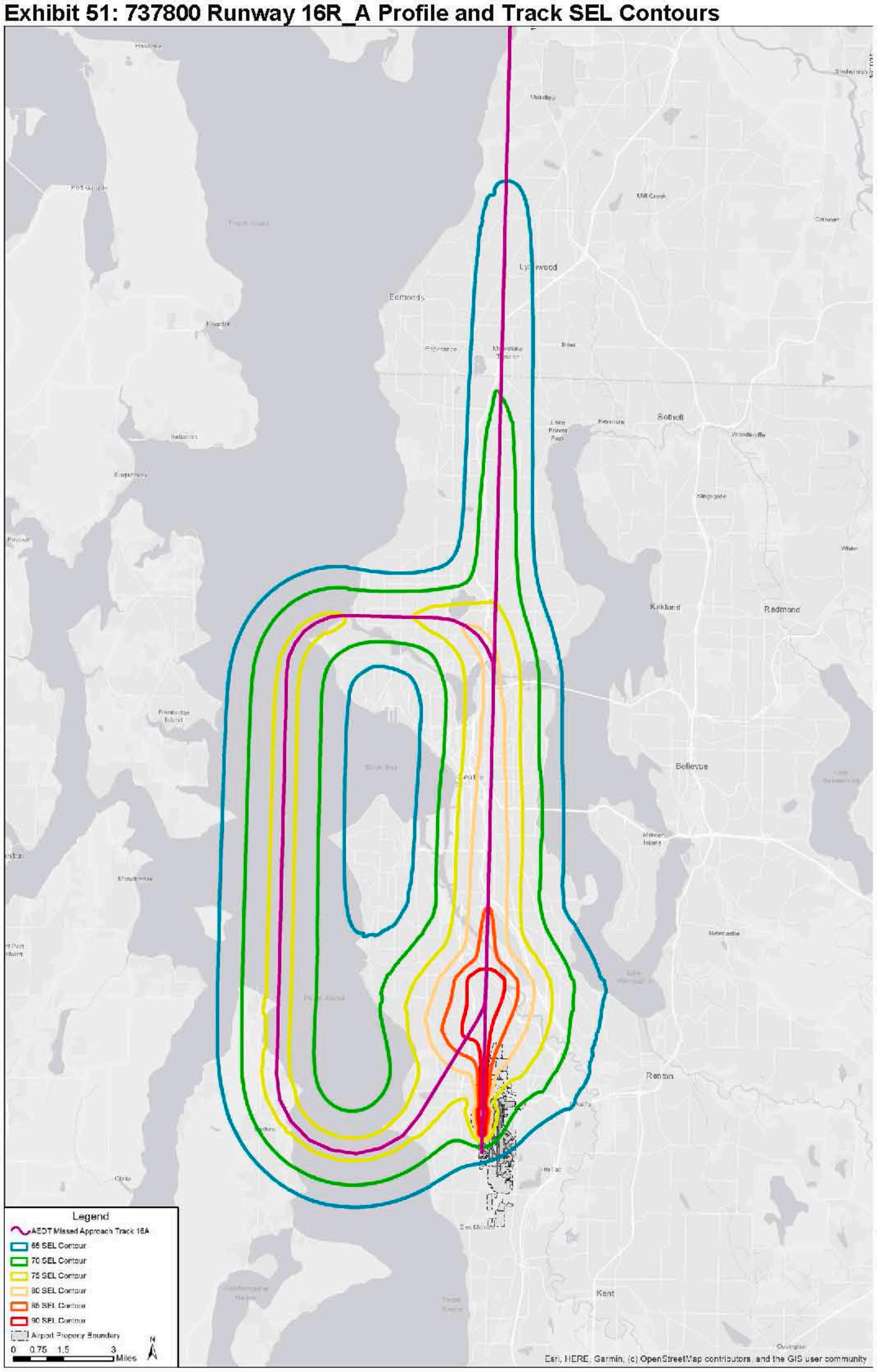
SECTION 3.2 – Sound Exposure Level (SEL) Contours

This section provides maps showing the SEL contours produced by each aircraft, profile, and track described in Section 3.1

Exhibit 51: 737800 Runway 16R_A Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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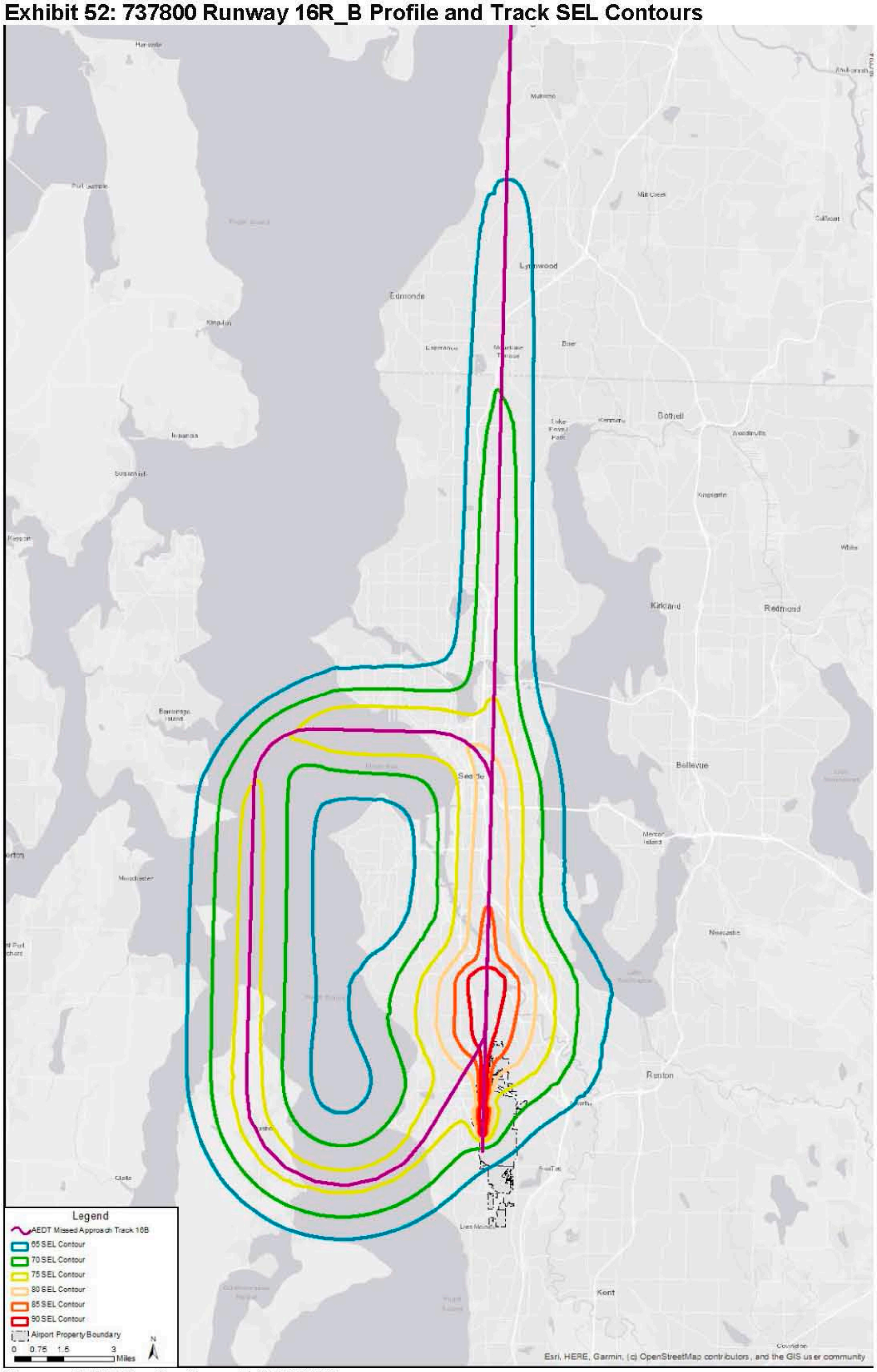
Exhibit 52: 737800 Runway 16R_B Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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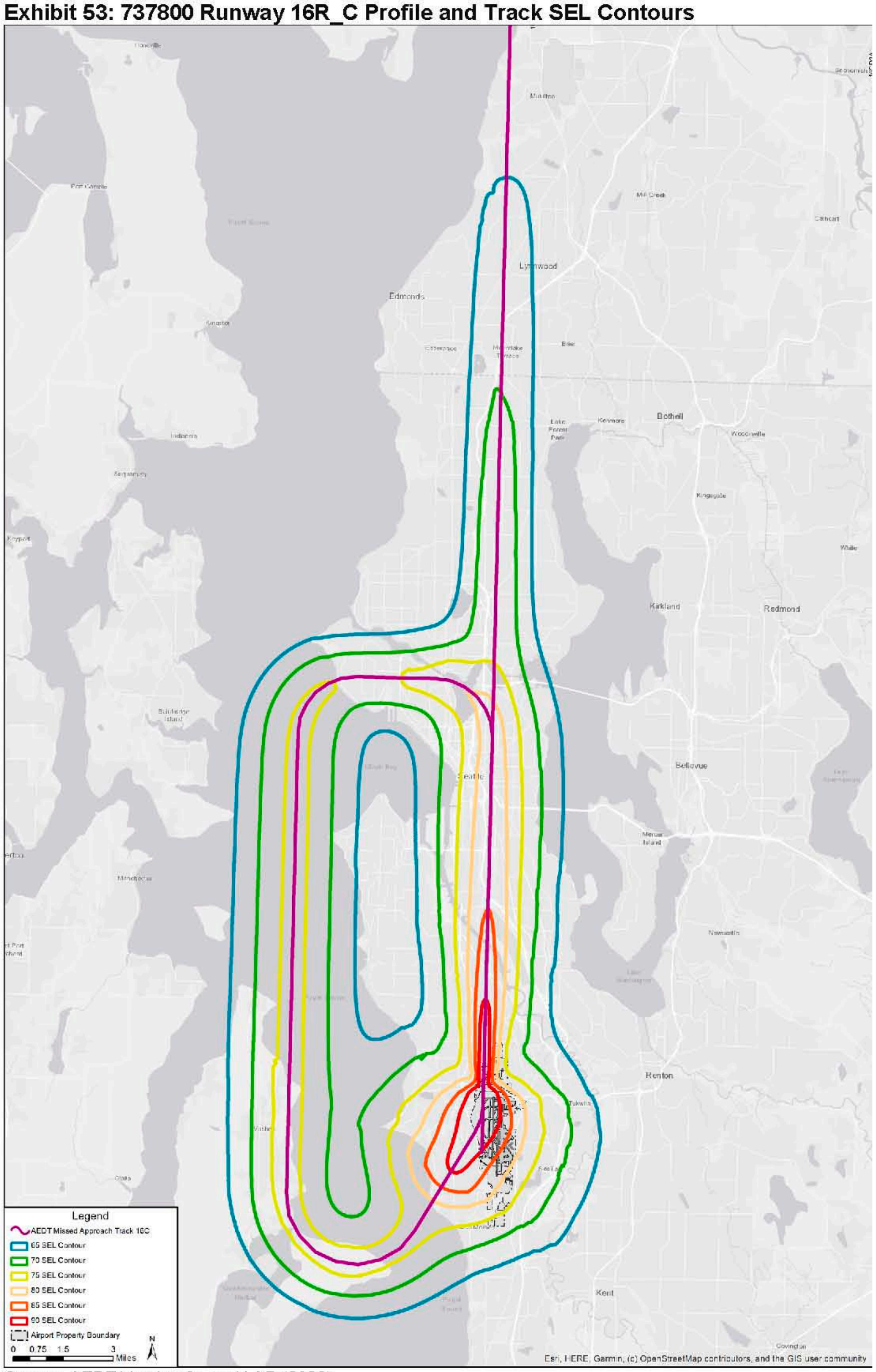
Exhibit 53: 737800 Runway 16R_C Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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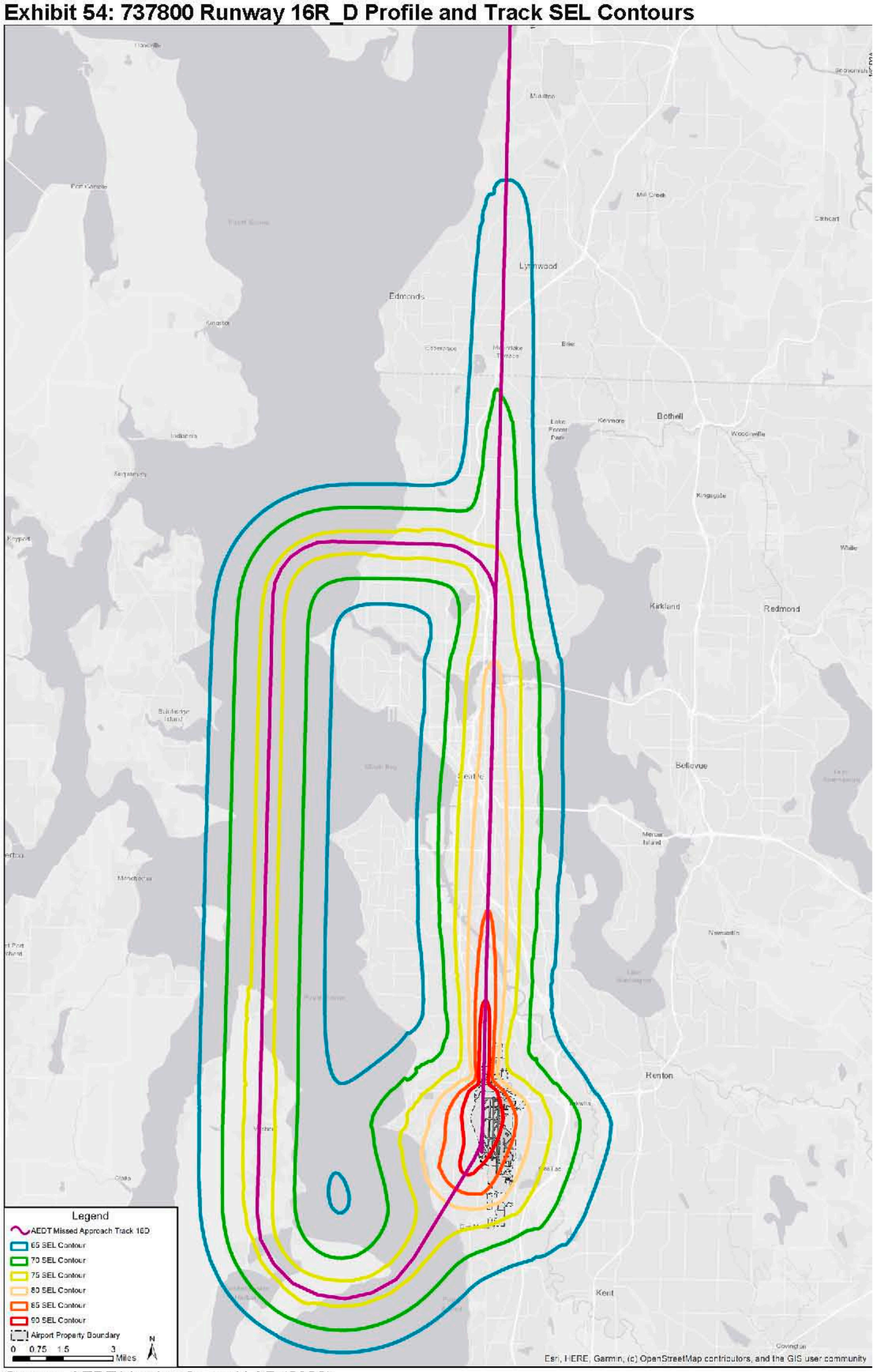
Exhibit 54: 737800 Runway 16R_D Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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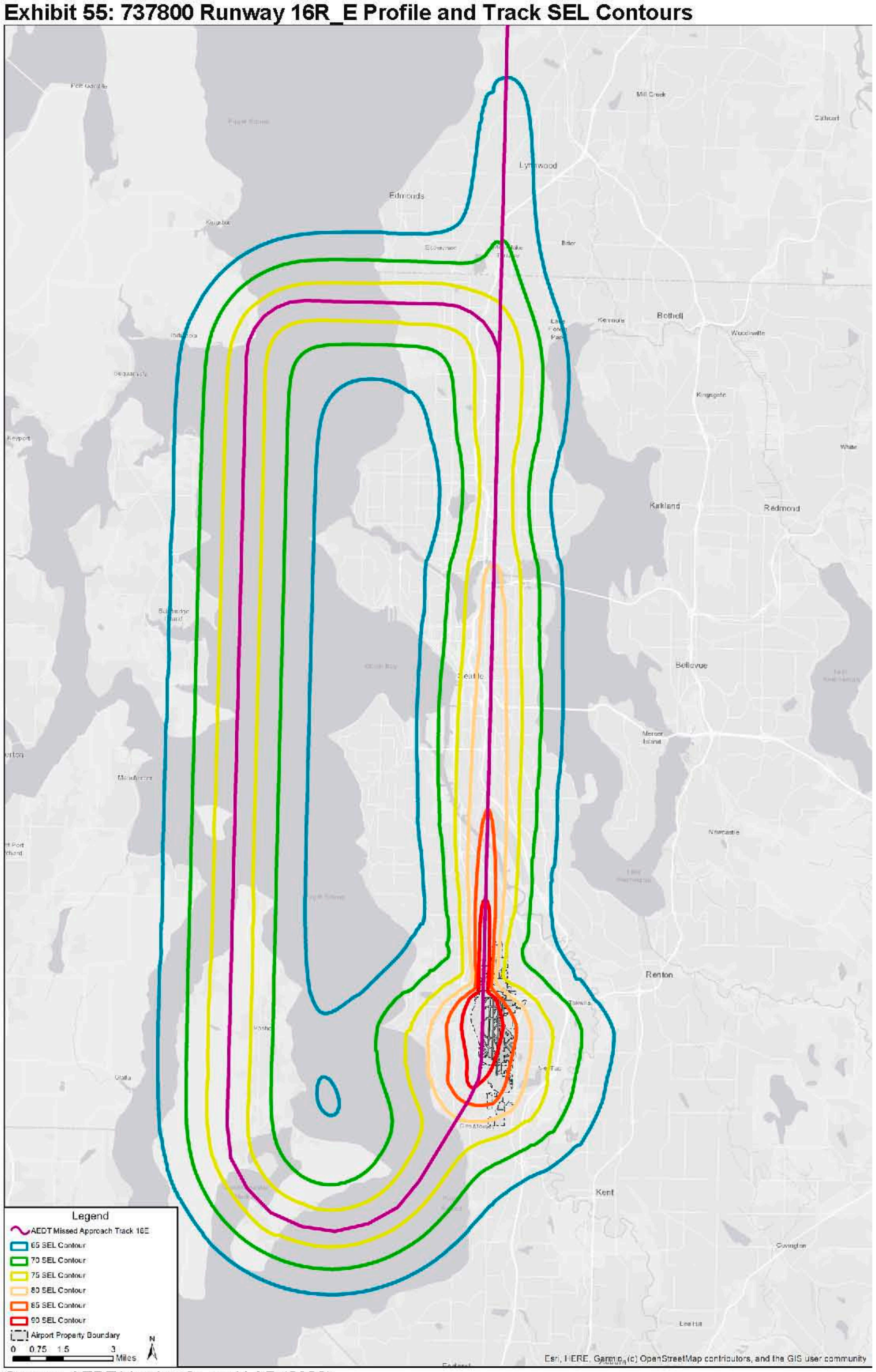
Exhibit 55: 737800 Runway 16R_E Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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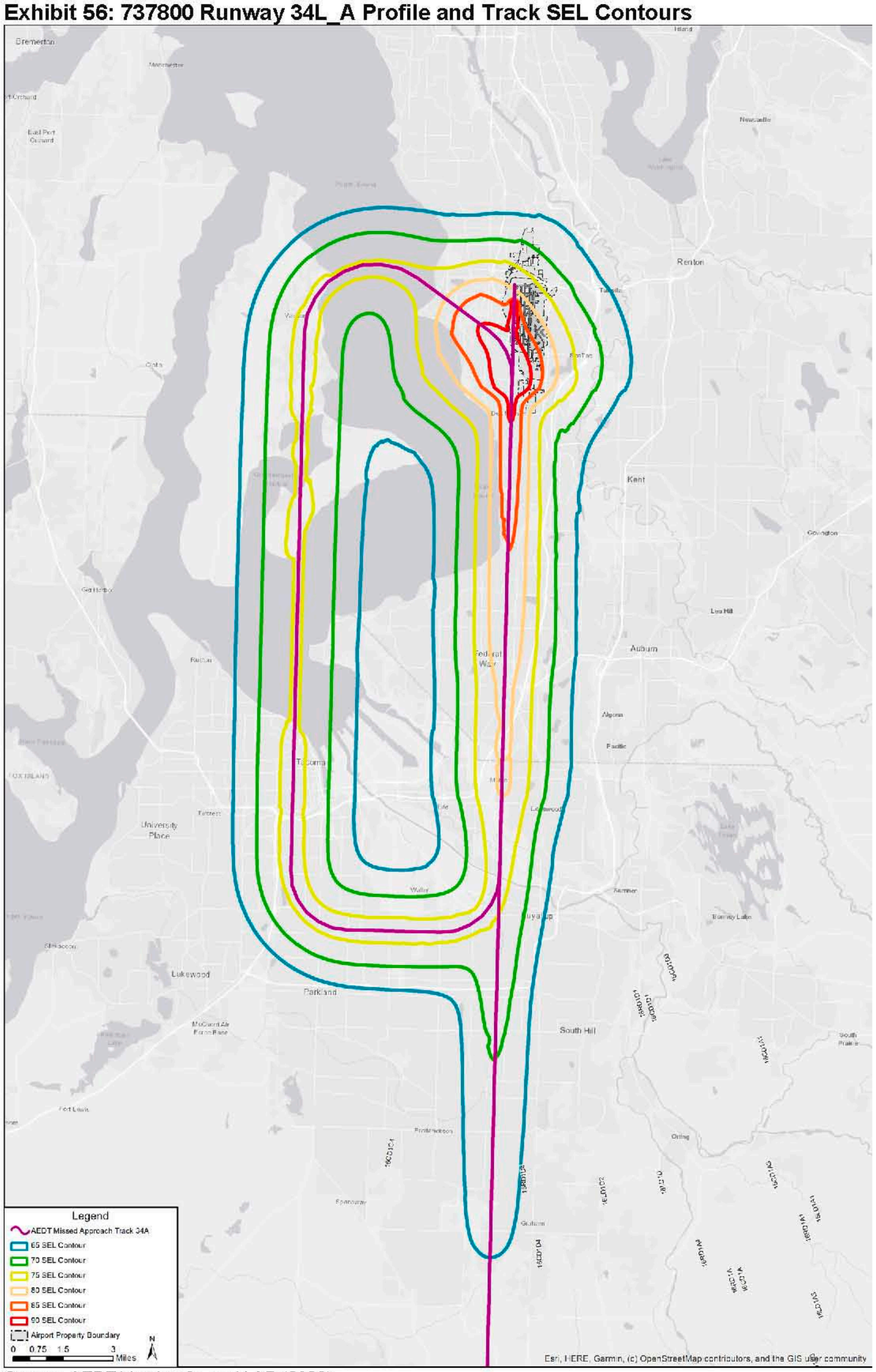
Exhibit 56: 737800 Runway 34L_A Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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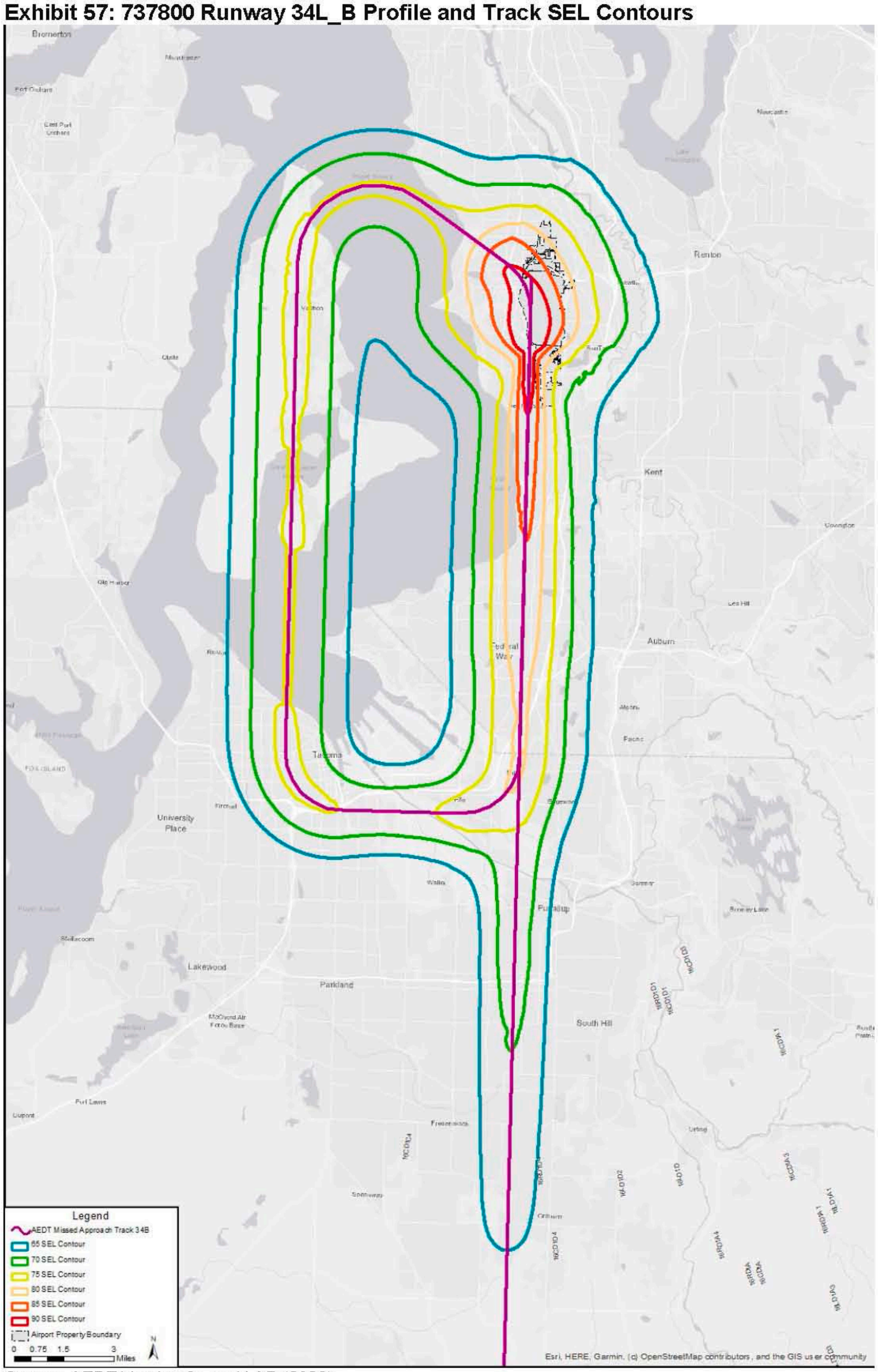
Exhibit 57: 737800 Runway 34L_B Profile and Track SEL Contours

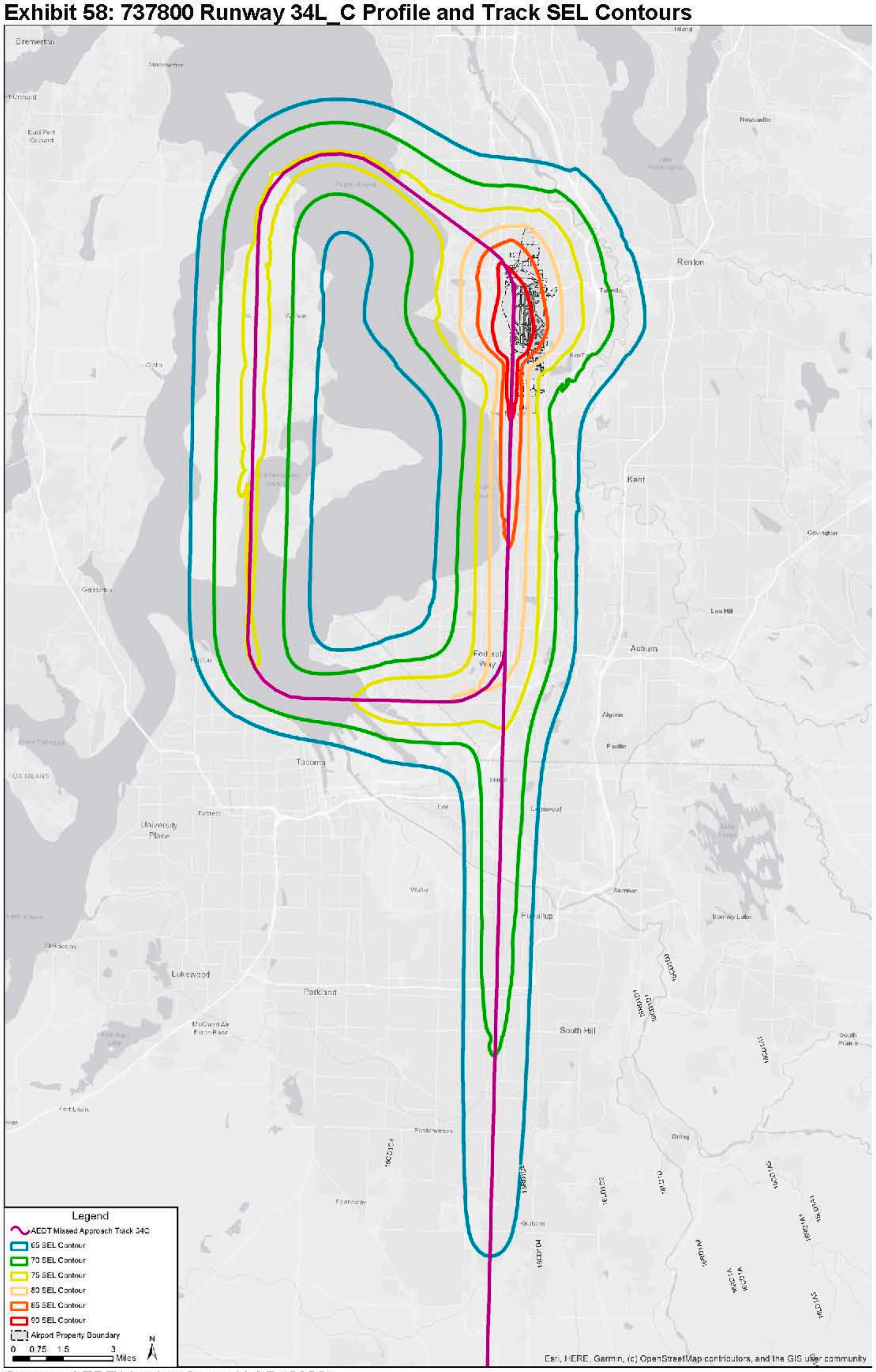


Source: AEDT Version 3e and L&B (2023)

Landrum & Brown, Incorporated
4445 Lake Forest Dr. Suite 700
Cincinnati, Ohio 45242
513.530.5333

memorandum

Exhibit 58: 737800 Runway 34L_C Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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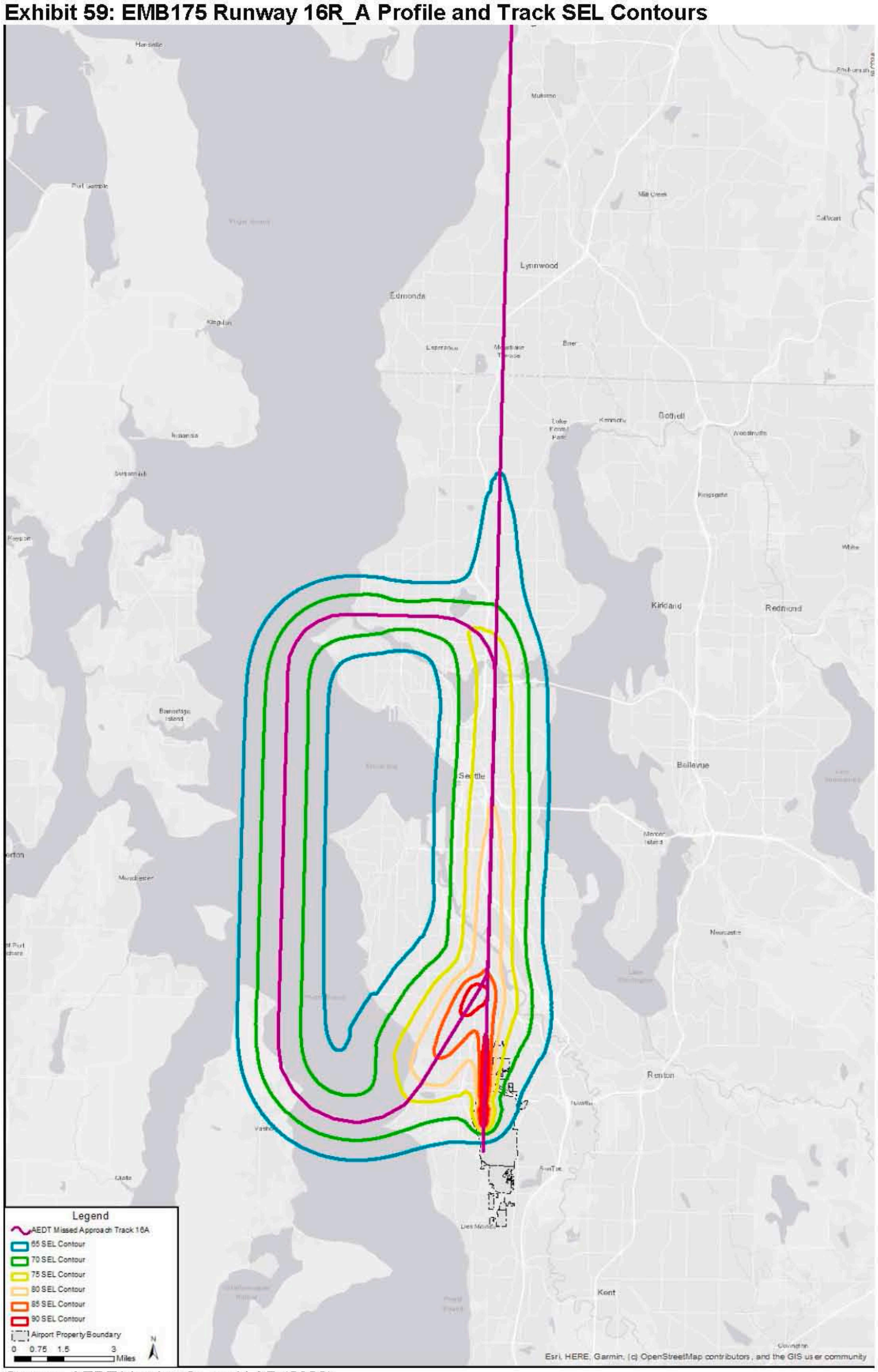
Exhibit 59: EMB175 Runway 16R_A Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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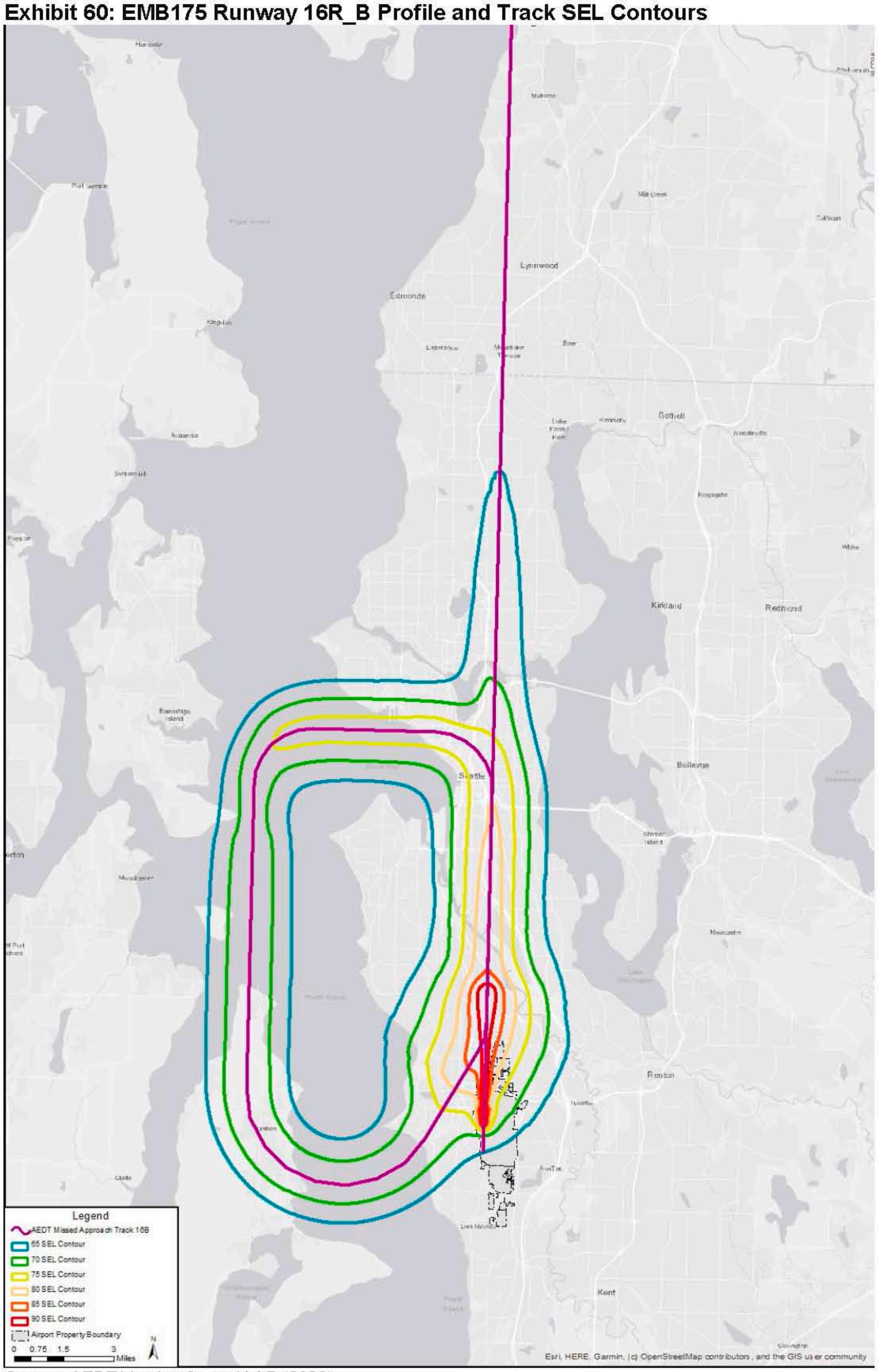
Exhibit 60: EMB175 Runway 16R_B Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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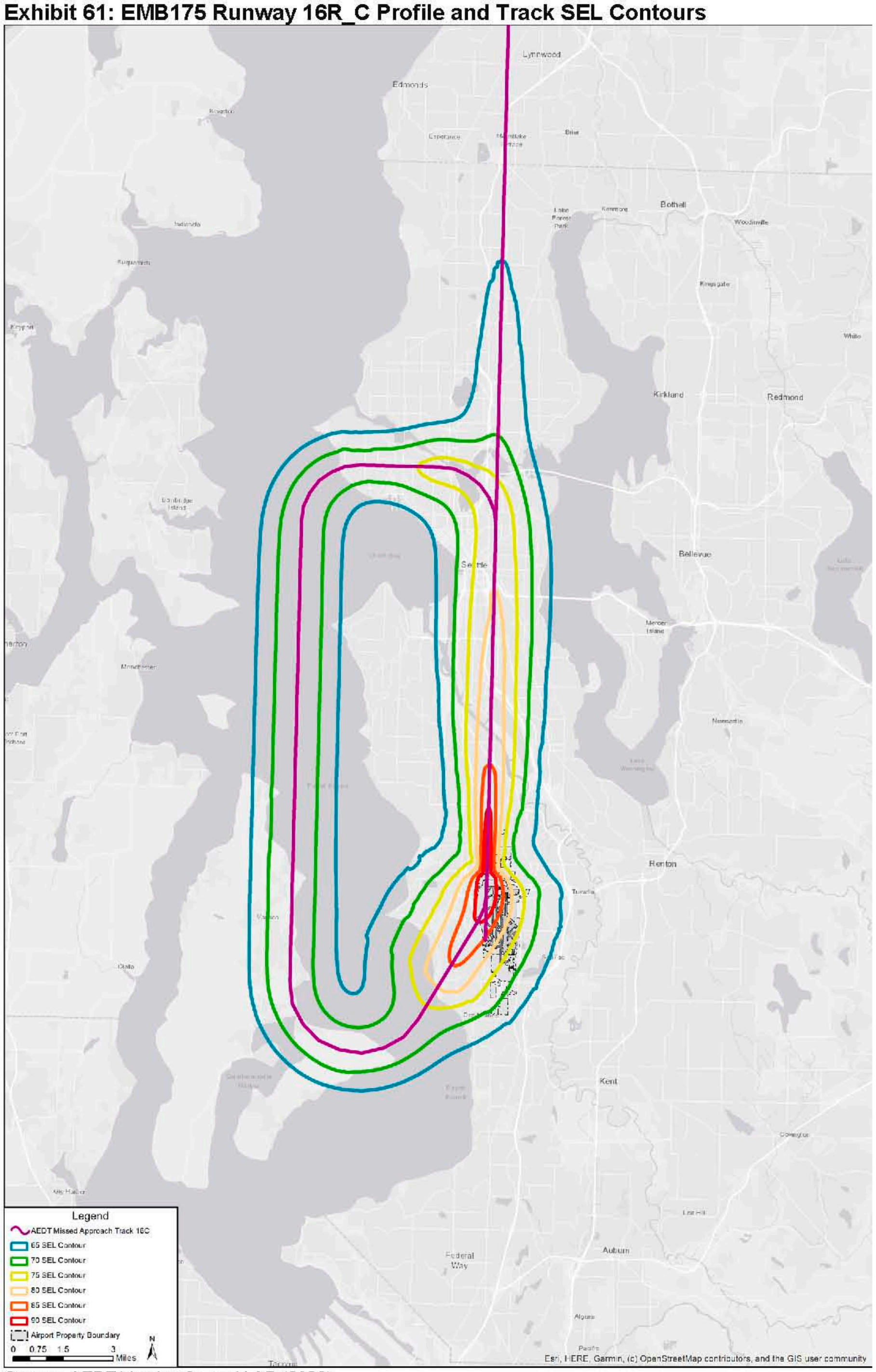
513.530.5333

Exhibit 61: EMB175 Runway 16R_C Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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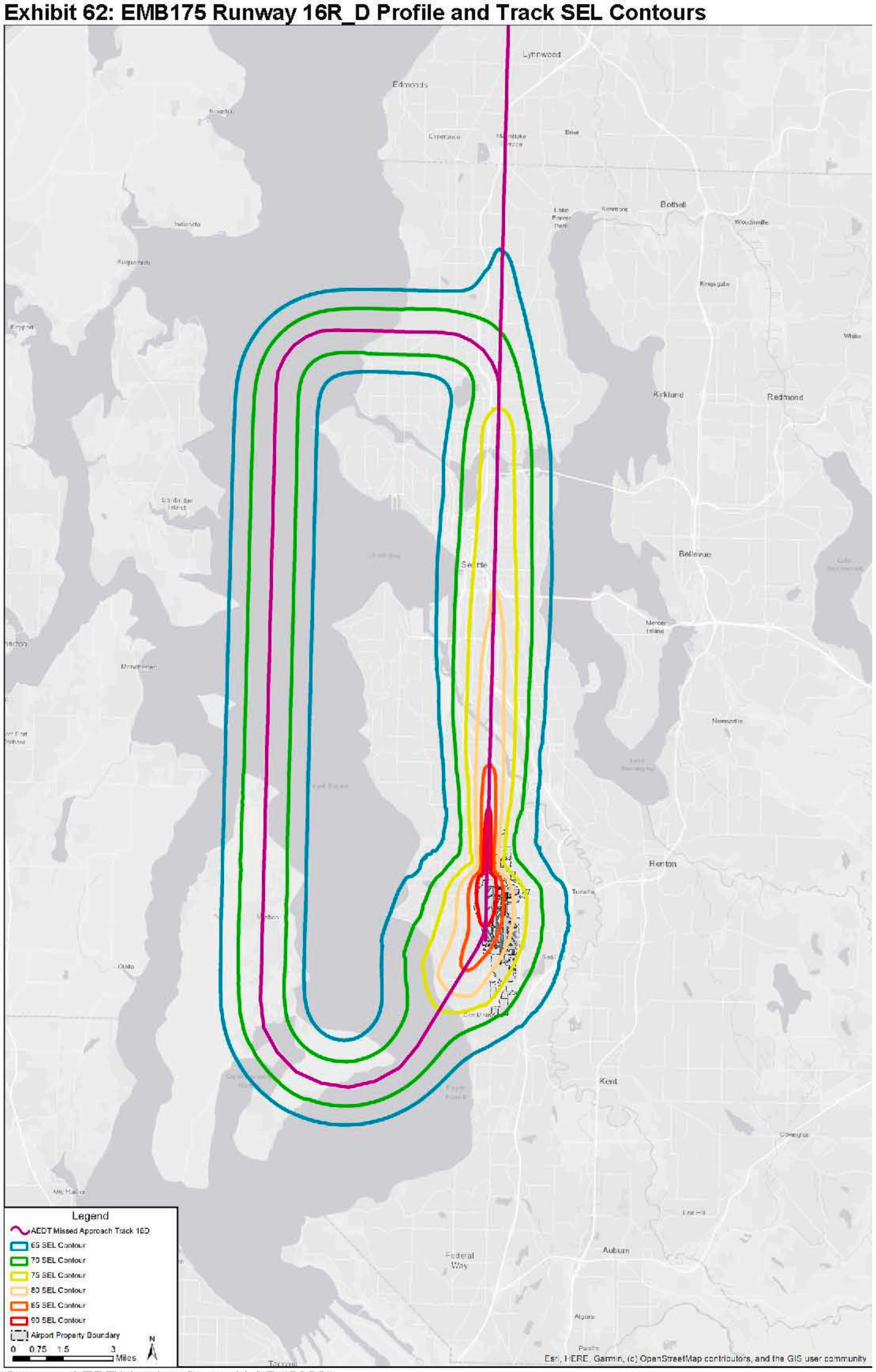
Exhibit 62: EMB175 Runway 16R_D Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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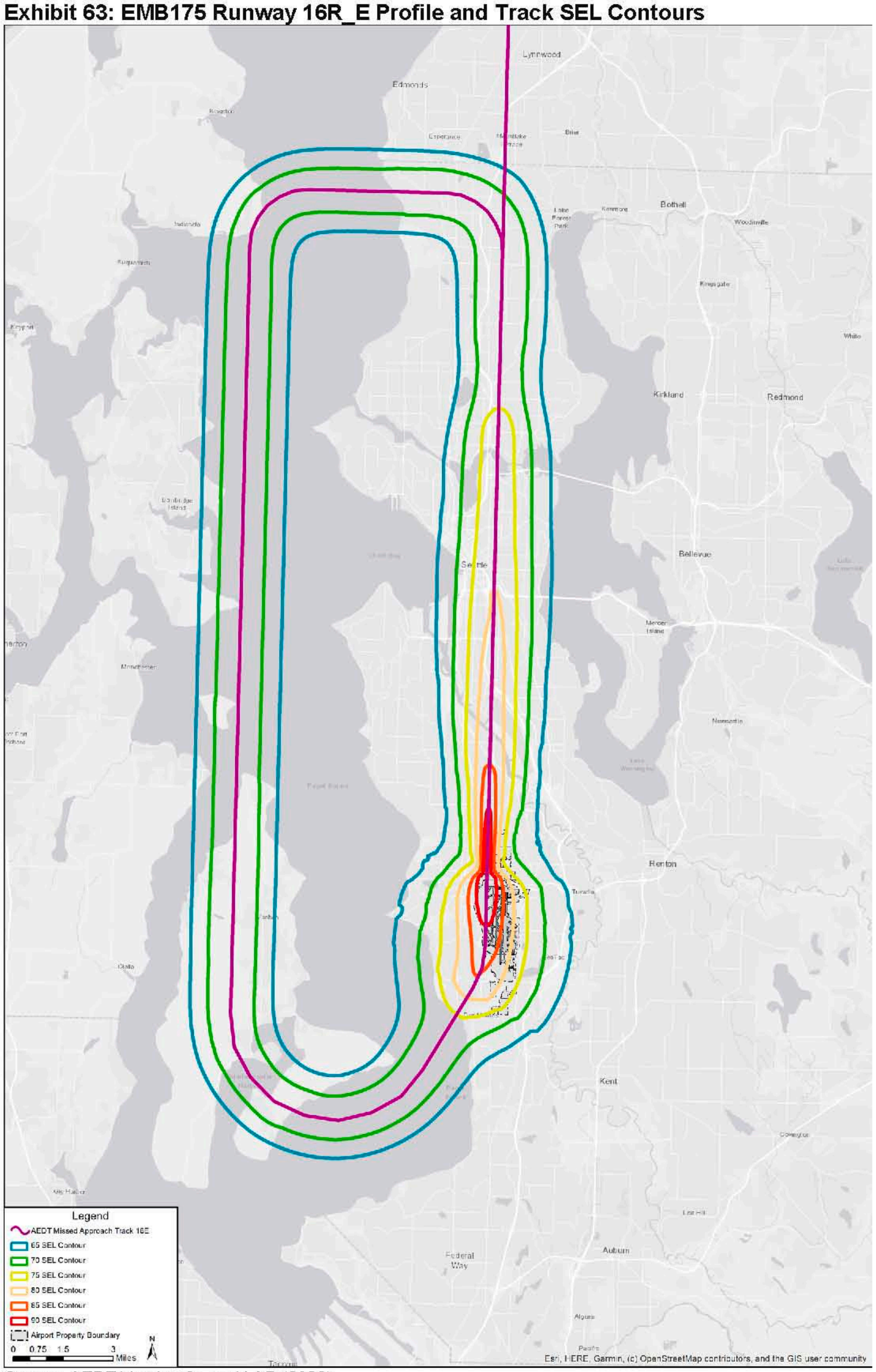
Cincinnati, Ohio 45242
513.530.5333

Exhibit 63: EMB175 Runway 16R_E Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

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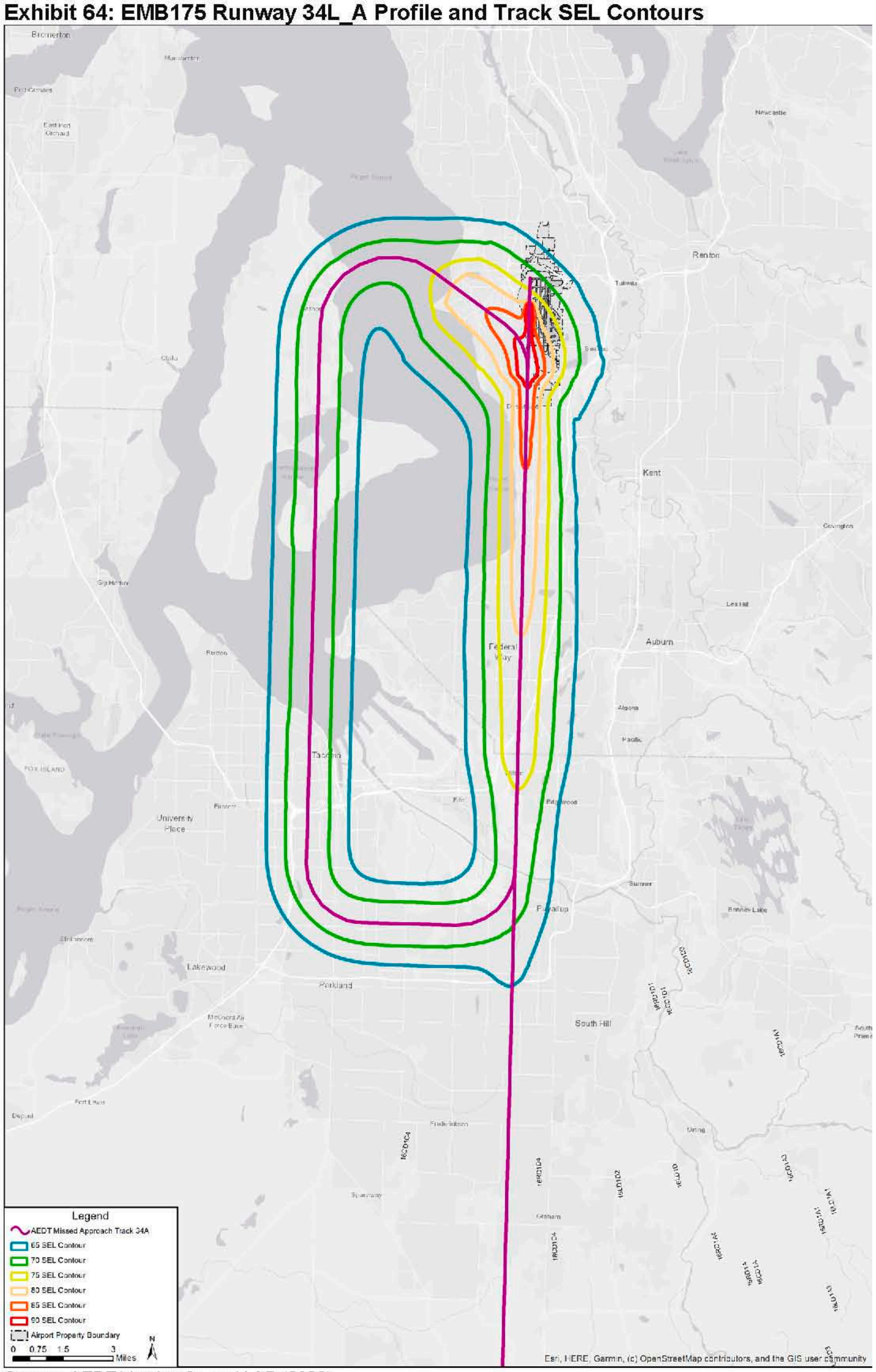
memorandum

Exhibit 64: EMB175 Runway 34L_A Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

Landrum & Brown, Incorporated
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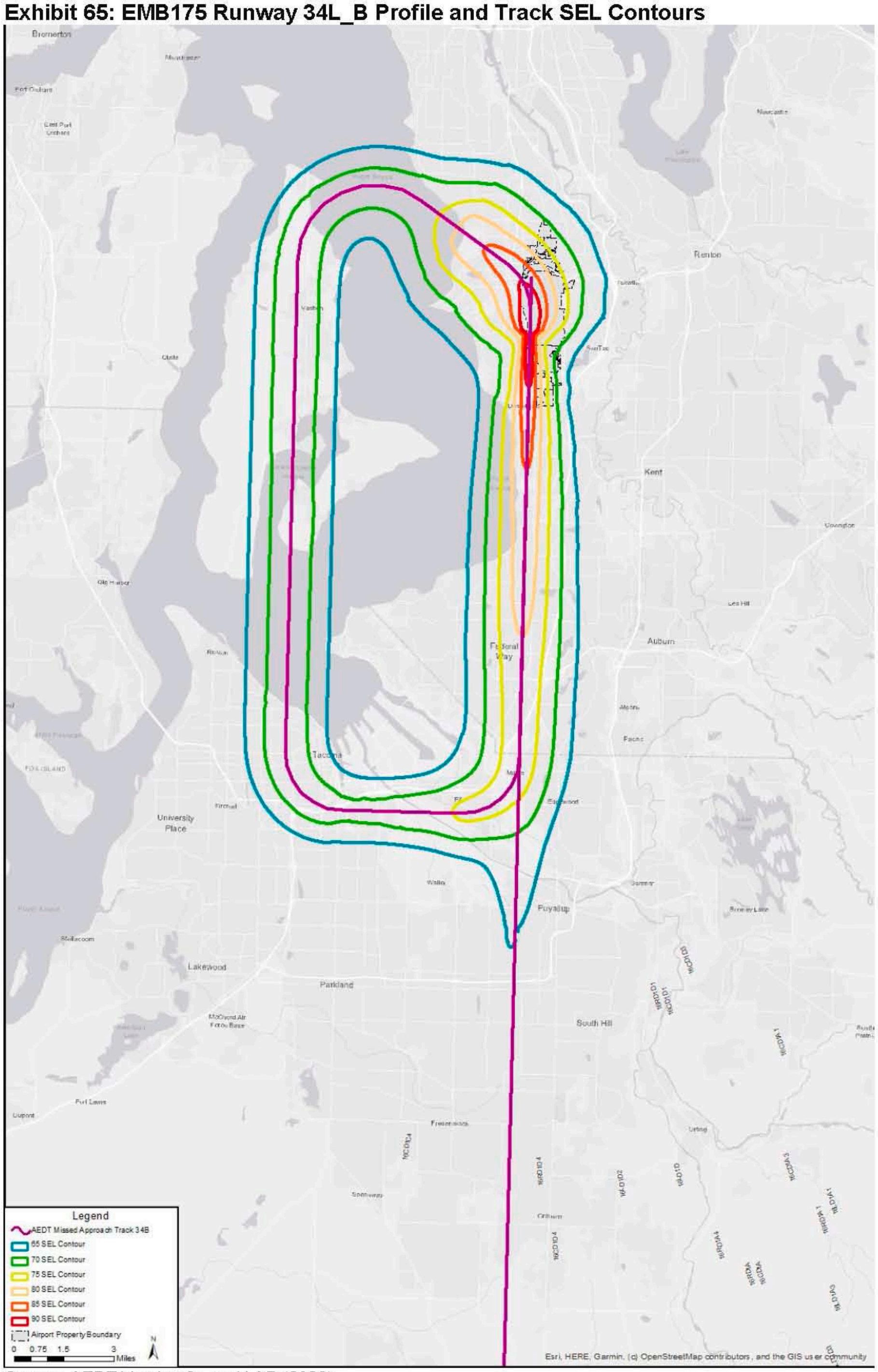
memorandum

Exhibit 65: EMB175 Runway 34L_B Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

Landrum & Brown, Incorporated
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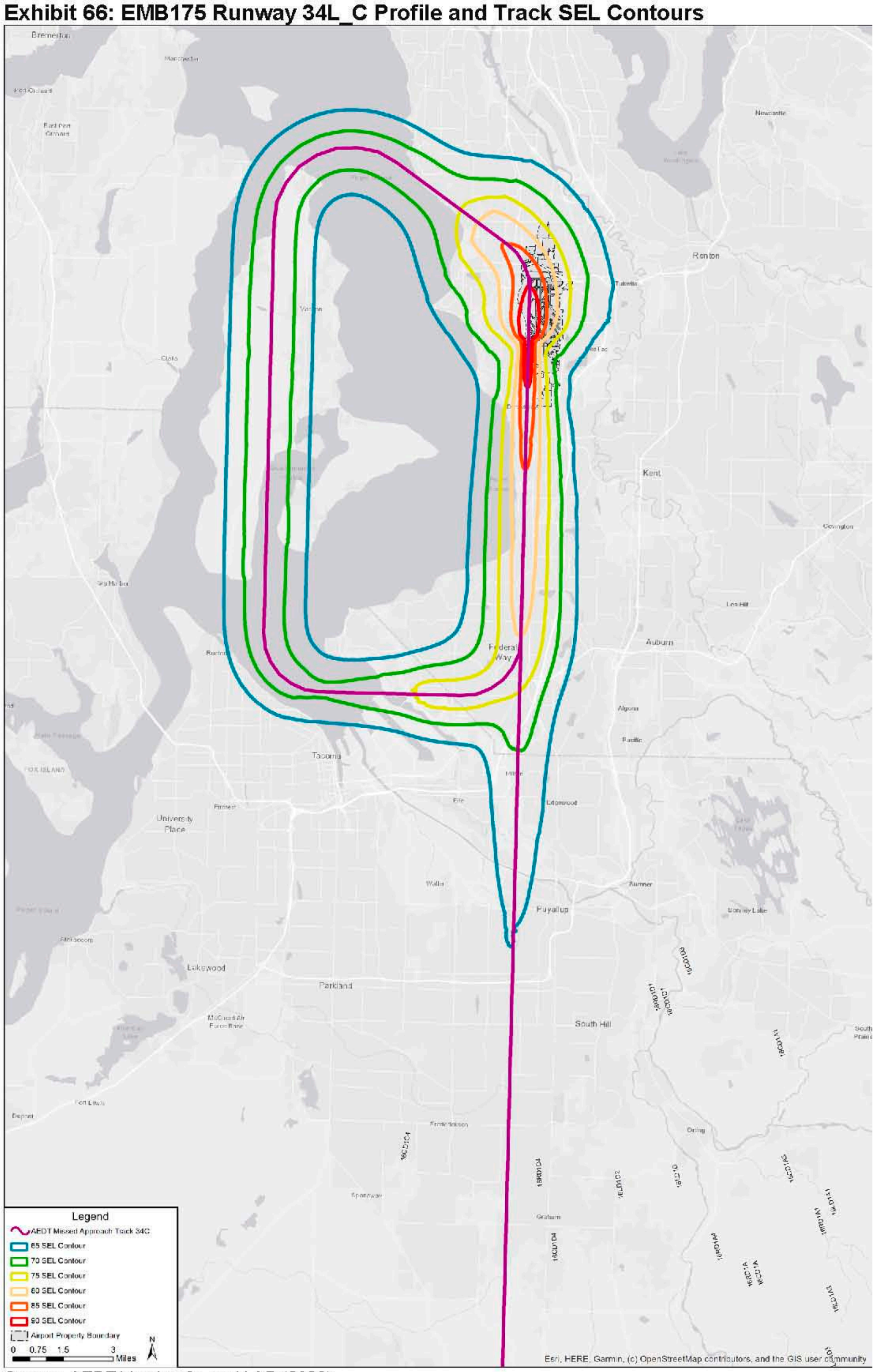
513.530.5333

memorandum

Exhibit 66: EMB175 Runway 34L_C Profile and Track SEL Contours



Source: AEDT Version 3e and L&B (2023)

Exhibit B-2 FAA/AEE Approval Letter

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

8/22/2023

Kandice Krull
Environmental Protection Specialist
Northwest Mountain Region
Federal Aviation Administration
26805 E 68th Ave, Suite 224
Denver, CO 80249

Dear Kandice Krull,

The Office of Environment and Energy (AEE) has received the memo from Landrum & Brown dated August 15th, 2023, referencing the Environmental Assessment (EA) for the Airport Sustainable Master Plan (SAMP) Near Term Projects (NTP) at Seattle-Tacoma International Airport (SEA). The memo presents a methodology for modeling missed approach operations at SEA in AEDT 3e and requests approval for the use of multiple user-defined profiles for the Boeing 737800 and Embraer EMB175 ANP types to represent missed approached operations.

AEE approves the proposed methodology for modeling missed approaches at SEA and use of the user-defined non-standard AEDT profiles for the Boeing 737800 and Embraer EMB175 ANP types to represent the missed approaches.

Please understand that this approval is limited to this particular Environmental Assessment for the Airport Sustainable Master Plan Near Term Projects at Seattle-Tacoma International Airport and for use with AEDT 3e only. Further non-standard AEDT inputs for additional projects at this or any other site will require separate approval.

Sincerely,

Digitally signed by
David Senzig
Date: 2023.08.22
13:19:56 -04'00'

David Senzig
Acting Manager
AEE-100/Noise Division

cc: ARP Contacts (Susan Staehle, APP-400 and Ilon Logan, ANM-610)

APPENDIX J

Noise and Noise-Compatible Land Use

Construction Noise Technical Report

Port of Seattle

Sustainable Airport Master Plan – Near-Term Projects

Construction Noise Technical Report

FINAL – June 2024

PREPARED FOR

Federal Aviation Administration and the Port of Seattle

PREPARED BY

Landrum & Brown, Incorporated

Contents Page

List of Tables Page

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1 Introduction

Landrum & Brown prepared this Construction Noise Technical Report to document the potential construction noise levels resulting from the Sustainable Airport Master Plan (SAMP) Near-Term Projects (NTPs) at the Seattle-Tacoma International Airport (SEA or Airport). This document describes the overall approach, methods, and results of the construction noise analysis to demonstrate compliance with the National Environmental Policy Act (NEPA).

This technical report is organized in the following manner:

- Section 1, Introduction
- Section 2, Characteristics of Noise
- Section 3, Regulations/Ordinances
- Section 4, Construction Noise Methodology
- Section 5, Construction Noise Results
- Appendix A, Construction Noise Results Tables
- Appendix B, Construction Schedule
- Appendix C, Construction Equipment
- Appendix D, Construction Noise Protocol

The approach, methods, and models used in the technical report are consistent with the Construction Noise Protocol (Appendix D) approved by the Federal Aviation Administration (FAA).

2 Characteristics of Noise

Sound is created by a vibrating source that induces vibrations in the air. The vibration produces alternating bands of relatively dense and sparse particles of air, spreading outward from the source like ripples on a pond. Sound waves dissipate with increasing distance from the source. Sound waves can also be reflected, diffracted, refracted, or scattered. When the source stops vibrating, the sound waves disappear almost instantly and the sound ceases.

Sound conveys information to listeners. It can be instructional, alarming, pleasant and relaxing, or annoying. Identical sounds can be characterized by different people, or even by the same person at different times, as desirable or unwanted. Unwanted sound is commonly referred to as “noise.”

2.1 Sound Frequency

The pitch (or frequency) of sound can vary greatly from a low-pitched rumble to a shrill whistle. If we consider the analogy of ripples in a pond, high frequency sounds are vibrations with tightly spaced ripples, while low rumbles are vibrations with widely spaced ripples. The rate at which a source vibrates determines the frequency. The rate of vibration is measured in units called “Hertz” -- the number of cycles, or waves, per second. One’s ability to hear a sound depends greatly on the frequency composition. Humans hear sounds best at frequencies between 1,000 and 6,000 Hertz. Sound at frequencies above 10,000 Hertz (high-pitched hissing) and below 100 Hertz (low rumble) are much more difficult to hear.

When attempting to measure sound in a way that approximates what our ears hear, we must give more weight to sounds at the frequencies we hear well and less weight to sounds at frequencies we do not hear well. Acousticians have developed several weighting scales for measuring sound. The A-weighted scale correlates with judgments people make about the loudness of sounds. The A-weighted decibel scale (dBA) is used in studies where audible sound is the focus of inquiry. The U.S. Environmental Protection Agency (USEPA) has recommended the use of the A-weighted decibel scale in studies of environmental noise.[1] Its use is required by the FAA in airport noise studies.[2] For the purposes of this analysis, dBA was used as the noise metric and dB and dBA are used interchangeably.

2.2 Sound Measurements

Sound is measured using the logarithmic decibel (dB) scale. This is because the range of sound pressures detectable by the human ear can vary from 1 to 100 trillion units. A logarithmic scale allows an analysis of noise using more manageable numbers. The range of audible sound ranges from approximately 1 to 140 dB, although everyday sounds rarely rise above about 120 dB.

There are several different metrics used for analyzing noise, including L_{eq} and Day Night Average Sound Level (DNL), which are geared towards evaluating longer term noise exposure (such as aircraft noise), while other metrics such as L_{max} are intended to evaluate shorter term fluctuating noise conditions. L_{max} does not include the number and duration of events, which are important for assessing people's reactions to noise. This construction noise analysis considered noise in terms of L_{eq} levels. L_{eq} is a single decibel value that accounts for total sound energy from all sound levels over a specified time interval (or time period).

2.3 Propagation of Noise

Outdoor sound levels decrease as a function of distance from the source, and as a result of wave divergence, atmospheric absorption, and ground attenuation. If sound is radiated from a source in a homogeneous and undisturbed manner, the sound travels as spherical waves. As the sound wave travels away from the source, the sound energy is distributed over a greater area, dispersing the sound energy of the wave. Spherical spreading of the sound wave reduces the noise level at a rate of 6 dB per doubling of the distance for hard ground and 7.5 dB per doubling of distance for soft ground. Obstacles between the source and the receiver, such as buildings, hills, and trees, will result in additional noise reductions depending upon their size, density, and location.

2.4 Ambient Sound Levels

Background or ambient sound levels can vary greatly depending on site-specific factors. Ambient sound levels can effectively mask construction noise and change the receiver's perception of how loud construction noise is. Urban areas have the highest background sound levels, with daytime levels approximating 60 to 65 dBA (EPA 1978). Suburban or residential areas have background levels around 45 to 50 dBA (EPA 1978), while rural areas are the quietest with sound levels of 35 to 40 dBA (EPA 1978). In a more recent study, Cavanaugh and Tocci (1998) identify typical urban residential background sound at around 65 dBA, high-density urban areas at 78 dBA, and urban areas adjacent to

---

1 Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety. USEPA, Office of Noise Abatement and Control. 1974, P. A-10.

2 "Airport Noise Compatibility Planning." 14 CFR Part 150, Sec. A150.3, September 24, 2004.

freeway traffic at 88 dBA. In urban and developed areas, traffic noise and construction noise attenuate (decline) to background in less distance than in undeveloped or rural areas.

3 Regulations/Ordinances

3.1 Federal Regulations

There are no federal regulations concerning construction noise. The FAA has not defined significance thresholds for construction noise.

3.2 State Regulations

Washington Administrative Code (WAC) 173-60-040, Maximum Permissible Environmental Noise Levels, sets the Washington Department of Ecology maximum environmental noise limits as a function of class of noise generator and class of noise receiver. WAC 173-60-030, Identification of Environments, defines the classes of noise receivers. Class A EDNA (Environmental Designation for Noise Abatement) is defined as uses where humans reside or sleep, including residential, multi-family residential, recreational and entertainment uses like camps and resorts, and community services like hospitals or elder care facilities. Class B EDNA is defined as uses requiring protection against noise interference with speech (retail and commercial uses). Class C EDNA are industrial uses.

	EDNA of Receiving Property - Class A	EDNA of Receiving Property - Class B	EDNA of Receiving Property - Class C
EDNA of Noise Source - Class A	55 dBA	57 dBA	60 dBA
EDNA of Noise Source - Class B	57	60	65
EDNA of Noise Source - Class C	60	65	70

These levels are reduced by 10 dBA between the hours of 10 pm and 7 am. WAC 173-60-050, Exemptions, lists the actions that are exempt from the provisions of WAC 173-60-040. Temporary construction noise is exempt from these limits except for noise received by Class A EDNA between 10 pm and 7 am.

3.3 Local Regulations/Ordinances

3.3.1 Port of Seattle

The Port has defined Construction General Requirements, which includes the following in relation to construction noise:

1.21 NOISE CONTROLS

A. At all times keep objectionable noise generation to a minimum by:
   a. Equipping air compressors with silencing packages.
   b. Equipping jackhammers with silencers on the air outlet.
   c. Equipment that can be electrically driven instead of gas or diesel is preferred. If noise levels on equipment cannot reasonably be brought down to criteria, listed as follows, either the equipment will not be allowed on the job or use time will have to be scheduled subject to approval of the Port construction project representative.

d. All construction vehicles and equipment on the project operating between 10:00 p.m. and 7:00 a.m. shall be equipped with an ambient noise sensing variable volume backup alarm system. The system shall be in compliance with Washington Administrative Code (WAC) 296-155-615.

B. Objectionable noise received on neighboring (non-Port owned) properties is defined as any noise exceeding the noise limits of State Regulations (WAC 173- 60-040) or City ordinance, as stated below, or as any noise causing a public nuisance in a residential area, as determined by the Port and community representatives, or by the nuisance provisions of local ordinances.

a. The noise limitations established are as set forth in the following table after any applicable adjustments provided for herein are applied:

RECEIVING PROPERTY

NOISE SOURCE	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
Airport	50 dBA	65 dBA	70 dBA

b. Between the hours of 2200 and 0500 on weekdays and 2200 and 0900 on weekends the noise limitations above may be exceeded for any receiving property by no more than:

i. 5 (five) dBA for a total of 15 minutes in any one hour period; or
ii. 10 (ten) dBA for a total of 5 minutes in any one hour period; or
iii. 15 (fifteen) dBA for a total of 1.5 minutes in any one hour period.

C. In addition to the noise controls specified, demolition and construction activities conducted within 1,000 feet of residential areas may have additional noise controls required.

D. The Contractor's operation shall at all times comply with all County and City requirements.

E. For work conducted within Airport buildings, noise levels from work activities shall not exceed 80 dBA on the slow scale at the project boundary.

F. The Contractor shall plan all work activities generating noise, such as saw cutting or core drilling, during periods of low airport activity.

3.3.2 City of SeaTac and City of Burien

Local jurisdictions also have the authority to regulate environmental noise generally and construction noise specifically. The City of SeaTac prohibits construction noise between the hours of 10 pm and 7 am on weekdays and 10 pm and 9 am on weekends. SMC 8.05.360.B.8. Burien Municipal Code 9.105.410.2.h prohibits construction noise between the hours of 7 pm and 7 am, unless the City grants a variance.

4 Construction Noise Methodology

This section outlines the procedures for assessing construction noise. Construction activities typically generate noise from the operation of equipment required for construction of various facilities. The construction noise for the NTPs was evaluated by considering the construction activity, calculating the construction-related noise at nearby noise sensitive receivers, and comparing the construction-related noise to existing ambient noise.

4.1 Types of Construction Noise

Construction-related noise is a function of the types of equipment being used, the distance to potential receivers, and the duration of construction activities. Noise increases above ambient from construction may vary greatly depending on the duration and complexity of the project.

Table 1 depicts an estimate of the typical maximum sound level energy from various types of construction equipment that are likely to be used during construction. Calculations of construction noise was be based on these sound levels.

TABLE 1: DEFAULT CONSTRUCTION EQUIPMENT NOISE

Equipment Description	Actual Measured L_{max} @ 50 feet (dBA)	Equipment Description	Actual Measured L_{max} @ 50 feet (dBA)
Auger Drill Rig	84	Man Lift	75
Backhoe	78	Mounted Impact Hammer (hoe ram)	90
Boring Jack Power Unit	83	Pavement Scarifier	90
Chain Saw	84	Paver	77
Clam Shovel (dropping)	87	Pickup Truck	75
Compactor (ground)	83	Pneumatic Tools	85
Compressor (air)	78	Pumps	81
Concrete Mixer Truck	79	Refrigerator Unit	73
Concrete Pump Truck	81	Rivit Buster/Chipping Gun	79
Concrete Saw	90	Rock Drill	81
Crane	81	Roller	80
Dozer	82	Sand Blasting (single nozzle)	96
Drill Rig Truck	79	Scraper	84
Drum Mixer	80	Sheers (on backhoe)	96
Dump Truck	76	Slurry Plant	78
Excavator	81	Slurry Trenching Machine	80

TABLE 1: DEFAULT CONSTRUCTION EQUIPMENT NOISE (CONTINUED)

Equipment Description	Actual Measured L_{max} @ 50 feet (dBA)	Equipment Description	Actual Measured L_{max} @ 50 feet (dBA)
Flat Bed Truck	74	Vacuum Excavator (Vac-Truck)	85
Front End Loader	79	Vacuum Street Sweeper	82
Generator	81	Ventilation Fan	79
Generator (<25KVA, VMS Signs)	73	Vibrating Hopper	87
Gradall	83	Vibratory Concrete Mixer	80
Grapple (on backhoe)	87	Vibratory Pile Driver	101
Horizontal Boring Hydraulic Jack	82	Warning Horn	83
Impact Pile Driver	101	Welder/Torch	74
Jackhammer	89		

Source: Federal Highway Administration, *Construction Noise Handbook, 9.0 Construction Equipment Noise Levels and Ranges, Table 9.1*. Available online at https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm

4.2 Multiple Sources of Construction Noise

When multiple sources of noise are combined (i.e., situations where multiple pieces of construction equipment are operating at the same time) the sound intensities would be combined. However, since dBA are calculated on a logarithmic scale, the sound levels would not add together. In a case where two 89 dBA jackhammers are operating simultaneously, the combined sound intensity would not produce a 178 dBA sound level. Rather, two jackhammers operating simultaneously (a doubling of sound intensity from just one) would result in an increase of 3 dBA of sound level, or 92 dBA at 50 feet from the source. Likewise, four jackhammers operating simultaneously (a doubling of sound intensity from two jackhammers) would result in a sound level of 95 dBA at 50 feet from the source. This concept is illustrated below in **Table 2** for use of one, two, and four jackhammers, the loudest type of construction equipment anticipated for the Proposed Action.

TABLE 2: EXAMPLE OF NOISE REDUCTION OVER DISTANCE FROM JACKHAMMERS (89 DBA)

Distance from Source (feet)	Point Source Noise (from an 89 dBA source)	Point Source Noise (from two 89 dBA sources)	Point Source Noise (from four 89 dBA sources)
50	89 dBA	92 dBA	95 dBA
100	83 dBA	86 dBA	89 dBA
200	77 dBA	80 dBA	83 dBA
400	71 dBA	74 dBA	77 dBA
800	65 dBA	68 dBA	71 dBA
1,600	59 dBA	62 dBA	65 dBA
3,200	53 dBA	56 dBA	59 dBA

Source: Based on Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

4.3 Construction Noise Screening

A construction noise screening was conducted for each NTP to determine if additional analysis was required. The screening evaluated each NTP, considering the construction activity, calculating the construction-related noise at nearby noise sensitive receivers, and comparing the construction-related noise to existing ambient noise. Appendix D has detailed information on the methodology utilized for the screening analysis.

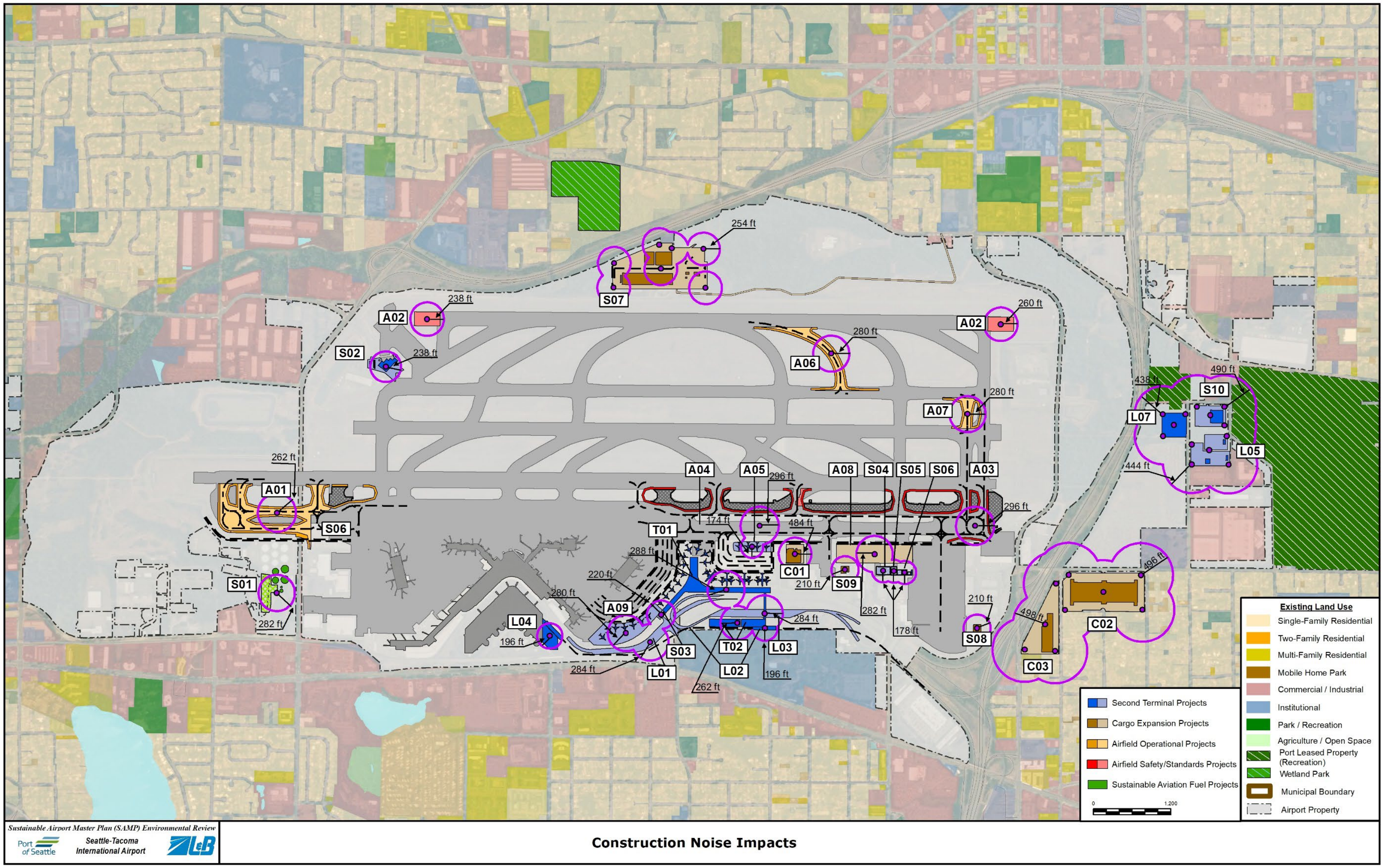
Data from the SEA noise monitoring system was utilized to determine ambient sound level for a 24-hour period (Equivalent Noise Level (LEQ) Community Noise data). Data from monitor SEA01 was used to establish the ambient sound level for each NTP located within the airfield ((Airport property south of 518, west of International Blvd, east of 509, and north of 200th St). Data from monitor SEA14 was used to establish the ambient sound level for the NTPs located north of SR 518. Table 3 provides the ambient level for each NTP.

TABLE 3 AMBIENT NOISE LEVELS FOR EACH NTP

NTP #	Ambient Sound Level
A01; A02; A03; A04; A05; A06; A07; A08; A09; A10; T01; T02; C01; L01; L02; L03; L04; S01; S02; S03; S04; S05; S06; S07; S08; S09	76.5 dB
C02; C03; L05; L07; S10	66 dB

The distance point source construction noise will travel before it attenuates to the ambient sound level was calculated for each NTP to determine the presence of noise sensitive land uses within the area where construction noise may be noticeable. The results were plotted on the land use map (Exhibit 1) to identify if potential noise sensitive receivers have the potential to experience construction noise levels above ambient.

EXHIBIT 1: DISTANCE CONSTRUCTION NOISE TRAVELS BEFORE REACHING AMBIENT LEVELS



3/12/2024 Y:\SEA\NEPA\DRAFT FOLDER STRUCTURE\15_GIS\MXD\Environmental Consequences\ Construction_Noise_2024_full_airport.mxd

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4.3.1 Noise Sensitive Receivers

If noise sensitive receivers were not identified within the area that could experience construction noise levels that exceed ambient conditions, no further analysis was completed. If noise sensitive receivers were identified within the area that could experience construction noise levels that exceed ambient condition, additional analysis was completed. **Table 4** documents the result of the screening process and indicates if additional analysis is required.

TABLE 4: SCREENING ANALYSIS RESULTS

NTP#	Noise Sensitive Receivers Identified	Additional Analysis Required
A01	No	No
A02	No	No
A03	No	No
A04	No	No
A05	No	No
A06	No	No
A07	No	No
A08	No	No
A09	No	No
A10	No	No
T01	No	No
T02	No	No
C01	No	No
C02	**Yes**	**Yes**
C03	**Yes**	**Yes**
L01	No	No
L02	No	No
L03	No	No
L04	No	No
L05	Yes	No
L07	Yes	No
S01	No	No
S02	No	No
S03	No	No
S04	No	No
S05	No	No
S06	No	No
S07	No	No
S08	No	No
S09	No	No
S10	Yes	No

Note: Bold indicates additional analysis is required for the project.

Based on the screening analysis, it was determined a detailed construction noise assessment was required for NTPs C02 and C03 as the projects are directly adjacent to residential properties. L05, L07, and S10 are directly adjacent to Section 4(f) properties, however it was determined that none of the Section 4(f) properties would experience a substantial impairment due to noise increases from construction. No other NTPs show potential construction noise increases over ambient on noise sensitive receivers from the screening analysis.

4.4 Construction Noise Assessment

The following methodology was used to prepare the construction noise analysis.

1. Detailed construction schedules were provided by the Port for NTPs C02 and C03. The schedules included detailed phasing and typical number and type of equipment used during the phase of construction. The construction phasing assumed 10 phases for each site. **Table 5** and **Table 6** present the overall construction phases for C02 and C03 and the activities that would occur in each phase.
2. Calculations of construction noise were conducted using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (TNM) version 3.2.
3. Construction noise was calculated in 2-week increments for C02 and C03 from 7am to 7 pm at adjacent receivers. The 2-week calculations incorporate any overlap in the construction phases. The adjacent receivers are shown in **Exhibit 2**.
4. To determine noise levels associated with each phase of construction of C02 and C03, it was assumed that every piece of construction equipment identified for the phase would be operating at the same time. This is the most conservative approach to identifying construction noise because the use of every piece of construction equipment at the same time would not be typical for most construction projects. The detailed calculation methods for construction are based on the quantities of construction equipment, schedule of construction efforts, and construction equipment noise source levels. See Attachment 2 for equipment number and type.
5. Calculated total noise levels at the receivers were compared to ambient noise levels to determine if the receiver would experience construction noise above ambient levels.

TABLE 5: C02 - CONSTRUCTION ACTIVITY BY CONSTRUCTION PHASE

Phase Description	Duration	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Phase 10
Tree Removal	2 weeks	X									
Street Demolition	2 weeks	X									
Site Mobilization	2 weeks		X								
Grading - North Portion of Site	2 weeks		X								
Grading - South Portion of Site	2 weeks		X								
Excavation - North Portion of Site	6 weeks			X							
Excavation - South Portion of Site	6 weeks			X							
Utilities	8 weeks				X						
Utilities - North	3 weeks				X						
Utilities - South	3 weeks				X						
Foundation - North	9 weeks				X						
Foundation - South	9 weeks				X						
North Apron Concrete	3 weeks					X					
South Apron Concrete	3 weeks					X					
Retaining Wall	10 weeks					X					
Building Structure Tilt-Up	10 weeks						X				
Building Roof Trust System	6 weeks							X			
Building Roof System Build-up	28 weeks								X		
Paving Onsite	8 weeks									X	
Building Exterior & Interiors Walls	24 weeks										X
Paving Public ROW/Streets	8 weeks										X

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TABLE 6: C03 - CONSTRUCTION ACTIVITY BY CONSTRUCTION PHASE

Phase Description	Duration	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Phase 10
Tree Removal	2 weeks	X									
Site Mobilization	2 weeks		X								
Grading	4 weeks		X								
Excavation	8 weeks			X							
Utilities	4 weeks				X						
Utilities - North	4 weeks				X						
Foundation	14 weeks				X						
Loading Dock	10 Weeks					X					
Retaining Wall	10 weeks					X					
Building Structure Tilt-Up	4 weeks						X				
Building Roof Trust System	4 weeks							X			
Building Roof System Build-up	8 weeks								X		
Paving Onsite	4 weeks									X	
Building Exterior & Interiors Walls	10 weeks										X
Paving Public ROW / Street	4 weeks										X

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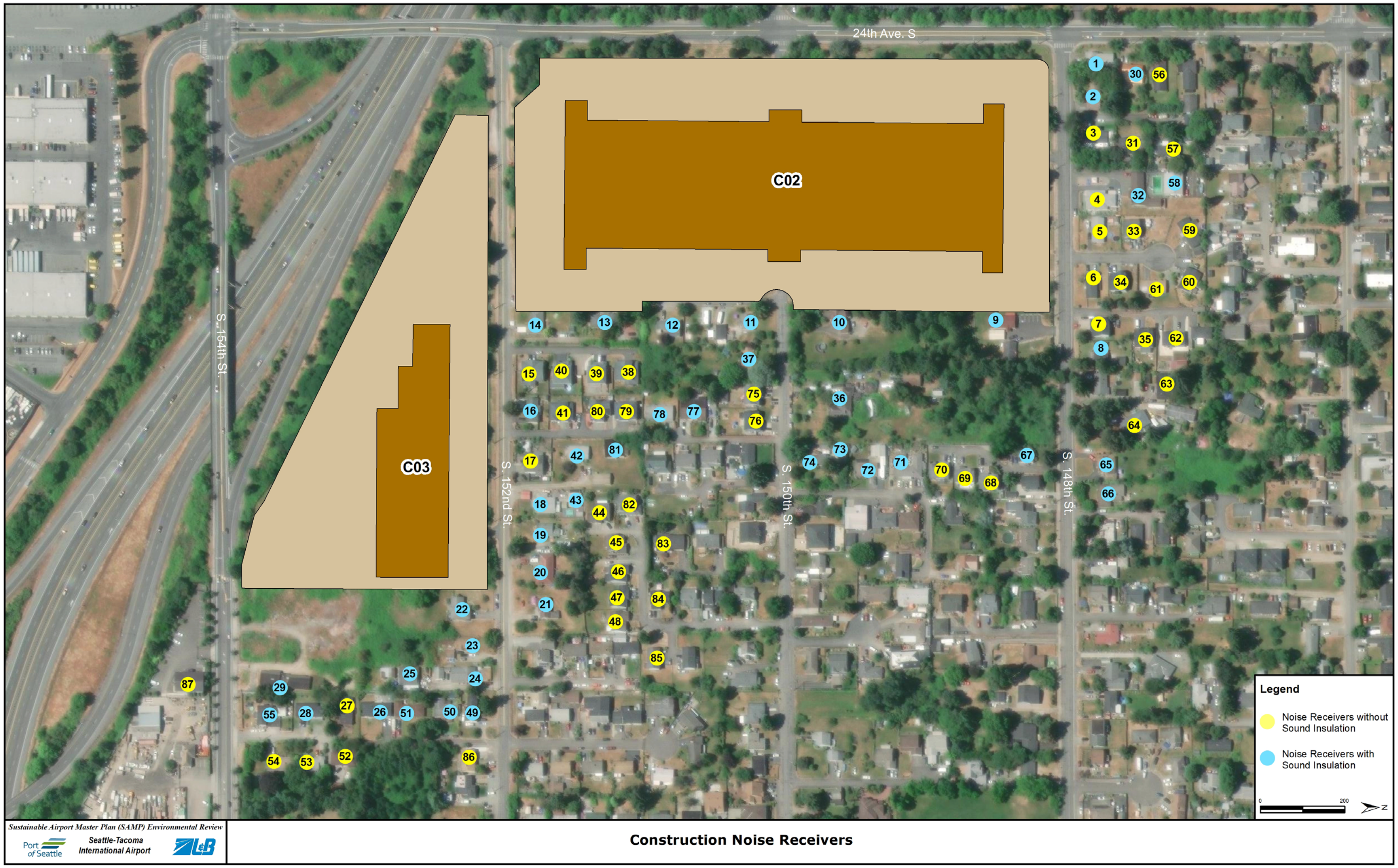
EXHIBIT 2: CONSTRUCTION NOISE RECEIVERS



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5 Construction Noise Results

It is anticipated that construction activity would occur in two different periods starting in 2026 (C02) and 2028 (Project C03) with C02 lasting approximately 18 months and C03 lasting around 16 months. Noise from construction equipment may at times exceed ambient noise levels and be noticeable to nearby receivers. As a result, temporary speech interference outdoors during the construction periods, activity interference (e.g. reading or watching television), or annoyance may occur.

Human perception of changes in sound pressure are less sensitive than a sound level meter. In community settings, most people perceive a 3 dB increase in sound pressure as just noticeable, a 5 dB change is readily noticeable, and a 10 dB change would be perceived as a doubling in sound. **Exhibit 3** and **Exhibit 4** present the results of the construction analysis for each receiver by 2-week increments (see Appendix A for the corresponding tables). The black dashed line on the graphs shows the 3 dB increase (69 dB) above the ambient (66 dB) where the human ear would begin to detect a change in the sound level. As shown, the construction noise level increases above ambient would be temporary and vary throughout the construction period for each site.

For C02, 13 receivers would experience noise levels at or above 69 dB approximately 1-5 times during the 18 months of construction. Each exceedance would last for anywhere from 2 weeks to 18 weeks depending on the phase of construction. Construction noise increases would be less than 10 dB (0.0-9.4 dB). These increases in noise would be short-term, temporary increases only occurring during active construction.

For C03, 8 receivers would experience noise levels above 69 dB approximately 3-6 times during the 16 months of construction. Each exceedance would last for anywhere from 2 weeks to 26 weeks depending on the phase of construction. Construction noise increases would be less than 10 dB (0.0-8.4 dB). These increases in noise would be short-term, temporary increases only occurring during active construction.

Construction-related noise increases would be minimized through strict adherence to the Port's Construction General Requirements and by meeting State and City of SeaTac requirements. Contractors will also utilize BMPs to reduce noise impacts. In addition, most of the receivers adjacent to the C02 and C03 site that would experience a noticeable temporary noise increase have received sound insulation through the Port's Sound Insulation Program which reduces the noise that enters the interior of the structure.

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EXHIBIT 3: C02 – NOISE LEVELS BY RECEIVER BY 2-WEEK INCREMENTS

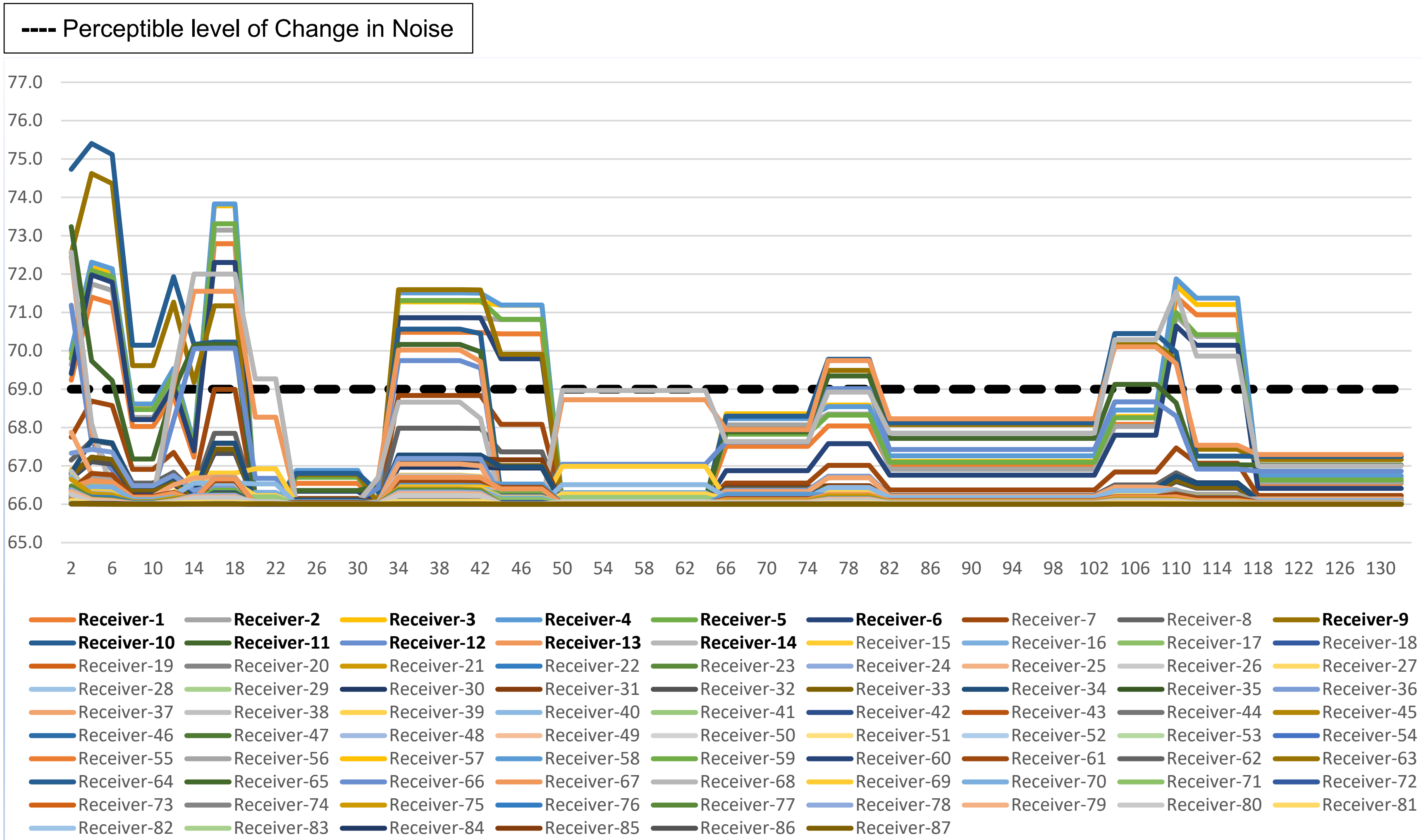

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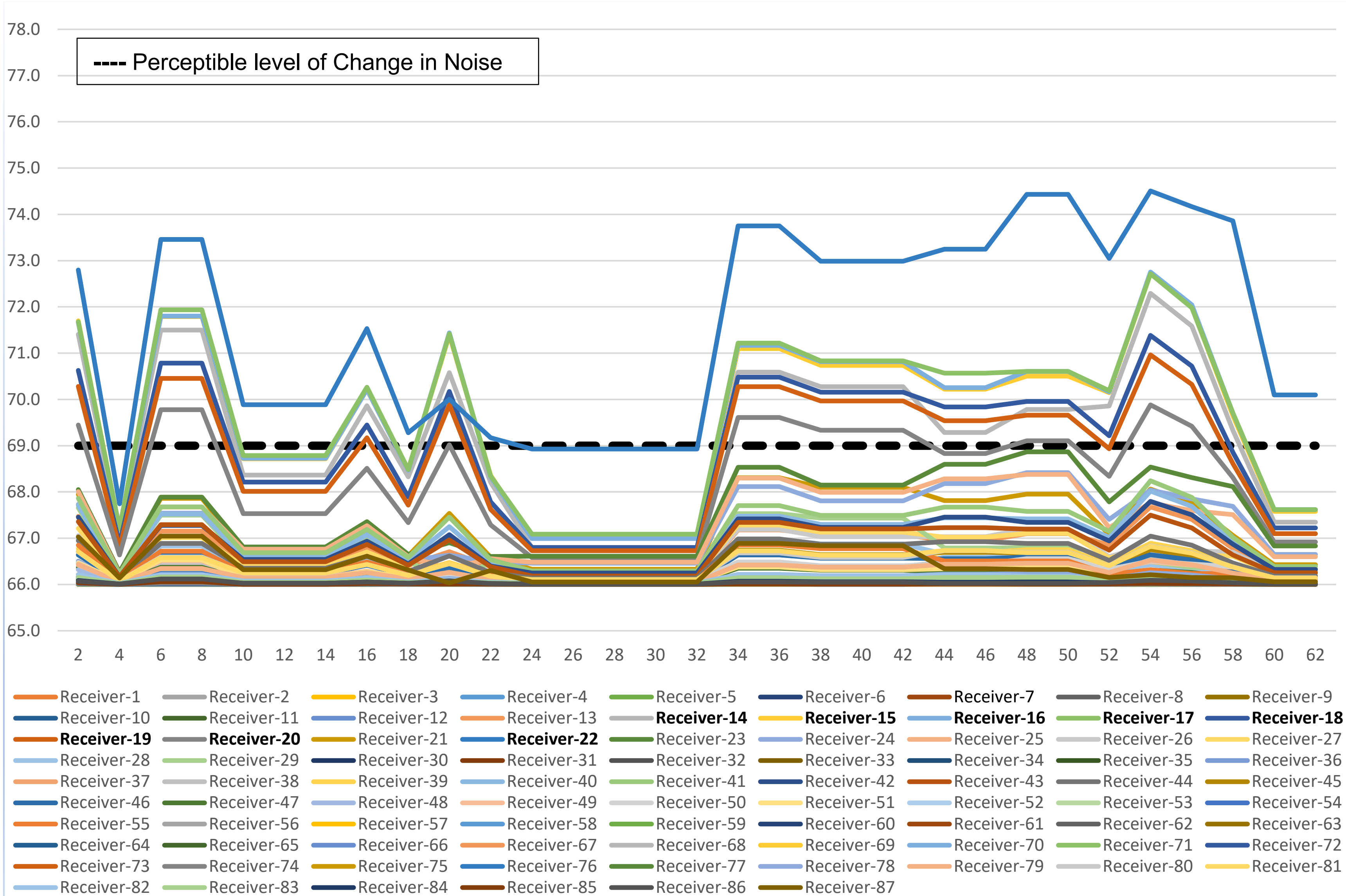
EXHIBIT 4: C03 – NOISE LEVELS BY RECEIVER OVER 2-WEEK INCREMENTS



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Appendix A, Construction Noise Results Tables

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TABLE A- 1: C02 CONSTRUCTION NOISE LEVELS (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 1-30)

	Receiver-1	Receiver-2	Receiver-3	Receiver-4	Receiver-5	Receiver-6	Receiver-7	Receiver-8	Receiver-9	Receiver-10	Receiver-11	Receiver-12	Receiver-13	Receiver-14	Receiver-15
Week	Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	
2	66.4	67.2	67.7	67.8	67.5	66.8	63.0	60.8	71.5	74.1	72.3	69.6	71.3	71.5	59.7
4	69.9	70.4	71.0	71.2	70.9	70.7	65.3	62.7	74.0	74.9	67.4	62.6	63.3	64.0	51.5
6	69.7	70.2	70.7	70.9	70.6	70.5	65.1	62.4	73.7	74.6	66.4	59.6	56.4	54.5	45.5
8	63.7	64.3	64.9	65.2	64.8	64.2	59.7	57.3	67.1	68.0	61.0	54.5	50.9	48.5	38.3
10	63.7	64.3	64.9	65.2	64.8	64.2	59.7	57.3	67.1	68.0	61.0	54.5	50.9	48.5	38.3
12	65.6	66.2	66.8	67.0	66.7	66.1	61.6	59.2	69.7	70.7	65.9	64.2	66.2	66.5	54.5
14	61.1	61.8	62.3	62.5	62.1	61.8	57.3	54.9	66.3	68.1	68.0	67.9	70.1	70.7	59.1
16	71.8	72.2	73.0	73.0	72.4	71.1	66.0	63.2	69.6	68.2	68.1	67.9	70.1	70.7	59.1
18	71.8	72.2	73.0	73.0	72.4	71.1	66.0	63.2	69.6	68.2	68.1	67.9	70.1	70.7	59.1
20	36.4	35.7	36.6	37.9	36.5	36.2	40.6	38.6	44.1	46.4	50.4	58.2	64.4	66.5	59.8
22	36.4	35.7	36.6	37.9	36.5	36.2	40.6	38.6	44.1	46.4	50.4	58.2	64.4	66.5	59.8
24	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5
26	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5
28	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5
30	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5
32	41.9	42.6	42.9	42.6	41.9	39.6	40.2	35.3	42.7	54.8	56.6	56.1	58.3	58.4	46.2
34	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8
36	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8
38	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8
40	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8
42	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.5	67.7	67.0	67.3	64.3	58.6
44	68.5	69.1	69.6	69.6	69.1	67.4	63.9	61.7	67.6	54.0	48.1	44.4	40.6	38.4	32.5
46	68.5	69.1	69.6	69.6	69.1	67.4	63.9	61.7	67.6	54.0	48.1	44.4	40.6	38.4	32.5
48	68.5	69.1	69.6	69.6	69.1	67.4	63.9	61.7	67.6	54.0	48.1	44.4	40.6	38.4	32.5
50	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
52	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
54	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
56	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
58	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
60	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
62	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
64	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1
66	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1
68	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1
70	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1
72	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1
74	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1
76	63.8	64.6	65.1	65.0	64.5	62.4	60.2	58.6	66.9	67.4	66.7	66.0	67.4	65.8	55.1
78	63.8	64.6	65.1	65.0	64.5	62.4	60.2	58.6	66.9	67.4	66.7	66.0	67.4	65.8	55.1
80	63.8	64.6	65.1	65.0	64.5	62.4	60.2	58.6	66.9	67.4	66.7	66.0	67.4	65.8	55.1
82	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
84	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
86	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
88	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
90	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
92	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
94	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
96	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
98	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
100	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
102	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7
104	63.9	63.7	64.4	64.8	64.3	63.1	59.3	56.9	68.1	68.5	66.2	65.3	68.0	68.3	55.3
106	63.9	63.7	64.4	64.8	64.3	63.1	59.3	56.9	68.1	68.5	66.2	65.3	68.0	68.3	55.3
108	63.9	63.7	64.4	64.8	64.3	63.1	59.3	56.9	68.1	68.5	66.2	65.3	68.0	68.3	55.3
110	69.9	69.2	70.3	70.6	69.4	68.8	62.0	59.2	67.4	67.7	65.2	64.4	67.2	70.1	57.9
112	69.3	68.4	69.6	69.9	68.5	68.0	60.5	57.4	61.9	61.3	60.3	59.7	62.3	67.6	56.1
114	69.3	68.4	69.6	69.9	68.5	68.0	60.5	57.4	61.9	61.3	60.3	59.7	62.3	67.6	56.1
116	69.3	68.4	69.6	69.9	68.5	68.0	60.5	57.4	61.9	61.3	60.3	59.7	62.3	67.6	56.1
118	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
120	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
122	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
124	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
126	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
128	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
130	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2
132	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2

	Receiver-16	Receiver-17	Receiver-18	Receiver-19	Receiver-20	Receiver-21	Receiver-22	Receiver-23	Receiver-24	Receiver-25	Receiver-26	Receiver-27	Receiver-28	Receiver-29	Receiver-30
Week	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated
2	55.7	51.9	49.1	47.6	45.3	43.4	43.2	41.8	38.7	39.5	40.9	39.3	38.8	40.0	58.2
4	47.7	44.5	44.0	41.7	39.4	39.1	38.2	37.1	35.3	35.7	38.9	37.4	38.1	35.0	60.6
6	42.2	40.5	42.1	39.1	36.8	37.3	35.8	34.0	33.7	33.6	37.8	36.2	37.3	32.4	60.4
8	35.2	33.4	34.8	31.8	29.5	29.8	28.7	26.5	26.3	26.3	30.3	28.6	29.8	25.0	55.0
10	35.2	33.4	34.8	31.8	29.5	29.8	28.7	26.5	26.3	26.3	30.3	28.6	29.8	25.0	55.0
12	50.4	46.5	44.1	42.5	40.3	38.9	38.9	37.8	34.7	35.5	36.5	35.8	35.4	35.6	57.0
14	54.9	51.0	47.8	46.4	44.2	42.4	42.9	40.3	39.2	39.4	39.1	38.2	37.8	39.3	52.8
16	54.9	51.0	47.8	46.4	44.3	42.5	42.9	40.4	39.3	39.5	39.4	38.5	38.7	39.4	61.5
18	54.9	51.0	47.8	46.4	44.3	42.5	42.9	40.4	39.3	39.5	39.4	38.5	38.7	39.4	61.5
20	54.7	51.1	48.4	46.6	45.5	43.5	44.1	40.9	41.1	41.7	40.1	41.0	41.0	41.5	31.4
22	54.7	51.1	48.4	46.6	45.5	43.5	44.1	40.9	41.1	41.7	40.1	41.0	41.0	41.5	31.4
24	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
26	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
28	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
30	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
32	41.4	38.1	30.7	29.8	27.8	25.8	32.3	27.5	26.8	28.9	29.8	28.5	29.2	31.7	36.2
34	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
36	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
38	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
40	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
42	54.9	51.3	48.2	46.1	43.8	41.3	42.1	38.3	37.9	38.3	38.0	37.4	37.4	37.2	59.9
44	31.0	29.7	28.3	25.9	26.5	25.1	24.0	22.5	22.6	21.5	26.7	25.8	29.8	24.0	59.9
46	31.0	29.7	28.3	25.9	26.5	25.1	24.0	22.5	22.6	21.5	26.7	25.8	29.8	24.0	59.9
48	31.0	29.7	28.3	25.9	26.5	25.1	24.0	22.5	22.6	21.5	26.7	25.8	29.8	24.0	59.9
50	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
52	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
54	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
56	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
58	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
60	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
62	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
64	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
66	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
68	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
70	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
72	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
74	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
76	49.8	43.9	37.7	36.4	35.0	31.7	37.4	33.8	32.3	33.9	37.0	32.5	32.3	34.1	56.0
78	49.8	43.9	37.7	36.4	35.0	31.7	37.4	33.8	32.3	33.9	37.0	32.5	32.3	34.1	56.0
80	49.8	43.9	37.7	36.4	35.0	31.7	37.4	33.8	32.3	33.9	37.0	32.5	32.3	34.1	56.0
82	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
84	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
86	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
88	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
90	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
92	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
94	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
96	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
98	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
100	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
102	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
104	51.0	47.4	44.0	43.0	41.4	38.3	39.8	36.9	36.1	36.5	38.9	36.5	36.4	36.7	55.2
106	51.0	47.4	44.0	43.0	41.4	38.3	39.8	36.9	36.1	36.5	38.9	36.5	36.4	36.7	55.2
108	51.0	47.4	44.0	43.0	41.4	38.3	39.8	36.9	36.1	36.5	38.9	36.5	36.4	36.7	55.2
110	54.1	49.8	47.3	46.1	44.1	41.7	41.9	39.8	39.1	38.3	38.7	38.1	37.4	37.6	58.6
112	52.3	47.7	45.0	43.8	41.6	39.7	40.1	38.4	37.5	36.4	36.6	35.6	34.6	35.4	57.3
114	52.3	47.7	45.0	43.8	41.6	39.7	40.1	38.4	37.5	36.4	36.6	35.6	34.6	35.4	57.3
116	52.3	47.7	45.0	43.8	41.6	39.7	40.1	38.4	37.5	36.4	36.6	35.6	34.6	35.4	57.3
118	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
120	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
122	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
124	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
126	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
128	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
130	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
132	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3

TABLE A- 2: C02 CONSTRUCTION NOISE LEVELS (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 31-55)

	Receiver-31	Receiver-32	Receiver-33	Receiver-34	Receiver-35	Receiver-36	Receiver-37	Receiver-38	Receiver-39	Receiver-40	Receiver-41	Receiver-42	Receiver-43	Receiver-44	Receiver-45	Receiver-46	Receiver-47	Receiver-48	Receiver-49	Receiver-50	Receiver-51	Receiver-52	Receiver-53	Receiver-54	Receiver-55
Week		Sound Insulated				Sound Insulated	Sound Insulated					Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Yes				Sound Insulated
2	59.0	58.6	58.8	59.2	55.4	61.5	63.3	59.4	58.7	58.6	54.0	49.2	45.3	43.5	42.8	41.2	39.7	39.6	38.2	38.2	40.2	40.1	40.1	39.7	38.4
4	61.1	60.7	61.2	62.7	58.1	61.9	59.0	52.7	52.2	51.6	47.4	44.6	43.8	40.4	39.9	39.4	38.3	38.7	37.6	35.4	38.8	36.1	37.2	38.9	37.1
6	60.9	60.4	60.9	62.5	57.8	61.7	58.4	50.7	50.1	48.7	45.3	43.6	43.4	39.7	39.3	39.0	37.9	38.1	37.2	34.1	37.7	33.6	35.8	38.1	36.2
8	55.7	55.4	55.7	56.6	52.1	56.7	52.9	44.5	43.3	41.6	38.3	36.8	36.2	32.3	32.2	32.0	30.5	30.6	29.6	26.4	30.0	25.7	28.1	30.4	28.8
10	55.7	55.4	55.7	56.6	52.1	56.7	52.9	44.5	43.3	41.6	38.3	36.8	36.2	32.3	32.2	32.0	30.5	30.6	29.6	26.4	30.0	25.7	28.1	30.4	28.8
12	57.6	57.3	57.6	58.4	54.1	58.8	56.9	53.6	53.2	53.2	48.4	43.7	40.8	38.8	37.9	37.0	35.8	36.0	34.1	34.3	36.8	36.2	36.1	35.9	34.9
14	53.2	53.0	53.3	54.2	50.2	55.3	58.3	57.3	57.4	57.3	52.4	46.9	43.0	41.0	39.7	38.4	36.5	36.2	36.1	38.7	40.0	38.4	38.1	37.1	38.0
16	62.4	61.6	61.9	62.5	57.4	56.6	58.5	57.3	57.5	57.4	52.4	47.2	43.2	41.2	40.4	38.9	37.4	37.1	36.5	38.9	40.1	38.5	38.3	37.3	38.6
18	62.4	61.6	61.9	62.5	57.4	56.6	58.5	57.3	57.5	57.4	52.4	47.2	43.2	41.2	40.4	38.9	37.4	37.1	36.5	38.9	40.1	38.5	38.3	37.3	38.6
20	30.7	31.7	30.7	37.1	39.5	38.5	46.3	51.2	53.3	57.2	52.6	46.1	40.0	37.4	35.8	34.8	31.3	30.8	33.9	40.6	43.6	38.1	38.8	41.5	41.4
22	30.7	31.7	30.7	37.1	39.5	38.5	46.3	51.2	53.3	57.2	52.6	46.1	40.0	37.4	35.8	34.8	31.3	30.8	33.9	40.6	43.6	38.1	38.8	41.5	41.4
24	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
26	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
28	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
30	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
32	36.6	36.7	35.7	36.5	37.3	41.1	47.2	45.6	45.9	47.2	43.1	34.6	32.0	30.3	28.8	27.4	26.2	25.8	25.8	27.0	28.5	27.9	28.4	30.0	29.8
34	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
36	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
38	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
40	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
42	61.0	60.6	61.0	61.3	57.6	61.0	60.1	58.5	57.9	57.9	53.6	48.4	43.8	41.2	39.7	38.7	36.6	36.3	34.9	33.9	34.9	33.3	32.7	36.0	36.6
44	60.9	60.1	60.2	60.0	55.8	52.6	44.9	39.0	35.1	37.1	34.0	33.0	30.6	28.1	30.6	30.0	31.4	31.1	27.1	22.8	23.7	19.0	21.8	22.5	28.0
46	60.9	60.1	60.2	60.0	55.8	52.6	44.9	39.0	35.1	37.1	34.0	33.0	30.6	28.1	30.6	30.0	31.4	31.1	27.1	22.8	23.7	19.0	21.8	22.5	28.0
48	60.9	60.1	60.2	60.0	55.8	52.6	44.9	39.0	35.1	37.1	34.0	33.0	30.6	28.1	30.6	30.0	31.4	31.1	27.1	22.8	23.7	19.0	21.8	22.5	28.0
50	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
52	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
54	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
56	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
58	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
60	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
62	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
64	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
66	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
68	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
70	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
72	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
74	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
76	56.7	56.2	56.1	56.1	52.9	58.6	58.4	56.2	55.3	56.2	50.4	45.2	39.9	37.5	36.3	35.8	33.0	32.2	32.6	32.6	36.0	33.8	34.1	35.7	32.5
78	56.7	56.2	56.1	56.1	52.9	58.6	58.4	56.2	55.3	56.2	50.4	45.2	39.9	37.5	36.3	35.8	33.0	32.2	32.6	32.6	36.0	33.8	34.1	35.7	32.5
80	56.7	56.2	56.1	56.1	52.9	58.6	58.4	56.2	55.3	56.2	50.4	45.2	39.9	37.5	36.3	35.8	33.0	32.2	32.6	32.6	36.0	33.8	34.1	35.7	32.5
82	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
84	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
86	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
88	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
90	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
92	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
94	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
96	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
98	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
100	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
102	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
104	55.0	54.8	55.1	55.9	52.1	56.2	56.3	54.5	54.3	55.2	49.8	44.9	40.5	39.8	38.1	36.9	35.0	35.6	35.5	35.7	38.3	36.4	36.3	38.4	36.9
106	55.0	54.8	55.1	55.9	52.1	56.2	56.3	54.5	54.3	55.2	49.8	44.9	40.5	39.8	38.1	36.9	35.0	35.6	35.5	35.7	38.3	36.4	36.3	38.4	36.9
108	55.0	54.8	55.1	55.9	52.1	56.2	56.3	54.5	54.3	55.2	49.8	44.9	40.5	39.8	38.1	36.9	35.0	35.6	35.5	35.7	38.3	36.4	36.3	38.4	36.9
110	58.5	57.6	58.0	58.7	53.6	55.6	55.6	54.0	54.1	55.5	50.7	45.0	40.9	40.2	38.7	37.1	35.0	35.4	35.1	36.5	37.7	36.0	36.0	37.6	37.7
112	57.2	56.1	56.4	57.2	51.5	51.2	51.1	49.7	50.1	52.7	48.0	41.9	38.0	36.3	35.3	33.9	32.0	31.5	31.8	33.9	35.4	33.5	34.1	34.4	34.4
114	57.2	56.1	56.4	57.2	51.5	51.2	51.1	49.7	50.1	52.7	48.0	41.9	38.0	36.3	35.3	33.9	32.0	31.5	31.8	33.9	35.4	33.5	34.1	34.4	34.4
116	57.2	56.1	56.4	57.2	51.5	51.2	51.1	49.7	50.1	52.7	48.0	41.9	38.0	36.3	35.3	33.9	32.0	31.5	31.8	33.9	35.4	33.5	34.1	34.4	34.4
118	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
120	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
122	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
124	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
126	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
128	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
130	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
132	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6

TABLE A- 3: C02 CONSTRUCTION NOISE LEVELS (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 56-87)

	Receiver-56	Receiver-57	Receiver-58	Receiver-59	Receiver-60	Receiver-61	Receiver-62	Receiver-63	Receiver-64	Receiver-65	Receiver-66	Receiver-67	Receiver-68	Receiver-69	Receiver-70	Receiver-71	Receiver-72	Receiver-73	Receiver-74	Receiver-75	Receiver-76	Receiver-77	Receiver-78	Receiver-79	Receiver-80	Receiver-81	Receiver-82	Receiver-83	Receiver-84	Receiver-85	Receiver-86	Receiver-87
Week			Sound Insulated							Sound Insulated	Sound Insulated	Sound Insulated				Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated			Sound Insulated	Sound Insulated			Sound Insulated						
2	56.0	55.6	56.0	53.7	53.0	55.7	52.9	50.4	51.7	53.3	51.4	56.3	54.3	54.4	54.1	52.2	50.5	50.5	53.6	58.1	55.8	56.7	55.6	54.9	53.8	49.6	44.0	44.1	41.8	40.2	37.3	40.2
4	58.4	57.4	57.8	55.7	56.0	59.1	55.3	51.9	53.4	54.8	53.3	57.8	55.7	56.1	56.5	52.8	50.2	50.9	52.8	54.0	52.4	51.3	50.6	50.6	48.1	45.2	41.6	43.0	43.3	41.7	37.7	35.8
6	58.1	57.1	57.5	55.4	55.7	58.9	55.0	51.5	53.1	54.5	53.0	57.5	55.5	55.9	56.3	52.5	49.8	50.6	52.6	53.5	52.0	50.5	49.6	49.6	46.6	44.4	41.1	42.6	43.0	41.4	37.2	33.5
8	52.6	51.9	52.5	49.9	49.7	52.9	49.3	45.9	47.3	49.1	47.2	52.2	50.2	50.5	50.5	47.1	43.9	44.2	46.4	47.8	46.3	44.8	43.4	43.0	39.9	37.8	34.0	36.0	35.9	34.2	29.5	25.9
10	52.6	51.9	52.5	49.9	49.7	52.9	49.3	45.9	47.3	49.1	47.2	52.2	50.2	50.5	50.5	47.1	43.9	44.2	46.4	47.8	46.3	44.8	43.4	43.0	39.9	37.8	34.0	36.0	35.9	34.2	29.5	25.9
12	54.6	54.0	54.5	52.1	51.8	54.7	51.3	48.3	49.6	51.3	49.5	54.4	52.3	52.5	52.4	49.6	47.3	47.0	48.6	51.6	49.6	50.3	49.6	49.4	48.2	44.0	39.4	40.0	39.3	37.7	34.3	36.0
14	50.6	50.0	50.4	49.2	48.3	50.7	47.8	45.1	46.5	47.7	46.1	50.7	48.4	48.2	48.0	46.4	45.2	45.2	48.1	53.0	50.2	53.1	53.3	52.5	51.7	46.9	40.5	40.2	39.1	36.0	35.3	39.3
16	58.3	58.0	58.1	55.4	54.4	57.8	54.0	50.8	52.2	53.9	52.0	58.2	53.2	52.8	52.6	51.0	48.4	46.4	49.2	53.1	50.5	53.2	53.5	52.6	51.8	47.0	40.8	41.5	40.4	37.4	35.8	39.4
18	58.3	58.0	58.1	55.4	54.4	57.8	54.0	50.8	52.2	53.9	52.0	58.2	53.2	52.8	52.6	51.0	48.4	46.4	49.2	53.1	50.5	53.2	53.5	52.6	51.8	47.0	40.8	41.5	40.4	37.4	35.8	39.4
20	38.9	29.6	30.7	40.4	36.9	39.8	36.3	34.5	31.4	28.1	26.3	26.8	24.9	25.6	26.0	26.8	31.1	31.7	31.8	36.9	35.5	39.2	43.0	45.6	47.9	42.4	36.9	34.7	32.8	22.0	33.2	39.9
22	38.9	29.6	30.7	40.4	36.9	39.8	36.3	34.5	31.4	28.1	26.3	26.8	24.9	25.6	26.0	26.8	31.1	31.7	31.8	36.9	35.5	39.2	43.0	45.6	47.9	42.4	36.9	34.7	32.8	22.0	33.2	39.9
24	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
26	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
28	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
30	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
32	40.1	35.4	36.0	38.7	34.6	36.7	35.1	32.4	32.1	32.0	30.8	33.1	26.1	25.9	26.8	28.5	31.6	33.1	38.0	42.1	39.8	40.2	41.2	40.5	39.7	34.4	29.8	28.2	27.2	20.7	24.6	31.5
34	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
36	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
38	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
40	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
42	57.2	57.0	57.5	55.3	54.7	57.8	54.8	52.1	52.5	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.1	48.7	50.5	55.6	53.3	55.3	54.6	54.0	53.2	48.3	40.3	41.8	39.2	35.8	32.1	35.9
44	57.1	56.9	57.1	54.1	53.0	56.3	52.8	49.7	49.5	52.5	50.0	55.8	52.6	52.0	51.6	50.7	46.6	41.0	41.4	39.7	40.3	39.1	38.5	39.3	35.9	32.7	29.5	34.4	33.4	29.5	25.8	24.6
46	57.1	56.9	57.1	54.1	53.0	56.3	52.8	49.7	49.5	52.5	50.0	55.8	52.6	52.0	51.6	50.7	46.6	41.0	41.4	39.7	40.3	39.1	38.5	39.3	35.9	32.7	29.5	34.4	33.4	29.5	25.8	24.6
48	57.1	56.9	57.1	54.1	53.0	56.3	52.8	49.7	49.5	52.5	50.0	55.8	52.6	52.0	51.6	50.7	46.6	41.0	41.4	39.7	40.3	39.1	38.5	39.3	35.9	32.7	29.5	34.4	33.4	29.5	25.8	24.6
50	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
52	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
54	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
56	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
58	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
60	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
62	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
64	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
66	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
68	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
70	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
72	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
74	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
76	53.1	52.8	53.5	50.0	49.6	52.7	50.4	47.0	47.4	50.8	48.4	53.9	52.4	52.6	52.2	49.2	44.3	44.9	47.5	53.0	50.4	51.8	51.3	50.9	49.7	44.8	37.1	38.5	35.6	33.0	32.2	32.6
78	53.1	52.8	53.5	50.0	49.6	52.7	50.4	47.0	47.4	50.8	48.4	53.9	52.4	52.6	52.2	49.2	44.3	44.9	47.5	53.0	50.4	51.8	51.3	50.9	49.7	44.8	37.1	38.5	35.6	33.0	32.2	32.6
80	53.1	52.8	53.5	50.0	49.6	52.7	50.4	47.0	47.4	50.8	48.4	53.9	52.4	52.6	52.2	49.2	44.3	44.9	47.5	53.0	50.4	51.8	51.3	50.9	49.7	44.8	37.1	38.5	35.6	33.0	32.2	32.6
82	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
84	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
86	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
88	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
90	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
92	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
94	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
96	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
98	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
100	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
102	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
104	52.4	51.3	51.8	49.4	49.9	52.6	49.7	46.5	46.9	48.9	46.9	52.3	50.1	50.3	49.7	47.9	45.3	44.5	45.8	51.1	48.4	50.1	49.9	49.6	48.8	44.7	38.8	38.8	37.8	35.3	34.8	35.5
106	52.4	51.3	51.8	49.4	49.9	52.6	49.7	46.5	46.9	48.9	46.9	52.3	50.1	50.3	49.7	47.9	45.3	44.5	45.8	51.1	48.4	50.1	49.9	49.6	48.8	44.7	38.8	38.8	37.8	35.3	34.8	35.5
108	52.4	51.3	51.8	49.4	49.9	52.6	49.7	46.5	46.9	48.9	46.9	52.3	50.1	50.3	49.7	47.9	45.3	44.5	45.8	51.1	48.4	50.1	49.9	49.6	48.8	44.7	38.8	38.8	37.8	35.3	34.8	35.5
110	55.3	54.3	54.2	51.4	50.9	54.1	50.5	47.3	47.6	50.6	48.7	52.6	50.1	50.2	49.7	47.8	44.8	44.1	45.4	50.5	48.0	49.5	49.3	49.3	48.8	44.8	38.9	38.7	37.4	34.4	33.9	36.7
112	53.9	52.7	52.4	49.1	48.2	51.9	48.0	44.4	44.7	48.6	46.7	49.5	47.0	47.2	46.4	44.4	41.3	40.1	41.4	45.5	43.4	44.6	44.5	44.9	45.0	40.1	35.2	35.2	33.2	30.5	31.3	34.1
114	53.9	52.7	52.4	49.1	48.2	51.9	48.0	44.4	44.7	48.6	46.7	49.5	47.0	47.2	46.4	44.4	41.3	40.1	41.4	45.5	43.4	44.6	44.5	44.9	45.0	40.1	35.2	35.2	33.2	30.5	31.3	34.1
116	53.9	52.7	52.4	49.1	48.2	51.9	48.0	44.4	44.7	48.6	46.7	49.5	47.0	47.2	46.4	44.4	41.3	40.1	41.4	45.5	43.4	44.6	44.5	44.9	45.0	40.1	35.2	35.2	33.2	30.5	31.3	34.1
118	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
120	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
122	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
124	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
126	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
128	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
130	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
132	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4

TABLE A-4: C02 - LOGARITHMIC COMBINATION OF AMBIENT NOISE AND CONSTRUCTION NOISE (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 1-30)

	Receiver-1	Receiver-2	Receiver-3	Receiver-4	Receiver-5	Receiver-6	Receiver-7	Receiver-8	Receiver-9	Receiver-10	Receiver-11	Receiver-12	Receiver-13	Receiver-14	Receiver-15	Receiver-16	Receiver-17	Receiver-18	Receiver-19	Receiver-20	Receiver-21	Receiver-22	Receiver-23	Receiver-24	Receiver-25	Receiver-26	Receiver-27	Receiver-28	Receiver-29	Receiver-30
Week	Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated
2	66.4	67.2	67.7	67.8	67.5	66.8	63.0	60.8	71.5	74.1	72.3	69.6	71.3	71.5	59.7	55.7	51.9	49.1	47.6	45.3	43.4	43.2	41.8	38.7	39.5	40.9	39.3	38.8	40.0	58.2
4	69.9	70.4	71.0	71.2	70.9	70.7	65.3	62.7	74.0	74.9	67.4	62.6	63.3	64.0	51.5	47.7	44.5	44.0	41.7	39.4	39.1	38.2	37.1	35.3	35.7	38.9	37.4	38.1	35.0	60.6
6	69.7	70.2	70.7	70.9	70.6	70.5	65.1	62.4	73.7	74.6	66.4	59.6	56.4	54.5	45.5	42.2	40.5	42.1	39.1	36.8	37.3	35.8	34.0	33.7	33.6	37.8	36.2	37.3	32.4	60.4
8	63.7	64.3	64.9	65.2	64.8	64.2	59.7	57.3	67.1	68.0	61.0	54.5	50.9	48.5	38.3	35.2	33.4	34.8	31.8	29.5	29.8	28.7	26.5	26.3	26.3	30.3	28.6	29.8	25.0	55.0
10	63.7	64.3	64.9	65.2	64.8	64.2	59.7	57.3	67.1	68.0	61.0	54.5	50.9	48.5	38.3	35.2	33.4	34.8	31.8	29.5	29.8	28.7	26.5	26.3	26.3	30.3	28.6	29.8	25.0	55.0
12	65.6	66.2	66.8	67.0	66.7	66.1	61.6	59.2	69.7	70.7	65.9	64.2	66.2	66.5	54.5	50.4	46.5	44.1	42.5	40.3	38.9	38.9	37.8	34.7	35.5	36.5	35.8	35.4	35.6	57.0
14	61.1	61.8	62.3	62.5	62.1	61.8	57.3	54.9	66.3	68.1	68.0	67.9	70.1	70.7	59.1	54.9	51.0	47.8	46.4	44.2	42.4	42.9	40.3	39.2	39.4	39.1	38.2	37.8	39.3	52.8
16	71.8	72.2	73.0	73.0	72.4	71.1	66.0	63.2	69.6	68.2	68.1	67.9	70.1	70.7	59.1	54.9	51.0	47.8	46.4	44.3	42.5	42.9	40.4	39.3	39.5	39.4	38.5	38.7	39.4	61.5
18	71.8	72.2	73.0	73.0	72.4	71.1	66.0	63.2	69.6	68.2	68.1	67.9	70.1	70.7	59.1	54.9	51.0	47.8	46.4	44.3	42.5	42.9	40.4	39.3	39.5	39.4	38.5	38.7	39.4	61.5
20	36.4	35.7	36.6	37.9	36.5	36.2	40.6	38.6	44.1	46.4	50.4	58.2	64.4	66.5	59.8	54.7	51.1	48.4	46.6	45.5	43.5	44.1	40.9	41.1	41.7	40.1	41.0	41.0	41.5	31.4
22	36.4	35.7	36.6	37.9	36.5	36.2	40.6	38.6	44.1	46.4	50.4	58.2	64.4	66.5	59.8	54.7	51.1	48.4	46.6	45.5	43.5	44.1	40.9	41.1	41.7	40.1	41.0	41.0	41.5	31.4
24	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
26	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
28	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
30	57.2	58.5	59.4	59.5	58.5	55.1	51.5	49.2	58.9	59.1	55.4	50.3	47.4	44.1	35.5	31.2	28.6	29.3	26.7	25.4	24.2	24.2	22.3	22.4	22.1	29.4	22.7	23.1	21.1	49.5
32	41.9	42.6	42.9	42.6	41.9	39.6	40.2	35.3	42.7	54.8	56.6	56.1	58.3	58.4	46.2	41.4	38.1	30.7	29.8	27.8	25.8	32.3	27.5	26.8	28.9	29.8	28.5	29.2	31.7	36.2
34	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
36	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
38	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
40	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.7	68.1	67.4	67.8	65.3	58.8	55.1	51.5	48.3	46.2	43.9	41.4	42.6	38.6	38.2	38.7	38.6	37.9	38.0	38.3	60.0
42	68.6	69.1	69.7	70.1	69.8	69.1	65.6	63.6	70.2	68.5	67.7	67.0	67.3	64.3	58.6	54.9	51.3	48.2	46.1	43.8	41.3	42.1	38.3	37.9	38.3	38.0	37.4	37.4	37.2	59.9
44	68.5	69.1	69.6	69.6	69.1	67.4	63.9	61.7	67.6	54.0	48.1	44.4	40.6	38.4	32.5	31.0	29.7	28.3	25.9	26.5	25.1	24.0	22.5	22.6	21.5	26.7	25.8	29.8	24.0	59.9
46	68.5	69.1	69.6	69.6	69.1	67.4	63.9	61.7	67.6	54.0	48.1	44.4	40.6	38.4	32.5	31.0	29.7	28.3	25.9	26.5	25.1	24.0	22.5	22.6	21.5	26.7	25.8	29.8	24.0	59.9
48	68.5	69.1	69.6	69.6	69.1	67.4	63.9	61.7	67.6	54.0	48.1	44.4	40.6	38.4	32.5	31.0	29.7	28.3	25.9	26.5	25.1	24.0	22.5	22.6	21.5	26.7	25.8	29.8	24.0	59.9
50	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
52	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
54	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
56	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
58	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
60	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
62	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
64	36.4	35.8	37.1	38.6	37.1	36.7	34.8	37.0	42.1	47.4	51.9	60.3	65.4	65.9	60.1	54.6	51.0	47.2	45.5	43.2	41.5	42.5	38.9	38.6	39.7	38.4	38.7	39.2	39.2	30.4
66	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
68	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
70	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
72	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
74	62.2	63.9	64.6	64.3	63.2	59.5	57.3	55.4	63.5	64.4	63.4	62.6	63.5	62.6	51.1	43.7	39.3	34.7	35.0	35.4	34.6	35.7	33.5	29.4	32.7	33.1	31.3	31.4	33.4	55.2
76	63.8	64.6	65.1	65.0	64.5	62.4	60.2	58.6	66.9	67.4	66.7	66.0	67.4	65.8	55.1	49.8	43.9	37.7	36.4	35.0	31.7	37.4	33.8	32.3	33.9	37.0	32.5	32.3	34.1	56.0
78	63.8	64.6	65.1	65.0	64.5	62.4	60.2	58.6	66.9	67.4	66.7	66.0	67.4	65.8	55.1	49.8	43.9	37.7	36.4	35.0	31.7	37.4	33.8	32.3	33.9	37.0	32.5	32.3	34.1	56.0
80	63.8	64.6	65.1	65.0	64.5	62.4	60.2	58.6	66.9	67.4	66.7	66.0	67.4	65.8	55.1	49.8	43.9	37.7	36.4	35.0	31.7	37.4	33.8	32.3	33.9	37.0	32.5	32.3	34.1	56.0
82	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
84	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
86	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
88	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
90	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
92	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
94	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
96	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
98	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
100	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
102	60.1	59.7	60.7	61.3	60.6	58.8	55.5	53.3	63.9	64.0	62.9	61.9	64.3	63.3	50.7	45.9	42.6	36.2	35.2	33.8	31.3	36.4	33.8	31.8	33.1	37.0	32.4	32.4	33.7	51.9
104	63.9	63.7	64.4	64.8	64.3	63.1	59.3	56.9	68.1	68.5	66.2	65.3	68.0	68.3	55.3	51.0	47.4	44.0	43.0	41.4	38.3	39.8	36.9	36.1	36.5	38.9	36.5	36.4	36.7	55.2
106	63.9	63.7	64.4	64.8	64.3	63.1	59.3	56.9	68.1	68.5	66.2	65.3	68.0	68.3	55.3	51.0	47.4	44.0	43.0	41.4	38.3	39.8	36.9	36.1	36.5	38.9	36.5	36.4	36.7	55.2
108	63.9	63.7	64.4	64.8	64.3	63.1	59.3	56.9	68.1	68.5	66.2	65.3	68.0	68.3	55.3	51.0	47.4	44.0	43.0	41.4	38.3	39.8	36.9	36.1	36.5	38.9	36.5	36.4	36.7	55.2
110	69.9	69.2	70.3	70.6	69.4	68.8	62.0	59.2	67.4	67.7	65.2	64.4	67.2	70.1	57.9	54.1	49.8	47.3	46.1	44.1	41.7	41.9	39.8	39.1	38.3	38.7	38.1	37.4	37.6	58.6
112	69.3	68.4	69.6	69.9	68.5	68.0	60.5	57.4	61.9	61.3	60.3	59.7	62.3	67.6	56.1	52.3	47.7	45.0	43.8	41.6	39.7	40.1	38.4	37.5	36.4	36.6	35.6	34.6	35.4	57.3
114	69.3	68.4	69.6	69.9	68.5	68.0	60.5	57.4	61.9	61.3	60.3	59.7	62.3	67.6	56.1	52.3	47.7	45.0	43.8	41.6	39.7	40.1	38.4	37.5	36.4	36.6	35.6	34.6	35.4	57.3
116	69.3	68.4	69.6	69.9	68.5	68.0	60.5	57.4	61.9	61.3	60.3	59.7	62.3	67.6	56.1	52.3	47.7	45.0	43.8	41.6	39.7	40.1	38.4	37.5	36.4	36.6	35.6	34.6	35.4	57.3
118	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
120	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
122	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
124	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
126	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
128	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
130	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3
132	57.3	57.5	58.4	58.7	58.0	56.0	53.2	51.2	60.9	61.2	60.2	59.4	61.4	60.1	48.2	43.2	39.3	33.9	32.9	31.6	29.2	33.4	30.7	29.1	30.1	33.3	29.4	29.5	30.9	49.3

TABLE A-5: C02 - LOGARITHMIC COMBINATION OF AMBIENT NOISE AND CONSTRUCTION NOISE (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 31-55)

	Receiver-31	Receiver-32	Receiver-33	Receiver-34	Receiver-35	Receiver-36	Receiver-37	Receiver-38	Receiver-39	Receiver-40	Receiver-41	Receiver-42	Receiver-43	Receiver-44	Receiver-45	Receiver-46	Receiver-47	Receiver-48	Receiver-49	Receiver-50	Receiver-51	Receiver-52	Receiver-53	Receiver-54	Receiver-55
Week		Sound Insulated				Sound Insulated	Sound Insulated					Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Yes				Sound Insulated
2	59.0	58.6	58.8	59.2	55.4	61.5	63.3	59.4	58.7	58.6	54.0	49.2	45.3	43.5	42.8	41.2	39.7	39.6	38.2	38.2	40.2	40.1	40.1	39.7	38.4
4	61.1	60.7	61.2	62.7	58.1	61.9	59.0	52.7	52.2	51.6	47.4	44.6	43.8	40.4	39.9	39.4	38.3	38.7	37.6	35.4	38.8	36.1	37.2	38.9	37.1
6	60.9	60.4	60.9	62.5	57.8	61.7	58.4	50.7	50.1	48.7	45.3	43.6	43.4	39.7	39.3	39.0	37.9	38.1	37.2	34.1	37.7	33.6	35.8	38.1	36.2
8	55.7	55.4	55.7	56.6	52.1	56.7	52.9	44.5	43.3	41.6	38.3	36.8	36.2	32.3	32.2	32.0	30.5	30.6	29.6	26.4	30.0	25.7	28.1	30.4	28.8
10	55.7	55.4	55.7	56.6	52.1	56.7	52.9	44.5	43.3	41.6	38.3	36.8	36.2	32.3	32.2	32.0	30.5	30.6	29.6	26.4	30.0	25.7	28.1	30.4	28.8
12	57.6	57.3	57.6	58.4	54.1	58.8	56.9	53.6	53.2	53.2	48.4	43.7	40.8	38.8	37.9	37.0	35.8	36.0	34.1	34.3	36.8	36.2	36.1	35.9	34.9
14	53.2	53.0	53.3	54.2	50.2	55.3	58.3	57.3	57.4	57.3	52.4	46.9	43.0	41.0	39.7	38.4	36.5	36.2	36.1	38.7	40.0	38.4	38.1	37.1	38.0
16	62.4	61.6	61.9	62.5	57.4	56.6	58.5	57.3	57.5	57.4	52.4	47.2	43.2	41.2	40.4	38.9	37.4	37.1	36.5	38.9	40.1	38.5	38.3	37.3	38.6
18	62.4	61.6	61.9	62.5	57.4	56.6	58.5	57.3	57.5	57.4	52.4	47.2	43.2	41.2	40.4	38.9	37.4	37.1	36.5	38.9	40.1	38.5	38.3	37.3	38.6
20	30.7	31.7	30.7	37.1	39.5	38.5	46.3	51.2	53.3	57.2	52.6	46.1	40.0	37.4	35.8	34.8	31.3	30.8	33.9	40.6	43.6	38.1	38.8	41.5	41.4
22	30.7	31.7	30.7	37.1	39.5	38.5	46.3	51.2	53.3	57.2	52.6	46.1	40.0	37.4	35.8	34.8	31.3	30.8	33.9	40.6	43.6	38.1	38.8	41.5	41.4
24	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
26	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
28	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
30	50.7	50.5	50.2	49.8	45.7	48.1	46.6	40.7	40.6	38.9	34.3	31.7	30.5	27.7	28.0	25.8	25.0	26.5	24.9	23.3	28.5	24.1	25.4	26.4	20.8
32	36.6	36.7	35.7	36.5	37.3	41.1	47.2	45.6	45.9	47.2	43.1	34.6	32.0	30.3	28.8	27.4	26.2	25.8	25.8	27.0	28.5	27.9	28.4	30.0	29.8
34	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
36	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
38	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
40	61.0	60.6	61.0	61.4	57.6	61.0	60.4	58.7	58.2	58.3	54.0	48.6	44.1	41.5	40.0	39.0	37.0	36.7	35.4	34.7	35.8	34.4	34.1	37.0	37.4
42	61.0	60.6	61.0	61.3	57.6	61.0	60.1	58.5	57.9	57.9	53.6	48.4	43.8	41.2	39.7	38.7	36.6	36.3	34.9	33.9	34.9	33.3	32.7	36.0	36.6
44	60.9	60.1	60.2	60.0	55.8	52.6	44.9	39.0	35.1	37.1	34.0	33.0	30.6	28.1	30.6	30.0	31.4	31.1	27.1	22.8	23.7	19.0	21.8	22.5	28.0
46	60.9	60.1	60.2	60.0	55.8	52.6	44.9	39.0	35.1	37.1	34.0	33.0	30.6	28.1	30.6	30.0	31.4	31.1	27.1	22.8	23.7	19.0	21.8	22.5	28.0
48	60.9	60.1	60.2	60.0	55.8	52.6	44.9	39.0	35.1	37.1	34.0	33.0	30.6	28.1	30.6	30.0	31.4	31.1	27.1	22.8	23.7	19.0	21.8	22.5	28.0
50	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
52	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
54	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
56	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
58	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
60	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
62	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
64	30.7	31.9	30.7	34.1	36.0	37.4	42.4	51.8	54.0	57.0	52.2	46.2	40.3	37.9	34.2	35.3	30.8	29.6	31.5	38.4	39.3	37.2	35.7	38.3	39.4
66	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
68	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
70	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
72	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
74	56.3	56.0	55.6	53.9	50.3	55.5	55.0	52.3	51.3	52.3	45.8	41.2	36.8	35.5	37.1	37.6	31.1	32.1	31.1	30.1	33.5	30.0	31.4	31.4	32.0
76	56.7	56.2	56.1	56.1	52.9	58.6	58.4	56.2	55.3	56.2	50.4	45.2	39.9	37.5	36.3	35.8	33.0	32.2	32.6	32.6	36.0	33.8	34.1	35.7	32.5
78	56.7	56.2	56.1	56.1	52.9	58.6	58.4	56.2	55.3	56.2	50.4	45.2	39.9	37.5	36.3	35.8	33.0	32.2	32.6	32.6	36.0	33.8	34.1	35.7	32.5
80	56.7	56.2	56.1	56.1	52.9	58.6	58.4	56.2	55.3	56.2	50.4	45.2	39.9	37.5	36.3	35.8	33.0	32.2	32.6	32.6	36.0	33.8	34.1	35.7	32.5
82	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
84	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
86	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
88	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
90	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
92	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
94	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
96	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
98	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
100	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
102	50.9	51.1	51.2	52.4	48.8	52.6	52.9	50.8	50.7	52.1	46.0	41.7	37.2	35.5	34.0	33.4	32.0	32.1	32.6	32.3	36.4	34.1	34.5	36.0	32.5
104	55.0	54.8	55.1	55.9	52.1	56.2	56.3	54.5	54.3	55.2	49.8	44.9	40.5	39.8	38.1	36.9	35.0	35.6	35.5	35.7	38.3	36.4	36.3	38.4	36.9
106	55.0	54.8	55.1	55.9	52.1	56.2	56.3	54.5	54.3	55.2	49.8	44.9	40.5	39.8	38.1	36.9	35.0	35.6	35.5	35.7	38.3	36.4	36.3	38.4	36.9
108	55.0	54.8	55.1	55.9	52.1	56.2	56.3	54.5	54.3	55.2	49.8	44.9	40.5	39.8	38.1	36.9	35.0	35.6	35.5	35.7	38.3	36.4	36.3	38.4	36.9
110	58.5	57.6	58.0	58.7	53.6	55.6	55.6	54.0	54.1	55.5	50.7	45.0	40.9	40.2	38.7	37.1	35.0	35.4	35.1	36.5	37.7	36.0	36.0	37.6	37.7
112	57.2	56.1	56.4	57.2	51.5	51.2	51.1	49.7	50.1	52.7	48.0	41.9	38.0	36.3	35.3	33.9	32.0	31.5	31.8	33.9	35.4	33.5	34.1	34.4	34.4
114	57.2	56.1	56.4	57.2	51.5	51.2	51.1	49.7	50.1	52.7	48.0	41.9	38.0	36.3	35.3	33.9	32.0	31.5	31.8	33.9	35.4	33.5	34.1	34.4	34.4
116	57.2	56.1	56.4	57.2	51.5	51.2	51.1	49.7	50.1	52.7	48.0	41.9	38.0	36.3	35.3	33.9	32.0	31.5	31.8	33.9	35.4	33.5	34.1	34.4	34.4
118	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
120	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
122	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
124	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
126	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
128	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
130	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6
132	49.1	49.0	49.0	49.6	46.3	50.8	51.0	48.8	48.3	49.6	43.6	39.3	35.0	33.5	32.1	31.6	30.0	29.8	29.7	29.4	32.7	30.6	31.0	32.4	29.6

TABLE A-6: C02 - LOGARITHMIC COMBINATION OF AMBIENT NOISE AND CONSTRUCTION NOISE (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 56-87)

	Receiver-56	Receiver-57	Receiver-58	Receiver-59	Receiver-60	Receiver-61	Receiver-62	Receiver-63	Receiver-64	Receiver-65	Receiver-66	Receiver-67	Receiver-68	Receiver-69	Receiver-70	Receiver-71	Receiver-72	Receiver-73	Receiver-74	Receiver-75	Receiver-76	Receiver-77	Receiver-78	Receiver-79	Receiver-80	Receiver-81	Receiver-82	Receiver-83	Receiver-84	Receiver-85	Receiver-86	Receiver-87
Week			Sound Insulated							Sound Insulated	Sound Insulated	Sound Insulated				Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated			Sound Insulated	Sound Insulated			Sound Insulated						
2	56.0	55.6	56.0	53.7	53.0	55.7	52.9	50.4	51.7	53.3	51.4	56.3	54.3	54.4	54.1	52.2	50.5	50.5	53.6	58.1	55.8	56.7	55.6	54.9	53.8	49.6	44.0	44.1	41.8	40.2	37.3	40.2
4	58.4	57.4	57.8	55.7	56.0	59.1	55.3	51.9	53.4	54.8	53.3	57.8	55.7	56.1	56.5	52.8	50.2	50.9	52.8	54.0	52.4	51.3	50.6	50.6	48.1	45.2	41.6	43.0	43.3	41.7	37.7	35.8
6	58.1	57.1	57.5	55.4	55.7	58.9	55.0	51.5	53.1	54.5	53.0	57.5	55.5	55.9	56.3	52.5	49.8	50.6	52.6	53.5	52.0	50.5	49.6	49.6	46.6	44.4	41.1	42.6	43.0	41.4	37.2	33.5
8	52.6	51.9	52.5	49.9	49.7	52.9	49.3	45.9	47.3	49.1	47.2	52.2	50.2	50.5	50.5	47.1	43.9	44.2	46.4	47.8	46.3	44.8	43.4	43.0	39.9	37.8	34.0	36.0	35.9	34.2	29.5	25.9
10	52.6	51.9	52.5	49.9	49.7	52.9	49.3	45.9	47.3	49.1	47.2	52.2	50.2	50.5	50.5	47.1	43.9	44.2	46.4	47.8	46.3	44.8	43.4	43.0	39.9	37.8	34.0	36.0	35.9	34.2	29.5	25.9
12	54.6	54.0	54.5	52.1	51.8	54.7	51.3	48.3	49.6	51.3	49.5	54.4	52.3	52.5	52.4	49.6	47.3	47.0	48.6	51.6	49.6	50.3	49.6	49.4	48.2	44.0	39.4	40.0	39.3	37.7	34.3	36.0
14	50.6	50.0	50.4	49.2	48.3	50.7	47.8	45.1	46.5	47.7	46.1	50.7	48.4	48.2	48.0	46.4	45.2	45.2	48.1	53.0	50.2	53.1	53.3	52.5	51.7	46.9	40.5	40.2	39.1	36.0	35.3	39.3
16	58.3	58.0	58.1	55.4	54.4	57.8	54.0	50.8	52.2	53.9	52.0	58.2	53.2	52.8	52.6	51.0	48.4	46.4	49.2	53.1	50.5	53.2	53.5	52.6	51.8	47.0	40.8	41.5	40.4	37.4	35.8	39.4
18	58.3	58.0	58.1	55.4	54.4	57.8	54.0	50.8	52.2	53.9	52.0	58.2	53.2	52.8	52.6	51.0	48.4	46.4	49.2	53.1	50.5	53.2	53.5	52.6	51.8	47.0	40.8	41.5	40.4	37.4	35.8	39.4
20	38.9	29.6	30.7	40.4	36.9	39.8	36.3	34.5	31.4	28.1	26.3	26.8	24.9	25.6	26.0	26.8	31.1	31.7	31.8	36.9	35.5	39.2	43.0	45.6	47.9	42.4	36.9	34.7	32.8	22.0	33.2	39.9
22	38.9	29.6	30.7	40.4	36.9	39.8	36.3	34.5	31.4	28.1	26.3	26.8	24.9	25.6	26.0	26.8	31.1	31.7	31.8	36.9	35.5	39.2	43.0	45.6	47.9	42.4	36.9	34.7	32.8	22.0	33.2	39.9
24	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
26	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
28	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
30	47.2	47.5	48.2	45.7	44.3	46.7	43.0	42.0	39.6	41.3	39.4	44.5	42.3	42.5	41.7	40.1	37.4	37.5	39.2	42.2	40.1	41.0	39.2	38.5	35.6	33.1	28.9	30.1	30.8	28.6	27.0	18.9
32	40.1	35.4	36.0	38.7	34.6	36.7	35.1	32.4	32.1	32.0	30.8	33.1	26.1	25.9	26.8	28.5	31.6	33.1	38.0	42.1	39.8	40.2	41.2	40.5	39.7	34.4	29.8	28.2	27.2	20.7	24.6	31.5
34	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
36	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
38	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
40	57.3	57.1	57.6	55.4	54.7	57.8	54.8	52.2	52.6	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.2	48.8	50.8	55.8	53.5	55.4	54.8	54.1	53.3	48.5	40.7	42.0	39.5	35.9	32.8	37.2
42	57.2	57.0	57.5	55.3	54.7	57.8	54.8	52.1	52.5	55.2	52.8	58.4	56.0	55.9	55.5	53.8	50.1	48.7	50.5	55.6	53.3	55.3	54.6	54.0	53.2	48.3	40.3	41.8	39.2	35.8	32.1	35.9
44	57.1	56.9	57.1	54.1	53.0	56.3	52.8	49.7	49.5	52.5	50.0	55.8	52.6	52.0	51.6	50.7	46.6	41.0	41.4	39.7	40.3	39.1	38.5	39.3	35.9	32.7	29.5	34.4	33.4	29.5	25.8	24.6
46	57.1	56.9	57.1	54.1	53.0	56.3	52.8	49.7	49.5	52.5	50.0	55.8	52.6	52.0	51.6	50.7	46.6	41.0	41.4	39.7	40.3	39.1	38.5	39.3	35.9	32.7	29.5	34.4	33.4	29.5	25.8	24.6
48	57.1	56.9	57.1	54.1	53.0	56.3	52.8	49.7	49.5	52.5	50.0	55.8	52.6	52.0	51.6	50.7	46.6	41.0	41.4	39.7	40.3	39.1	38.5	39.3	35.9	32.7	29.5	34.4	33.4	29.5	25.8	24.6
50	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
52	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
54	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
56	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
58	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
60	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
62	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
64	36.6	28.8	30.3	36.5	31.4	33.1	34.5	32.6	32.5	27.4	26.3	28.7	24.9	25.5	26.8	26.7	27.4	29.2	30.1	34.8	35.8	40.9	43.9	47.0	48.2	42.0	35.5	32.3	33.3	21.7	31.9	37.0
66	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
68	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
70	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
72	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
74	53.0	52.7	53.9	50.4	48.6	51.3	47.8	44.2	44.4	47.3	45.0	50.4	49.1	49.3	48.9	45.9	40.6	43.7	44.8	49.3	46.7	47.9	47.5	47.5	45.2	41.4	37.4	38.2	35.6	32.4	28.6	33.5
76	53.1	52.8	53.5	50.0	49.6	52.7	50.4	47.0	47.4	50.8	48.4	53.9	52.4	52.6	52.2	49.2	44.3	44.9	47.5	53.0	50.4	51.8	51.3	50.9	49.7	44.8	37.1	38.5	35.6	33.0	32.2	32.6
78	53.1	52.8	53.5	50.0	49.6	52.7	50.4	47.0	47.4	50.8	48.4	53.9	52.4	52.6	52.2	49.2	44.3	44.9	47.5	53.0	50.4	51.8	51.3	50.9	49.7	44.8	37.1	38.5	35.6	33.0	32.2	32.6
80	53.1	52.8	53.5	50.0	49.6	52.7	50.4	47.0	47.4	50.8	48.4	53.9	52.4	52.6	52.2	49.2	44.3	44.9	47.5	53.0	50.4	51.8	51.3	50.9	49.7	44.8	37.1	38.5	35.6	33.0	32.2	32.6
82	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
84	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
86	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
88	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
90	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
92	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
94	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
96	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
98	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
100	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
102	49.1	47.3	48.0	44.8	46.0	49.4	46.4	42.6	43.0	45.5	43.5	49.0	47.1	47.2	46.5	44.6	42.3	41.1	42.3	47.0	44.6	46.2	46.1	45.6	44.9	39.8	35.1	35.2	34.1	32.6	32.9	31.6
104	52.4	51.3	51.8	49.4	49.9	52.6	49.7	46.5	46.9	48.9	46.9	52.3	50.1	50.3	49.7	47.9	45.3	44.5	45.8	51.1	48.4	50.1	49.9	49.6	48.8	44.7	38.8	38.8	37.8	35.3	34.8	35.5
106	52.4	51.3	51.8	49.4	49.9	52.6	49.7	46.5	46.9	48.9	46.9	52.3	50.1	50.3	49.7	47.9	45.3	44.5	45.8	51.1	48.4	50.1	49.9	49.6	48.8	44.7	38.8	38.8	37.8	35.3	34.8	35.5
108	52.4	51.3	51.8	49.4	49.9	52.6	49.7	46.5	46.9	48.9	46.9	52.3	50.1	50.3	49.7	47.9	45.3	44.5	45.8	51.1	48.4	50.1	49.9	49.6	48.8	44.7	38.8	38.8	37.8	35.3	34.8	35.5
110	55.3	54.3	54.2	51.4	50.9	54.1	50.5	47.3	47.6	50.6	48.7	52.6	50.1	50.2	49.7	47.8	44.8	44.1	45.4	50.5	48.0	49.5	49.3	49.3	48.8	44.8	38.9	38.7	37.4	34.4	33.9	36.7
112	53.9	52.7	52.4	49.1	48.2	51.9	48.0	44.4	44.7	48.6	46.7	49.5	47.0	47.2	46.4	44.4	41.3	40.1	41.4	45.5	43.4	44.6	44.5	44.9	45.0	40.1	35.2	35.2	33.2	30.5	31.3	34.1
114	53.9	52.7	52.4	49.1	48.2	51.9	48.0	44.4	44.7	48.6	46.7	49.5	47.0	47.2	46.4	44.4	41.3	40.1	41.4	45.5	43.4	44.6	44.5	44.9	45.0	40.1	35.2	35.2	33.2	30.5	31.3	34.1
116	53.9	52.7	52.4	49.1	48.2	51.9	48.0	44.4	44.7	48.6	46.7	49.5	47.0	47.2	46.4	44.4	41.3	40.1	41.4	45.5	43.4	44.6	44.5	44.9	45.0	40.1	35.2	35.2	33.2	30.5	31.3	34.1
118	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
120	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
122	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
124	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
126	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
128	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
130	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4
132	46.4	45.3	46.1	42.8	43.2	46.4	43.9	40.3	40.9	43.6	41.5	46.7	45.0	45.2	44.6	42.3	39.2	38.9	40.4	45.2	42.9	44.2	44.0	43.6	42.7	38.1	33.3	33.4	31.9	29.7	29.3	29.4

TABLE A-7: C02 - PROJECTED INCREASE OF COMBINED AMBIENT AND CONSTRUCTION NOISE LEVEL (LEQ) COMPARED TO AMBIENT NOISE LEVEL BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 1-30)

	Receiver-1	Receiver-2	Receiver-3	Receiver-4	Receiver-5	Receiver-6	Receiver-7	Receiver-8	Receiver-9	Receiver-10	Receiver-11	Receiver-12	Receiver-13	Receiver-14	Receiver-15	Receiver-16	Receiver-17	Receiver-18	Receiver-19	Receiver-20	Receiver-21	Receiver-22	Receiver-23	Receiver-24	Receiver-25	Receiver-26	Receiver-27	Receiver-28	Receiver-29	Receiver-30
Week	Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated
2	3.2	3.6	3.9	4.0	3.8	3.4	1.8	1.1	6.5	8.7	7.2	5.2	6.5	6.6	0.9	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
4	5.4	5.7	6.2	6.3	6.1	6.0	2.7	1.7	8.6	9.4	3.7	1.6	1.9	2.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
6	5.2	5.6	6.0	6.1	5.9	5.8	2.6	1.6	8.4	9.1	3.2	0.9	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
8	2.0	2.3	2.5	2.6	2.5	2.2	0.9	0.6	3.6	4.1	1.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
10	2.0	2.3	2.5	2.6	2.5	2.2	0.9	0.6	3.6	4.1	1.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
12	2.8	3.1	3.4	3.5	3.4	3.1	1.4	0.8	5.3	5.9	3.0	2.2	3.1	3.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
14	1.2	1.4	1.5	1.6	1.5	1.4	0.6	0.3	3.2	4.2	4.1	4.1	5.5	6.0	0.8	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
16	6.8	7.1	7.8	7.8	7.3	6.3	3.0	1.8	5.2	4.2	4.2	4.1	5.6	6.0	0.8	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
18	6.8	7.1	7.8	7.8	7.3	6.3	3.0	1.8	5.2	4.2	4.2	4.1	5.6	6.0	0.8	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	2.3	3.3	0.9	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	2.3	3.3	0.9	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.5	0.7	0.9	0.9	0.7	0.3	0.2	0.1	0.8	0.8	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
26	0.5	0.7	0.9	0.9	0.7	0.3	0.2	0.1	0.8	0.8	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
28	0.5	0.7	0.9	0.9	0.7	0.3	0.2	0.1	0.8	0.8	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
30	0.5	0.7	0.9	0.9	0.7	0.3	0.2	0.1	0.8	0.8	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	4.5	4.9	5.3	5.5	5.3	4.9	2.8	2.0	5.6	4.6	4.2	3.7	4.0	2.7	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
36	4.5	4.9	5.3	5.5	5.3	4.9	2.8	2.0	5.6	4.6	4.2	3.7	4.0	2.7	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
38	4.5	4.9	5.3	5.5	5.3	4.9	2.8	2.0	5.6	4.6	4.2	3.7	4.0	2.7	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
40	4.5	4.9	5.3	5.5	5.3	4.9	2.8	2.0	5.6	4.6	4.2	3.7	4.0	2.7	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
42	4.5	4.9	5.3	5.5	5.3	4.9	2.8	2.0	5.6	4.4	4.0	3.6	3.7	2.2	0.7	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
44	4.4	4.8	5.2	5.2	4.8	3.8	2.1	1.4	3.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
46	4.4	4.8	5.2	5.2	4.8	3.8	2.1	1.4	3.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
48	4.4	4.8	5.2	5.2	4.8	3.8	2.1	1.4	3.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.7	3.0	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	1.5	2.1	2.4	2.2	1.8	0.9	0.6	0.4	2.0	2.3	1.9	1.6	1.9	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
68	1.5	2.1	2.4	2.2	1.8	0.9	0.6	0.4	2.0	2.3	1.9	1.6	1.9	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
70	1.5	2.1	2.4	2.2	1.8	0.9	0.6	0.4	2.0	2.3	1.9	1.6	1.9	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
72	1.5	2.1	2.4	2.2	1.8	0.9	0.6	0.4	2.0	2.3	1.9	1.6	1.9	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
74	1.5	2.1	2.4	2.2	1.8	0.9	0.6	0.4	2.0	2.3	1.9	1.6	1.9	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
76	2.0	2.3	2.6	2.5	2.3	1.6	1.0	0.7	3.5	3.8	3.3	3.0	3.7	2.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
78	2.0	2.3	2.6	2.5	2.3	1.6	1.0	0.7	3.5	3.8	3.3	3.0	3.7	2.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
80	2.0	2.3	2.6	2.5	2.3	1.6	1.0	0.7	3.5	3.8	3.3	3.0	3.7	2.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
82	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
84	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
86	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
88	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
90	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
92	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
94	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
96	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
98	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
100	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
102	1.0	0.9	1.1	1.3	1.1	0.8	0.4	0.2	2.1	2.1	1.7	1.4	2.2	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
104	2.1	2.0	2.3	2.5	2.3	1.8	0.8	0.5	4.2	4.4	3.1	2.7	4.1	4.3	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
106	2.1	2.0	2.3	2.5	2.3	1.8	0.8	0.5	4.2	4.4	3.1	2.7	4.1	4.3	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
108	2.1	2.0	2.3	2.5	2.3	1.8	0.8	0.5	4.2	4.4	3.1	2.7	4.1	4.3	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
110	5.4	4.9	5.7	5.9	5.0	4.7	1.5	0.8	3.8	4.0	2.6	2.3	3.7	5.5	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
112	4.9	4.4	5.2	5.4	4.4	4.1	1.1	0.6	1.4	1.3	1.0	0.9	1.5	3.9	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
114	4.9	4.4	5.2	5.4	4.4	4.1	1.1	0.6	1.4	1.3	1.0	0.9	1.5	3.9	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
116	4.9	4.4	5.2	5.4	4.4	4.1	1.1	0.6	1.4	1.3	1.0	0.9	1.5	3.9	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
118	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
120	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
122	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
124	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
126	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
128	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
130	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
132	0.5	0.6	0.7	0.7	0.6	0.4	0.2	0.1	1.2	1.2	1.0	0.9	1.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

3 – 4.9 dB increase over ambient

5 – 9.9 dB increase over ambient

TABLE A-8: C02 - PROJECTED INCREASE OF COMBINED AMBIENT AND CONSTRUCTION NOISE LEVEL (LEQ) COMPARED TO AMBIENT NOISE LEVEL BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 31-55)

	Receiver-31	Receiver-32	Receiver-33	Receiver-34	Receiver-35	Receiver-36	Receiver-37	Receiver-38	Receiver-39	Receiver-40	Receiver-41	Receiver-42	Receiver-43	Receiver-44	Receiver-45	Receiver-46	Receiver-47	Receiver-48	Receiver-49	Receiver-50	Receiver-51	Receiver-52	Receiver-53	Receiver-54	Receiver-55
Week		Sound Insulated				Sound Insulated	Sound Insulated					Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Yes				Sound Insulated
2	0.8	0.7	0.8	0.8	0.4	1.3	1.9	0.9	0.7	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	1.2	1.1	1.2	1.7	0.6	1.4	0.8	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	1.2	1.1	1.2	1.6	0.6	1.4	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.4	0.4	0.4	0.5	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.4	0.4	0.4	0.5	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.6	0.6	0.6	0.7	0.3	0.8	0.5	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.2	0.2	0.2	0.3	0.1	0.4	0.7	0.5	0.6	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	1.6	1.3	1.4	1.6	0.6	0.5	0.7	0.6	0.6	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	1.6	1.3	1.4	1.6	0.6	0.5	0.7	0.6	0.6	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	1.2	1.1	1.2	1.3	0.6	1.2	1.0	0.7	0.7	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	1.2	1.1	1.2	1.3	0.6	1.2	1.0	0.7	0.7	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	1.2	1.1	1.2	1.3	0.6	1.2	1.0	0.7	0.7	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	1.2	1.1	1.2	1.3	0.6	1.2	1.0	0.7	0.7	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	1.2	1.1	1.2	1.3	0.6	1.2	1.0	0.7	0.6	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	1.2	1.0	1.0	1.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	1.2	1.0	1.0	1.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	1.2	1.0	1.0	1.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.4	0.4	0.4	0.3	0.1	0.4	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.4	0.4	0.4	0.3	0.1	0.4	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.4	0.4	0.4	0.3	0.1	0.4	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.4	0.4	0.4	0.3	0.1	0.4	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74	0.4	0.4	0.4	0.3	0.1	0.4	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76	0.5	0.4	0.4	0.4	0.2	0.7	0.7	0.4	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.5	0.4	0.4	0.4	0.2	0.7	0.7	0.4	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	0.5	0.4	0.4	0.4	0.2	0.7	0.7	0.4	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.3	0.3	0.3	0.4	0.2	0.4	0.4	0.3	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106	0.3	0.3	0.3	0.4	0.2	0.4	0.4	0.3	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108	0.3	0.3	0.3	0.4	0.2	0.4	0.4	0.3	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	0.7	0.6	0.6	0.7	0.2	0.4	0.4	0.3	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.5	0.4	0.4	0.5	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114	0.5	0.4	0.4	0.5	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	0.5	0.4	0.4	0.5	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE A-9: C02 - PROJECTED INCREASE OF COMBINED AMBIENT AND CONSTRUCTION NOISE LEVEL (LEQ) COMPARED TO AMBIENT NOISE LEVEL BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 56-87)

	Receiver-56	Receiver-57	Receiver-58	Receiver-59	Receiver-60	Receiver-61	Receiver-62	Receiver-63	Receiver-64	Receiver-65	Receiver-66	Receiver-67	Receiver-68	Receiver-69	Receiver-70	Receiver-71	Receiver-72	Receiver-73	Receiver-74	Receiver-75	Receiver-76	Receiver-77	Receiver-78	Receiver-79	Receiver-80	Receiver-81	Receiver-82	Receiver-83	Receiver-84	Receiver-85	Receiver-86	Receiver-87
Week			Sound Insulated							Sound Insulated	Sound Insulated	Sound Insulated				Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated			Sound Insulated	Sound Insulated			Sound Insulated						
2	0.4	0.4	0.4	0.3	0.2	0.4	0.2	0.1	0.2	0.2	0.1	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.6	0.4	0.5	0.4	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
4	0.7	0.6	0.6	0.4	0.4	0.8	0.4	0.2	0.2	0.3	0.2	0.6	0.4	0.4	0.5	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.6	0.5	0.6	0.4	0.4	0.8	0.3	0.2	0.2	0.3	0.2	0.6	0.4	0.4	0.4	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.3	0.3	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
16	0.7	0.6	0.7	0.4	0.3	0.6	0.3	0.1	0.2	0.3	0.2	0.7	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
18	0.7	0.6	0.7	0.4	0.3	0.6	0.3	0.1	0.2	0.3	0.2	0.7	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.5	0.5	0.6	0.4	0.3	0.6	0.3	0.2	0.2	0.4	0.2	0.7	0.4	0.4	0.4	0.3	0.1	0.1	0.1	0.4	0.2	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
36	0.5	0.5	0.6	0.4	0.3	0.6	0.3	0.2	0.2	0.4	0.2	0.7	0.4	0.4	0.4	0.3	0.1	0.1	0.1	0.4	0.2	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
38	0.5	0.5	0.6	0.4	0.3	0.6	0.3	0.2	0.2	0.4	0.2	0.7	0.4	0.4	0.4	0.3	0.1	0.1	0.1	0.4	0.2	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
40	0.5	0.5	0.6	0.4	0.3	0.6	0.3	0.2	0.2	0.4	0.2	0.7	0.4	0.4	0.4	0.3	0.1	0.1	0.1	0.4	0.2	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
42	0.5	0.5	0.6	0.4	0.3	0.6	0.3	0.2	0.2	0.3	0.2	0.7	0.4	0.4	0.4	0.3	0.1	0.1	0.1	0.4	0.2	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
44	0.5	0.5	0.5	0.3	0.2	0.4	0.2	0.1	0.1	0.2	0.1	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.5	0.5	0.5	0.3	0.2	0.4	0.2	0.1	0.1	0.2	0.1	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	0.5	0.5	0.5	0.3	0.2	0.4	0.2	0.1	0.1	0.2	0.1	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	0.4	0.3	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.3	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114	0.3	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	0.3	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE A- 10: C03 CONSTRUCTION NOISE LEVELS (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 1-30)

	Receiver-1	Receiver-2	Receiver-3	Receiver-4	Receiver-5	Receiver-6	Receiver-7	Receiver-8	Receiver-9	Receiver-10	Receiver-11	Receiver-12	Receiver-13	Receiver-14	Receiver-15
Week	Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	
2	30.8	24.1	25.4	25.3	33.4	36.7	35.8	35.8	39.4	44.8	49.4	56.9	62.1	69.9	70.3
4	22.9	15.1	16.1	16.7	25.0	27.7	27.4	27.7	30.7	35.1	39.2	45.8	51.3	60.6	61.1
6	33.3	26.8	27.9	26.3	33.7	37.4	37.0	37.2	40.5	45.4	49.0	55.3	60.8	70.1	70.5
8	33.3	26.8	27.9	26.3	33.7	37.4	37.0	37.2	40.5	45.4	49.0	55.3	60.8	70.1	70.5
10	17.9	16.5	17.6	17.8	27.0	32.1	31.1	30.1	34.4	40.1	43.5	51.3	56.2	64.6	65.4
12	17.9	16.5	17.6	17.8	27.0	32.1	31.1	30.1	34.4	40.1	43.5	51.3	56.2	64.6	65.4
14	17.9	16.5	17.6	17.8	27.0	32.1	31.1	30.1	34.4	40.1	43.5	51.3	56.2	64.6	65.4
16	27.3	21.6	22.8	23.0	31.2	35.1	34.2	33.8	37.6	42.9	46.6	54.0	59.1	67.6	68.2
18	26.8	20.0	21.3	21.4	29.1	32.1	31.3	31.4	34.7	39.7	43.8	50.7	56.0	64.5	64.9
20	23.8	17.9	19.0	19.1	25.7	30.9	31.0	29.4	34.4	40.3	45.0	52.9	58.5	68.7	69.9
22	25.7	18.0	19.3	19.7	28.1	31.0	30.5	30.7	33.7	38.9	43.1	50.2	55.7	64.2	64.6
24	14.0	12.3	13.2	12.4	22.9	27.1	26.3	27.5	30.4	35.2	39.8	46.1	50.8	59.0	60.1
26	14.0	12.3	13.2	12.4	22.9	27.1	26.3	27.5	30.4	35.2	39.8	46.1	50.8	59.0	60.1
28	14.0	12.3	13.2	12.4	22.9	27.1	26.3	27.5	30.4	35.2	39.8	46.1	50.8	59.0	60.1
30	14.0	12.3	13.2	12.4	22.9	27.1	26.3	27.5	30.4	35.2	39.8	46.1	50.8	59.0	60.1
32	14.0	12.3	13.2	12.4	22.9	27.1	26.3	27.5	30.4	35.2	39.8	46.1	50.8	59.0	60.1
34	24.5	20.3	21.2	20.3	28.5	34.9	33.6	33.9	37.3	44.2	49.3	56.1	60.9	68.7	69.5
36	24.5	20.3	21.2	20.3	28.5	34.9	33.6	33.9	37.3	44.2	49.3	56.1	60.9	68.7	69.5
38	24.1	19.5	20.5	19.5	27.2	34.1	32.7	32.7	36.4	43.6	48.8	55.7	60.5	68.2	69.0
40	24.1	19.5	20.5	19.5	27.2	34.1	32.7	32.7	36.4	43.6	48.8	55.7	60.5	68.2	69.0
42	24.1	19.5	20.5	19.5	27.2	34.1	32.7	32.7	36.4	43.6	48.8	55.7	60.5	68.2	69.0
44	18.1	16.7	18.3	17.6	29.6	32.5	32.3	32.0	36.7	43.8	49.5	55.9	59.9	66.5	68.2
46	18.1	16.7	18.3	17.6	29.6	32.5	32.3	32.0	36.7	43.8	49.5	55.9	59.9	66.5	68.2
48	19.6	18.2	19.3	19.8	25.3	32.1	33.4	30.8	37.4	44.3	50.8	56.8	60.6	67.4	68.6
50	19.6	18.2	19.3	19.8	25.3	32.1	33.4	30.8	37.4	44.3	50.8	56.8	60.6	67.4	68.6
52	22.6	21.3	22.2	22.1	27.2	34.2	34.2	33.5	38.7	43.3	47.9	54.5	59.4	67.6	68.0
54	25.2	23.7	24.7	24.7	30.0	36.4	36.3	35.4	40.6	45.5	50.3	57.4	62.7	71.1	71.7
56	24.2	22.6	23.7	23.8	28.8	34.8	34.9	33.6	38.9	43.8	49.1	56.5	61.8	70.2	70.7
58	22.3	21.0	22.1	22.1	27.0	33.1	33.5	32.1	37.6	42.1	47.8	54.3	58.9	66.6	67.2
60	17.5	16.5	17.7	17.6	23.0	28.6	29.2	27.4	33.0	37.9	43.5	49.9	54.2	61.6	62.4
62	17.5	16.5	17.7	17.6	23.0	28.6	29.2	27.4	33.0	37.9	43.5	49.9	54.2	61.6	62.4

	Receiver-16	Receiver-17	Receiver-18	Receiver-19	Receiver-20	Receiver-21	Receiver-22	Receiver-23	Receiver-24	Receiver-25	Receiver-26	Receiver-27	Receiver-28	Receiver-29	Receiver-30
Week	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated
2	70.3	70.3	68.8	68.3	66.8	63.5	71.8	63.8	62.9	63.7	60.4	61.1	60.0	62.7	22.5
4	61.0	61.0	59.5	59.0	58.0	53.9	62.9	54.0	53.0	53.4	50.0	50.7	49.8	52.8	13.6
6	70.5	70.7	69.0	68.5	67.4	63.3	72.6	63.4	62.3	62.7	59.4	60.2	59.3	62.2	24.7
8	70.5	70.7	69.0	68.5	67.4	63.3	72.6	63.4	62.3	62.7	59.4	60.2	59.3	62.2	24.7
10	65.4	65.5	64.2	63.7	62.3	58.7	67.6	59.1	58.2	58.8	55.3	55.8	54.8	57.2	13.5
12	65.4	65.5	64.2	63.7	62.3	58.7	67.6	59.1	58.2	58.8	55.3	55.8	54.8	57.2	13.5
14	65.4	65.5	64.2	63.7	62.3	58.7	67.6	59.1	58.2	58.8	55.3	55.8	54.8	57.2	13.5
16	68.1	68.2	66.8	66.3	64.9	61.3	70.1	61.6	60.7	61.3	57.9	58.5	57.5	60.1	19.6
18	64.8	64.9	63.4	62.9	61.6	57.9	66.5	58.1	57.1	57.7	54.4	55.1	54.1	56.9	18.4
20	70.0	70.0	68.1	67.6	66.0	62.3	67.8	59.6	58.0	55.2	50.4	50.0	47.6	47.8	15.3
22	64.5	64.6	63.1	62.6	61.4	57.6	66.3	57.8	56.8	57.4	53.9	54.7	53.6	56.6	16.5
24	60.1	60.5	59.1	58.6	57.6	55.0	65.8	57.8	56.5	56.7	52.6	52.6	50.6	50.8	9.5
26	60.1	60.5	59.1	58.6	57.6	55.0	65.8	57.8	56.5	56.7	52.6	52.6	50.6	50.8	9.5
28	60.1	60.5	59.1	58.6	57.6	55.0	65.8	57.8	56.5	56.7	52.6	52.6	50.6	50.8	9.5
30	60.1	60.5	59.1	58.6	57.6	55.0	65.8	57.8	56.5	56.7	52.6	52.6	50.6	50.8	9.5
32	60.1	60.5	59.1	58.6	57.6	55.0	65.8	57.8	56.5	56.7	52.6	52.6	50.6	50.8	9.5
34	69.6	69.7	68.6	68.2	67.1	64.5	73.0	65.0	64.0	64.4	61.0	61.4	60.0	62.3	17.9
36	69.6	69.7	68.6	68.2	67.1	64.5	73.0	65.0	64.0	64.4	61.0	61.4	60.0	62.3	17.9
38	69.1	69.1	68.1	67.7	66.6	63.9	72.0	64.1	63.1	63.6	60.3	60.7	59.5	61.9	17.2
40	69.1	69.1	68.1	67.7	66.6	63.9	72.0	64.1	63.1	63.6	60.3	60.7	59.5	61.9	17.2
42	69.1	69.1	68.1	67.7	66.6	63.9	72.0	64.1	63.1	63.6	60.3	60.7	59.5	61.9	17.2
44	68.2	68.7	67.5	67.0	65.6	63.1	72.3	65.1	64.1	64.4	60.3	60.2	58.1	59.0	14.0
46	68.2	68.7	67.5	67.0	65.6	63.1	72.3	65.1	64.1	64.4	60.3	60.2	58.1	59.0	14.0
48	68.8	68.8	67.7	67.2	66.2	63.6	73.8	65.7	64.7	64.6	61.0	60.6	58.4	59.0	14.8
50	68.8	68.8	67.7	67.2	66.2	63.6	73.8	65.7	64.7	64.6	61.0	60.6	58.4	59.0	14.8
52	68.1	68.1	66.4	65.8	64.5	60.5	72.1	63.1	61.8	61.1	57.7	57.5	54.6	55.3	17.9
54	71.7	71.7	69.9	69.3	67.6	63.8	73.8	65.0	63.8	63.0	59.4	59.1	56.2	56.8	20.5
56	70.8	70.7	68.9	68.3	66.8	63.0	73.5	64.5	63.3	62.5	58.6	58.0	54.9	55.5	19.4
58	67.3	67.3	65.7	65.2	64.5	60.4	73.1	64.0	62.8	62.2	58.4	57.8	54.7	55.3	17.6
60	62.5	62.6	61.1	60.6	59.7	56.2	68.0	59.2	58.1	57.7	53.9	53.3	50.6	51.3	13.1
62	62.5	62.6	61.1	60.6	59.7	56.2	68.0	59.2	58.1	57.7	53.9	53.3	50.6	51.3	13.1

Table A- 11: C03 Construction Noise Levels (Leq) by Receiver per 2-Week Increments (Receivers 31-55)

	Receiver-31	Receiver-32	Receiver-33	Receiver-34	Receiver-35	Receiver-36	Receiver-37	Receiver-38	Receiver-39	Receiver-40	Receiver-41	Receiver-42	Receiver-43	Receiver-44	Receiver-45	Receiver-46	Receiver-47	Receiver-48	Receiver-49	Receiver-50	Receiver-51	Receiver-52	Receiver-53	Receiver-54	Receiver-55
Week		Sound Insulated				Sound Insulated	Sound Insulated					Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Yes				Sound Insulated
2	26.6	27.1	32.7	35.6	35.1	41.7	48.3	56.8	58.9	62.8	63.3	62.0	61.7	59.9	58.5	58.0	55.5	54.8	56.1	56.6	56.5	52.0	52.1	51.7	59.4
4	17.5	17.8	22.2	25.4	24.4	32.8	39.0	46.6	48.7	52.7	53.3	52.0	51.9	50.1	49.1	48.9	46.3	46.1	47.3	47.6	47.7	44.2	44.4	43.6	49.0
6	28.9	28.7	32.6	36.0	35.4	42.9	48.9	56.0	58.1	62.2	62.7	61.4	61.4	59.6	58.5	58.2	55.5	55.1	57.0	57.3	57.2	53.8	54.1	53.5	58.6
8	28.9	28.7	32.6	36.0	35.4	42.9	48.9	56.0	58.1	62.2	62.7	61.4	61.4	59.6	58.5	58.2	55.5	55.1	57.0	57.3	57.2	53.8	54.1	53.5	58.6
10	19.9	18.2	26.2	30.8	28.4	36.2	44.0	51.6	53.6	57.8	58.3	57.2	56.8	55.3	53.8	53.4	50.4	47.2	51.9	51.0	51.1	47.3	47.9	47.5	54.0
12	19.9	18.2	26.2	30.8	28.4	36.2	44.0	51.6	53.6	57.8	58.3	57.2	56.8	55.3	53.8	53.4	50.4	47.2	51.9	51.0	51.1	47.3	47.9	47.5	54.0
14	19.9	18.2	26.2	30.8	28.4	36.2	44.0	51.6	53.6	57.8	58.3	57.2	56.8	55.3	53.8	53.4	50.4	47.2	51.9	51.0	51.1	47.3	47.9	47.5	54.0
16	24.3	24.1	30.5	34.1	32.9	39.7	46.7	54.3	56.4	60.5	61.0	59.8	59.4	57.8	56.4	56.0	53.3	51.7	54.4	54.2	54.2	50.5	50.8	50.3	56.7
18	22.4	22.8	28.5	31.4	31.0	37.2	43.3	51.0	53.1	57.1	57.6	56.3	56.1	54.3	53.0	52.6	50.1	49.8	50.9	51.3	51.3	47.6	47.7	47.1	53.4
20	20.8	22.3	24.8	28.1	27.9	37.0	44.9	54.6	56.7	61.2	62.0	60.5	59.9	57.8	55.9	55.2	52.2	50.0	53.8	51.5	47.8	41.6	41.1	40.0	46.4
22	20.7	21.1	25.7	28.9	27.9	36.0	42.6	50.5	52.6	56.7	57.2	55.9	55.7	53.9	52.7	52.4	49.6	49.3	50.5	51.0	50.9	47.1	47.3	46.6	52.9
24	15.5	14.1	20.2	25.3	22.1	32.4	39.8	47.4	49.1	53.5	54.5	53.7	52.3	51.2	50.2	48.6	46.3	44.4	49.6	49.4	47.7	46.5	43.9	42.8	49.4
26	15.5	14.1	20.2	25.3	22.1	32.4	39.8	47.4	49.1	53.5	54.5	53.7	52.3	51.2	50.2	48.6	46.3	44.4	49.6	49.4	47.7	46.5	43.9	42.8	49.4
28	15.5	14.1	20.2	25.3	22.1	32.4	39.8	47.4	49.1	53.5	54.5	53.7	52.3	51.2	50.2	48.6	46.3	44.4	49.6	49.4	47.7	46.5	43.9	42.8	49.4
30	15.5	14.1	20.2	25.3	22.1	32.4	39.8	47.4	49.1	53.5	54.5	53.7	52.3	51.2	50.2	48.6	46.3	44.4	49.6	49.4	47.7	46.5	43.9	42.8	49.4
32	15.5	14.1	20.2	25.3	22.1	32.4	39.8	47.4	49.1	53.5	54.5	53.7	52.3	51.2	50.2	48.6	46.3	44.4	49.6	49.4	47.7	46.5	43.9	42.8	49.4
34	22.5	24.7	27.9	32.2	31.1	39.6	47.8	56.3	58.3	62.1	62.8	61.9	61.6	60.1	58.7	58.0	55.3	53.0	56.5	56.8	55.6	50.8	49.7	49.4	59.4
36	22.5	24.7	27.9	32.2	31.1	39.6	47.8	56.3	58.3	62.1	62.8	61.9	61.6	60.1	58.7	58.0	55.3	53.0	56.5	56.8	55.6	50.8	49.7	49.4	59.4
38	21.6	24.3	27.1	31.3	30.5	38.6	47.0	55.7	57.7	61.4	62.1	61.2	61.0	59.5	58.0	57.5	54.7	52.3	55.5	55.9	54.9	48.8	48.4	48.3	58.9
40	21.6	24.3	27.1	31.3	30.5	38.6	47.0	55.7	57.7	61.4	62.1	61.2	61.0	59.5	58.0	57.5	54.7	52.3	55.5	55.9	54.9	48.8	48.4	48.3	58.9
42	21.6	24.3	27.1	31.3	30.5	38.6	47.0	55.7	57.7	61.4	62.1	61.2	61.0	59.5	58.0	57.5	54.7	52.3	55.5	55.9	54.9	48.8	48.4	48.3	58.9
44	20.5	19.4	26.8	31.1	28.9	39.7	48.2	56.7	58.4	61.9	62.7	62.0	61.2	59.8	58.4	57.4	54.1	51.2	56.2	56.3	55.1	51.0	48.8	48.2	57.0
46	20.5	19.4	26.8	31.1	28.9	39.7	48.2	56.7	58.4	61.9	62.7	62.0	61.2	59.8	58.4	57.4	54.1	51.2	56.2	56.3	55.1	51.0	48.8	48.2	57.0
48	20.5	19.8	23.0	30.6	29.1	39.8	48.2	56.9	58.8	61.9	62.4	61.6	61.0	59.6	58.3	57.7	54.5	51.7	56.9	57.4	55.6	52.4	46.6	46.4	56.9
50	20.5	19.8	23.0	30.6	29.1	39.8	48.2	56.9	58.8	61.9	62.4	61.6	61.0	59.6	58.3	57.7	54.5	51.7	56.9	57.4	55.6	52.4	46.6	46.4	56.9
52	23.2	22.0	25.5	32.0	31.1	38.7	45.7	54.3	56.3	60.2	60.8	59.8	58.7	57.1	55.7	55.1	51.8	49.3	55.0	55.0	52.0	53.0	47.6	45.9	53.2
54	25.8	25.7	28.8	34.5	33.6	41.4	48.5	57.4	59.6	63.7	64.3	63.1	62.2	60.3	58.8	58.1	54.8	52.3	56.8	57.0	54.1	54.2	48.5	47.1	54.8
56	24.8	24.9	27.4	33.2	31.8	40.5	47.6	56.5	58.6	62.8	63.4	62.2	61.1	59.3	57.8	57.1	53.9	51.3	56.1	56.3	53.4	53.4	45.1	44.7	53.5
58	23.1	22.0	24.6	31.4	29.5	38.7	45.6	54.2	56.0	59.6	60.2	59.5	58.0	56.6	55.5	55.0	51.7	49.0	55.5	55.6	52.6	53.4	44.7	44.3	53.4
60	18.6	18.0	21.4	27.5	25.8	34.4	41.3	49.8	51.6	55.2	55.7	54.9	53.8	52.3	51.1	50.6	47.2	44.6	50.6	50.8	48.1	47.8	40.3	40.0	49.3
62	18.6	18.0	21.4	27.5	25.8	34.4	41.3	49.8	51.6	55.2	55.7	54.9	53.8	52.3	51.1	50.6	47.2	44.6	50.6	50.8	48.1	47.8	40.3	40.0	49.3

TABLE A- 12: C03 CONSTRUCTION NOISE LEVELS (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 56-87)

	Receiver-56	Receiver-57	Receiver-58	Receiver-59	Receiver-60	Receiver-61	Receiver-62	Receiver-63	Receiver-64	Receiver-65	Receiver-66	Receiver-67	Receiver-68	Receiver-69	Receiver-70	Receiver-71
Week			Sound Insulated							Sound Insulated	Sound Insulated	Sound Insulated				Sound Insulated
2	21.6	24.4	28.2	33.7	35.2	34.5	34.4	35.8	35.1	35.9	35.8	37.4	37.8	38.5	39.1	40.3
4	12.5	15.7	19.4	25.0	27.0	25.6	23.9	28.3	27.0	27.6	27.6	28.6	29.2	29.8	30.3	31.5
6	23.5	26.8	29.6	34.4	36.8	35.6	34.8	37.8	36.7	37.4	37.3	38.3	38.6	39.2	39.8	41.0
8	23.5	26.8	29.6	34.4	36.8	35.6	34.8	37.8	36.7	37.4	37.3	38.3	38.6	39.2	39.8	41.0
10	13.9	16.0	22.6	29.3	32.3	30.9	28.3	33.4	33.1	31.8	34.8	32.1	36.2	35.0	36.2	37.1
12	13.9	16.0	22.6	29.3	32.3	30.9	28.3	33.4	33.1	31.8	34.8	32.1	36.2	35.0	36.2	37.1
14	13.9	16.0	22.6	29.3	32.3	30.9	28.3	33.4	33.1	31.8	34.8	32.1	36.2	35.0	36.2	37.1
16	19.1	21.6	26.3	32.3	34.6	33.6	32.4	35.6	35.1	34.8	36.4	35.6	38.0	37.5	38.5	39.5
18	17.6	20.2	23.9	29.3	30.9	30.2	30.3	31.7	30.9	31.8	31.5	33.0	33.4	34.0	34.6	35.8
20	15.6	18.4	24.4	28.3	27.6	27.6	27.0	30.4	29.1	29.4	29.7	31.7	32.5	33.3	34.4	36.0
22	15.4	18.6	22.6	28.3	30.1	28.8	27.4	31.1	30.0	30.5	30.6	31.5	32.1	32.7	33.3	34.6
24	10.0	12.1	20.4	27.4	28.4	25.6	23.3	27.4	25.7	28.7	32.3	28.5	32.7	32.6	31.7	33.4
26	10.0	12.1	20.4	27.4	28.4	25.6	23.3	27.4	25.7	28.7	32.3	28.5	32.7	32.6	31.7	33.4
28	10.0	12.1	20.4	27.4	28.4	25.6	23.3	27.4	25.7	28.7	32.3	28.5	32.7	32.6	31.7	33.4
30	10.0	12.1	20.4	27.4	28.4	25.6	23.3	27.4	25.7	28.7	32.3	28.5	32.7	32.6	31.7	33.4
32	10.0	12.1	20.4	27.4	28.4	25.6	23.3	27.4	25.7	28.7	32.3	28.5	32.7	32.6	31.7	33.4
34	17.6	19.8	26.5	31.9	33.4	31.8	30.6	32.0	30.5	32.8	34.8	33.9	36.5	36.8	37.0	38.2
36	17.6	19.8	26.5	31.9	33.4	31.8	30.6	32.0	30.5	32.8	34.8	33.9	36.5	36.8	37.0	38.2
38	16.8	19.0	25.3	30.1	31.7	30.6	29.8	30.1	28.8	30.7	31.2	32.4	34.1	34.6	35.5	36.5
40	16.8	19.0	25.3	30.1	31.7	30.6	29.8	30.1	28.8	30.7	31.2	32.4	34.1	34.6	35.5	36.5
42	16.8	19.0	25.3	30.1	31.7	30.6	29.8	30.1	28.8	30.7	31.2	32.4	34.1	34.6	35.5	36.5
44	14.5	16.8	25.8	32.6	32.3	30.6	29.2	31.4	30.5	35.5	36.7	33.9	39.2	37.7	37.3	39.1
46	14.5	16.8	25.8	32.6	32.3	30.6	29.2	31.4	30.5	35.5	36.7	33.9	39.2	37.7	37.3	39.1
48	15.6	17.2	24.9	28.7	30.2	29.1	27.8	27.7	29.6	30.1	30.9	32.7	34.2	34.8	36.1	37.8
50	15.6	17.2	24.9	28.7	30.2	29.1	27.8	27.7	29.6	30.1	30.9	32.7	34.2	34.8	36.1	37.8
52	18.5	19.9	26.2	29.9	32.3	31.2	29.5	30.2	31.4	31.4	32.1	33.7	34.8	35.2	36.2	37.4
54	21.0	22.8	28.8	32.5	34.3	33.5	32.3	32.4	33.6	34.0	34.4	36.2	37.3	37.8	38.8	40.1
56	20.0	21.7	28.1	31.6	33.3	32.3	30.9	31.3	32.6	32.9	33.5	35.2	36.4	36.9	37.9	39.2
58	18.2	19.6	26.4	29.9	32.4	30.8	28.6	30.0	31.4	31.0	32.4	33.5	34.9	35.3	36.3	37.5
60	13.6	15.1	21.6	25.3	27.5	26.5	24.9	25.3	26.7	26.7	27.7	29.0	30.3	30.8	31.8	33.1
62	13.6	15.1	21.6	25.3	27.5	26.5	24.9	25.3	26.7	26.7	27.7	29.0	30.3	30.8	31.8	33.1

	Receiver-72	Receiver-73	Receiver-74	Receiver-75	Receiver-76	Receiver-77	Receiver-78	Receiver-79	Receiver-80	Receiver-81	Receiver-82	Receiver-83	Receiver-84	Receiver-85	Receiver-86	Receiver-87
Week	Sound Insulated	Sound Insulated	Sound Insulated			Sound Insulated	Sound Insulated			Sound Insulated						
2	41.2	43.6	43.6	47.9	47.3	50.3	53.1	56.2	58.4	58.5	53.0	51.5	49.0	45.1	48.2	60.3
4	32.4	35.3	34.7	38.7	38.0	40.6	43.0	45.9	48.4	48.2	43.2	42.2	40.2	37.6	40.3	51.1
6	42.0	45.0	44.5	48.6	48.1	50.2	52.3	55.2	57.7	57.5	53.0	51.8	49.7	47.4	50.5	60.4
8	42.0	45.0	44.5	48.6	48.1	50.2	52.3	55.2	57.7	57.5	53.0	51.8	49.7	47.4	50.5	60.4
10	38.2	38.9	39.0	43.1	42.5	45.5	48.3	51.4	53.6	53.7	48.6	46.7	44.1	38.2	44.1	54.8
12	38.2	38.9	39.0	43.1	42.5	45.5	48.3	51.4	53.6	53.7	48.6	46.7	44.1	38.2	44.1	54.8
14	38.2	38.9	39.0	43.1	42.5	45.5	48.3	51.4	53.6	53.7	48.6	46.7	44.1	38.2	44.1	54.8
16	40.6	42.1	42.0	46.0	45.5	48.3	50.9	53.9	56.2	56.2	51.1	49.5	47.1	42.9	47.0	57.8
18	36.8	39.2	39.0	43.0	42.4	45.0	47.5	50.4	52.7	52.7	47.6	46.2	44.2	41.0	43.9	54.8
20	37.4	39.4	40.0	44.6	44.2	47.7	50.8	54.0	56.4	56.4	50.0	48.3	44.2	40.2	48.7	44.7
22	35.5	38.4	38.0	42.2	41.6	44.2	46.8	49.8	52.2	52.2	46.8	45.7	43.3	40.5	43.1	54.6
24	36.1	33.2	34.5	39.2	38.4	41.3	43.9	46.9	50.1	49.9	44.7	43.6	39.6	37.2	39.4	47.0
26	36.1	33.2	34.5	39.2	38.4	41.3	43.9	46.9	50.1	49.9	44.7	43.6	39.6	37.2	39.4	47.0
28	36.1	33.2	34.5	39.2	38.4	41.3	43.9	46.9	50.1	49.9	44.7	43.6	39.6	37.2	39.4	47.0
30	36.1	33.2	34.5	39.2	38.4	41.3	43.9	46.9	50.1	49.9	44.7	43.6	39.6	37.2	39.4	47.0
32	36.1	33.2	34.5	39.2	38.4	41.3	43.9	46.9	50.1	49.9	44.7	43.6	39.6	37.2	39.4	47.0
34	40.2	40.4	42.2	47.3	46.8	50.2	53.1	56.1	58.3	58.6	52.9	51.4	48.0	41.7	47.2	59.5
36	40.2	40.4	42.2	47.3	46.8	50.2	53.1	56.1	58.3	58.6	52.9	51.4	48.0	41.7	47.2	59.5
38	38.1	39.5	41.4	46.5	46.1	49.6	52.5	55.5	57.6	58.0	52.2	50.6	47.3	39.8	46.4	59.3
40	38.1	39.5	41.4	46.5	46.1	49.6	52.5	55.5	57.6	58.0	52.2	50.6	47.3	39.8	46.4	59.3
42	38.1	39.5	41.4	46.5	46.1	49.6	52.5	55.5	57.6	58.0	52.2	50.6	47.3	39.8	46.4	59.3
44	42.7	40.0	41.8	47.6	47.0	50.2	53.2	56.3	58.6	58.7	52.9	51.5	46.6	41.7	43.9	55.2
46	42.7	40.0	41.8	47.6	47.0	50.2	53.2	56.3	58.6	58.7	52.9	51.5	46.6	41.7	43.9	55.2
48	39.3	40.6	42.2	47.8	47.1	50.9	53.6	56.5	58.4	58.4	52.3	51.6	46.8	40.1	43.8	54.9
50	39.3	40.6	42.2	47.8	47.1	50.9	53.6	56.5	58.4	58.4	52.3	51.6	46.8	40.1	43.8	54.9
52	38.6	39.8	40.8	45.2	44.5	47.9	50.7	53.9	56.0	55.9	49.6	49.6	45.2	42.1	45.8	51.5
54	41.3	42.6	43.5	48.2	47.5	50.9	53.8	57.1	59.3	59.2	52.8	52.2	47.9	44.1	49.2	53.0
56	40.5	41.6	42.5	47.2	46.5	50.0	52.8	56.2	58.3	58.3	51.7	51.5	46.8	42.6	48.5	51.5
58	38.7	39.6	40.7	45.2	44.3	47.9	50.5	53.7	55.6	55.6	48.8	49.8	44.8	41.0	45.5	51.3
60	34.2	35.2	36.4	40.9	40.1	43.7	46.2	49.4	51.3	51.2	44.7	45.1	40.4	36.2	40.3	47.3
62	34.2	35.2	36.4	40.9	40.1	43.7	46.2	49.4	51.3	51.2	44.7	45.1	40.4	36.2	40.3	47.3

TABLE A-13: C03 - LOGARITHMIC COMBINATION OF AMBIENT NOISE AND CONSTRUCTION NOISE (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 1-30)

	Receiver-1	Receiver-2	Receiver-3	Receiver-4	Receiver-5	Receiver-6	Receiver-7	Receiver-8	Receiver-9	Receiver-10	Receiver-11	Receiver-12	Receiver-13	Receiver-14	Receiver-15
Week	Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	
2	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	67.5	71.4	71.7
4	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	67.1	67.2
6	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.2	71.5	71.8
8	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.2	71.5	71.8
10	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	68.4	68.7
12	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	68.4	68.7
14	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	68.4	68.7
16	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.3	66.8	69.9	70.2
18	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	68.3	68.5
20	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.2	66.7	70.6	71.4
22	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	68.2	68.4
24	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.8	67.0
26	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.8	67.0
28	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.8	67.0
30	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.8	67.0
32	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.8	67.0
34	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.2	70.6	71.1
36	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.2	70.6	71.1
38	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.1	70.3	70.7
40	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.1	70.3	70.7
42	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.1	70.3	70.7
44	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.0	69.3	70.2
46	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	67.0	69.3	70.2
48	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	67.1	69.8	70.5
50	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	67.1	69.8	70.5
52	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.3	66.9	69.9	70.1
54	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.6	67.7	72.3	72.7
56	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	67.4	71.6	72.0
58	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.3	66.8	69.3	69.6
60	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.3	67.3	67.6
62	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.3	67.3	67.6

	Receiver-16	Receiver-17	Receiver-18	Receiver-19	Receiver-20	Receiver-21	Receiver-22	Receiver-23	Receiver-24	Receiver-25	Receiver-26	Receiver-27	Receiver-28	Receiver-29	Receiver-30
Week	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated
2	71.7	71.7	70.6	70.3	69.4	67.9	72.8	68.1	67.7	68.0	67.1	67.2	67.0	67.7	66.0
4	67.2	67.2	66.9	66.8	66.6	66.3	67.7	66.3	66.2	66.2	66.1	66.1	66.1	66.2	66.0
6	71.8	71.9	70.8	70.5	69.8	67.9	73.5	67.9	67.5	67.7	66.9	67.0	66.8	67.5	66.0
8	71.8	71.9	70.8	70.5	69.8	67.9	73.5	67.9	67.5	67.7	66.9	67.0	66.8	67.5	66.0
10	68.7	68.8	68.2	68.0	67.5	66.7	69.9	66.8	66.7	66.8	66.4	66.4	66.3	66.5	66.0
12	68.7	68.8	68.2	68.0	67.5	66.7	69.9	66.8	66.7	66.8	66.4	66.4	66.3	66.5	66.0
14	68.7	68.8	68.2	68.0	67.5	66.7	69.9	66.8	66.7	66.8	66.4	66.4	66.3	66.5	66.0
16	70.2	70.3	69.4	69.2	68.5	67.3	71.5	67.4	67.1	67.3	66.6	66.7	66.6	67.0	66.0
18	68.5	68.5	67.9	67.7	67.3	66.6	69.3	66.7	66.5	66.6	66.3	66.3	66.3	66.5	66.0
20	71.4	71.4	70.2	69.9	69.0	67.5	70.0	66.9	66.6	66.3	66.1	66.1	66.1	66.1	66.0
22	68.3	68.3	67.8	67.6	67.3	66.6	69.2	66.6	66.5	66.6	66.3	66.3	66.2	66.5	66.0
24	67.0	67.1	66.8	66.7	66.6	66.3	68.9	66.6	66.5	66.5	66.2	66.2	66.1	66.1	66.0
26	67.0	67.1	66.8	66.7	66.6	66.3	68.9	66.6	66.5	66.5	66.2	66.2	66.1	66.1	66.0
28	67.0	67.1	66.8	66.7	66.6	66.3	68.9	66.6	66.5	66.5	66.2	66.2	66.1	66.1	66.0
30	67.0	67.1	66.8	66.7	66.6	66.3	68.9	66.6	66.5	66.5	66.2	66.2	66.1	66.1	66.0
32	67.0	67.1	66.8	66.7	66.6	66.3	68.9	66.6	66.5	66.5	66.2	66.2	66.1	66.1	66.0
34	71.2	71.2	70.5	70.3	69.6	68.3	73.8	68.5	68.1	68.3	67.2	67.3	67.0	67.5	66.0
36	71.2	71.2	70.5	70.3	69.6	68.3	73.8	68.5	68.1	68.3	67.2	67.3	67.0	67.5	66.0
38	70.8	70.8	70.2	70.0	69.3	68.1	73.0	68.1	67.8	68.0	67.0	67.1	66.9	67.4	66.0
40	70.8	70.8	70.2	70.0	69.3	68.1	73.0	68.1	67.8	68.0	67.0	67.1	66.9	67.4	66.0
42	70.8	70.8	70.2	70.0	69.3	68.1	73.0	68.1	67.8	68.0	67.0	67.1	66.9	67.4	66.0
44	70.3	70.6	69.8	69.5	68.8	67.8	73.2	68.6	68.2	68.3	67.0	67.0	66.7	66.8	66.0
46	70.3	70.6	69.8	69.5	68.8	67.8	73.2	68.6	68.2	68.3	67.0	67.0	66.7	66.8	66.0
48	70.6	70.6	70.0	69.7	69.1	68.0	74.4	68.9	68.4	68.4	67.2	67.1	66.7	66.8	66.0
50	70.6	70.6	70.0	69.7	69.1	68.0	74.4	68.9	68.4	68.4	67.2	67.1	66.7	66.8	66.0
52	70.2	70.2	69.2	68.9	68.3	67.1	73.0	67.8	67.4	67.2	66.6	66.6	66.3	66.4	66.0
54	72.8	72.7	71.4	71.0	69.9	68.1	74.5	68.5	68.0	67.8	66.9	66.8	66.4	66.5	66.0
56	72.0	72.0	70.7	70.3	69.4	67.8	74.2	68.3	67.9	67.6	66.7	66.6	66.3	66.4	66.0
58	69.7	69.7	68.9	68.6	68.3	67.1	73.9	68.1	67.7	67.5	66.7	66.6	66.3	66.4	66.0
60	67.6	67.6	67.2	67.1	66.9	66.4	70.1	66.8	66.6	66.6	66.3	66.2	66.1	66.1	66.0
62	67.6	67.6	67.2	67.1	66.9	66.4	70.1	66.8	66.6	66.6	66.3	66.2	66.1	66.1	66.0

TABLE A-14: C03 - LOGARITHMIC COMBINATION OF AMBIENT NOISE AND CONSTRUCTION NOISE (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 31-55)

	Receiver-31	Receiver-32	Receiver-33	Receiver-34	Receiver-35	Receiver-36	Receiver-37	Receiver-38	Receiver-39	Receiver-40	Receiver-41	Receiver-42	Receiver-43	Receiver-44	Receiver-45	Receiver-46	Receiver-47	Receiver-48	Receiver-49	Receiver-50	Receiver-51	Receiver-52	Receiver-53	Receiver-54	Receiver-55
Week		Sound Insulated				Sound Insulated	Sound Insulated					Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Yes				Sound Insulated
2	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	66.8	67.7	67.9	67.5	67.4	66.9	66.7	66.6	66.4	66.3	66.4	66.5	66.5	66.2	66.2	66.2	66.9
4	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.2	66.2	66.2	66.2	66.1	66.1	66.1	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.1
6	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.6	67.5	67.7	67.3	67.3	66.9	66.7	66.7	66.4	66.3	66.5	66.6	66.5	66.3	66.3	66.2	66.7
8	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.6	67.5	67.7	67.3	67.3	66.9	66.7	66.7	66.4	66.3	66.5	66.6	66.5	66.3	66.3	66.2	66.7
10	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.2	66.2	66.6	66.7	66.5	66.5	66.4	66.3	66.2	66.1	66.1	66.2	66.1	66.1	66.1	66.1	66.1	66.3
12	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.2	66.2	66.6	66.7	66.5	66.5	66.4	66.3	66.2	66.1	66.1	66.2	66.1	66.1	66.1	66.1	66.1	66.3
14	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.2	66.2	66.6	66.7	66.5	66.5	66.4	66.3	66.2	66.1	66.1	66.2	66.1	66.1	66.1	66.1	66.1	66.3
16	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.3	66.4	67.1	67.2	66.9	66.9	66.6	66.5	66.4	66.2	66.2	66.3	66.3	66.3	66.1	66.1	66.1	66.5
18	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.2	66.5	66.6	66.4	66.4	66.3	66.2	66.2	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.2
20	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.3	66.5	67.2	67.5	67.1	67.0	66.6	66.4	66.3	66.2	66.1	66.3	66.2	66.1	66.0	66.0	66.0	66.0
22	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.2	66.5	66.5	66.4	66.4	66.3	66.2	66.2	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.0	66.2
24	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.1	66.2	66.3	66.2	66.2	66.1	66.1	66.1	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.1
26	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.1	66.2	66.3	66.2	66.2	66.1	66.1	66.1	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.1
28	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.1	66.2	66.3	66.2	66.2	66.1	66.1	66.1	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.1
30	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.1	66.2	66.3	66.2	66.2	66.1	66.1	66.1	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.1
32	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.1	66.2	66.3	66.2	66.2	66.1	66.1	66.1	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.1
34	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.7	67.5	67.7	67.4	67.3	67.0	66.7	66.6	66.4	66.2	66.5	66.5	66.4	66.1	66.1	66.1	66.9
36	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.7	67.5	67.7	67.4	67.3	67.0	66.7	66.6	66.4	66.2	66.5	66.5	66.4	66.1	66.1	66.1	66.9
38	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.6	67.3	67.5	67.2	67.2	66.9	66.6	66.6	66.3	66.2	66.4	66.4	66.3	66.1	66.1	66.1	66.8
40	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.6	67.3	67.5	67.2	67.2	66.9	66.6	66.6	66.3	66.2	66.4	66.4	66.3	66.1	66.1	66.1	66.8
42	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.4	66.6	67.3	67.5	67.2	67.2	66.9	66.6	66.6	66.3	66.2	66.4	66.4	66.3	66.1	66.1	66.1	66.8
44	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	66.7	67.4	67.7	67.5	67.2	66.9	66.7	66.6	66.3	66.1	66.4	66.4	66.3	66.1	66.1	66.1	66.5
46	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	66.7	67.4	67.7	67.5	67.2	66.9	66.7	66.6	66.3	66.1	66.4	66.4	66.3	66.1	66.1	66.1	66.5
48	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	66.8	67.4	67.6	67.3	67.2	66.9	66.7	66.6	66.3	66.2	66.5	66.6	66.4	66.2	66.1	66.0	66.5
50	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	66.8	67.4	67.6	67.3	67.2	66.9	66.7	66.6	66.3	66.2	66.5	66.6	66.4	66.2	66.1	66.0	66.5
52	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.3	66.4	67.0	67.1	66.9	66.7	66.5	66.4	66.3	66.2	66.1	66.3	66.3	66.2	66.2	66.1	66.0	66.2
54	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.6	66.9	68.0	68.2	67.8	67.5	67.0	66.8	66.6	66.3	66.2	66.5	66.5	66.3	66.3	66.1	66.1	66.3
56	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.5	66.7	67.7	67.9	67.5	67.2	66.8	66.6	66.5	66.3	66.1	66.4	66.4	66.2	66.2	66.0	66.0	66.2
58	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.3	66.4	66.9	67.0	66.9	66.6	66.5	66.4	66.3	66.2	66.1	66.4	66.4	66.2	66.2	66.0	66.0	66.2
60	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.2	66.3	66.4	66.3	66.3	66.2	66.1	66.1	66.1	66.0	66.1	66.1	66.1	66.1	66.0	66.0	66.1
62	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.1	66.2	66.3	66.4	66.3	66.3	66.2	66.1	66.1	66.1	66.0	66.1	66.1	66.1	66.1	66.0	66.0	66.1

TABLE A-15: C03 - LOGARITHMIC COMBINATION OF AMBIENT NOISE AND CONSTRUCTION NOISE (LEQ) BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 56-87)

	Receiver-56	Receiver-57	Receiver-58	Receiver-59	Receiver-60	Receiver-61	Receiver-62	Receiver-63	Receiver-64	Receiver-65	Receiver-66	Receiver-67	Receiver-68	Receiver-69	Receiver-70	Receiver-71	Receiver-72	Receiver-73	Receiver-74
Week			Sound Insulated							Sound Insulated	Sound Insulated	Sound Insulated				Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated
2	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
4	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
6	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
8	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
10	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
12	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
14	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
16	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
18	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
20	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
22	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
24	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
26	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
28	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
30	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
32	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
34	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
36	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
38	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
40	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
42	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
44	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
46	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
48	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
50	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
52	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
54	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
56	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
58	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
60	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
62	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0

	Receiver-75	Receiver-76	Receiver-77	Receiver-78	Receiver-79	Receiver-80	Receiver-81	Receiver-82	Receiver-83	Receiver-84	Receiver-85	Receiver-86	Receiver-87
Week			Sound Insulated	Sound Insulated			Sound Insulated						
2	66.1	66.1	66.1	66.2	66.4	66.7	66.7	66.2	66.1	66.1	66.0	66.1	67.0
4	66.0	66.0	66.0	66.0	66.0	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
6	66.1	66.1	66.1	66.2	66.3	66.6	66.6	66.2	66.2	66.1	66.1	66.1	67.0
8	66.1	66.1	66.1	66.2	66.3	66.6	66.6	66.2	66.2	66.1	66.1	66.1	67.0
10	66.0	66.0	66.0	66.1	66.1	66.2	66.2	66.1	66.1	66.0	66.0	66.0	66.3
12	66.0	66.0	66.0	66.1	66.1	66.2	66.2	66.1	66.1	66.0	66.0	66.0	66.3
14	66.0	66.0	66.0	66.1	66.1	66.2	66.2	66.1	66.1	66.0	66.0	66.0	66.3
16	66.0	66.0	66.1	66.1	66.3	66.4	66.4	66.1	66.1	66.1	66.0	66.1	66.6
18	66.0	66.0	66.0	66.1	66.1	66.2	66.2	66.1	66.0	66.0	66.0	66.0	66.3
20	66.0	66.0	66.1	66.1	66.3	66.5	66.5	66.1	66.1	66.0	66.0	66.1	66.0
22	66.0	66.0	66.0	66.1	66.1	66.2	66.2	66.1	66.0	66.0	66.0	66.0	66.3
24	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
26	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
28	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
30	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
32	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
34	66.1	66.1	66.1	66.2	66.4	66.7	66.7	66.2	66.1	66.1	66.0	66.1	66.9
36	66.1	66.1	66.1	66.2	66.4	66.7	66.7	66.2	66.1	66.1	66.0	66.1	66.9
38	66.0	66.0	66.1	66.2	66.4	66.6	66.6	66.2	66.1	66.1	66.0	66.0	66.8
40	66.0	66.0	66.1	66.2	66.4	66.6	66.6	66.2	66.1	66.1	66.0	66.0	66.8
42	66.0	66.0	66.1	66.2	66.4	66.6	66.6	66.2	66.1	66.1	66.0	66.0	66.8
44	66.1	66.1	66.1	66.2	66.4	66.7	66.7	66.2	66.2	66.0	66.0	66.0	66.3
46	66.1	66.1	66.1	66.2	66.4	66.7	66.7	66.2	66.2	66.0	66.0	66.0	66.3
48	66.1	66.1	66.1	66.2	66.5	66.7	66.7	66.2	66.2	66.1	66.0	66.0	66.3
50	66.1	66.1	66.1	66.2	66.5	66.7	66.7	66.2	66.2	66.1	66.0	66.0	66.3
52	66.0	66.0	66.1	66.1	66.3	66.4	66.4	66.1	66.1	66.0	66.0	66.0	66.2
54	66.1	66.1	66.1	66.3	66.5	66.8	66.8	66.2	66.2	66.1	66.0	66.1	66.2
56	66.1	66.0	66.1	66.2	66.4	66.7	66.7	66.2	66.2	66.1	66.0	66.1	66.2
58	66.0	66.0	66.1	66.1	66.2	66.4	66.4	66.1	66.1	66.0	66.0	66.0	66.1
60	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1
62	66.0	66.0	66.0	66.0	66.1	66.1	66.1	66.0	66.0	66.0	66.0	66.0	66.1

TABLE A-16: C03 - PROJECTED INCREASE OF COMBINED AMBIENT AND CONSTRUCTION NOISE LEVEL (LEQ) COMPARED TO AMBIENT NOISE LEVEL BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 1-30)

	Receiver-1	Receiver-2	Receiver-3	Receiver-4	Receiver-5	Receiver-6	Receiver-7	Receiver-8	Receiver-9	Receiver-10	Receiver-11	Receiver-12	Receiver-13	Receiver-14	Receiver-15	Receiver-16	Receiver-17	Receiver-18	Receiver-19	Receiver-20	Receiver-21	Receiver-22	Receiver-23	Receiver-24	Receiver-25	Receiver-26	Receiver-27	Receiver-28	Receiver-29	Receiver-30
Week	Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated		Sound Insulated	Sound Insulated	Sound Insulated
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.5	5.4	5.7	5.7	5.7	4.6	4.3	3.4	1.9	6.8	2.1	1.7	2.0	1.1	1.2	1.0	1.7	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	1.2	1.2	1.2	0.9	0.8	0.6	0.3	1.7	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.2	5.5	5.8	5.8	5.9	4.8	4.5	3.8	1.9	7.5	1.9	1.5	1.7	0.9	1.0	0.8	1.5	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.2	5.5	5.8	5.8	5.9	4.8	4.5	3.8	1.9	7.5	1.9	1.5	1.7	0.9	1.0	0.8	1.5	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.4	2.7	2.7	2.8	2.2	2.0	1.5	0.7	3.9	0.8	0.7	0.8	0.4	0.4	0.3	0.5	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.4	2.7	2.7	2.8	2.2	2.0	1.5	0.7	3.9	0.8	0.7	0.8	0.4	0.4	0.3	0.5	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.4	2.7	2.7	2.8	2.2	2.0	1.5	0.7	3.9	0.8	0.7	0.8	0.4	0.4	0.3	0.5	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	3.9	4.2	4.2	4.3	3.4	3.2	2.5	1.3	5.5	1.4	1.1	1.3	0.6	0.7	0.6	1.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.3	2.5	2.5	2.5	1.9	1.7	1.3	0.6	3.3	0.7	0.5	0.6	0.3	0.3	0.3	0.5	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	4.6	5.4	5.4	5.4	4.2	3.9	3.0	1.5	4.0	0.9	0.6	0.3	0.1	0.1	0.1	0.1	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.2	2.4	2.3	2.3	1.8	1.6	1.3	0.6	3.2	0.6	0.5	0.6	0.3	0.3	0.2	0.5	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.0	1.0	1.1	0.8	0.7	0.6	0.3	2.9	0.6	0.5	0.5	0.2	0.2	0.1	0.1	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.0	1.0	1.1	0.8	0.7	0.6	0.3	2.9	0.6	0.5	0.5	0.2	0.2	0.1	0.1	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.0	1.0	1.1	0.8	0.7	0.6	0.3	2.9	0.6	0.5	0.5	0.2	0.2	0.1	0.1	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.0	1.0	1.1	0.8	0.7	0.6	0.3	2.9	0.6	0.5	0.5	0.2	0.2	0.1	0.1	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.0	1.0	1.1	0.8	0.7	0.6	0.3	2.9	0.6	0.5	0.5	0.2	0.2	0.1	0.1	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.2	4.6	5.1	5.2	5.2	4.5	4.3	3.6	2.3	7.8	2.5	2.1	2.3	1.2	1.3	1.0	1.5	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.2	4.6	5.1	5.2	5.2	4.5	4.3	3.6	2.3	7.8	2.5	2.1	2.3	1.2	1.3	1.0	1.5	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.1	4.3	4.7	4.8	4.8	4.2	4.0	3.3	2.1	7.0	2.1	1.8	2.0	1.0	1.1	0.9	1.4	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.1	4.3	4.7	4.8	4.8	4.2	4.0	3.3	2.1	7.0	2.1	1.8	2.0	1.0	1.1	0.9	1.4	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.1	4.3	4.7	4.8	4.8	4.2	4.0	3.3	2.1	7.0	2.1	1.8	2.0	1.0	1.1	0.9	1.4	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.0	3.3	4.2	4.3	4.6	3.8	3.5	2.8	1.8	7.2	2.6	2.2	2.3	1.0	1.0	0.7	0.8	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.0	3.3	4.2	4.3	4.6	3.8	3.5	2.8	1.8	7.2	2.6	2.2	2.3	1.0	1.0	0.7	0.8	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.1	3.8	4.5	4.6	4.6	4.0	3.7	3.1	2.0	8.4	2.9	2.4	2.4	1.2	1.1	0.7	0.8	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.1	3.8	4.5	4.6	4.6	4.0	3.7	3.1	2.0	8.4	2.9	2.4	2.4	1.2	1.1	0.7	0.8	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.9	3.9	4.1	4.2	4.2	3.2	2.9	2.3	1.1	7.0	1.8	1.4	1.2	0.6	0.6	0.3	0.4	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	1.7	6.3	6.7	6.8	6.7	5.4	5.0	3.9	2.1	8.5	2.5	2.0	1.8	0.9	0.8	0.4	0.5	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.4	5.6	6.0	6.0	6.0	4.7	4.3	3.4	1.8	8.2	2.3	1.9	1.6	0.7	0.6	0.3	0.4	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.8	3.3	3.6	3.7	3.7	2.9	2.6	2.3	1.1	7.9	2.1	1.7	1.5	0.7	0.6	0.3	0.4	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.3	1.6	1.6	1.6	1.2	1.1	0.9	0.4	4.1	0.8	0.6	0.6	0.3	0.2	0.1	0.1	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.3	1.6	1.6	1.6	1.2	1.1	0.9	0.4	4.1	0.8	0.6	0.6	0.3	0.2	0.1	0.1	0.0

3 – 4.9 dB increase over ambient
5 – 9.9 dB increase over ambient

TABLE A-17: C03 - PROJECTED INCREASE OF COMBINED AMBIENT AND CONSTRUCTION NOISE LEVEL (LEQ) COMPARED TO AMBIENT NOISE LEVEL BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 31-55)

	Receiver-31	Receiver-32	Receiver-33	Receiver-34	Receiver-35	Receiver-36	Receiver-37	Receiver-38	Receiver-39	Receiver-40	Receiver-41	Receiver-42	Receiver-43	Receiver-44	Receiver-45	Receiver-46	Receiver-47	Receiver-48	Receiver-49	Receiver-50	Receiver-51	Receiver-52	Receiver-53	Receiver-54	Receiver-55
Week		Sound Insulated				Sound Insulated	Sound Insulated					Sound Insulated	Sound Insulated						Sound Insulated	Sound Insulated	Yes				Sound Insulated
2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.8	1.7	1.9	1.5	1.4	0.9	0.7	0.6	0.4	0.3	0.4	0.5	0.5	0.2	0.2	0.2	0.9
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	1.5	1.7	1.3	1.3	0.9	0.7	0.7	0.4	0.3	0.5	0.6	0.5	0.3	0.3	0.2	0.7
8	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	1.5	1.7	1.3	1.3	0.9	0.7	0.7	0.4	0.3	0.5	0.6	0.5	0.3	0.3	0.2	0.7
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.6	0.7	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.6	0.7	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.6	0.7	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3
16	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	1.1	1.2	0.9	0.9	0.6	0.5	0.4	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1	0.5
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.6	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.2	1.5	1.1	1.0	0.6	0.4	0.3	0.2	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
34	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	1.5	1.7	1.4	1.3	1.0	0.7	0.6	0.4	0.2	0.5	0.5	0.4	0.1	0.1	0.1	0.9
36	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	1.5	1.7	1.4	1.3	1.0	0.7	0.6	0.4	0.2	0.5	0.5	0.4	0.1	0.1	0.1	0.9
38	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	1.3	1.5	1.2	1.2	0.9	0.6	0.6	0.3	0.2	0.4	0.4	0.3	0.1	0.1	0.1	0.8
40	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	1.3	1.5	1.2	1.2	0.9	0.6	0.6	0.3	0.2	0.4	0.4	0.3	0.1	0.1	0.1	0.8
42	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	1.3	1.5	1.2	1.2	0.9	0.6	0.6	0.3	0.2	0.4	0.4	0.3	0.1	0.1	0.1	0.8
44	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7	1.4	1.7	1.5	1.2	0.9	0.7	0.6	0.3	0.1	0.4	0.4	0.3	0.1	0.1	0.1	0.5
46	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7	1.4	1.7	1.5	1.2	0.9	0.7	0.6	0.3	0.1	0.4	0.4	0.3	0.1	0.1	0.1	0.5
48	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.8	1.4	1.6	1.3	1.2	0.9	0.7	0.6	0.3	0.2	0.5	0.6	0.4	0.2	0.1	0.0	0.5
50	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.8	1.4	1.6	1.3	1.2	0.9	0.7	0.6	0.3	0.2	0.5	0.6	0.4	0.2	0.1	0.0	0.5
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	1.0	1.1	0.9	0.7	0.5	0.4	0.3	0.2	0.1	0.3	0.3	0.2	0.2	0.1	0.0	0.2
54	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.9	2.0	2.2	1.8	1.5	1.0	0.8	0.6	0.3	0.2	0.5	0.5	0.3	0.3	0.1	0.1	0.3
56	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7	1.7	1.9	1.5	1.2	0.8	0.6	0.5	0.3	0.1	0.4	0.4	0.2	0.2	0.0	0.0	0.2
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.9	1.0	0.9	0.6	0.5	0.4	0.3	0.2	0.1	0.4	0.4	0.2	0.2	0.0	0.0	0.2
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1

TABLE A-18: C03 - PROJECTED INCREASE OF COMBINED AMBIENT AND CONSTRUCTION NOISE LEVEL (LEQ) COMPARED TO AMBIENT NOISE LEVEL BY RECEIVER PER 2-WEEK INCREMENTS (RECEIVERS 56-87)

	Receiver-56	Receiver-57	Receiver-58	Receiver-59	Receiver-60	Receiver-61	Receiver-62	Receiver-63	Receiver-64	Receiver-65	Receiver-66	Receiver-67	Receiver-68	Receiver-69	Receiver-70	Receiver-71	Receiver-72	Receiver-73	Receiver-74
Week			Sound Insulated							Sound Insulated	Sound Insulated	Sound Insulated				Sound Insulated	Sound Insulated	Sound Insulated	Sound Insulated
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Receiver-75	Receiver-76	Receiver-77	Receiver-78	Receiver-79	Receiver-80	Receiver-81	Receiver-82	Receiver-83	Receiver-84	Receiver-85	Receiver-86	Receiver-87
Week			Sound Insulated	Sound Insulated			Sound Insulated						
2	0.1	0.1	0.1	0.2	0.4	0.7	0.7	0.2	0.1	0.1	0.0	0.1	1.0
4	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
6	0.1	0.1	0.1	0.2	0.3	0.6	0.6	0.2	0.2	0.1	0.1	0.1	1.0
8	0.1	0.1	0.1	0.2	0.3	0.6	0.6	0.2	0.2	0.1	0.1	0.1	1.0
10	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.3
12	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.3
14	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.3
16	0.0	0.0	0.1	0.1	0.3	0.4	0.4	0.1	0.1	0.1	0.0	0.1	0.6
18	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.3
20	0.0	0.0	0.1	0.1	0.3	0.5	0.5	0.1	0.1	0.0	0.0	0.1	0.0
22	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.3
24	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
26	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
28	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
30	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
32	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
34	0.1	0.1	0.1	0.2	0.4	0.7	0.7	0.2	0.1	0.1	0.0	0.1	0.9
36	0.1	0.1	0.1	0.2	0.4	0.7	0.7	0.2	0.1	0.1	0.0	0.1	0.9
38	0.0	0.0	0.1	0.2	0.4	0.6	0.6	0.2	0.1	0.1	0.0	0.0	0.8
40	0.0	0.0	0.1	0.2	0.4	0.6	0.6	0.2	0.1	0.1	0.0	0.0	0.8
42	0.0	0.0	0.1	0.2	0.4	0.6	0.6	0.2	0.1	0.1	0.0	0.0	0.8
44	0.1	0.1	0.1	0.2	0.4	0.7	0.7	0.2	0.2	0.0	0.0	0.0	0.3
46	0.1	0.1	0.1	0.2	0.4	0.7	0.7	0.2	0.2	0.0	0.0	0.0	0.3
48	0.1	0.1	0.1	0.2	0.5	0.7	0.7	0.2	0.2	0.1	0.0	0.0	0.3
50	0.1	0.1	0.1	0.2	0.5	0.7	0.7	0.2	0.2	0.1	0.0	0.0	0.3
52	0.0	0.0	0.1	0.1	0.3	0.4	0.4	0.1	0.1	0.0	0.0	0.0	0.2
54	0.1	0.1	0.1	0.3	0.5	0.8	0.8	0.2	0.2	0.1	0.0	0.1	0.2
56	0.1	0.0	0.1	0.2	0.4	0.7	0.7	0.2	0.2	0.1	0.0	0.1	0.2
58	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.1	0.1	0.0	0.0	0.0	0.1
60	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
62	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1

Appendix B, Construction Schedule

ID	DESCRIPTION	2025				2026				2027				2028				2029				2030				2031				2032				Number of Quarters
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
AIRSIDE																																		
A01	Taxiway A/B Extension							■	■	■	■	■	■	■	■	■	■	■																11
A02	Runway 16R/34L Blast Pads					■	■	■																										3
A03	Taxiway C/D Reconfiguration & RIM														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			17
A04	Taxiway B 500' Separation														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			17
A05	North Hold Pad																				■	■	■	■	■									5
A06	Runway 34L High-Speed Exit					■	■	■																										3
A07	Taxiway D Extension								■	■	■	■																						4
A08	North Cargo Hardstand								■	■	■	■	■	■	■	■	■	■																10
A09	Central Hardstand									■	■	■	■	■	■	■	■	■																9
A10	Taxiway Fillets					■	■	■	■	■	■	■	■	■	■	■																		11
CARGO																																		
C01	Cargo 4 South Redevelopment				■	■	■	■	■																									5
C02	Offsite Cargo Phase 1								■	■	■	■	■	■																				6
CO3	Offsite Cargo Phase 2																■	■	■	■	■													5
LANDSIDE																																		
L01	NAE Relocation (southbound lanes)				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■													17
L02	Elevated Busway & Stations			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				27
L03	Second Terminal Roads & Curbside																■	■	■	■	■	■	■	■										8
L04	Northeast GTC							■	■	■	■	■	■	■	■	■	■	■																11
L05	North GT Holding Lot											■	■	■	■	■																		5
L07	Employee Parking Structure																			■	■	■	■	■	■	■								7
TERMINAL																																		
T01	North Gates									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					20
T02	Second Terminal & Parking														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		18
AIRPORT/AIRLINE SUPPORT																																		
S01	Fuel Farm Expansion																■	■	■	■	■	■	■	■	■	■	■	■	■					13
S02	Primary ARFF Facility						■	■	■	■	■	■	■	■																				8
S03	Secondary ARFF Facility										■	■	■	■	■	■	■	■	■	■														10
S04	Fuel Rack Relocation					■	■	■	■	■	■	■	■	■	■	■																		11
S05	Triculator					■	■	■	■	■	■	■																						7
S06	De-icing Tanks					■	■	■	■	■	■	■																						7
S07	Westside Maintenance Campus		■	■	■	■	■	■	■	■	■	■																						10
S08	North Airline Support											■	■	■	■	■																		5
S09	West Airline Support											■	■	■	■	■																		5
S10	Centralized Rec. & Dist. Center																	■	■	■	■	■	■	■										7

Appendix C, Construction Equipment

C02 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
1a	Chain Saw	6	0.2	Power Tools - Chainsaw
	Grappling Claw All Terrain vehicle	1	0.4	Backhoe
	Log Stripper	1	0.4	Front End Loader (Cyclical)
	Logging Haul Trucks	3	0.4	Flatbed Truck
	Heavy Duty Wood Chipper	2	0.2	Concrete Batch Plant
	Excavator (pulling tree root balls)	1	0.4	Excavator
	Dump Trucks	4	0.4	Dump Truck (Passby)
	Front end Loader	1	0.4	Front End Loader (Cyclical)
1b	Walk Behaind Asphalt Cutting Machine	1	0.2	Concrete Saw
	Crawler Excavator	1	0.4	Excavator
	Front end Loader	1	0.4	Front End Loader (Cyclical)
	Dump Truck	2	0.4	Dump Truck (Passby)
2a	Flat Bed & Bobtail Trucks	3	0.4	Flatbed Truck
	Surveyor Equip Trucks	1	0.4	Flatbed Truck
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
2b	Crawler Excavator	1	0.4	Excavator
	Scraper	1	0.4	Scraper
	Bull Dozer D-8 w/ ripper bars	1	0.4	Dozer
	Front end Loader	2	0.4	Front End Loader (Cyclical)
	Dump Truck	4	0.4	Dump Truck (Passby)
	Sheeps Foot Roller	1	0.2	Compactor (Roller)
	Vibrator Roller	1	0.2	Compactor (Roller)
	Motor Grader	1	0.4	Grader (passby)
	Water Tanker Truck	1	0.1	Water Spray Truck
	Street Sweeper Truck	1	0.1	Street Sweeper

C02 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
2c	Crawler Excavator	1	0.4	Excavator
	Scraper	1	0.4	Scraper
	Bull Dozer D-8 w/ ripper bars	1	0.4	Dozer
	Front end Loader	2	0.4	Front End Loader (Cyclical)
	Dump Truck	4	0.4	Dump Truck (Passby)
	Sheeps Foot Roller	1	0.2	Compactor (Roller)
	Vibrator Roller	1	0.2	Compactor (Roller)
	Motor Grader	1	0.4	Grader (passby)
	Water Tanker Truck	1	0.1	Water Spray Truck
	Street Sweeper Truck	1	0.1	Street Sweeper
3a	Back Hoe-Loader	2	0.4	Backhoe
	Front end Loader	2	0.4	Front End Loader (Cyclical)
	Dump Truck	4	0.4	Dump Truck (Passby)
	Flat Bed & Bobtail Trucks -Delivery	1	0.4	Flatbed Truck
3b	Back Hoe-Loader	2	0.4	Backhoe
	Front end Loader	2	0.4	Front End Loader (Cyclical)
	Dump Truck	4	0.4	Dump Truck (Passby)
	Flat Bed & Bobtail Trucks -Delivery	1	0.4	Flatbed Truck
4a	Back Hoe-Loader	1	0.4	Backhoe
	Crawler Excavator (maybe rubber tires)	1	0.4	Excavator
	Dump Truck	2	0.4	Dump Truck (Passby)
	Asphalt Truck	1	0.4	Flatbed Truck
	Smooth Vibration Roller	1	0.1	Compactor (Roller)
	Hot Tar Kettle Trailer	1	0.5	Generator
4b	Back Hoe-Loader	2	0.4	Backhoe
	Dump Truck	3	0.4	Dump Truck (Passby)
	Transit Cement Truck for CDF	2	0.4	Dump Truck (Passby)
	Air Compressor Trailer	1	0.4	Compressor
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)

C02 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
4c	Bobtail rebar delivery trucks	1	0.4	Flatbed Truck
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
	Metal Grinders & Metal Cut-Off Saw	4	0.2	Power Tools - Grinder
4d	Back Hoe-Loader	2	0.4	Backhoe
	Dump Truck	3	0.4	Dump Truck (Passby)
	Transit Cement Truck for CDF	2	0.4	Dump Truck (Passby)
	Air Compressor Trailer	1	0.4	Compressor
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
4e	Bobtail rebar delivery trucks	1	0.4	Flatbed Truck
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
	Metal Grinders & Metal Cut-Off Saw	4	0.2	Power Tools - Grinder
5a	Concrete Transit Trucks (coming & going)	6	0.4	Flatbed Truck
	Concrete Pumper Truck	1	0.4	Flatbed Truck
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Concrete Floor Rotary Trowel	2	0.4	Generator
	Walk Behaind Concrete Saw	1	0.2	Concrete Saw
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
5b	Concrete Transit Trucks (coming & going)	6	0.4	Flatbed Truck
	Concrete Pumper Truck	1	0.4	Flatbed Truck
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Concrete Floor Rotary Trowel	2	0.4	Generator
	Walk Behaind Concrete Saw	1	0.2	Concrete Saw
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill

C02 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
5c	Concrete Transit Trucks (coming & going)	6	0.4	Dump Truck (Passby)
	Concrete Pumper Truck	1	0.4	Flatbed Truck
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	2	0.4	Compressor
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
	Hand Held Concrete Saw	2	0.2	Concrete Saw
6	Concrete Transit Trucks (coming & going)	6	0.4	Flatbed Truck
	Telescoping Crane	1	0.16	Crane
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
	Hand Held Concrete Saw	4	0.2	Concrete Saw
	Portable Elec Generator Trailer	1	0.5	Generator
7	Telescoping Crane	2	0.16	Crane
	All Terrain Forklift Telehandler	2	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
	Hand Held Concrete Saw	4	0.2	Concrete Saw
	Portable Elec Generator Trailer	1	0.5	Generator
	Portable Welding Equip	2	0.4	Welding Machine
8	Telescoping Crane	2	0.16	Crane
	All Terrain Forklift Telehandler	2	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Belt Loader	1	0.4	Dozer
	Open Flame Torch for Seams fusion	4	0.2	Welding Machine
9	Back Hoe-Loader	1	0.4	Backhoe
	Asphalt Truck	2	0.4	Flatbed Truck
	Asphalt Paving Machine	1	0.4	Paving - Asphalt (Paver + Dump Truck)
	Smooth Vibration Roller	1	0.2	Compactor (Roller)
	Hot Tar Kettle Trailer	1	0.5	Generator

C02 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
10a	Telescoping Crane	1	0.16	Crane
	All Terrain Forklift Telehandler	2	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	6	0.4	Flatbed Truck
	Hand Drills	6	0.2	Power Tools - Hammer Drill
	Handheld Grinders	6	0.2	Power Tools - Grinder
10b	Elec Scissors Lift	4	0.1	Man Lift
	Back Hoe-Loader	1	0.4	Backhoe
	Asphalt Truck	2	0.4	Flatbed Truck
	Asphalt Paving Machine	1	0.4	Paving - Asphalt (Paver + Dump Truck)
	Smooth Vibration Roller	1	0.2	Compactor (Roller)
	Hot Tar Kettle Trailer	1	0.5	Generator

C03 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
1	Chain Saw	6	0.2	Power Tools - Chainsaw
	Grappling Claw All Terrain vehicle	1	0.4	Backhoe
	Log Stripper	1	0.4	Front End Loader (Cyclical)
	Logging Haul Trucks	3	0.4	Flatbed Truck
	Heavy Duty Wood Chipper	2	0.2	Concrete Batch Plant
	Excavator (pulling tree root balls)	1	0.4	Excavator
	Dump Trucks	4	0.4	Dump Truck (Passby)
	Front end Loader	1	0.4	Front End Loader (Cyclical)
2a	Flat Bed & Bobtail Trucks	3	0.4	Flatbed Truck
	Surveyor Equip Trucks	1	0.4	Flatbed Truck
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
2b	Crawler Excavator	1	0.4	Excavator
	Scraper	1	0.4	Scraper
	Bull Dozer D-8 w/ ripper bars	1	0.4	Dozer
	Front end Loader	2	0.4	Front End Loader (Cyclical)
	Dump Truck	4	0.4	Dump Truck (Passby)
	Sheeps Foot Roller	1	0.2	Compactor (Roller)
	Vibrator Roller	1	0.2	Compactor (Roller)
	Motor Grader	1	0.4	Grader (passby)
	Water Tanker Truck	1	0.1	Water Spray Truck
	Street Sweeper Truck	1	0.1	Street Sweeper
3	Back Hoe-Loader	2	0.4	Backhoe
	Front end Loader	2	0.4	Front End Loader (Cyclical)
	Dump Truck	4	0.4	Dump Truck (Passby)
	Flat Bed & Bobtail Trucks -Delivery	1	0.4	Flatbed Truck
4a	Back Hoe-Loader	1	0.4	Backhoe
	Crawler Excavator (maybe rubber tires)	1	0.4	Excavator
	Dump Truck	2	0.4	Dump Truck (Passby)
	Asphalt Truck	1	0.4	Flatbed Truck
	Smooth Vibration Roller	1	0.1	Compactor (Roller)
	Hot Tar Kettle Trailer	1	0.5	Generator

C03 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
4b	Back Hoe-Loader	2	0.4	Backhoe
	Dump Truck	3	0.4	Dump Truck (Passby)
	Transit Cement Truck for CDF	2	0.4	Dump Truck (Passby)
	Air Compressor Trailer	1	0.4	Compressor
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
4c	Bobtail rebar delivery trucks	1	0.4	Flatbed Truck
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
	Metal Grinders & Metal Cut-Off Saw	4	0.2	Power Tools - Grinder
4d	Back Hoe-Loader	2	0.4	Backhoe
	Dump Truck	3	0.4	Dump Truck (Passby)
	Transit Cement Truck for CDF	2	0.4	Dump Truck (Passby)
	Air Compressor Trailer	1	0.4	Compressor
	Portable Elec Generator Trailer	1	0.5	Generator
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
5a	Concrete Transit Trucks (coming & going)	6	0.4	Flatbed Truck
	Concrete Pumper Truck	1	0.4	Flatbed Truck
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Concrete Floor Rotary Trowel	2	0.4	Generator
	Walk Behaind Concrete Saw	1	0.2	Concrete Saw
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
5b	Concrete Transit Trucks (coming & going)	6	0.4	Dump Truck (Passby)
	Concrete Pumper Truck	1	0.4	Flatbed Truck
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	2	0.4	Compressor
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
	Hand Held Concrete Saw	2	0.2	Concrete Saw

C03 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
6	Concrete Transit Trucks (coming & going)	6	0.4	Flatbed Truck
	Telescoping Crane	1	0.16	Crane
	All Terrain Forklift Telehandler	1	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
	Hand Held Concrete Saw	4	0.2	Concrete Saw
	Portable Elec Generator Trailer	1	0.5	Generator
7	Telescoping Crane	2	0.16	Crane
	All Terrain Forklift Telehandler	2	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Air Compressor Trailer	1	0.4	Compressor
	Rotary Hammer Drills	4	0.2	Power Tools - Hammer Drill
	Hand Held Concrete Saw	4	0.2	Concrete Saw
	Portable Elec Generator Trailer	1	0.5	Generator
	Portable Welding Equip	2	0.4	Welding Machine
8	Telescoping Crane	2	0.16	Crane
	All Terrain Forklift Telehandler	2	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	4	0.4	Flatbed Truck
	Belt Loader	1	0.4	Dozer
	Open Flame Torch for Seams fusion	4	0.2	Welding Machine
9	Back Hoe-Loader	1	0.4	Backhoe
	Asphalt Truck	2	0.4	Flatbed Truck
	Asphalt Paving Machine	1	0.4	Paving - Asphalt (Paver + Dump Truck)
	Smooth Vibration Roller	1	0.2	Compactor (Roller)
	Hot Tar Kettle Trailer	1	0.5	Generator
10a	Telescoping Crane	1	0.16	Crane
	All Terrain Forklift Telehandler	2	0.2	Telescopic Handler (Forklift)
	Bobtail Work Trucks	6	0.4	Flatbed Truck
	Hand Drills	6	0.2	Power Tools - Hammer Drill
	Handheld Grinders	6	0.2	Power Tools - Grinder
	Elec Scissors Lift	4	0.1	Man Lift

C03 Construction Equipment

Construction Phase Number	Equipment Type	Quantity	Usage Factor	Equipment Name TNM
10b	Back Hoe-Loader	1	0.4	Backhoe
	Asphalt Truck	2	0.4	Flatbed Truck
	Asphalt Paving Machine	1	0.4	Paving - Asphalt (Paver + Dump Truck)
	Smooth Vibration Roller	1	0.2	Compactor (Roller)
	Hot Tar Kettle Trailer	1	0.5	Generator

Appendix D, Construction Noise Protocol

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Construction Noise Protocol
Seattle-Tacoma International Airport

FINAL – June 2024

PREPARED FOR
Federal Aviation Administration and
the Port of Seattle

PRESENTED BY
Landrum & Brown, Incorporated

1 Introduction

This document outlines the methodology for determining the potential construction noise increase above ambient in the Seattle Tacoma International Airport (SEA) Sustainable Airport Master Plan Near Term Projects (Proposed Action) Environmental Assessment (EA). Construction noise would result from construction activities associated with the Near-Term Projects (NTPs). Construction activities associated with the NTPs are set to begin in 2026, with all projects constructed by 2032. A detailed construction phasing schedule is provided as Attachment 1.

2 Characteristics of Noise

Sound is created by a vibrating source that induces vibrations in the air. The vibration produces alternating bands of relatively dense and sparse particles of air, spreading outward from the source like ripples on a pond. Sound waves dissipate with increasing distance from the source. Sound waves can also be reflected, diffracted, refracted, or scattered. When the source stops vibrating, the sound waves disappear almost instantly and the sound ceases.

Sound conveys information to listeners. It can be instructional, alarming, pleasant and relaxing, or annoying. Identical sounds can be characterized by different people, or even by the same person at different times, as desirable or unwanted. Unwanted sound is commonly referred to as "noise."

2.1 Sound Measurements

Sound is measured using the logarithmic decibel (dB) scale. This is because the range of sound pressures detectable by the human ear can vary from 1 to 100 trillion units. A logarithmic scale allows an analysis of noise using more manageable numbers. The range of audible sound ranges from approximately 1 to 140 dB, although everyday sounds rarely rise above about 120 dB.

There are several different metrics used for analyzing noise, including L_{eq} and DNL, which are geared towards evaluating longer term noise exposure (such as aircraft noise), while other metrics such as L_{max} are intended to evaluate shorter term fluctuating noise conditions. This construction noise analysis will consider noise increases in terms of L_{eq} levels.

2.2 Propagation of Noise

Outdoor sound levels decrease as a function of distance from the source, and as a result of wave divergence, atmospheric absorption, and ground attenuation. If sound is radiated from a source in a homogeneous and undisturbed manner, the sound travels as spherical waves. As the sound wave travels away from the source, the sound energy is distributed over a greater area, dispersing the sound energy of the wave. Spherical spreading of the sound wave reduces the noise level at a rate of 6 dB per doubling of the distance for hard ground and 7.5 dB per doubling of distance for soft ground. Obstacles between the source and the receptor, such as buildings, hills, and trees, will result in additional noise reductions depending upon their size, density, and location.

2.3 Ambient Sound Levels

Background or ambient sound levels can vary greatly depending on site-specific factors. Ambient sound levels can effectively mask construction noise and change the receiver's perception of how loud construction noise is. Urban areas have the highest background sound levels, with daytime levels approximating 60 to 65 dBA (EPA 1978). Suburban or residential areas have background levels around 45 to 50 dBA (EPA 1978), while rural areas are the quietest with sound levels of 35 to 40 dBA (EPA 1978). In a more recent study, Cavanaugh and Tocci (1998) identify typical urban residential background sound at around 65 dBA, high-density urban areas at 78 dBA, and urban areas adjacent to freeway traffic at 88 dBA. In urban and developed areas, traffic noise and construction noise attenuate (decline) to background in less distance than in undeveloped or rural areas.

3 Regulations/Ordinances

3.1 Federal Regulations

There are no federal regulations concerning construction noise. The FAA has not defined significance thresholds for construction noise.

3.2 State Regulations

WAC 173-60-040 sets the Washington Department of Ecology maximum environmental noise limits as a function of class of noise generator and class of noise receptor. Class A EDNA is defined as uses where humans reside or sleep, including residential, multi-family residential, recreational and entertainment uses like camps and resorts, and community services like hospitals or elder care facilities. Class B EDNA is defined as uses requiring protection against noise interference with speech (retail and commercial uses). Class C EDNA are industrial uses. WAC 173-60-030.

EDNA OF NOISE SOURCE	EDNA OF RECEIVING PROPERTY		
	Class A	Class B	Class C
CLASS A	55 dBA	57 dBA	60 dBA
CLASS B	57	60	65
CLASS C	60	65	70

These levels are reduced by 10 dBA between the hours of 10 pm and 7 am. However, all construction noise is exempt from these limits except for noise received by Class A EDNA between 10 pm and 7 am.

3.3 Local Regulations/Ordinances

3.3.1 Port of Seattle

The Port has defined Construction General Requirements, which includes the following in relation to construction noise:

1.21 NOISE CONTROLS

A. At all times keep objectionable noise generation to a minimum by:
    a. Equipping air compressors with silencing packages.
    b. Equipping jackhammers with silencers on the air outlet.

c. Equipment that can be electrically driven instead of gas or diesel is preferred. If noise levels on equipment cannot reasonably be brought down to criteria, listed as follows, either the equipment will not be allowed on the job or use time will have to be scheduled subject to approval of the Port construction project representative.
d. All construction vehicles and equipment on the project operating between 10:00 p.m. and 7:00 a.m. shall be equipped with an ambient noise sensing variable volume backup alarm system. The system shall be in compliance with Washington Administrative Code (WAC) 296-155-615.

B. Objectionable noise received on neighboring (non-Port owned) properties is defined as any noise exceeding the noise limits of State Regulations (WAC 173- 60-040) or City ordinance, as stated below, or as any noise causing a public nuisance in a residential area, as determined by the Port and community representatives, or by the nuisance provisions of local ordinances.
   a. The noise limitations established are as set forth in the following table after any applicable adjustments provided for herein are applied:

RECEIVING PROPERTY

NOISE SOURCE	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
Airport	50 dBA	65 dBA	70 dBA

   b. Between the hours of 2200 and 0500 on weekdays and 2200 and 0900 on weekends the noise limitations above may be exceeded for any receiving property by no more than:
      i. 5 (five) dBA for a total of 15 minutes in any one hour period; or
      ii. 10 (ten) dBA for a total of 5 minutes in any one hour period; or
      iii. 15 (fifteen) dBA for a total of 1.5 minutes in any one hour period.

C. In addition to the noise controls specified, demolition and construction activities conducted within 1,000 feet of residential areas may have additional noise controls required.
D. The Contractor's operation shall at all times comply with all County and City requirements.
E. For work conducted within Airport buildings, noise levels from work activities shall not exceed 80 dBA on the slow scale at the project boundary.
F. The Contractor shall plan all work activities generating noise, such as saw cutting or core drilling, during periods of low airport activity.

3.3.2 City of SeaTac and City of Burien

Local jurisdictions also have the authority to regulate environmental noise generally and construction noise specifically. The City of SeaTac prohibits construction noise between the hours of 10 pm and 7 am on weekdays and 10 pm and 9 am on weekends. SMC 8.05.360.B.8. Burien Municipal Code 9.105.410.2.h prohibits construction noise between the hours of 7 pm and 7 am, unless the City grants a variance.

4 Construction Noise Methodology

This section outlines the procedures for assessing noise increases above ambient during construction. The type of assessment (qualitative or quantitative) and the level of analysis are determined based on the scale of the project and surrounding land uses.

4.1 Types of Construction Noise

Construction-related noise is a function of the types of equipment being used, the distance to potential receptors, and the duration of construction activities. Noise increases above ambient from construction may vary greatly depending on the duration and complexity of the project.

Table 1 depicts an estimate of the typical maximum sound level energy from various types of construction equipment that are likely to be used during construction of the Proposed Project. Calculations of construction noise will be based on these sound levels.

Table 1: Default Construction Equipment Noise

Equipment Description	Actual Measured L_{max} @ 50 feet (dBA)	Equipment Description	Actual Measured L_{max} @ 50 feet (dBA)
Auger Drill Rig	84	Man Lift	75
Backhoe	78	Mounted Impact Hammer (hoe ram)	90
3bBoring Jack Power Unit	83	Pavement Scarifier	90
Chain Saw	84	Paver	77
Clam Shovel (dropping)	87	Pickup Truck	75
Compactor (ground)	83	Pneumatic Tools	85
Compressor (air)	78	Pumps	81
Concrete Mixer Truck	79	Refrigerator Unit	73
Concrete Pump Truck	81	Rivit Buster/Chipping Gun	79
Concrete Saw	90	Rock Drill	81
Crane	81	Roller	80
Dozer	82	Sand Blasting (single nozzle)	96
Drill Rig Truck	79	Scraper	84
Drum Mixer	80	Sheers (on backhoe)	96
Dump Truck	76	Slurry Plant	78
Excavator	81	Slurry Trenching Machine	80
Flat Bed Truck	74	Vacuum Excavator (Vac-Truck)	85
Front End Loader	79	Vacuum Street Sweeper	82
Generator	81	Ventilation Fan	79
Generator (<25KVA, VMS Signs)	73	Vibrating Hopper	87
Gradall	83	Vibratory Concrete Mixer	80
Grapple (on backhoe)	87	Vibratory Pile Driver	101
Horizontal Boring Hydraulic Jack	82	Warning Horn	83
Impact Pile Driver	101	Welder/Torch	74
Jackhammer	89		

Source: Federal Highway Administration, *Construction Noise Handbook, 9.0 Construction Equipment Noise Levels and Ranges, Table 9.1.* Available online at https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm

4.2 Multiple Sources of Construction Noise

When multiple sources of noise are combined (i.e., situations where multiple pieces of construction equipment are operating at the same time) the sound intensities would be combined. However, since dBA are calculated on a logarithmic scale, the sound levels would not add together. In a case where two 89 dBA jackhammers are operating simultaneously, the combined sound intensity would not produce a 178 dBA sound level. Rather, two jackhammers operating simultaneously (a doubling of sound intensity from just one) would result in an increase of 3 dBA of sound level, or 92 dBA at 50 feet from the source. Likewise, four jackhammers operating simultaneously (a doubling of sound intensity from two jackhammers) would result in a sound level of 95 dBA at 50 feet from the source.

This concept is illustrated below in **Table 2** for use of one, two, and four jackhammers, the loudest type of construction equipment anticipated for the Proposed Action.

Table 2: Example of Noise Reduction over Distance from Jackhammers (89 dBA)

Distance from Source (feet)	Point Source Noise (from an 89 dBA source)	Point Source Noise (from two 89 dBA sources)	Point Source Noise (from four 89 dBA sources)
50	89 dBA	92 dBA	95 dBA
100	83 dBA	86 dBA	89 dBA
200	77 dBA	80 dBA	83 dBA
400	71 dBA	74 dBA	77 dBA
800	65 dBA	68 dBA	71 dBA
1,600	59 dBA	62 dBA	65 dBA
3,200	53 dBA	56 dBA	59 dBA

Source: Based on Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

4.3 Construction Noise Screening

A construction noise screening was conducted for each NTP to determine if additional analysis was required to conclude construction noise increases over ambient from the NTP. The screening evaluated each NTP, considering the construction activity, calculating the construction-related noise at nearby noise-sensitive receptors, and comparing the construction-related noise to existing ambient noise. The following described the methodology used in the screening.

4.3.1.1 Noise Metric

The screening use the Equivalent Sound Level ($L_{eq(t)}$) metric to assess potential construction noise. This unit is appropriate because $L_{eq(t)}$ can be used to describe:

- Noise level from operation of each piece of equipment separately, and levels can be combined to represent the noise level from all equipment operating during a given period.
- Noise level during an entire phase.
- Average noise over all phases of the construction.

4.3.1.2 Detailed Assessment

A detailed assessment was selected over a general assessment given the ability of the detailed assessment to account for the terrain surrounding SEA. The detailed analysis used the Federal Highway Administration's Windows-based screening tool, "Roadway Construction Noise Model (RCNM)," for the analysis.

4.3.1.3 Equipment Type and Duration

Data was obtained from the Port concerning the duration of the construction for each NTP. Construction equipment information from the Airport Construction Emissions Inventory Tool (ACEIT) was utilized for each NTP. It is assumed that every piece of construction equipment identified for that phase would be operating at the same time for the entire construction schedule as part of the screening process to identify locations where noise sensitive receivers could be exposed to construction noise (Attachment 1). This is the most conservative approach to identify construction noise because the use of every piece of construction equipment at the same time would be difficult to achieve and not typical for most construction projects.

4.3.1.4 Calculation of Ambient Noise Level

In determining the existing background noise levels for use in evaluating construction noise levels, it is important to consider the events and activities which will typically occur during the time-period for which construction noise is planned. If construction noise is to be evaluated in the vicinity of a noise-generating source, such as an airport, the consideration of the operational characteristics of that noise source may be appropriate.

Data from the SEA noise monitoring system was utilized to determine ambient sound level for a 24-hour period (Equivalent Noise Level (LEQ) Community Noise data). Data from the monitor SEA01 was used to establish the ambient sound level for each NTP located within the airfield ((Airport property south of 518, west of International Blvd, east of 509, and north of 200th St). Data from the monitor SEA14 was used to establish the ambient sound level for the NTPs located north of SR 518. Table 3 provides the ambient level for each NTP.

Table 3 Ambient Noise Levels for Each NTP

NTP #	Ambient Sound Level
A01; A02; A03; A04; A05; A06; A07; A08; A09; A10; T01; T02; C01; L01; L02; L03; L04; S01; S02; S03; S04; S05; S06; S07; S08; S09	76.5 dB
C02; C03; L05; L07; S10	66 dB

4.3.1.5 Calculation of Distance Above Ambient

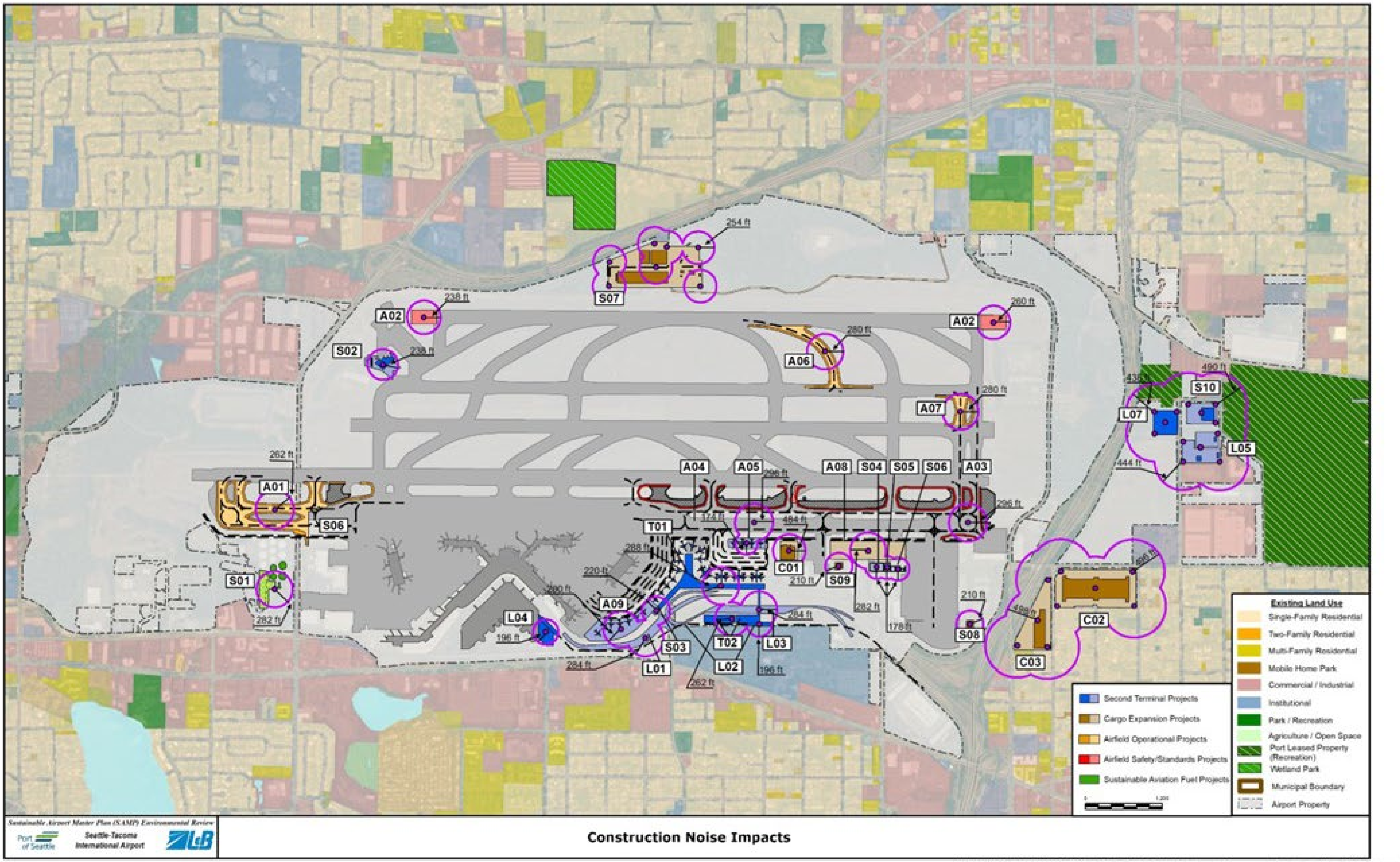
The distance point source construction noise will travel before it attenuates to the ambient sound level was calculated for each NTP to determine the presence of noise sensitive land uses within the area where construction noise may be noticeable. The following equation was used to determine the distance point source construction noise will travel before it attenuates to the ambient sound level:

D = Do * 10((Construction Noise – Ambient Sound Level in dBA)/α)

Where D = the distance from the noise source
Do = the reference measurement distance (50 feet in this case)
Construction Noise = X dBA
α = 25 for soft ground. For point source noise, a spherical spreading loss model is used. These alpha (α) values assume a 7.5 dBA reduction per doubling distance over soft ground.

The results were plotted on the land use map (Figure 1) to identify if potential noise sensitive receivers have the potential to experience construction noise levels above ambient.

Figure 1 Distance Construction Noise Travels Before Reaching Ambient Levels



4.3.1.6 Noise Sensitive Receivers

If noise sensitive receivers were not identified within the area that could experience construction noise levels that exceed ambient conditions, no further analysis was be completed. If noise sensitive receivers were identified within the area that could experience construction noise levels that exceed ambient condition, additional analysis was completed. Table 4 documents the result of the screening process and indicates if additional analysis is required.

Table 4: Screening Analysis Results

NTP#	Noise Sensitive Receivers Identified	Additional Analysis Required
A01	No	No
A02	No	No
A03	No	No
A04	No	No
A05	No	No
A06	No	No
A07	No	No
A08	No	No
A09	No	No
A10	No	No
T01	No	No
T02	No	No
C01	No	No
C02	**Yes**	**Yes**
C03	**Yes**	**Yes**
L01	No	No
L02	No	No
L03	No	No
L04	No	No
L05	Yes	No
L07	Yes	No
S01	No	No
S02	No	No
S03	No	No
S04	No	No
S05	No	No
S06	No	No
S07	No	No
S08	No	No
S09	No	No
S10	Yes	No

Note: Bold indicates additional analysis is required for the project.

Based on the screening analysis, it was determined a detailed construction noise assessment was required for NTPs C02 and C03 as the projects are directly adjacent to residential properties. L05, L07, and S10 are directly adjacent to Section 4(f) properties, however it was determined that none of the Section 4(f) properties would experience a substantial impairment due to noise increases from construction. No other NTPs show potential construction noise increases over ambient on noise sensitive receptors from the screening analysis.

5 Assess Construction Noise Results

The following methodology was used to prepare the construction noise analysis.

1. Detailed construction schedules were provided by the Port for NTPs C02 and C03. The schedules included detailed phasing and typical number and type of equipment used during the phase of construction. The construction phasing assumed 10 phases for each site. Tables 5 and 6 present the overall construction phases for C02 and C03 and the activities that would occur in each phase.

2. Calculations of construction noise will be conducted using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (TNM) version 3.2.

3. Construction noise will be calculated in 2-week increments for C02 and C03 from 7am to 7 pm at adjacent receivers. The 2-week calculations incorporate any overlap in the construction phases. The adjacent receivers are shown in Exhibit 2.

4. To determine noise levels associated with each phase of construction of C02 and C03, it will be assumed that every piece of construction equipment identified for the phase would be operating at the same time. This is the most conservative approach to identifying construction noise because the use of every piece of construction equipment at the same time would not be typical for most construction projects. The detailed calculation methods for construction are based on the quantities of construction equipment, schedule of construction efforts, and construction equipment noise source levels.

5. Calculated total noise levels at the receivers will then compared to ambient noise levels to determine noise levels at the adjacent receivers.

The results of the construction noise assessment will be reviewed by the FAA and the Port to determine the appropriate next steps.

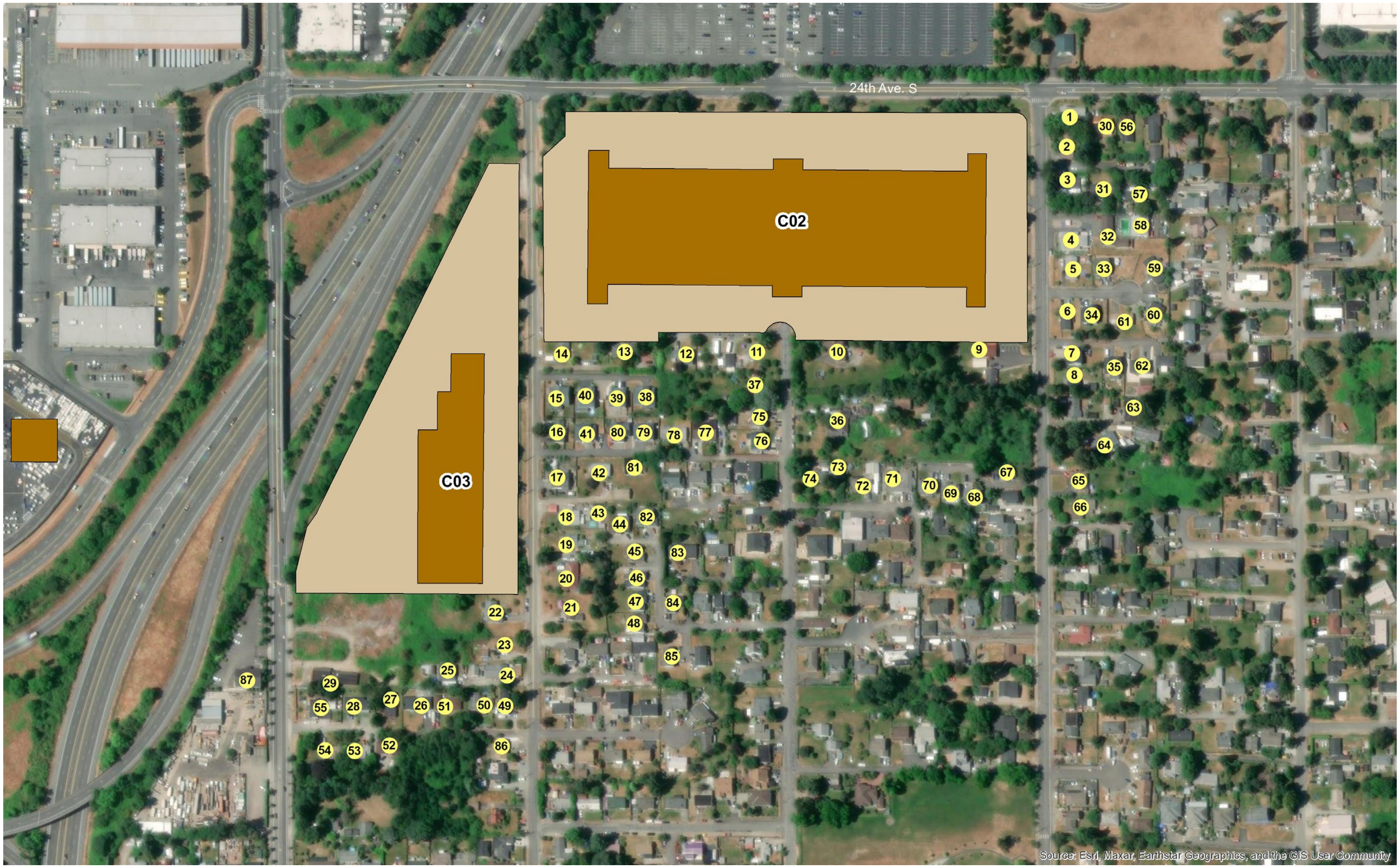
Table 5: C02 - Construction Activity by Construction Phase

Phase Description	Duration	Phase 1	2	3	4	5	6	7	8	9	10
Tree Removal	2 weeks	X									
Street Demolition	2 weeks	X									
Site Mobilization	2 weeks		X								
Grading - North Portion of Site	2 weeks		X								
Grading - South Portion of Site	2 weeks		X								
Excavation - North Portion of Site	6 weeks			X							
Excavation - South Portion of Site	6 weeks			X							
Utilities	8 weeks				X						
Utilities - North	3 weeks				X						
Utilities - South	3 weeks				X						
Foundation - North	9 weeks				X						
Foundation - South	9 weeks				X						
North Apron Concrete	3 weeks					X					
South Apron Concrete	3 weeks					X					
Retaining Wall	10 weeks					X					
Building Structure Tilt-Up	10 weeks						X				
Building Roof Trust System	6 weeks							X			
Building Roof System Build-up	28 weeks								X		
Paving Onsite	8 weeks									X	
Building Exterior & Interiors Walls	24 weeks										X
Paving Public ROW/Streets	8 weeks										X

Table 6: C03 - Construction Activity by Construction Phase

							Phase				
Phase Description	***Duration***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***
Tree Removal	2 weeks	X									
Site Mobilization	2 weeks		X								
Grading	4 weeks		X								
Excavation	8 weeks			X							
Utilities	4 weeks				X						
Utilities - North	4 weeks				X						
Foundation	14 weeks				X						
Loading Dock	10 Weeks					X					
Retaining Wall	10 weeks					X					
Building Structure Tilt-Up	4 weeks						X				
Building Roof Trust System	4 weeks							X			
Building Roof System Build-up	8 weeks								X		
Paving Onsite	4 weeks									X	
Building Exterior & Interiors Walls	10 weeks										X
Paving Public ROW / Street	4 weeks										X

Exhibit 2: Receivers



Attachment 1: Proposed Construction Schedule

		2025				2026				2027				2028				2029				2030				2031				2032				Number of Quarters
ID	DESCRIPTION	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
AIRSIDE																																		
A01	Taxiway A/B Extension							■	■	■	■	■	■	■	■	■	■	■																11
A02	Runway 16R-34L Blast Pads					■	■	■																										3
A04	Taxiway B 500' Separation & RIM Mitigation														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			17
A05	North Hold Pad																				■	■	■	■	■									5
A06	Runway 34L Highspeed Exit					■	■	■																										3
A07	Taxiway D Extension								■	■	■	■																						4
A08	Hardstand (north)								■	■	■	■	■	■	■	■	■	■																10
A09	Hardstand (central)									■	■	■	■	■	■	■	■	■																9
A10	Taxiway Fillets					■	■	■	■	■	■	■	■	■	■	■																		11
CARGO																																		
C01	Cargo 4 South Redevelopment				■	■	■	■	■																									5
C02	Off-site Cargo PH 1								■	■	■	■	■	■																				6
CO3	Off-site Cargo PH 2																■	■	■	■	■													5
LANDSIDE																																		
L01	NAE Relocation (southbound lanes)				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■													17
L02	Elevated Busway & Stations			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				27
L03	Second Terminal Roads/Curbside																■	■	■	■	■	■	■	■										8
L04	Main Terminal North GT Lot							■	■	■	■	■	■	■	■	■	■	■																11
L05	North GT Holding Lot											■	■	■	■	■																		5
L07	Employee Parking Structure																			■	■	■	■	■	■	■								7
TERMINAL																																		
T01	North Gates									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					20
T02	Second Terminal & Parking														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		18
AIRPORT/AIRLINE SUPPORT																																		
S01	Fuel Farm Expansion																■	■	■	■	■	■	■	■	■	■	■	■	■					13
S02	Primary ARFF						■	■	■	■	■	■	■	■																				8
S03	Secondary ARFF										■	■	■	■	■	■	■	■	■	■														10
S04	Fuel Rack Relocation					■	■	■	■	■	■	■	■	■	■	■																		11
S05	Triculator					■	■	■	■	■	■	■																						7
S06	Consolidated De-Icing Tanks					■	■	■	■	■	■	■																						7
S07	Westside Maintenance Campus		■	■	■	■	■	■	■	■	■	■																						10
S08	Airline Support (north)											■	■	■	■	■																		5
S09	Airline Support (west)											■	■	■	■	■																		5
S10	Centralized Rec. & Dist. Center																	■	■	■	■	■	■	■										7
																																		285

Health Effects of Aviation Noise:

Review of US Research and Findings

May 8, 2026

Prepared by:
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ME Eagan Consulting

Contents

Introduction and Summary

This appendix provides an overview of recent research on various potential health effects from exposure to aviation noise. It is part of the Environmental Impact Statement evaluating the effects of the Near-Term Projects (NTPs) from the SEA Sustainable Airport Master Plan (SAMP).

While the Federal Aviation Administration (FAA) currently is developing an updated noise policy, that process is likely to take several years. The Port is therefore conducting this review based on current noise FAA policy.

This Appendix provides a summary of the most recent research conducted by independent US researchers, largely funded by the FAA and conducted through the FAA's Aviation Sustainability Center (ASCENT) or directly through FAA's William J. Hughes Technical Center for Advanced Aerospace. These studies have been peer-reviewed and published in academic journals. They are considered robust and reliable and are generally the largest studies on these topics that have been conducted to date and are considered best available science.

These studies examine the areas of annoyance, sleep disturbance, hypertension, and cardiovascular disease. However, except for annoyance, none of the studies demonstrated a dose-response function, which is typically used to develop policy in this area.

The studies indicate that aircraft noise exposure can have effects on levels of annoyance and sleep disturbance. They suggest potential marginal effects between aircraft noise exposure and hypertension and show no effect between aircraft noise and cardiovascular disease. For the annoyance study, the noise exposure levels that were examined covered the full range of levels typically experienced in communities around airports, i.e., from very low levels of Day Night Average Sound Level (DNL) 50 dB to very high (and rare) levels of DNL 75 dB. The other studies reported on here, i.e., sleep disturbance, hypertension, and cardiovascular disease, were based on large national epidemiologic studies not originally designed to evaluate aircraft noise effects. As a result, the number of subjects exposed to aircraft noise in those studies was quite limited, so the statistical analyses categorized those exposed to levels higher than either DNL 55 dB or Nighttime Noise Level (Lnight) 45 dB to be "exposed" (depending on the effect being evaluated), and those exposed to lower levels "non-exposed". Therefore, except for annoyance, the study design and statistical findings are not sufficient to determine quantitative impacts at FAA's current thresholds evaluated in this study, i.e., DNL 65, although some qualitative evaluation is possible.

Development of FAA Noise Policy

Current US airport noise policy relies DNL 65 dB, which current FAA noise policy designates as compatible with residential and other noise-sensitive land uses. This section provides background on the development and status of that policy and the relationship of health effects to the development of US policy[1]. The DNL 65 dB threshold was initially recommended by the Environmental Protection Agency (EPA) in the 1970s, re-affirmed by the Federal Interagency Committee on Noise (FICON) in 1990, and again by the Federal Interagency Committee on Aviation Noise (FICAN) in 2018.

Current FAA noise policy is informed by an annoyance dose-response curve initially created in the 1970s known as the Schultz Curve[2], which is generally accepted as a representation of the range of noise impacts. It has been revalidated by subsequent analyses over the years.

In 1992, the Federal Interagency Committee on Noise (FICON) reviewed the use of the Schultz Curve and created an updated version using additional social survey data[3]. The FICON 1992 analysis added to the Schultz Curve's original database of 161 survey data points and calculated an updated dose-response curve using the same methodology but with a total of 400 survey data points.

The updated dose-response curve was found to agree within one to two percent of the original curve, leading FICON to conclude that the updated Schultz Curve remained the best available source of data to predict community response to transportation noise. The resulting FICON curve showed that 12.3% of people were highly annoyed by DNL 65 dB — a result similar to the original Schultz Curve — which supported FAA's continued choice of DNL 65 dB as its noise threshold.

The Federal Interagency Committee on Aviation Noise (FICAN) concluded in 2018 that, in general, updated research findings suggested the following: people are more annoyed by aircraft noise than by surface transportation noise, and annoyance due to aircraft noise is greater than that described by the dose-response curve recommended by FICON[4]. FICAN did not provide a revised recommendation for a threshold of impact, advising that decisions on whether to review and revise noise impact thresholds currently in effect should be left to agency discretion.

FAA currently is evaluating its noise policy. That effort began in the early 2010s. The FAA's Neighborhood Environment Survey (NES) [5] was published in 2021, after which FAA initiated agency-wide policy discussions.

The FAA Reauthorization Act of 2024[6] contains two provisions specifically related to the development of an updated noise policy:

- *Sec. 786 — Part 150 Noise Standards Update* directs the FAA to update FAR Part 150 Airport Noise Compatibility Program regulations[7] that identify land uses that are normally compatible with various levels of aviation noise exposure and prescribe a system for measuring noise at airports and surrounding areas.
- *Sec. 792 — Aircraft Noise Advisory Committee (ANAC)* requires the FAA to form an Aircraft Noise Advisory Committee to advise the FAA on issues facing the aviation community related to aircraft noise exposure and existing FAA noise policies and regulations.

The FAA's Noise Policy Review approach[8] includes timelines to allow the ANAC to complete its work and issue its report before finalizing policy revisions. This process is likely to take several years. It is very unlikely that the FAA will issue new policy – or even draft policy – before this SEPA process concludes.

Health Effects Pathways

Figure 1 below presents an overview of various noise-related health effects that have been studied. Researchers believe that there are two primary pathways for the range of health effects that have been identified: physiological responses from sleep disturbance and psychological responses from annoyance. These responses have been demonstrated with everyday noise sources unrelated to aviation (e.g., annoyance and increased stress levels related to leaf blowers and construction equipment), but the research on these effects vis-à-vis aircraft noise is not definitive. In short, the primary effects that have been identified are sleep disturbance and annoyance; these, in turn, can have secondary effects that can be categorized as biological responses and cardiometabolic responses. The findings presented here are focused first on the primary pathways (sleep disturbance and annoyance) and then on secondary responses (biologic responses and cardiometabolic responses).

Figure 1 Proposed Mechanisms to Explain Relationship Between Noise and Health Effects, Source: Clark, 2025

Key Findings: Annoyance

Annoyance is considered the best indicator of overall human response to aviation noise. For this reason, it has historically been the primary response driving noise policy. Noise annoyance represents both a health outcome and a critical mediator between noise exposure and other health effects. Research consistently shows that subjective annoyance is often a stronger predictor of health outcomes than objective noise levels alone. Non-acoustic factors can also influence annoyance, including attitudes toward the noise source, perceived control, expectations, fear, noise sensitivity, and beliefs about whether noise could be reduced.

As discussed above, current US policy relies on DNL 65 dB as the impact threshold for environmental actions such as the NTPs recommended in SAMP and denotes DNL 65 dB as the noise exposure level compatible with residential land use. Figure 2 presents the results of the FAA's NES, released in 2021. The Figure shows an increase in annoyance as compared with previous research that informs current policy; whereas the FICON curve indicates about 12.3% highly annoyed at DNL 65 dB, the NES indicates greater than 60% of the population is highly annoyed at that same exposure level.

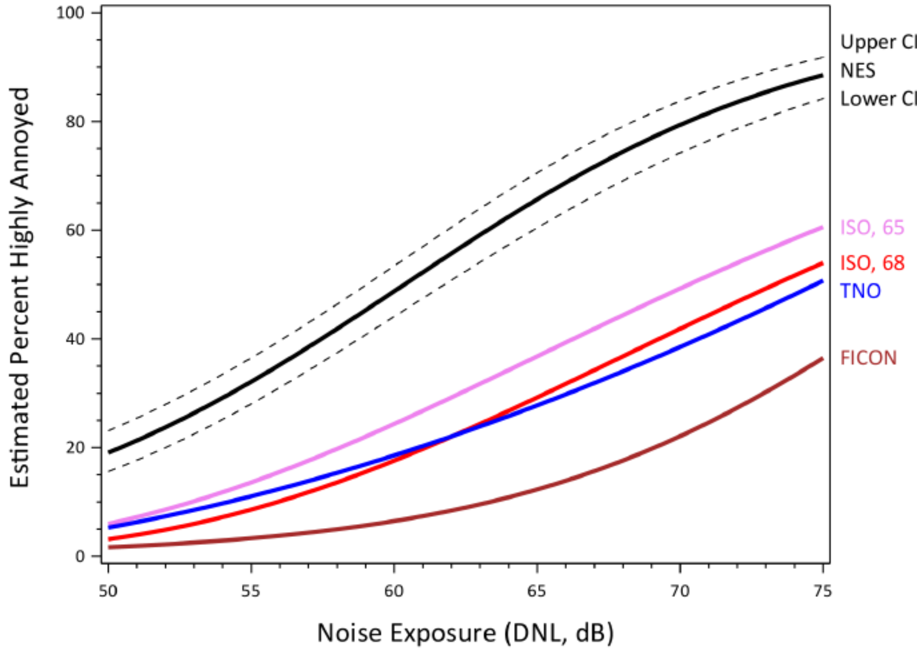

Figure 2 FAA Neighborhood Environmental Survey National Dose-Response Curve (NES), with 95 Percent Confidence Intervals (CI) . TNO, FICON and ISO Curves

Key Findings: Sleep Disturbance

Recent research suggests that sleep disturbance is a primary pathway influencing health effects of aviation noise. As shown in Figure 1, sleep disturbance can be related to primary effects (e.g., awakening, sleep quality) and secondary effects (e.g., blood pressure).

Sleep disturbance is evaluated in terms of both sleep quality (electrocardiogram (ECG) recordings, body movement, etc.) and behavioral awakenings. Effects on sleep quality from aviation are generally evaluated against nighttime noise levels, in terms of Lnight (defined as the average noise level between 10 pm and 7 am) because it is most appropriate to look at noise exposure when people are most likely to be sleeping. DNL has also been used in such analyses, mainly for consistency with metrics more typically used for policy development (DNL includes a 10 dB weighting for events that occur at night). Awakenings are generally evaluated using metrics such as Number of Events Above a Threshold (NA), which better measures exposure from individual events that might cause behavioral awakenings rather than an average measure.

A recent study in the U.S.[9] examined aircraft noise exposure and self-reported sleep disturbance among more than 35,000 participants from the Nurses' Health Study (NHS) living around 90 major U.S. airports, exposed over a period of more than 20 years. The Nurses' Health Study I (NHS I) and Nurses' Health Study II (NHS II) are among the largest investigations into the risk factors for major chronic diseases in women. The study was not initially designed to examine aircraft noise, so the percentage of women exposed to aircraft noise was very low, about one percent. The researchers used detailed noise level estimates based on each participant's home address. Participants were classified as either exposed or unexposed: exposed participants were those with aircraft noise levels greater than Lnight 45 dB. The study found that people exposed to Lnight greater than 45 dB were 23% more likely to report that they slept fewer than 7 hours per night, though no consistent association was found between aircraft noise and quality of sleep.

The FAA recently completed the largest sleep study of its kind, which measured both sleep quality and awakenings, as well as measurement of interior noise levels and predictions of exterior noise levels[10]. The study has not been published. FAA has stated that it will consider these results as part of its Noise Policy Review.

Based on the research presented above, it is reasonable to conclude that there may be some sleep disturbance in areas exposed to Lnight 45 dB and above, though the extent of that disturbance is not known. No dose-response relationship yet exists to determine the level of sleep disturbance at any given noise level.

Key Findings: Hypertension

Several studies have examined the relationship between aircraft noise and hypertension. As discussed above, both annoyance and sleep disturbance can invoke stress responses leading to hypertension.

Another analysis of the Nurses' Health Study data described above examined the relationship between nighttime noise exposure and hypertension using essentially the same methodology[11]. The researchers tested two noise thresholds: DNL 45 dB and DNL 55 dB. At DNL 45 dB, the results show a Hazard Ratio[1] (HR) of 1.03, or a roughly a 3% higher risk of hypertension. However, the confidence interval (CI) of that analysis was (0.99, 1.07), i.e., the confidence of that result is somewhere between 99% and 107%, which means that the risk is with the confidence interval of the study and thus is not conclusive. At DNL 55 dB, the HR was slightly higher at 1.07, i.e., 7% higher risk, but its CI (0.98, 1.15) was also marginal.

The same research team also applied this methodology to a different large cohort study, the Women's Health Initiative[12], using DNL and Lnight 45 dB as metrics of interest. After accounting for other potential confounding factors that could affect blood pressure, the HRs were 1.00 and 1.06 for the two noise measures, respectively. In this case, too, the confidence intervals of (0.93, 1.08) and (0.91, 1.24), respectively, included the value of one, meaning the result was not statistically meaningful.

No quantitative, i.e., dose-response relationship exists to determine levels of hypertension effect.

Key Findings: Cardiovascular Disease

Cardiovascular disease (CVD) develops through a variety of mechanisms, including chronic stress responses, which can lead to inflammation, sleep disruption, hypertension, and metabolic dysfunction. As discussed above, sleep disturbance and annoyance (regardless of source) are considered primary pathways that can lead to many of these mechanisms. Research results are mixed but generally do not support a relationship between aviation noise and CVD.

The FAA Study described above also examined associations between long-term aircraft noise exposure and CVD incidence and mortality in the Nurses' Health Study[13]. Using DNL estimates modeled at 5-year intervals, researchers observed 4,529 CVD cases and 14,930 deaths over 20 years among the total cohort of 117,364 female nurses. Approximately 7% of the CVD cases (317 women) were exposed to DNL greater than 50 dB, and an even smaller percentage (0.1%) were exposed to noise levels greater than DNL 65 dB. No significant associations were

[1] A hazard ratio is a way of expressing relative risk — an HR of 1.00 means no difference in risk compared to the baseline group, and an HR of 1.03 means roughly a 3% higher risk.

found between aircraft noise exposure and health outcomes: the result for CVD incidence was HR of 1.00; i.e., no additional risk (CI: 0.89, 1.12) comparing women exposed to DNL greater than 50 dB to those exposed to DNL less than 50 dB. The result for mortality was an HR of 1.02 (0.96, 1.09) for the same comparison.

This is one of the first large US nationwide prospective studies on aircraft noise and cardiovascular outcomes and the largest to date The authors conclude they found no adverse associations but emphasize their findings should be interpreted cautiously due to the limited statistical power (i.e., low number of women exposed to aircraft noise levels) and low exposure levels.

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