

Summary of Measured Noise Levels in the Town of Superior, Colorado due to Rocky Mountain Metropolitan Airport Operations

June 2024



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Monthly Summary – June 2024 (Water Bladder Site)

The following summarizes the noise levels measured at the Water Bladder measurement location located off S. Torreys Peak Dr. and aircraft operations detected over the Town of Superior for the month of June 2024. Additional information regarding the measurements is attached.

- Over the entire month, a total of 12,069 aircraft operations¹ occurred within 1.25 miles of the measurement location (the distance within which aircraft are audible).
- Of these, 7,462 were touch and go (T&G) operations (62%).
- Over the entire month, aircraft operations were clearly noticeable (aircraft noise measured at approximately 5 dBA above the ambient sound level) for 8,679 minutes (145 hours).
- If T&G operations were not conducted at the airport, an analysis of the measurement data indicates that noticeable aircraft operations would decrease to 2,517 minutes (42 hours), which is a 71% reduction.
- The following summarizes the June 2024 noise survey results at the Water Bladder.

Table 1 - Summary of Measured Noise Levels and Aircraft Operations in June 2024

Operations	Quantity	Audible aircraft operations	Aircraft noise above ambient (dBA)	Aircraft 5 dBA Above Ambient (minutes)	Aircraft 10 dBA Above Ambient (minutes)	Aircraft 20 dBA Above Ambient (minutes)
All	Total for month	12,069	---	8,679	5,803	869
	Daily average	402	17	289	193	29
Touch and Go Removed	Total for month	5,748	---	2,517	1,507	196
	Daily average	192	11	84	50	7

- Figure 1 shows the flight paths on June 16, a day with total operations close to the median for the month. Note the concentration of T&G operations over the Town of Superior and Boulder County.
- Figure 2 shows the measured noise levels and concurrent aircraft activity for this day. Maximum noise levels generated by individual aircraft operations exceeded the ambient sound level by at least the following levels for the durations noted:
 - 5 dBA (clearly noticeable), 326 minutes.
 - 10 dBA (significant increase), 250 minutes.
 - 20 dBA (much louder), 43 minutes.
- Table 2 shows the hourly average noise levels and operation counts for this day.
- Figure 3 shows an hour on this day, during which time the measured level rarely reached ambient conditions (37 dBA), meaning that aircraft noise was almost constantly present.
- Figure 4 shows the flight paths for the entire month of June 2024.

¹ This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch and go operation as two operations.

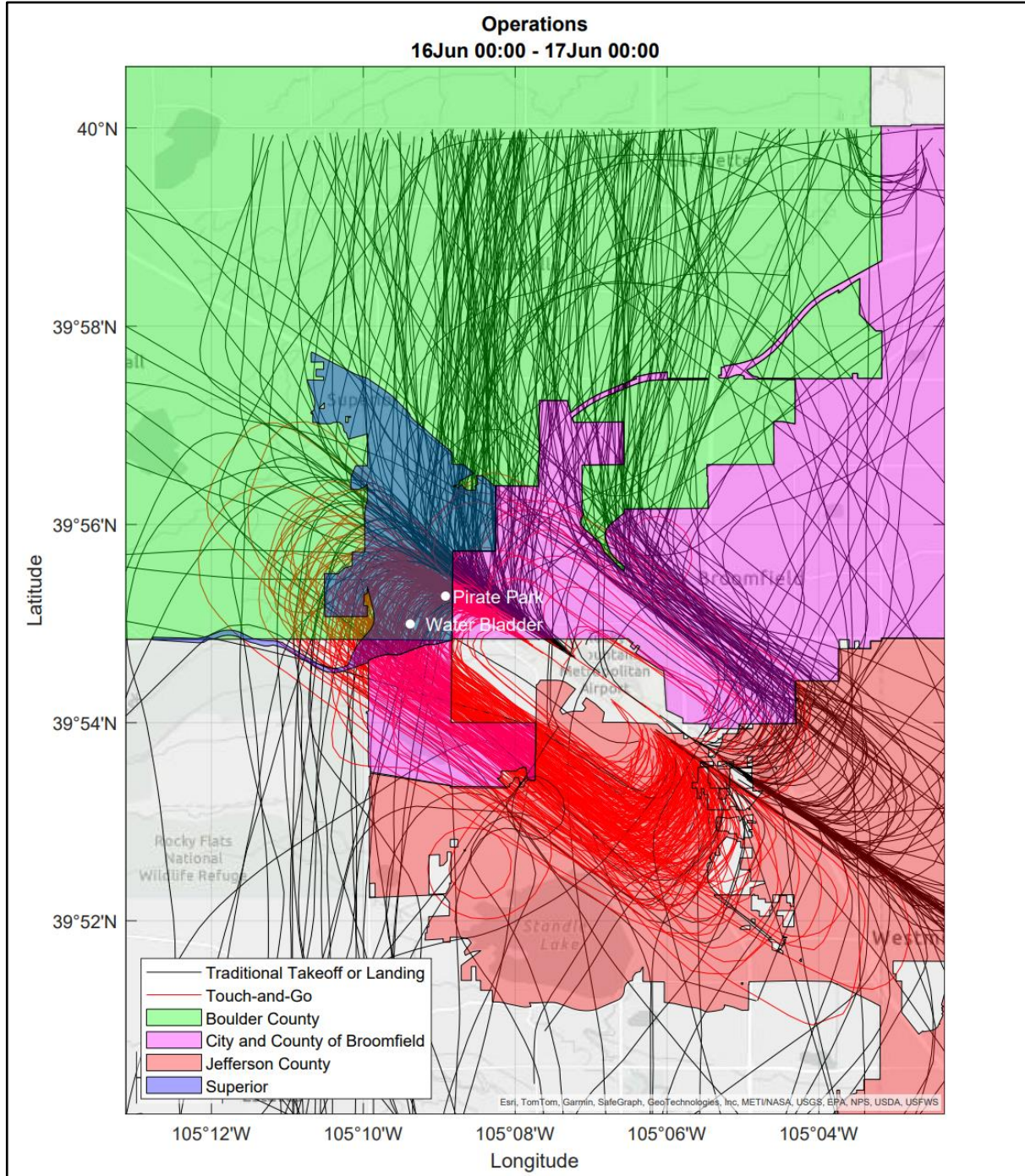


Figure 1 – Flight Paths on Median Day in June 2024 (566 Operations, 229 T&G)

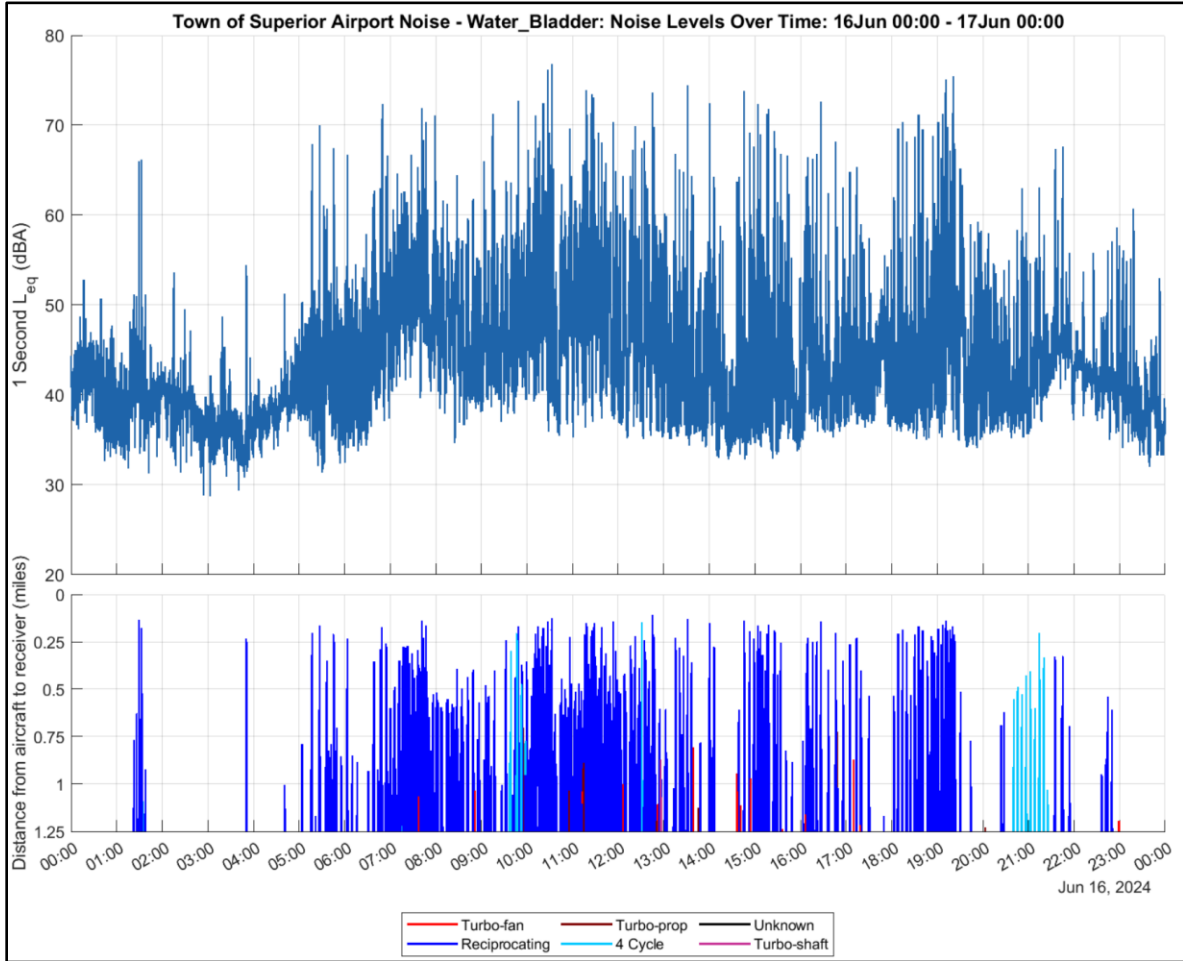


Figure 2 – Noise Levels and Aircraft Operations on Median Day (Water Bladder)

Table 2 – Hourly Noise Levels and Aircraft Operations on Median Day (Water Bladder)

Time	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm
Average Noise Level (dBA)	54	50	52	56	55	53	50	51	52	51	47	52	54	45	49
Number of Operations	54	38	41	68	72	47	31	28	31	26	18	23	19	7	3

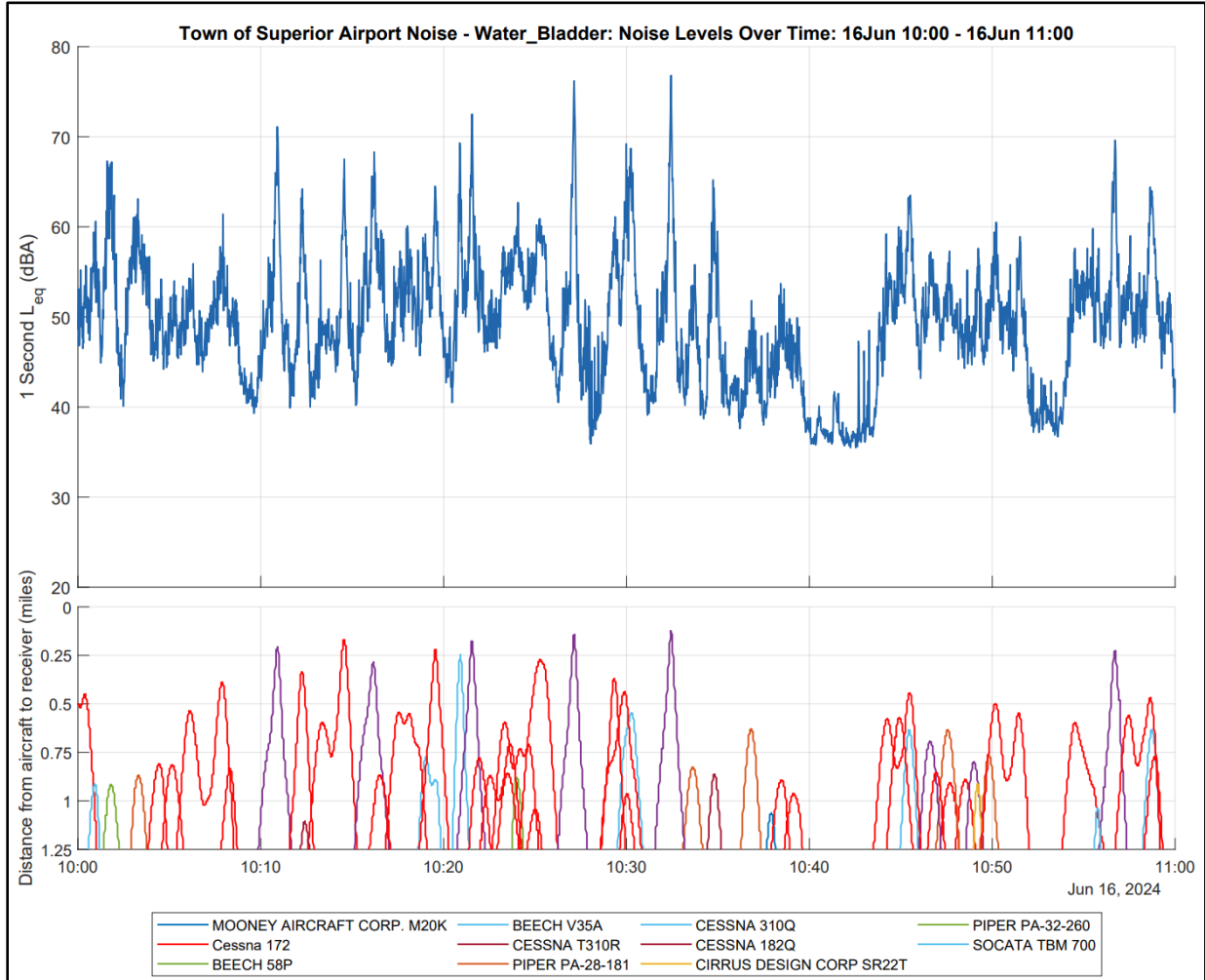


Figure 3 – Noise Levels and Aircraft Operations during an Example Hour on Median Day (Water Bladder)

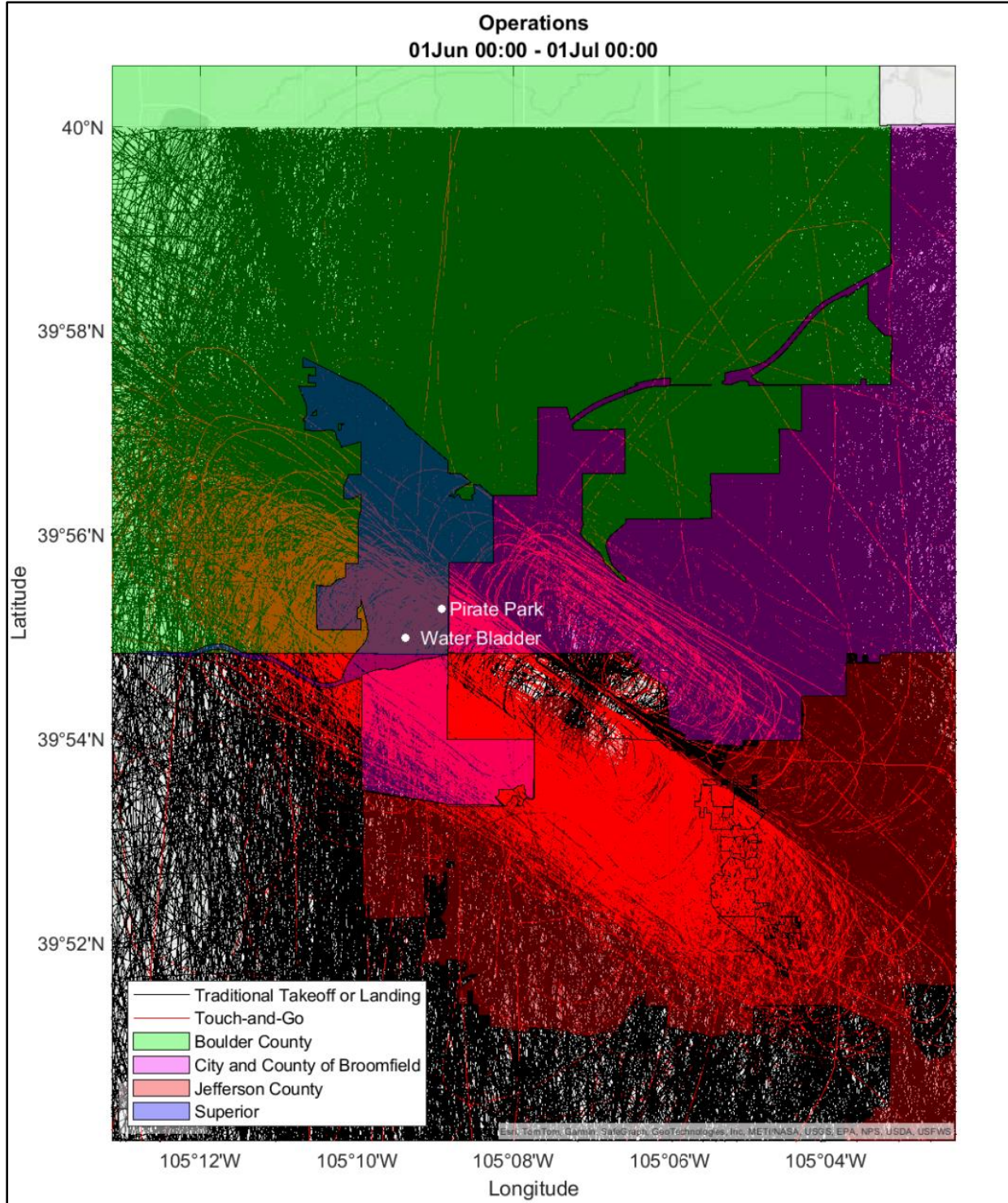


Figure 4 – All Flight Paths in June 2024 (17,736 Operations; 7,995 T&G)

Monthly Summary – June 2024 (Pirate Park Site)

The following summarizes the noise levels measured at the Pirate Park measurement site located near Pirate Park off Yarrow Circle and aircraft operations detected over the Town of Superior for the month of June 2024. Additional information regarding the measurements is attached.

- Over the entire month, a total of 12,645 aircraft operations² occurred within 1.25 miles of the measurement location (the distance within which aircraft are audible).
- Of these, 7,585 were touch and go (T&G) operations (60%).
- Over the entire month, aircraft operations were clearly noticeable (aircraft noise measured at approximately 5 dBA above the ambient sound level) for 7,876 minutes (131 hours).
- If T&G operations were not conducted at the airport, an analysis of the measurement data indicates that noticeable aircraft operations would decrease to 3,209 minutes (53 hours), which is a 59% reduction.
- Aircraft noise exceeds the ambient noise level by 20 dBA or more for a significant amount of time at this site (almost one hour per day).
- The following summarizes the June 2024 noise survey at Pirate Park. Note the minutes 20 dBA above ambient are much higher than at the Water Bladder due to the closer proximity to the runway and the lower, climbing, aircraft.

Table 3 - Summary of Measured Noise Levels and Aircraft Operations in June 2024

Operations	Quantity	Audible aircraft operations	Aircraft noise above ambient (dBA)	Aircraft 5 dBA Above Ambient (minutes)	Aircraft 10 dBA Above Ambient (minutes)	Aircraft 20 dBA Above Ambient (minutes)
All	Total for month	12,645	---	7,876	5,519	1,472
	Daily average	422	19	263	184	49
Touch and Go Removed	Total for month	6,262	---	3,209	2,196	450
	Daily average	209	14	107	73	15

- Figure 5 shows the measured noise levels and concurrent aircraft activity for June 16, a day with total operations close to the median for the month. Maximum noise levels generated by individual aircraft operations exceeded the ambient sound level by at least the following levels for the durations noted:
 - 5 dBA (clearly noticeable), 300 minutes.
 - 10 dBA (significant increase), 223 minutes.
 - 20 dBA (much louder), 63 minutes.
- Table 4 shows the hourly average noise levels and operation counts for this day.
- Figure 6 shows an hour on this day, during which time the measured level rarely reached ambient conditions (42 dBA), meaning that aircraft noise was almost constantly present.

² This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch and go operation as two operations.

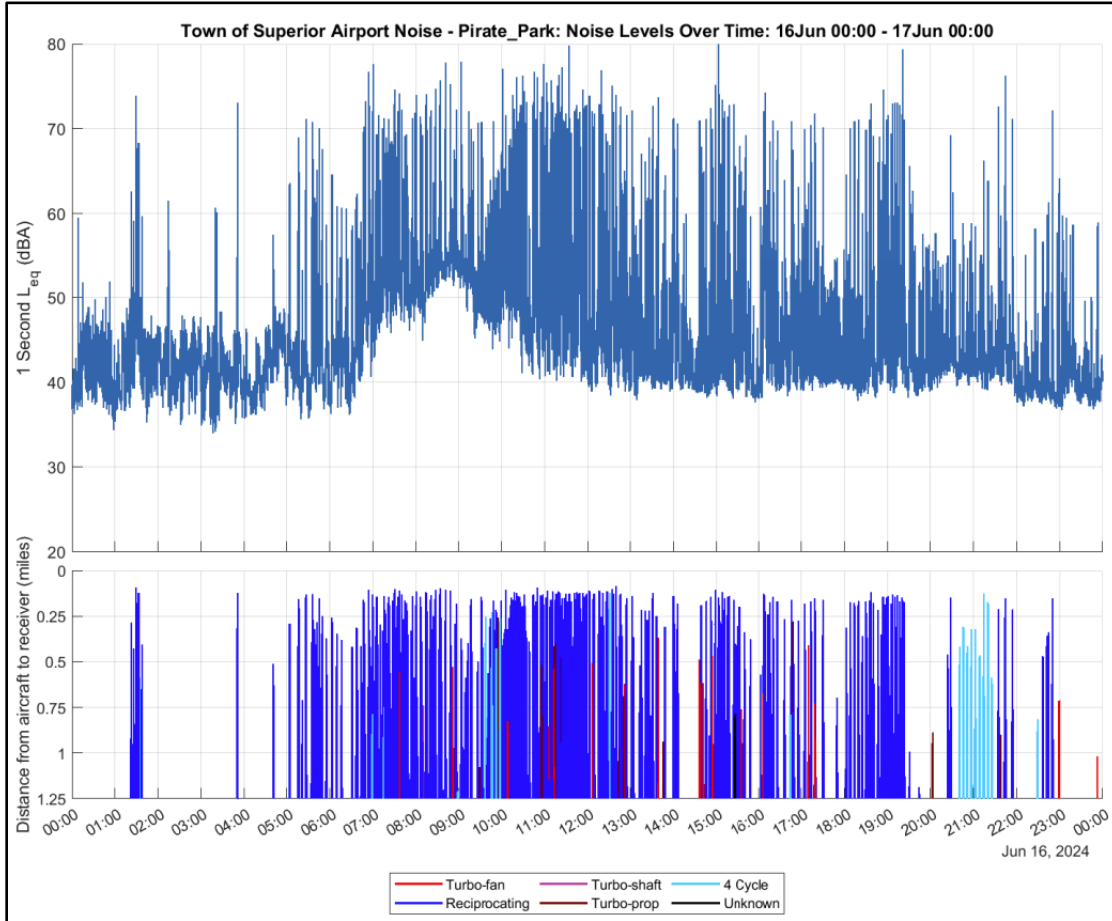


Figure 5 – Noise Levels and Aircraft Operations on Median Day (Pirate Park)

Table 4 – Hourly Noise Levels and Aircraft Operations on Median Day (Pirate Park)

Time	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm
Average Noise Level (dBA)	59	59	56	61	61	57	53	54	57	54	52	56	56	48	53
Number of Operations	54	38	41	68	72	47	31	28	31	26	18	23	19	7	3

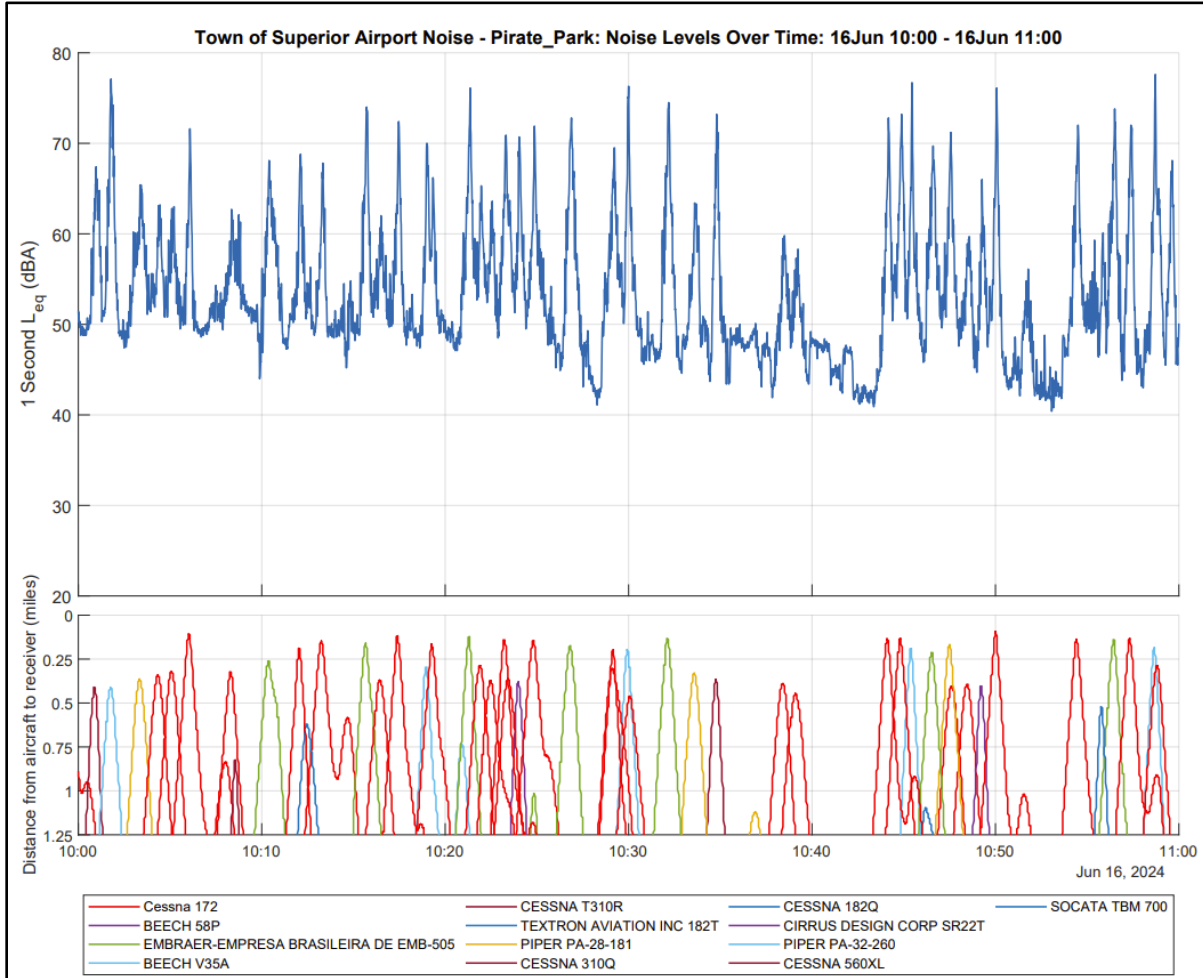


Figure 6 – Noise Levels and Aircraft Operations during an Example Hour on Median Day (Pirate Park)

Detailed Results

1. Measurement Locations and Flight Paths

Noise level monitors were placed at the locations shown in Figure 1-1 and configured to continually measure noise levels. The meters were in service for the entirety of June 2024. The selection of measurement locations considered proximity of Town of Superior residences, aircraft flight paths, and availability of public land. The Water Bladder location was chosen as it is removed from busy roads and in the flight path of touch and go operations. The Community Center location was chosen as it is directly in the flight path of the runway 12 L. The Pirate Park location was chosen as it is directly in the flight path of runway 12 R while still being nearby to residences.

Aircraft flight paths are limited due to Denver International Airport airspace to the east and mountains to the west. This, along with prevailing wind patterns, pushes a majority of operations over the town, as shown in Figures 1 and 4 (above).

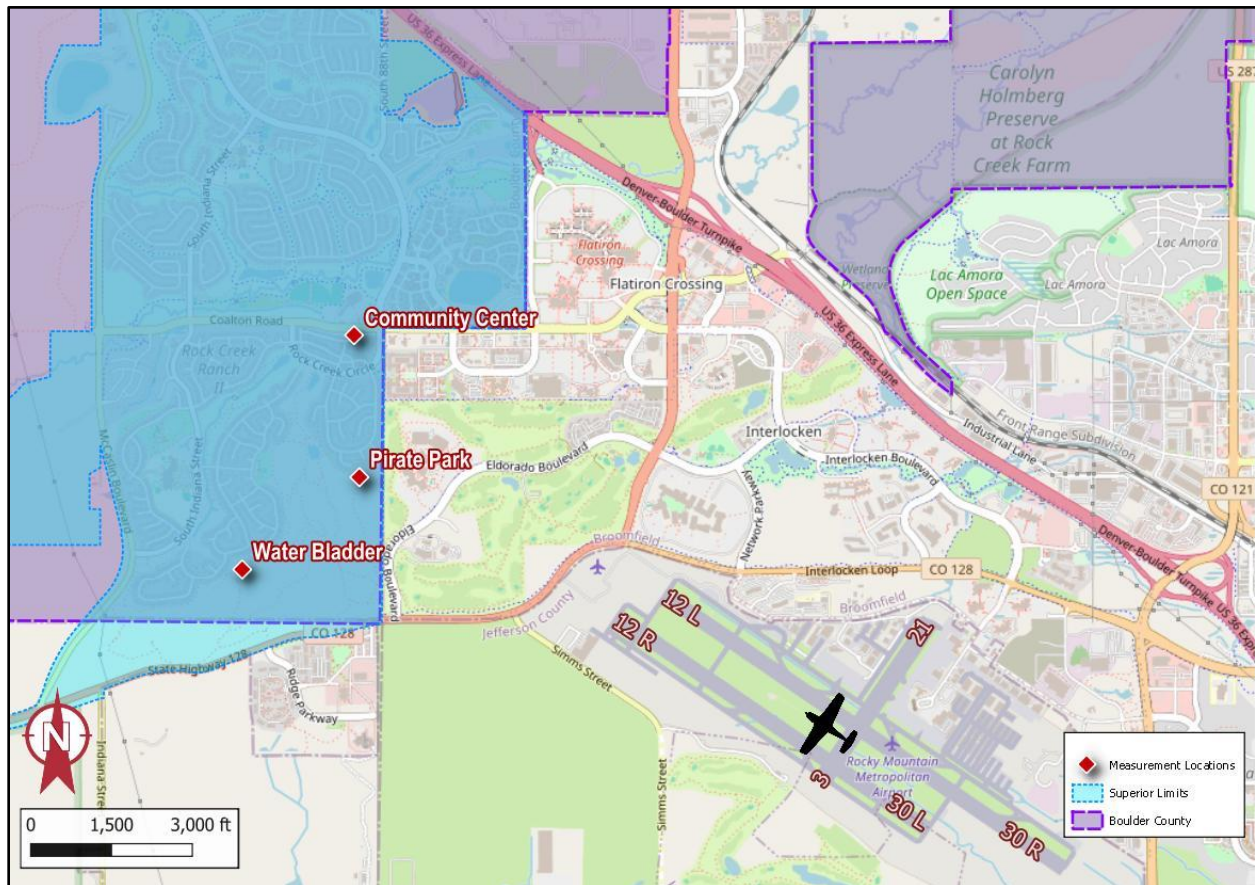


Figure 1-1. Measurement Locations and Airport

2. Noise and Aircraft Operations Measurement Procedures

Noise levels were measured in accordance with applicable acoustical standards as well as the author's experience in this specialized field. The following sections describe the acoustical standards followed, measurement equipment specifications and settings, measurement duration, ground wind measurement equipment, and aircraft operations data integration.

2.1 Applicable Noise Measurement and Analysis Standards

The measurements were executed in accordance with the relevant aspects of the following standards:

1. Noise measurement equipment meets the Type 1 specifications of American National Standards Institute (ANSI) standard S1.4-2014 (R2024) American National Standard Specification for Sound Level Meters.
2. ANSI S1.11-2004 (R2009), Electroacoustics - Octave-band and Fractional-octave-band Filters - Part 1: Specifications.
3. ANSI S1.40-2006 (R2016), American National Standard Specifications and Verification Procedures for Sound Calibrators.
4. The measurement and analysis procedures followed the applicable portions of ANSI S12.9-2013 Part 3 (R2018) Quantities and Procedures for Description and Measurement of Environmental Sound - Part 3: Short-Term Measurements with an Observer Present.
5. ANSI S12.18-1994 (R2019) Outdoor Measurement of Sound Pressure Level.
6. ANSI S1.13-2020 American National Standard Measurement of Sound Pressure Level in Air.

2.2 Noise Measurement Equipment

Noise levels were measured using Larson Davis Model 831 sound level meters with associated preamplifiers and ½ inch free-field precision microphones. All measurement and field calibration equipment were certified by a traceable laboratory within 18 months prior to the measurements. Field calibrations were conducted on June 10, 2024 at the Community Center and June 14, 2024 at the Water Bladder and Pirate Park, and the drift in the measured noise level was well within tolerance (Water Bladder +0.25 dB, Pirate Park +0.01 dB, and Community Center +0.29 dB). Calibration certificates and records are available upon request. The microphones were mounted on steel poles and positioned five feet above the ground (per ANSI S12.9). The microphones were covered with hydrophobically treated 7-inch diameter, 80-pores-per-inch density windscreens (ACO Pacific Model WS7-80T). Audio from each sound level meter was recorded using Tascam DR-05X digital recorders. The sound level meters were configured to continuously measure and record 1-second and 1-hour averages of the following metrics: overall L_{eq} , L_{10} , L_{50} , and L_{90} , as well as one-third octave band L_{eq} levels (6.3 Hz to 20 kHz). The meters were switched from 5-second intervals to 1-second intervals at the beginning of the month.

2.3 Aircraft Position Measurement Equipment

Aircraft position data is being collected in the area with an Automatic Dependent Surveillance-Broadcast (ADS-B) monitoring system that receives real-time data from each aircraft in the area, including location, speed, and a unique identifier (hex code). Aircraft position data is being logged on 1-second intervals and is combined with the Federal Aviation Administration (FAA) aircraft registration database to get additional information for each aircraft, including make/model, engine type, and owner. Aircraft from flight schools were identified based on the owner and listed registration numbers from the flight school websites. Altitude data from the aircraft is based on barometric pressure on the aircraft and is not corrected for barometric pressure on the ground. During data processing, the altitude data is corrected based on barometric pressure from the airport. Aircraft above 11,000 feet are filtered out of the database to eliminate from the analysis aircraft that are passing overhead.

2.4 Meteorological Data

Wind speeds and direction are being measured continuously at each long-term monitoring site using Vaisala WXT530 series sonic anemometers, mounted on steel poles approximately 6.5 feet above the ground (per ANSI S12.18) and placed within approximately 10 feet of the microphones. Barometric pressure data was obtained from the airport's weather station.

2.5 Resulting Measurement Database

This report presents the results of measurements conducted throughout the month of June 2024. A total of 720 hours of continuous noise, aircraft, and ground wind data were collected. All data was organized into a single database and time synchronized through the cellular network.

Figure 2-1 shows noise levels versus time (top graph) and distance to the nearest aircraft over time (bottom graph) for an example one-hour period at Pirate Park. This example shows a single aircraft doing touch and go exercises, which involves landing the airplane and immediately taking off again, and results in the airplane circling over the microphone every 5 to 10 minutes, with another aircraft starting touch and go exercises in the last 10 minutes. Note the ambient sound level, the level occurring with no aircraft present, is approximately 40 dBA during this example hour. With aircraft present levels are as high as 70 dBA, which is a 30 dBA increase over the ambient sound level.

Figure 2-2 shows the measured noise levels and aircraft operations for a representative hour with frequent aircraft operations. During this hour the ambient sound level for this day of 40 dBA is reached only for a few minutes because there was very little time when aircraft noise was not audible.

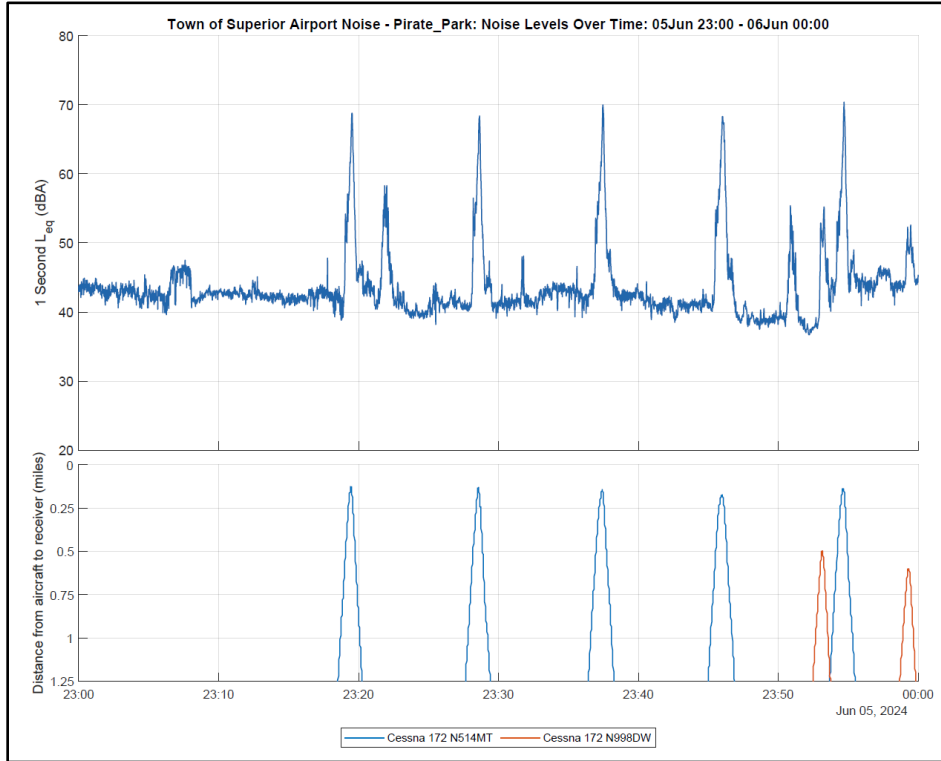


Figure 2-1. Example Time Plot of Measured Noise Levels - Touch and Go Operations

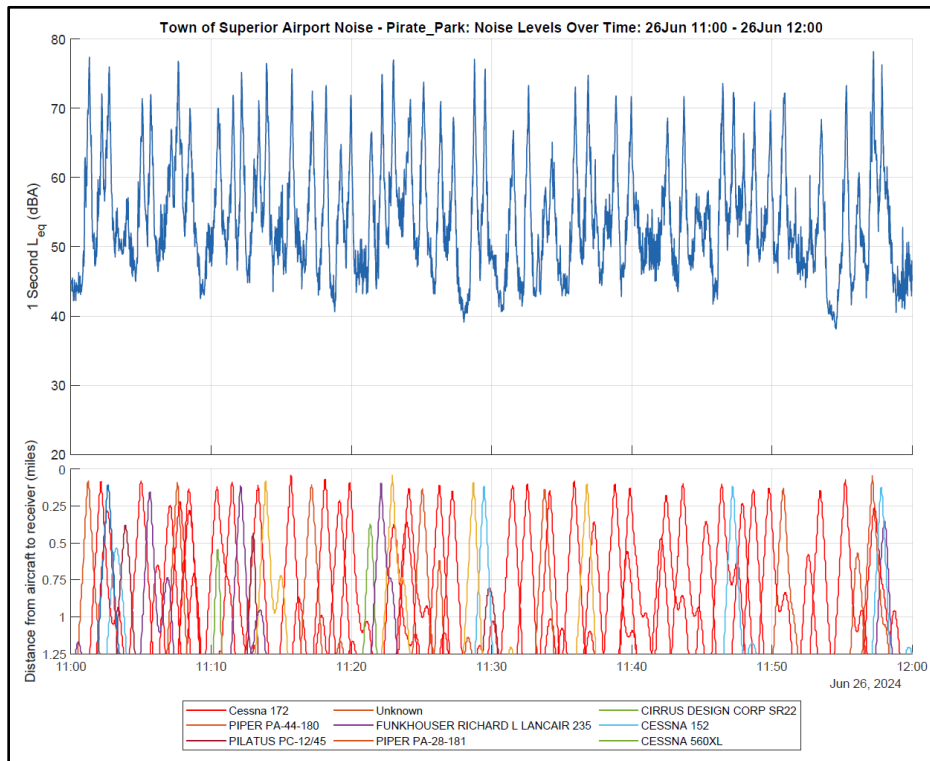


Figure 2-2. Example Time Plot During an Hour with Frequent Aircraft Operations

3. Data Analysis Procedures

The measured noise level and aircraft operations data was analyzed as follows.

3.1 Duration of Analysis Intervals

The measured data was recorded and analyzed in 1-second intervals. This interval was chosen because it provides sufficient resolution to capture changes in noise levels against aircraft proximity over time and follows the FAA's procedures. All meters were switched from 5-second intervals to 1-second intervals at the beginning of the month. Results are summarized and presented herein in terms of daily averages of noise levels when aircraft are present versus ambient noise levels in the area (noise generated by non-aircraft sources, such as distant roadway traffic).

3.2 Aircraft Types and Operations

Each 1-second ADS-B sample was classified into one of five operational types: (1) on-the-ground, (2) flyover, (3) touch and go (T&G), (4) takeoff, and (5) landing. The number of operations per day for each operational type is shown in Table 3-1. Samples classified as on-the-ground were excluded from further analysis as planes would not be audible during these times, and samples for aircraft above 11,000 feet or classified as flyovers were excluded from further analysis as these operations were not generated by this airport.

Each aircraft detected in the month is analyzed separately. Each 1-second sample in which the individual aircraft's signal was detected is arranged into a table in chronological order. Each sample is labeled as on the ground (known from the positional information) or airborne. Airborne samples are then grouped into events, which include takeoff, landing, touch and go operation, and flyover. Starting with the first 1-second sample in time where the aircraft was detected as being airborne, the following logic is applied. This is also shown in the table below.

- If the previous sample was on the ground, and a sample within the next 20 minutes is on the ground, the entire window of samples when the aircraft was airborne is classified as touch and go.
- If the previous sample was on the ground, and no samples within the next 20 minutes are on the ground, the entire 20-minute window of samples is classified as takeoff.
- If the previous sample was not on the ground, and a sample within the next 20 minutes is on the ground, the entire window of samples when the aircraft was airborne is classified as landing.
- If the previous sample was not on the ground, and no samples within the next 20 minutes are on the ground, the entire 20-minute window of samples is classified as flyover.

	Is on the ground within the next 20 minutes	Is not on the ground within the next 20 minutes
Previous sample was on the ground	Touch and Go	Take-off
Previous sample was not on the ground	Landing	Flyover

Additionally, T&G operations were further classified as initial (the initial take off) or subsequent (subsequent touch and go landings and takeoffs) depending on whether or not the last operation of the aircraft was classified as a T&G operation. As described in more detail below, this was done to allow for the estimation of noise levels for a scenario where T&G operations occurred at another distant airfield.

Each ADS-B sample was also classified by aircraft engine type, as shown in Table 3-2. Aircraft engine type is identified from the aircraft registration “N Number” broadcast by the aircraft, and the FAA aircraft registration database, which provides details about each registered aircraft. Flight schools are identified based on the aircraft registered owner, a list of planes and N Numbers on each flight school’s website, and observations of aircraft at the airport. Most aircraft are identified as piston engine (reciprocating or 4-cycle) and the majority of them are registered to flight schools.

3.3 Ambient Sound Levels

For the purposes of this analysis, the ambient daytime noise levels for each day are defined as the L_{90} dBA noise level measured during daytime hours. This is calculated by ordering all 1-second L_{eq} dBA noise level samples measured between 7:00 AM and 10:00 PM and taking the 90th percentile, which is the noise level exceeded 90 percent of the time. Noise level contributions from aircraft operations are effectively removed with the L_{90} metric.

3.4 Aircraft Noise Levels

Aircraft noise levels represent the 1-second measurement samples when any aircraft operations were audible. Noise levels are plotted against the concurrently measured distance from each aircraft to quantify the relationship between these two variables. The data indicates that at distances of 1 to 1.25 miles, aircraft begin to have an effect on noise levels and, at distances of 1 mile or less from the measurement location aircraft have a significant influence on measured noise levels. For the purposes of this analysis operations were considered audible if the aircraft came within 1.25 miles of a measurement site at any time during the operation.

3.5 Aircraft Noise Levels without T&G Operations

Aircraft noise levels without T&G operations represent the average of all 1-second samples taken when aircraft operations were audible, but with noise level during all times when an aircraft operation was classified as a subsequent T&G set to the ambient sound level for that day. This simulates what the average noise level would be if T&G operations took place elsewhere, i.e., a distant airfield. Initial T&G operations were not removed from the analysis because an aircraft would need to takeoff from the airport even if T&G operations were located elsewhere. This initial T&G operation represents the takeoff.

Table 3-1. Aircraft Operations³ by Type

Day	Operation Type			Total Operations	Percentage T&G	Total Number of Unique Aircraft
	T&G	Takeoff	Landing			
1-Jun-24	177	132	138	447	40%	109
2-Jun-24	212	160	165	537	39%	122
3-Jun-24	351	212	222	785	45%	129
4-Jun-24	173	150	132	455	38%	104
5-Jun-24	151	155	148	454	33%	120
6-Jun-24	395	249	266	910	43%	152
7-Jun-24	213	144	147	504	42%	144
8-Jun-24	320	130	128	578	55%	119
9-Jun-24	298	114	114	526	57%	122
10-Jun-24	269	127	137	533	50%	129
11-Jun-24	375	223	220	818	46%	146
12-Jun-24	288	197	207	692	42%	168
13-Jun-24	240	184	186	610	39%	144
14-Jun-24	246	143	141	530	46%	120
15-Jun-24	352	159	160	671	52%	119
16-Jun-24	229	172	165	566	40%	130
17-Jun-24	284	143	145	572	50%	122
18-Jun-24	348	181	180	709	49%	136
19-Jun-24	372	193	189	754	49%	145
20-Jun-24	212	150	149	511	41%	140
21-Jun-24	168	125	124	417	40%	126
22-Jun-24	217	145	148	510	43%	105
23-Jun-24	256	164	168	588	44%	123
24-Jun-24	221	132	105	458	48%	121
25-Jun-24	239	131	171	541	44%	130
26-Jun-24	404	219	214	837	48%	169
27-Jun-24	188	172	178	538	35%	144
28-Jun-24	61	98	103	262	23%	119
29-Jun-24	437	186	189	812	54%	135
30-Jun-24	299	158	154	611	49%	133
Month Total	7,995	4,848	4,893	17,736	45%	-

³ This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch and go operation as two operations.

Table 3-2. Aircraft Operations⁴ by Aircraft Engine Type

Day	Engine Type					
	Piston	Turboprop	Turboshaft	Turbojet	Turbofan	Unknown
1-Jun-24	411	10	8	0	17	1
2-Jun-24	480	11	7	0	36	3
3-Jun-24	726	17	5	0	32	5
4-Jun-24	385	20	12	0	34	4
5-Jun-24	401	15	6	0	24	8
6-Jun-24	829	23	6	0	47	5
7-Jun-24	427	14	3	0	51	9
8-Jun-24	534	14	0	0	29	1
9-Jun-24	465	12	0	0	49	0
10-Jun-24	446	19	6	0	58	4
11-Jun-24	740	18	8	0	39	13
12-Jun-24	596	26	7	0	56	7
13-Jun-24	531	19	7	0	39	14
14-Jun-24	454	14	0	0	44	18
15-Jun-24	615	18	0	0	36	2
16-Jun-24	503	11	4	0	44	4
17-Jun-24	504	15	6	0	46	1
18-Jun-24	632	20	5	0	50	2
19-Jun-24	666	29	10	0	43	6
20-Jun-24	386	44	4	0	71	6
21-Jun-24	327	18	0	0	69	3
22-Jun-24	484	8	0	0	17	1
23-Jun-24	530	17	3	0	37	1
24-Jun-24	403	15	3	0	34	3
25-Jun-24	451	29	7	6	36	12
26-Jun-24	704	26	10	0	57	40
27-Jun-24	444	23	7	0	52	12
28-Jun-24	162	22	12	0	57	9
29-Jun-24	757	16	5	0	33	1
30-Jun-24	550	11	2	0	42	6
Month Total	15,543	554	153	6	1,279	201

⁴ This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch and go operation as two operations.

4. Noise Measurement and Analysis Results

Tables 4-1 through 4-3 provide a summary of the noise levels and aircraft operations measured during each day of June 2024 at each of the three measurement locations. The tables provide the following information:

- The daily measured ambient (background) sound level (L_{90}).
- The number of audible aircraft operations each day. For the purposes of this analysis operations were considered audible if aircraft came within 1.25 miles of a measurement site, based on an analysis of measured noise level and aircraft distance data. This will exclude any takeoffs and landings to and from runways 30 L and 30 R.
- The average measured noise level with aircraft from the airport present (within 1.25 miles).
- The number of decibels that aircraft noise is above the daily ambient sound level.
- The number of minutes each day that aircraft were present, and the noise level they generated that exceeded the ambient sound level by at least 5, 10, and 20 dBA, respectively.
- This information is then repeated with T&G operations excluded from the analysis.

Table 4-1. Summary of Measured Noise Levels and Aircraft Operations⁵ – Water Bladder

Date	Ambient Noise Level (dBA)	Daytime - All Operations						Daytime - T&G Operation Removed					
		Number of Audible Operations	Average Noise Level with Aircraft (dBA)	Aircraft Noise Level Increase (dBA)	Duration of Aircraft Noise Levels Above Ambient (Minutes)			Number of Audible Operations	Average Noise Level with Aircraft (dBA)	Aircraft Noise Level Increase (dBA)	Duration of Aircraft Noise Levels Above Ambient (Minutes)		
					> 5 dBA	> 10 dBA	> 20 dBA				> 5dBA	> 10 dBA	> 20 dBA
1-Jun-24	37	301	62	25	228	167	44	166	61	23	84	57	18
2-Jun-24	38	374	53	15	229	125	17	219	48	10	101	52	5
3-Jun-24	39	522	56	17	445	314	46	236	50	11	119	75	9
4-Jun-24	38	280	56	18	197	135	21	154	51	13	77	47	6
5-Jun-24	40	260	55	16	170	99	13	150	51	12	84	44	5
6-Jun-24	38	641	54	15	362	211	26	324	46	8	114	59	4
7-Jun-24	38	328	55	17	275	211	25	155	48	10	72	49	5
8-Jun-24	37	400	57	20	311	262	55	147	49	12	64	51	8
9-Jun-24	39	382	57	18	366	286	42	139	50	11	76	56	7
10-Jun-24	39	370	56	17	318	230	24	142	48	9	52	32	3
11-Jun-24	38	592	53	15	379	220	25	284	47	9	109	57	5
12-Jun-24	40	449	56	16	291	182	24	236	49	10	93	49	4
13-Jun-24	38	415	54	16	258	160	17	235	50	12	92	49	6
14-Jun-24	37	355	57	20	256	204	44	162	51	14	70	51	10
15-Jun-24	38	507	54	17	369	234	34	214	47	9	88	55	7
16-Jun-24	37	363	56	19	326	250	43	184	49	12	100	69	11
17-Jun-24	38	397	55	18	314	212	34	176	49	11	82	46	7
18-Jun-24	39	501	51	12	321	141	6	224	46	7	96	40	2
19-Jun-24	39	554	54	15	385	226	19	240	47	8	89	45	3
20-Jun-24	39	354	55	16	226	136	16	200	49	11	92	49	5
21-Jun-24	38	266	55	17	184	126	17	136	48	10	59	33	4
22-Jun-24	37	328	55	18	233	143	27	159	50	13	85	51	8
23-Jun-24	34	406	50	16	273	163	21	208	46	12	102	61	8
24-Jun-24	37	325	54	17	225	164	20	155	48	11	57	36	4
25-Jun-24	36	360	50	14	273	157	12	171	45	9	68	41	4
26-Jun-24	39	587	56	18	448	319	49	260	49	11	106	70	9
27-Jun-24	40	300	56	16	169	102	16	162	51	11	61	33	4
28-Jun-24	39	116	55	17	76	48	7	81	51	12	35	19	2
29-Jun-24	37	602	54	17	391	256	41	237	47	10	83	50	7
30-Jun-24	35	434	56	21	380	317	81	192	50	14	106	80	16
Monthly Average	38	402	55	17	289	193	29	192	49	11	84	50	7
Monthly Total	-	12,069	-	-	8,679	5,803	869	5,748	-	-	2,517	1,507	196

⁵ This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch-and-go operation as two operations.

Table 4-2. Summary of Measured Noise Levels⁶ and Aircraft Operations⁷ – Community Center

Date	Ambient Noise Level (dBA)	Daytime - All Operations						Daytime - T&G Operation Removed					
		Number of Audible Operations	Average Noise Level with Aircraft (dBA)	Aircraft Noise Level Increase Above Ambient (dBA)	Duration of Aircraft Noise Levels Above Ambient (Minutes)			Number of Audible Operations	Average Noise Level with Aircraft (dBA)	Aircraft Noise Level Increase Above Ambient (dBA)	Duration of Aircraft Noise Levels Above Ambient (Minutes)		
					> 5 dBA	> 10 dBA	> 20 dBA				> 5dBA	> 10 dBA	> 20 dBA
1-Jun-24	45	319	55	10	100	34	4	183	52	8	62	20	2
2-Jun-24	43	387	54	11	174	46	5	233	51	8	107	27	3
3-Jun-24	45	551	57	12	227	98	11	264	54	9	104	45	5
4-Jun-24	45	300	55	10	90	27	4	172	54	9	52	16	2
5-Jun-24	46	287	54	7	71	18	1	177	52	6	45	13	1
6-Jun-24	46	646	57	11	168	65	8	329	54	8	95	34	4
7-Jun-24	46	340	56	10	117	48	3	167	53	7	59	24	2
8-Jun-24	45	421	57	12	131	64	8	171	54	10	61	33	4
9-Jun-24	-	399	-	-	-	-	-	156	-	-	-	-	-
10-Jun-24	-	379	-	-	-	-	-	151	-	-	-	-	-
11-Jun-24	-	599	-	-	-	-	-	289	-	-	-	-	-
12-Jun-24	-	471	-	-	-	-	-	257	-	-	-	-	-
13-Jun-24	-	423	-	-	-	-	-	243	-	-	-	-	-
14-Jun-24	-	369	-	-	-	-	-	174	-	-	-	-	-
15-Jun-24	-	521	-	-	-	-	-	228	-	-	-	-	-
16-Jun-24	45	387	59	14	183	91	12	208	58	13	101	54	9
17-Jun-24	46	415	56	10	84	33	2	195	54	8	43	18	2
18-Jun-24	45	507	55	9	159	37	5	229	54	8	91	29	5
19-Jun-24	45	569	58	14	261	120	16	253	56	12	124	61	12
20-Jun-24	45	360	58	13	138	61	11	205	57	13	91	43	9
21-Jun-24	45	282	59	14	122	62	10	155	58	13	72	41	9
22-Jun-24	44	343	56	12	143	56	6	174	55	11	86	38	5
23-Jun-24	45	425	56	11	135	48	7	225	55	10	87	36	7
24-Jun-24	46	338	58	13	129	62	8	169	57	11	70	36	6
25-Jun-24	46	367	57	11	131	52	6	177	56	10	73	34	6
26-Jun-24	46	605	59	13	265	131	14	276	57	11	120	63	11
27-Jun-24	47	333	58	11	105	41	5	195	57	11	71	31	5
28-Jun-24	47	140	57	11	50	20	2	105	57	10	39	17	2
29-Jun-24	45	615	58	13	230	108	16	249	56	11	111	55	11
30-Jun-24	44	453	58	14	230	122	17	210	57	13	118	69	15
Monthly Average	45	418	57	12	150	63	8	207	55	10	82	36	6
Monthly Total	-	12,551	-	-	3,442	1,445	183	6,219	-	-	1,881	835	135

⁶ The Community Center measurement site was not collecting data between 6/9 and 6/15

⁷ This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch-and-go operation as two operations.

Table 4-3. Summary of Measured Noise Levels and Aircraft Operations⁸ – Pirate Park

Date	Ambient Noise Level (dBA)	Daytime - All Operations						Daytime - T&G Operation Removed					
		Number of Audible Operations	Average Noise Level with Aircraft (dBA)	Aircraft Noise Level Increase Above Ambient (dBA)	Duration of Aircraft Noise Levels Above Ambient (Minutes)			Number of Audible Operations	Average Noise Level with Aircraft (dBA)	Aircraft Noise Level Increase Above Ambient (dBA)	Duration of Aircraft Noise Levels Above Ambient (Minutes)		
					> 5 dBA	> 10 dBA	> 20 dBA				> 5dBA	> 10 dBA	> 20 dBA
1-Jun-24	39	316	58	19	209	135	38	180	53	14	101	66	14
2-Jun-24	39	387	56	17	230	127	27	232	53	14	130	69	13
3-Jun-24	41	551	60	19	400	267	75	263	55	14	141	94	19
4-Jun-24	40	312	60	19	219	147	39	180	55	15	113	73	15
5-Jun-24	43	297	59	16	174	111	18	186	55	12	104	61	7
6-Jun-24	40	648	58	19	339	220	53	331	54	14	146	92	18
7-Jun-24	41	346	61	21	249	187	56	171	56	15	100	73	17
8-Jun-24	40	428	61	22	273	208	71	170	54	15	90	68	17
9-Jun-24	40	402	62	22	312	244	91	158	56	16	94	74	23
10-Jun-24	42	381	61	20	259	177	56	151	54	12	79	54	10
11-Jun-24	39	604	57	19	316	214	52	292	52	13	122	79	16
12-Jun-24	41	475	59	19	296	229	56	258	54	14	126	93	17
13-Jun-24	40	427	59	19	232	165	36	246	55	14	109	74	13
14-Jun-24	39	370	61	22	240	192	61	175	55	16	97	77	20
15-Jun-24	40	520	59	19	332	226	60	226	53	14	119	82	17
16-Jun-24	40	388	61	21	300	223	63	208	55	15	124	93	19
17-Jun-24	40	421	60	19	263	170	48	197	54	13	98	61	13
18-Jun-24	42	506	54	13	285	168	8	228	52	10	114	71	4
19-Jun-24	41	573	59	18	336	227	49	256	53	12	110	73	10
20-Jun-24	40	366	59	18	208	155	28	209	55	14	106	77	12
21-Jun-24	41	286	60	19	159	99	28	154	55	13	72	46	10
22-Jun-24	40	342	58	19	248	171	34	173	54	14	107	71	12
23-Jun-24	38	425	55	17	215	136	28	224	51	13	105	67	13
24-Jun-24	39	341	60	21	201	145	46	171	53	14	76	53	12
25-Jun-24	38	370	57	19	219	140	39	180	53	14	84	53	14
26-Jun-24	40	610	61	21	397	298	96	277	56	16	140	103	25
27-Jun-24	42	339	62	20	194	146	39	199	58	16	101	73	17
28-Jun-24	43	146	59	17	97	73	11	111	56	14	59	42	5
29-Jun-24	39	617	60	20	325	235	67	250	53	14	110	79	17
30-Jun-24	38	451	61	23	348	283	101	206	56	17	134	106	32
Monthly Average	40	422	59	19	263	184	49	209	54	14	107	73	15
Monthly Total	-	12,645	-	-	7,876	5,519	1,472	6,262	-	-	3,209	2,196	450

⁸ This report counts each touch and go operation as a single operation. The Federal Aviation Administration counts each touch-and-go operation as two operations.