Appendix B

Noise Measurements and Complaints

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Appendix B Noise Measurements and Complaints

This Part 150 Noise Compatibility Study (Part 150 Study) included data collection related to measured aircraft noise levels and community complaints at the Duluth International Airport (DLH or Airport). This appendix provides the results of a temporary field noise measurement program that was conducted to provide actual noise data for informational purposes useful for the development of noise contour modeling.

B.1 Noise Measurement Program

Noise measurements were performed at sixteen (16) sites near the Airport on November 4th – November 7th of 2019. Noise meters were located at different residences and public locations to capture noise from aircraft operations. Measurement staff coordinated with property owners and caretakers to gain access to the properties. Each site was selected relative to flight patterns and in response to community suggestions on locations to measure aircraft noise. Noise monitoring was conducted at all sites that were recommended by community members.

Measurements made for short periods of time are unique to that one period, and may not represent the average of the events that would occur at that location over a longer period of time. The relationship between field measurements and computer-modeled average noise levels is comparable to that between a book and its cover. While the cover (single-event measurements) may indicate something of the character of a book, and receive inordinate attention based on its color or graphics, the total story (average noise level) is in all the words that constitute the story. It is on the total story that the critic makes his assessment. In other words, the modeling process simulates overall average-annual conditions (the book) while field measurements (the cover) reflect only a small part of the whole story and should not be too heavily relied upon when conducting a noise analysis. Aircraft noise measurements concentrated on the collection of a variety of single overflight noise information, with emphasis on the noise generated by military aircraft during arrival and departure east and west of the Airport. Measurements occurred during all times that the military aircraft were operating to the extent possible.

Noise monitoring data, per FAA regulations, can be utilized for data acquisition and refinement, but not to calibrate the noise model for enforcement purposes. For this noise measurement program the results were utilized to identify the areas impacted by aircraft overflights, and report the measured sound levels.

B.1.1 Equipment Type

State of the art equipment used in this program included the Larson Davis LxT sound level meters. These are Class I Precision Sound Level Meters (as defined by American National Standards Institute (ANSI) and International Electrotechnical Commission (IEC)). The equipment was calibrated in compliance with manufacturer's procedures. Microphones and recording equipment are the highest quality and are capable of recording and calculating various noise metrics. Each meter logged noise events in terms of date, time, duration and peak noise level metric (Lmax) in decibels (dB).

B.1.2 Noise Measurement Sites

Sites for the noise measurements included single-family residences, places of worship and recreational open space. The microphones were placed in backyards and the rear of the properties if possible, to avoid non-aircraft noise sources. **Table B-1, *Noise Measurement Locations*,** lists the sites where the

noise measurement microphones were located. **Exhibit B-1, *Noise Measurement Locations***, illustrates the locations of the noise measurement sites.

B.1.2.1 Site Description

The following sections provide a description of the monitoring location and its surroundings. Observations about the estimated ambient noise levels and any background noise sources (non-aviation) are reported in the description.

Site 1

Located at 5560 MN-194 in Hermantown. The site is approximately 2.1 miles west of Runway End 9. This is a rural home in a semi wooded area with low background traffic noise from MN-194. The monitor was placed in the backyard of the residence on the property. The ambient sound level measured in this area was approximately 43-64 db. The ambient sound varied due to traffic, specifically trucks traveling on MN-194 and using engine brake prior to stopping at Miller Trunk Highway.

Site 2

Located at 4483 Martin Rd, near the northeast corner of Martin Road and Rice Lake Road. The site is approximately 1.8 miles to the northeast of Runway End 21. This is an open space area that was previously used as a recreational land use. There was heavy machinery operating on 11/06/2019 near the corner of Martin Rd and Rice Lake Road. The ambient sound level was higher on 11/06/2019 due to this heavy machinery operating. Ambient sound as measured was approximately 44 dB on 11/05/2019 and 49-54 dB on 11/06/2019.

Site 3

Located at 5963 Helm Road near Rice Lake. The site is approximately 4.7 miles to the northwest of Runway End 09. This is a rural home in a semi wooded area, with low background traffic noise. The ambient sound level in this area is significantly lower than levels measured at other sites due to the rural setting. Ambient sound as measured was approximately 34 dB.

Site 4

Located at 5454 Miller Trunk Highway. This site is approximately 1.6 miles to the southwest from Runway End 09. This location is classified as a place of worship (Grace Lutheran Church). There was minimal background traffic noise from Miller Trunk Highway and the monitor was placed in the rear of the parking lot behind the main structure on the property. Ambient sound as measured was approximately 47.0 dB.

Site 5

Located on Old Ugstad Road, west of the Lavaque Bypass and Ugstad Road intersection. The site is approximately 0.8 miles from Runway End 09. The site is an open area to the west with a wooded area directly to the east. There was minimal background noise from road traffic, with occasional heavy trucks on Lavaque Bypass. The measured ambient sound level was approximately 46.0 dB.

Site 6

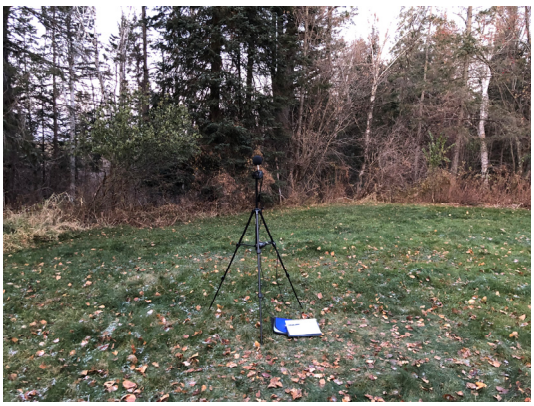
Located at 725 Swan Lake Road, west of Haines Road. The site is approximately 0.6 miles east of Runway End 03 and 0.7 miles southeast of Runway End 27. This site was in a wooded area with a clearing to the east of a north/south oriented tree line. There was minimal background noise from Haines Road and Swan Lake Road. However, there was a 10-knot wind during the measurement period which caused the ambient to be slightly higher than what would be observed on a non-windy day. The measured ambient sound level was 46 dB.

Site 7

Located at 5006 Timber Hill Court. The site is approximately 1.1 miles to the southeast of Runway End 09. The site is in a residential setting with minimal background noise from traffic. The monitor was placed in front of the homes as the property owner was not home to gain access to the rear of the home. The measured ambient sound level was approximately 42.0 dB.

Site 8

Located at 4670 Lavaque Bypass Road. The site is approximately 0.6 miles from Runway End 09. The site is a residential house located in a wooded area with low background traffic noise. The monitor was placed approximately 120 feet behind the residence. The measured ambient sound level was approximately 38 to 50 dB, with the variation due to road noise.



Site 9

Located at 5025 Silver Leaf Street. The site is approximately 1.0 miles from Runway End 09. The site is in a residential setting with minimal background traffic noise. At times there was heavy machinery operating on a construction site at the adjacent lot. However, the machinery was not operating while the majority of the aircraft were observed at the site. The monitor was placed in the front yard in order to minimalize the heavy machinery background noise. The measured ambient sound level was approximately 37.0 dB with no heavy machinery operating and 50.0 dB when the machinery was operating.

Site 10

Located at 3902 Norton Road. The site is approximately 1.5 miles from Runway End 27. The site is a rural residential setting with minimal background traffic noise. The monitor was located approximately 100 feet southwest of the residence in the background area. The ambient sound level was measured at approximately 42.0 dB on 11/05/2019 and 45-55 dB on 11/07/2019.

Site 11

Located at 5545 Miller Trunk Highway. The site is approximately 2.0 miles from Runway End 09 and slightly north of the extended centerline for Runway 09/27. The site is in a semi wooded area in a clearing that was on a hill located to the north of the home on the property. The location had minimal background noise from traffic on Miller Trunk Highway due to how far the location was from the road. The measured ambient sound level was 45.0 dB.

Site 12

Located at 2220 Norton Road. The site is approximately 3.0 miles from Runway End 27. The site is located in a semi wooded area in the backyard of a residence. The site was approximately 50 feet to the southwest of the residence. The location had minimal background noise from traffic on Norton Road. The measured ambient sound level was 41.0 dB.

Site 13

Located at 4509 Kruger Road. The site is approximately 0.9 miles to the south, southeast of Runway End 27. The site is located in a semi wooded area in the backyard of a residence. The site was approximately 50 feet north of the residence in a clearing. The location had minimal background noise from traffic on Kruger Road. The measured ambient sound level was 45.0 dB.

Site 14

Located at 4926 Martin Road. The site is approximately 1.5 miles north of the midpoint of Runway 9/27. The site is located 75 feet behind the residence in a clearing of a semi wooded area. The location had low background noise from traffic on Martin Road. The measured ambient sound level on 11/05/2019 was at 42 dB and on 11/06/2019 and 11/07/2019 the measured ambient sound level was between 38-42 dB.

Site 15

Located along Mustang Drive near the Runway End 27 ILS installation, just to the south of the Minnesota Air National Guard 148th Fighter Wing base entrance. The site is approximately 0.6 miles from Runway End 27. The site was in an open area, however there was considerable traffic along Mustang Drive as base personnel were going to a from the base along this road. The measured ambient sound level was 47.5 dB.

Site 16

Located at 4464 Ralston Drive. The site is in an open space recreational area located on the Federal Prison Camp. The site is approximately 0.5 miles to the southwest of Runway End 03. There was minimal background traffic noise from Ralston Drive and Miller Trunk Highway. The measured ambient sound level was 45 dB. Due to the security of the facility a photograph of the location is not provided.

B.1.3 Duration of Monitoring

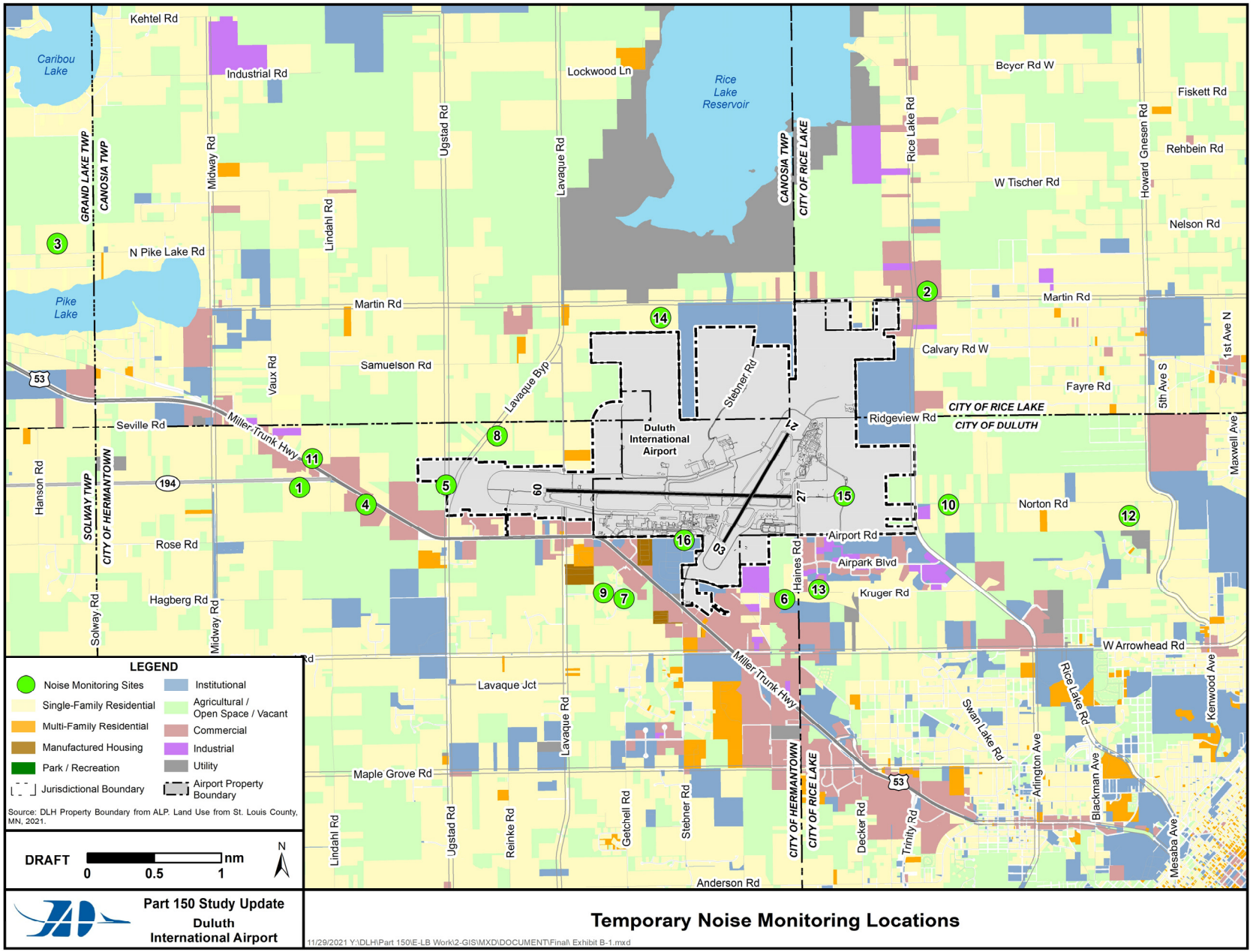
The noise monitoring was conducted for at least two (2) hours at each site. The weather during the monitoring period was clear and normal for Duluth conditions, there was periodic light snow occurring on some days. Both East and West air traffic flow were observed during the measurement dates. **Table B-2, *Noise Measurement Program Duration***, lists the dates and times of the monitoring periods at each site.

Table B-1 Noise Measurement Locations

Site Number	Location	City
1	5560 MN-194	Hermantown
2	4483 Martin Rd	Duluth
3	5963 Helm Rd	Duluth
4	5454 Miller Trunk Rd	Hermantown
5	West of Lavaque Bypass Rd and Ugstad Rd on Old Ugstad Rd	Duluth
6	4725 Swan Lake Rd	Hermantown
7	5006 Timber Hill Ct	Hermantown
8	4670 Lavaque Bypass Rd	Hermantown
9	5025 Silver Leaf St	Hermantown
10	3902 Norton Rd	Duluth
11	5545 Miller Trunk Hwy	Hermantown
12	2220 Norton Rd	Duluth
13	4509 Kruger Rd	Duluth
14	4926 Martin Rd	Duluth
15	Mustang Dr south of Deuce Ave	Duluth
16	4464 Ralston Dr	Duluth

Source: Landrum & Brown analysis, 2021.

Exhibit B-1 Noise Measurement Locations



Source: Landrum & Brown analysis, 2021.

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Table B-2 Noise Measurement Program Duration

Site	Measurement Date	Start Time	End Time
1	11/6/2019	8:45 AM	10:00 AM
1	11/7/2019	1:00 PM	2:00 PM
2	11/5/2019	10:45 AM	11:45 AM
2	11/6/2019	10:30 AM	11:30 AM
3	11/6/2019	12:00 PM	2:10 PM
4	11/5/2019	1:00 PM	2:00 PM
4	11/6/2019	1:00 PM	2:02 PM
5	11/5/2019	8:30 AM	10:30 AM
6	11/7/2019	10:45 AM	12:45 PM
7	11/6/2019	2:30 PM	4:30 PM
8	11/5/2019	1:05 PM	2:05 PM
8	11/7/2019	8:41 AM	9:56 AM
9	11/7/2019	8:30 AM	10:30 AM
10	11/5/2019	2:45 PM	3:45 PM
10	11/7/2019	10:51 AM	11:52 AM
11	11/6/2019	8:45 AM	9:50 AM
11	11/7/2019	1:00 PM	2:00 PM
12	11/5/2019	2:45 PM	4:18 PM
13	11/6/2019	2:47 PM	4:51 PM
14	11/5/2019	9:15 AM	10:19 AM
14	11/6/2019	10:55 AM	12:00 PM
14	11/7/2019	10:45 AM	12:00 PM
15	11/4/2019	2:30 PM	4:30 PM
16	11/5/2019	2:30 PM	4:30 PM

Source: Landrum & Brown analysis, 2021.

B.1.4 Methods for Event Correlation

Measured noise events were matched with specific aircraft operations using the following two-step method:

- Each measurement site and equipment was supervised by a technician who observed and logged aircraft operations
- Noise events from noise meter were correlated to logged aircraft operations by using the time of the event and operation

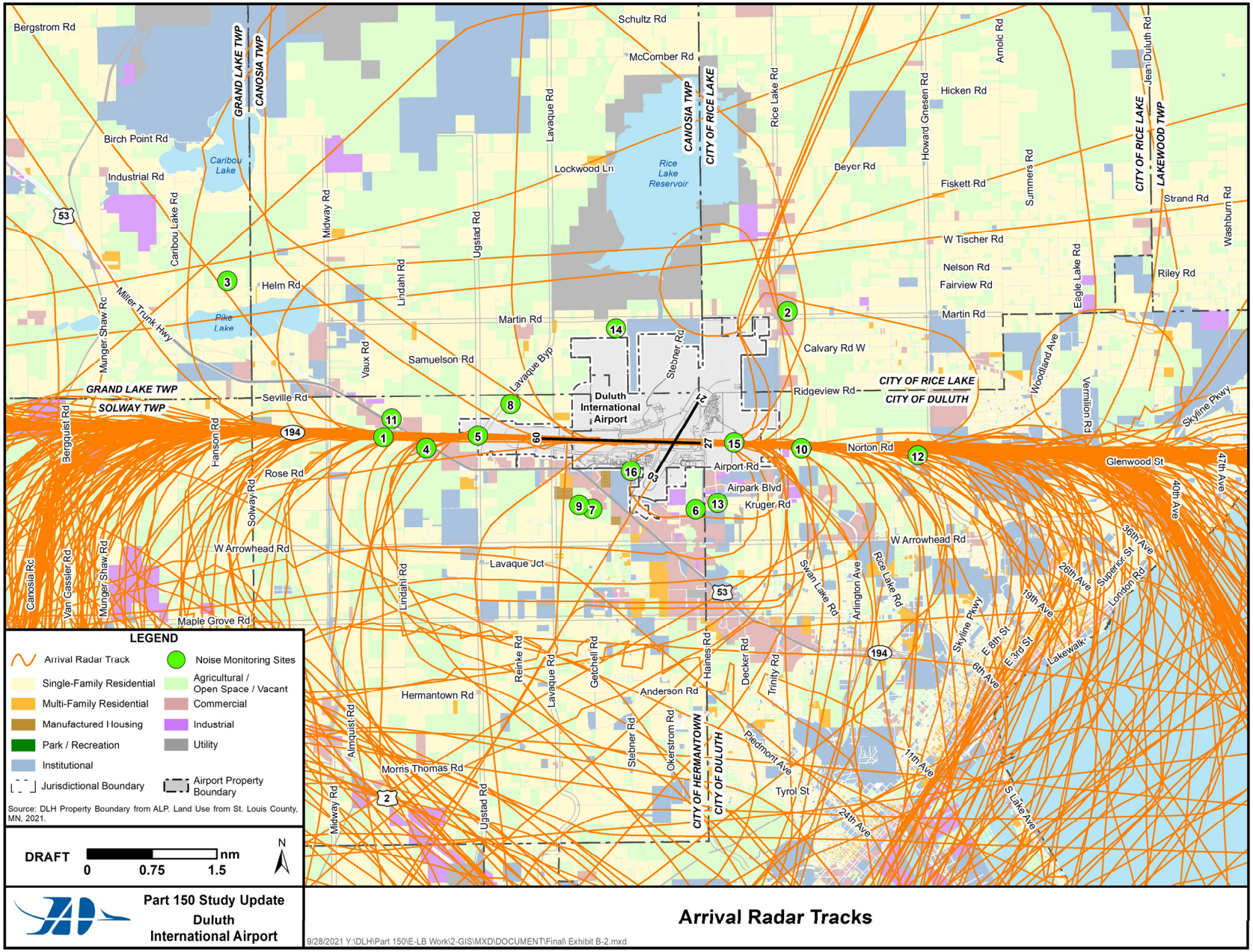
Although this method provided positive identification of aircraft operations and highly accurate correlation with measured noise events, some community noise (e.g. cars, heavy machinery, animals) and aircraft noise occurred simultaneously and correlated as aircraft noise events. Unfortunately, there is currently no technology to separate aircraft noise levels from simultaneous non-aircraft noise levels.

B.1.4.1 Air Traffic Maps

The following figures illustrate the typical arrival and departure flight paths relative to the noise measurement sites. Each map shows radar tracks for multiple days from Runway 09/27. The radar flight

track data was supplied by the FAA's National Offload Program (NOP) database. The flight track colors represent different aircraft operation types shown on the map legends. **Figure B-2, *Arrival Radar Tracks***, and **Figure B-3, *Departure Radar Tracks***, illustrate typical flight corridors flown during the noise measurement program.

Exhibit B-2 Arrival Radar Tracks



Source: FAA National Offload Program (NOP) data, Landrum & Brown analysis, 2021.

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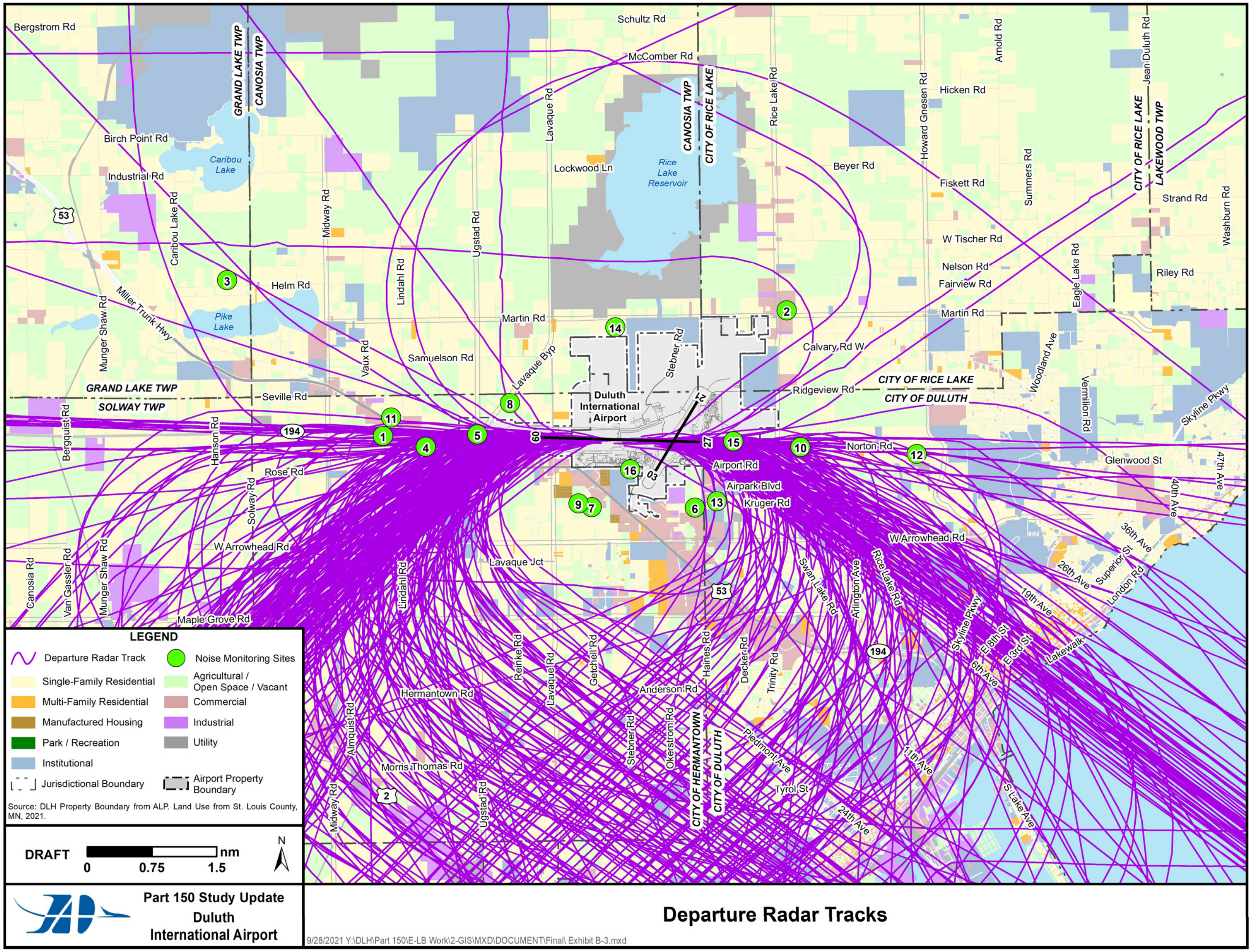
Exhibit B-3 Departure Radar Tracks



Source: FAA National Offload Program (NOP) data, Landrum & Brown analysis, 2021.

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B.1.5 Noise Measurement Results

Noise level readings were used to characterize the noise environment to distinguish the various noise levels associated with individual aircraft operations. The noise measurement process was designed to capture the noise levels of a representative mix of aircraft operations near the measurement sites that includes military, general aviation, commuter/air taxi, and air carrier operations at DLH. Some of the noise events collected at the measurement sites had varying levels of background ambient noise due to proximity to major thorough fares such as Miller Trunk Highway.

B.1.5.1 Sound Metrics

The description, analysis, and reporting of community sound levels is made difficult by the complexity of human response to sound and the myriad of sound-rating scales and metrics that have been developed for describing acoustic effects. Various rating scales have been devised to approximate the human subjective assessment of "loudness" or "noisiness" of a sound.

A sound metric that is commonly used in community noise analysis is the Lmax metric, which quantifies the peak or maximum noise level reached by a noise event.

For an aircraft noise event, the sound of the aircraft begins to rise above ambient noise levels. The closer the aircraft gets, the louder it is until the aircraft is at its loudest (Lmax) point. As the aircraft passes, the noise level decreases until the sound level settles to ambient levels.

B.1.5.2 Noise Monitoring Results Summary

The noise monitoring program provided insight into the noise exposure from aircraft activity in the areas surrounding the airport. The measured noise levels from departing aircraft tended to produce peak decibel levels several decibels higher than those of arriving aircraft. This difference is caused by two characteristics of the separate operations. First, exposure to noise above the background levels from arriving aircraft is typically shorter than from departing aircraft. Second, the power settings used during approach are lower than those necessary to climb during the takeoff, resulting in measured noise levels of arrivals at several decibels less than measured at similar locations during departure.

It should be noted that the Lmax noise levels represent the maximum noise level for each individual aircraft event and should not be confused with the average Day-Night Level (DNL) contours that are used for determining eligibility for land use mitigation programs.

AIRCRAFT SINGLE EVENT MAXIMUM NOISE LEVEL RESULTS

Individual aircraft noise events were measured using the Lmax metric **Table B-3, *Maximum Aircraft Noise Levels***, lists noise levels that represent the highest or maximum Lmax measured at each monitoring site for any given noise event. In many instances the noise events from F-16 aircraft were created by multiple aircraft flying in formation and or close sequence in a flight pattern. **Table B-4, *Noise Measurement Program Results***, provides these data in tabular form listing all aircraft noise events and their corresponding Lmax.

Table B-3 Maximum Aircraft Noise Levels

Site	Date	Time	Aircraft Type	Lmax (dB)	Arrival/ Departure	Runway
1	11/7/2019	1:35 PM	F-16	96.1	D	27
2	11/5/2019	11:21 AM	F-16	108.6	A	27
3	11/6/2019	1:56 PM	F-16	104.2	D	27
4	11/5/2019	1:47 PM	F-16	121.17	D	27
5	11/5/2019	9:32 AM	F-16	122.3	D	27
6	11/7/2019	11:33 AM	F-16	109.7	A	27
7	11/6/2019	3:21 PM	Helicopter	79.3	O	--
8	11/5/2019	1:38 PM	F-16	110	D	27
9	11/7/2019	9:43 AM	F-16	105.9	D	27
10	11/5/2019	11:21 PM	F-16	104.6	A	27
11	11/7/2019	3:25 PM	F-16	114.2	D	27
12	11/5/2019	2:51 PM	E6 Mercury	95.2	A	27
13	11/6/2019	4:16 PM	Twin Propeller	67.9	A	27
14	11/5/2019	10:04 AM	F-16	96.2	D	27
15	11/4/2019	3:06 PM	F-16	113.4	A	27
16	11/5/2019	3:28 PM	F-16	105.3	A	27

Source: Landrum & Brown analysis, 2020.

NOISE MEASUREMENT PROGRAM MEASUREMENT RESULTS DATA

Table B-4, *Noise Measurement Program Results*, provides all measured noise events and observation data in tabular form listing all aircraft noise events and their corresponding Lmax. In some instances, non-aviation background sources were captured and during aircraft noise events. These noise events were noted as having non-aviation background noise sources that were also audible at the time of measurement.

Table B-4 Noise Measurement Program Results

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
1	11/6/2019	8:45:00 AM	10:00:00 AM	27	43-64	9:34:00 AM	2:00	89.6	Dep	MIL	F16
1	11/6/2019	8:45:00 AM	10:00:00 AM	27	43-64	9:39:00 AM	1:34	87.6	Dep	MIL	F16
1	11/6/2019	8:45:00 AM	10:00:00 AM	27	43-64	9:46:00 AM	2:00	93.5	Dep	MIL	F16
1	11/7/2019	1:00:00 PM	2:01:00 PM	27	43-64	1:08:00 PM	0:48	55.7	Dep	GA	Prop
1	11/7/2019	1:00:00 PM	2:01:00 PM	27	43-64	1:16:00 PM	0:48	52.3	Dep	GA	Prop
1	11/7/2019	1:00:00 PM	2:01:00 PM	27	43-64	1:24:00 PM	3:40	94.4	Dep	MIL	F16
1	11/7/2019	1:00:00 PM	2:01:00 PM	27	43-64	1:35:00 PM	2:40	96.1	Dep	MIL	F16
1	11/7/2019	1:00:00 PM	2:01:00 PM	27	43-64	1:54:00 PM	0:54	61.9	Dep	CM	Jet
2	11/5/2019	10:45:00 AM	11:45:00 AM	27	43-45	11:03:40 AM	01:04	97.6	Arr	MIL	F16
2	11/5/2019	10:45:00 AM	11:45:00 AM	27	43-45	11:09:34 AM	01:22	89.7	Arr	MIL	F16
2	11/5/2019	10:45:00 AM	11:45:00 AM	27	43-45	11:16:30 AM	00:20	79.7	Arr	MIL	F16
2	11/5/2019	10:45:00 AM	11:45:00 AM	27	43-45	11:21:41 AM	01:11	108.6	Arr	MIL	F16
2	11/5/2019	10:45:00 AM	11:45:00 AM	27	43-45	11:24:59 AM	01:03	99.0	Arr	MIL	F16
2	11/6/2019	10:30:00 AM	11:30:00 AM	27	49-54	10:53:17 AM	01:00	103.7	Arr	MIL	F16
2	11/6/2019	10:30:00 AM	11:30:00 AM	27	49-54	11:29:21 AM	00:38	77.6	Dep	GA	Prop
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	12:28:32 PM	00:53	72.3	Ovf	CM	Jet
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	12:39:55 PM	00:42	67.9	Ovf	CM	Jet
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	12:45:09 PM	00:42	59.2	Ovf	CM	Jet
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	1:15:40 PM	00:33	57.0	Ovf	CM	Jet
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	1:34:38 PM	00:48	81.3	Ovf	CM	Jet
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	1:44:12 PM	01:39	95.7	Dep	MIL	F16
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	1:52:21 PM	00:43	68.2	Ovf	CM	Jet
3	11/6/2019	12:00:00 PM	2:10:00 PM	27	34	1:56:38 PM	01:57	104.2	Dep	MIL	F16
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:34:54 PM	00:14	67.1	Dep	CM	Jet
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:36:10 PM	00:40	79.6	Dep	CM	Jet
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:37:19 PM	01:04	106.3	Dep	MIL	F16
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:39:11 PM	01:09	102.3	Dep	MIL	F16
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:46:50 PM	00:17	86.5	Dep	CM	Jet
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:47:25 PM	01:28	121.7	Dep	MIL	F16

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
4	11/5/2019	1:00:00 PM	2:00:00 PM	27	46-47	1:50:10 PM	00:44	86.9	Dep	CM	Jet
4	11/6/2019	1:00:00 PM	2:02:00 PM	27	54.5	1:14:00 PM	0:54	68.0	Dep	GA	Prop
4	11/6/2019	1:00:00 PM	2:02:00 PM	27	54.5	1:33:00 PM	1:42	95.4	Dep	MIL	F16
4	11/6/2019	1:00:00 PM	2:02:00 PM	27	54.5	1:40:00 PM	0:54	54.3	Dep	GA	Prop
4	11/6/2019	1:00:00 PM	2:02:00 PM	27	54.5	1:43:00 PM	1:26	92.5	Dep	MIL	F16
4	11/6/2019	1:00:00 PM	2:02:00 PM	27	54.5	1:51:00 PM	0:49	64.5	Dep	CM	Jet
4	11/6/2019	1:00:00 PM	2:02:00 PM	27	54.5	1:55:00 PM	2:00	89.5	Dep	MIL	F16
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	8:47:04 AM	00:50	78.1	Dep	GA	Prop
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	8:48:56 AM	01:06	67.4	Dep	GA	Prop
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	8:57:37 AM	00:18	78.7	Dep	GA	Prop
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	9:02:56 AM	00:04	61.3	Dep	GA	Prop
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	9:03:44 AM	00:26	74.0	Dep	GA	Prop
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	9:32:43 AM	00:57	122.3	Dep	MIL	F16
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	9:43:27 AM	01:42	120.3	Dep	MIL	F16
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	9:56:29 AM	00:28	114.4	Dep	MIL	F16
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	9:57:01 AM	00:29	119.7	Dep	MIL	F16
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	10:04:46 AM	01:07	120.8	Dep	MIL	F16
5	11/5/2019	8:30:00 AM	10:30:00 AM	27	45-47	10:06:14 AM	00:28	77.7	Dep	MIL	F16
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	10:54:28 AM	00:26	66.9	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:03:14 AM	00:28	72.7	Dep	CM	Jet
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:09:44 AM	00:59	88.4	Arr	MIL	F16
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:17:37 AM	00:24	60.7	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:18:13 AM	00:29	70.5	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:22:23 AM	00:36	69.0	Dep	CM	Jet
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:23:26 AM	00:23	66.4	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:27:24 AM	00:37	86.0	Arr	MIL	F16
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:28:12 AM	00:22	65.5	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:29:32 AM	00:43	84.6	Arr	MIL	F16
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:31:55 AM	00:17	64.1	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:33:07 AM	00:39	109.7	Arr	MIL	F16

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:39:07 AM	00:15	63.8	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:40:36 AM	00:56	93.1	Arr	MIL	F16
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:44:55 AM	00:26	73.2	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:45:43 AM	00:23	62.3	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:49:19 AM	00:24	70.1	Dep	CM	Jet
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	11:56:58 AM	00:26	72.6	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	12:05:21 PM	00:28	68.3	Arr	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	12:13:15 PM	00:22	83.6	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	12:17:15 PM	00:17	69.7	Ovf	GA	Prop
6	11/7/2019	10:45:00 AM	12:45:00 PM	27	45-48	12:24:00 PM	00:24	71.8	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:15:27 PM	00:49	76.8	Dep	MIL	Helo
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:21:48 PM	00:27	79.3	Ovf	GA	Helo
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:27:07 PM	00:15	64.6	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:28:16 PM	00:32	72.1	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:35:06 PM	00:47	69.6	Dep	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:36:03 PM	00:26	71.3	Dep	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:38:36 PM	00:42	70.1	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:40:03 PM	00:32	68.6	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:43:01 PM	00:36	77.6	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	3:44:54 PM	00:15	68.5	Ovf	GA	Prop
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	4:00:25 PM	00:32	69.5	Dep	CM	Jet
7	11/6/2019	2:30:00 PM	4:30:00 PM	27	41-42	4:06:05 PM	00:56	68.6	Ovf	CM	Jet
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:16:20 PM	01:30	76.2	Dep	GA	Prop
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:27:24 PM	01:06	77.3	Dep	GA	Prop
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:31:59 PM	01:10	75.6	Dep	GA	Prop
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:34:16 PM	00:34	77.9	Dep	GA	Jet
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:35:37 PM	00:41	81.4	Dep	CM	Jet
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:36:55 PM	01:28	105.4	Dep	MIL	F16
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:38:52 PM	01:04	110.0	Dep	MIL	F16
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:41:23 PM	00:28	67.0	Dep	GA	Prop

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:43:54 PM	01:43	80.5	Dep	GA	Prop
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:46:17 PM	00:38	67.1	Dep	GA	Prop
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:47:01 PM	02:08	108.9	Dep	MIL	F16
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:49:22 PM	00:39	80.2	Dep	GA	Prop
8	11/5/2019	1:05:00 PM	2:05:00 PM	27	38-50	1:50:56 PM	00:37	73.6	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	8:51:00 AM	1:35	73.4	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	8:54:00 AM	0:40	68.6	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	8:56:00 AM	1:32	73.4	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:14:00 AM	1:15	66.6	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:19:00 AM	0:37	55.6	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:20:00 AM	0:43	69.1	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:22:00 AM	1:38	71.1	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:34:00 AM	2:31	95.8	Dep	MIL	F16
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:43:00 AM	1:39	91.4	Dep	MIL	F16
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:46:00 AM	0:53	61.8	Dep	GA	Prop
8	11/7/2019	8:41:00 AM	9:56:00 AM	27	38-50	9:51:00 AM	3:17	96.4	Dep	MIL	F16
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	8:36:29 AM	00:21	83.8	Dep	GA	Prop
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	8:51:38 AM	00:32	73.3	Dep	GA	Prop
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:15:20 AM	00:19	67.4	Dep	GA	Jet
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:16:24 AM	00:24	65.7	Ovf	CM	Jet
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:19:51 AM	00:55	82.8	Dep	GA	Prop
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:20:51 AM	00:22	76.1	Dep	GA	Prop
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:22:37 AM	00:25	75.2	Dep	GA	Prop
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:34:35 AM	02:20	100.3	Dep	MIL	F16
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:43:46 AM	01:15	105.9	Dep	MIL	F16
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:49:36 AM	00:23	75.2	Ovf	GA	Prop
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:52:07 AM	02:23	100.6	Dep	MIL	F16
9	11/7/2019	8:30:00 AM	10:30:00 AM	27	37-50	9:58:33 AM	00:19	83.9	Dep	GA	Prop
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:02:39 AM	00:56	97.8	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:04:04 AM	00:24	86.6	Arr	MIL	F16

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:04:33 AM	00:22	87.8	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:04:56 AM	00:49	98.8	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:05:48 AM	00:38	75.2	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:08:10 AM	00:49	103.9	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:09:12 AM	00:36	81.0	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:10:00 AM	02:04	90.6	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:12:08 AM	00:57	82.4	Arr	GA	Prop
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:17:51 AM	00:40	70.9	Arr	GA	Prop
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:20:31 AM	00:53	103.4	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:21:27 AM	00:22	83.9	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:21:57 AM	01:41	104.6	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:24:28 AM	00:29	88.5	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:25:29 AM	00:22	81.4	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:25:52 AM	00:23	87.4	Arr	MIL	F16
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:47:55 AM	00:54	87.0	Arr	ENY	Jet
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:50:44 AM	00:34	71.6	Arr	GA	Prop
10	11/5/2019	10:51:00 AM	11:52:00 AM	27	42	11:53:18 AM	00:51	71.0	Arr	GA	Prop
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	2:48:32 PM	00:32	77.5	Arr	GA	Prop
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	2:54:16 PM	00:44	93.8	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	2:55:50 PM	01:04	95.4	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	2:57:26 PM	00:26	93.7	Arr	CM	Jet
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:04:53 PM	00:52	95.4	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:05:59 PM	00:39	91.9	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:06:44 PM	00:29	96.4	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:10:34 PM	00:38	102.3	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:11:23 PM	00:25	102.0	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:12:11 PM	00:37	97.5	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:13:25 PM	00:28	93.6	Arr	MIL	F16
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:17:32 PM	00:22	65.1	Arr	GA	Prop
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:22:31 PM	00:18	67.2	Arr	GA	Prop

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:26:07 PM	00:31	70.2	Arr	GA	Prop
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:27:41 PM	00:28	70.4	Arr	GA	Prop
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:28:34 PM	00:47	80.0	Arr	GA	Jet
10	11/7/2019	2:45:00 PM	3:45:00 PM	27	45-55	3:30:54 PM	00:36	76.5	Arr	GA	Prop
11	11/6/2019	8:45:00 AM	9:50:00 AM	27	41-48	8:41:22 AM	00:23	66.0	Dep	GA	Prop
11	11/6/2019	8:45:00 AM	9:50:00 AM	27	41-48	9:34:03 AM	01:58	104.5	Dep	MIL	F16
11	11/6/2019	8:45:00 AM	9:50:00 AM	27	41-48	9:39:26 AM	01:31	105.2	Dep	MIL	F16
11	11/6/2019	8:45:00 AM	9:50:00 AM	27	41-48	9:46:33 AM	01:45	107.7	Dep	MIL	F16
11	11/7/2019	1:00:00 PM	2:00:00 PM	27	42-53	1:09:24 PM	00:40	69.1	Ovf	GA	Prop
11	11/7/2019	1:00:00 PM	2:00:00 PM	27	42-53	1:25:02 PM	01:27	114.2	Dep	MIL	F16
11	11/7/2019	1:00:00 PM	2:00:00 PM	27	42-53	1:26:48 PM	01:27	109.2	Dep	MIL	F16
11	11/7/2019	1:00:00 PM	2:00:00 PM	27	42-53	1:35:42 PM	01:59	112.6	Dep	MIL	F16
11	11/7/2019	1:00:00 PM	2:00:00 PM	27	42-53	1:54:31 PM	00:41	73.0	Dep	CM	Jet
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	2:47:57 PM	00:50	78.1	Arr	GA	Prop
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	2:51:02 PM	00:49	95.2	Arr	MIL	E-6B
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	2:56:05 PM	01:05	84.1	Arr	CM	Jet
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	2:57:41 PM	00:31	62.5	Arr	GA	Prop
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:01:36 PM	01:08	94.8	Arr	MIL	E-6B
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:08:36 PM	00:46	94.8	Arr	MIL	F16
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:10:08 PM	01:01	81.8	Arr	MIL	F16
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:12:37 PM	00:50	84.8	Arr	GA	Jet
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:14:23 PM	01:05	94.4	Arr	MIL	F16
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:16:55 PM	01:02	78.4	Arr	MIL	F16
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:18:31 PM	00:53	84.1	Arr	GA	Prop
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:22:27 PM	00:40	86.7	Arr	MIL	E-6B
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:25:00 PM	00:55	77.5	Arr	GA	Jet
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:27:15 PM	00:42	90.5	Arr	MIL	F16
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:28:32 PM	01:05	86.3	Arr	MIL	F16
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:38:12 PM	00:57	73.9	Arr	GA	Jet
12	11/5/2019	2:45:00 PM	4:18:00 PM	27	41	3:55:59 PM	00:48	72.6	Arr	GA	Jet

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	2:54:00 PM	0:55	55.8	Dep	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:00:00 PM	0:40	52.0	Arr	GA	Jet
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:04:00 PM	0:27	63.4	Arr	MIL	F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:05:00 PM	0:56	61.1	Arr	MIL	F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:07:00 PM	0:50	58.5	Arr	MIL	F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:08:00 PM	1:50	63.5	Dep/Arr	GA/MIL	Helo/F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:11:00 PM	0:55	56.5	Dep	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:14:00 PM	1:05	60.7	Dep	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:16:00 PM	1:17	59.4	Arr	MIL	Prop/F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:18:00 PM	0:37	53.4	Arr	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:20:00 PM	2:03	60.7	Arr	MIL	F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:20:00 PM	0:31	49.5	Arr	MIL	F16
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:23:00 PM	0:46	54.5	Arr	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:27:00 PM	0:45	53.7	Dep	GA	Jet
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:31:00 PM	1:09	57.3	Dep	CM	Jet
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:38:00 PM	0:35	50.9	UNK	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:40:00 PM	1:30	54.8	Arr	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:42:00 PM	0:32	50.2	Arr	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:45:00 PM	1:41	52.1	Arr	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:50:00 PM	0:53	56.4	Arr	GA	Jet
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	3:59:00 PM	1:03	52.8	Dep	CM	Jet
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	4:16:00 PM	0:57	67.9	Arr	GA	Prop
13	11/6/2019	2:47:00 PM	4:51:00 PM	27	45	4:43:00 PM	0:55	57.8	Dep	GA	Prop
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:26:00 AM	0:56	73.0	Dep	GA	Prop
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:32:17 AM	01:53	90.6	Dep	MIL	F16
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:39:18 AM	00:19	60.1	UNK	GA	Prop
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:43:02 AM	02:25	88.8	Dep	MIL	F16
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:45:52 AM	00:26	58.3	UNK	GA	Prop
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:49:12 AM	00:57	67.8	Dep	GA	Helo
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:50:52 AM	01:13	61.8	Ovf	UNK	Jet

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:52:54 AM	00:56	65.5	Ovf	GA	Helo
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:54:56 AM	00:37	57.0	Arr	GA	Prop
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	9:56:02 AM	02:08	94.0	Dep	MIL	F16
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:00:02 AM	00:45	72.2	Arr	UNK	UNK
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:01:18 AM	00:34	58.3	UNK	GA	Prop
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:03:16 AM	00:42	61.8	UNK	UNK	UNK
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:04:19 AM	02:39	96.2	Dep	MIL	F16
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:10:01 AM	03:10	81.8	UNK	GA	Helo
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:13:26 AM	01:08	70.8	Ovf	GA	Helo
14	11/5/2019	9:15:00 AM	10:19:00 AM	27	42	10:16:38 AM	00:46	64.8	Ovf	GA	Helo
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:00:00 AM	0:44	51.9	UNK	UNK	Jet
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:12:00 AM	0:26	60.1	UNK	UNK	Jet
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:19:00 AM	1:19	58.5	Arr	GA	Prop
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:26:00 AM	0:25	50.8	Dep	CM	Jet
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:28:00 AM	1:05	60.6	Dep	GA	Prop
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:49:00 AM	2:05	61.8	Dep	GA	Prop
14	11/6/2019	10:55:00 AM	12:00:00 PM	27	38-42	11:54:00 AM	0:58	51.5	Arr	UNK	Jet
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	10:48:00 AM	0:50	48.8	Arr	GA	Helo
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	10:54:00 AM	0:35	54.9	Dep	GA	Prop
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:03:00 AM	0:38	49.8	UNK	UNK	Jet
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:09:00 AM	1:56	81.2	Arr	MIL	F16
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:16:00 AM	1:52	54.7	Dep	GA	Prop
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:22:00 AM	1:10	50.2	Arr	MIL	F16
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:26:00 AM	0:23	49.0	Dep	GA	Prop
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:27:00 AM	1:14	79.7	Arr	MIL	F16
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:29:00 AM	1:00	71.1	Arr	MIL	F16
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:33:00 AM	0:37	86.4	Dep	MIL	F16
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:37:00 AM	2:53	55.2	Arr	GA	Helo
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:40:00 AM	1:24	78.0	Arr	MIL	F16
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:40:00 AM	0:19	45.2	UNK	UNK	UNK

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:45:00 AM	0:52	47.4	Arr	GA	Helo
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:49:00 AM	0:41	48.9	Dep	GA	Jet
14	11/7/2019	10:45:00 AM	12:00:00 PM	27	38-45	11:51:00 AM	0:55	50.2	Arr	GA	Helo
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:05:03 PM	00:19	97.9	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:05:36 PM	00:32	99.8	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:06:27 PM	00:22	105.0	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:06:51 PM	00:20	113.4	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:07:15 PM	00:15	105.0	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:08:00 PM	00:40	107.6	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:12:21 PM	00:19	98.4	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:13:18 PM	00:27	102.5	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:13:57 PM	00:37	104.6	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:16:37 PM	00:26	97.3	Arr	MIL	F16
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:24:00 PM	00:15	70.6	Arr	GA	Prop
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:25:57 PM	00:25	86.3	Arr	CM	Jet
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:42:27 PM	00:14	81.0	Arr	GA	Prop
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	3:57:14 PM	00:13	87.9	Arr	CM	Jet
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	4:21:12 PM	00:27	91.8	Arr	CM	Jet
15	11/4/2019	2:30:00 PM	4:30:00 PM	27	45-50	4:27:52 PM	00:39	93.5	Arr	CM	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:25:06 PM	00:53	74.9	Dep	CM	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:26:06 PM	00:37	79.5	Dep	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:28:37 PM	01:29	75.8	Ovf	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:37:14 PM	02:35	73.7	Dep	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:41:27 PM	00:37	70.0	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:42:30 PM	00:32	74.2	Dep	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:45:28 PM	00:32	73.3	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:53:15 PM	00:36	72.4	Ovf	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:56:34 PM	00:40	69.4	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	2:57:24 PM	00:36	69.4	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:01:38 PM	00:25	78.8	Dep	CM	Jet

SITE NUMBER	DATE	START TIME	END TIME	RUNWAY	AMBIENT (dB)	TIME	DURATION (mm:ss)	L_{max} (dB)	OPERATION TYPE	OPERATOR	AIRCRAFT TYPE
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:04:02 PM	00:27	71.6	Dep	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:06:47 PM	00:31	69.8	Dep	CM	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:09:12 PM	00:40	91.7	Arr	MIL	F16
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:14:56 PM	00:20	74.2	Dep	GA	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:15:23 PM	01:30	87.3	Arr	MIL	F16
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:21:18 PM	02:15	77.2	Ovf	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:24:23 PM	00:49	70.9	Ovf	MIL	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:27:29 PM	00:42	80.1	Dep	GA	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:28:14 PM	00:26	105.3	Arr	MIL	F16
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:29:22 PM	00:38	77.8	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:54:01 PM	00:27	69.4	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:56:50 PM	00:39	68.2	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	3:58:03 PM	00:21	71.4	Dep	CM	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:00:27 PM	00:47	71.7	Dep	CM	Jet
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:04:01 PM	00:48	70.3	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:04:57 PM	00:20	68.8	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:14:24 PM	00:20	68.4	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:19:26 PM	00:20	70.8	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:25:16 PM	00:54	75.6	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:26:18 PM	00:28	78.9	Ovf	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:27:22 PM	00:46	74.9	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:28:56 PM	00:20	66.7	Dep	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:30:17 PM	00:28	76.0	Ovf	GA	Prop
16	11/5/2019	2:30:00 PM	4:30:00 PM	27	44-47	4:30:51 PM	00:16	69.8	Dep	GA	Prop

Source: Landrum & Brown analysis, 2021.

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B.2 Noise Complaint History

The Airport does not officially collect, and record noise complaints received by the airport or the Federal; Aviation Administration (FAA) Air Traffic Control Tower (ATCT). However, if calls are received at DLH offices regarding a noise or operational issue the correspondence is documented.

The Minnesota Air National Guard (MnANG) 148th Fighter Wing documents noise complaints received regarding military operations. The MnANG noise complaint log was reviewed, it was determined the majority of these complaints are received from residents and locations that are beneath the Military Operating Areas (MOAs) utilized by the MnANG. The operating areas are more than 20 miles from the airport.

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