SAINT PAUL DOWNTOWN AIRPORT ADVISORY COUNCIL (DAAC)

Meeting Agenda
May 19, 2020

1. Introductions – Information
2. Public Comment –(up to 3-minutes each)
3. DAAC Bylaws - Action
4. Elections for Chair and Vice Chair - Action
5. Work Plan 2020-2021 - Action
6. Q1 2020 STP Operations and Noise Complaints - Information
7. Noise Study - Action
   --Postponed to July 2020
8. Meeting Schedule - Action

DRAFT

(Proposed for approval May 19, 2020)

BYLAWS OF

DOWNTOWN AIRPORT ADVISORY COUNCIL

ARTICLE I

The name of this organization shall be the (Saint Paul) Downtown Airport Advisory Council (DAAC), hereinafter referred to as the "Council."

ARTICLE II

Purpose and Goals

GOAL: This Council is formed to further the general welfare of the community and the Saint Paul Downtown Airport - Holman Field, a public airport in the City of Saint Paul, County of Ramsey, State of Minnesota, through minimizing or resolving problems created by the operation of the airport and aircraft.

PURPOSE: 1) To advise the Metropolitan Airports Commission (MAC) on future airport use and development.

2) To study and evaluate complaints and problems concerning the airport and aircraft operations.

3) To propose and promote reasonable and effective methods to minimize or resolve problems arising from and connected with aircraft operations and the airport.

4) To disseminate information to the affected communities, neighborhoods and users of the airport.

5) To bring information from the affected communities, neighborhoods and users of the airport back to the MAC.

ARTICLE III

Council Powers

The Council powers and business of the Council shall be vested in, and exercised, conducted and controlled by the membership of the Council through the USER REPRESENTATIVES, PUBLIC REPRESENTATIVES and GOVERNMENT REPRESENTATIVES, all as hereinafter provided, with exercise of said powers by the membership and through its Council Officers and Sub-committee(s).

ARTICLE IV

Membership

(1) The Council membership, as hereinafter set forth, shall consist of the officially designated representatives with authority to act upon all matters within the purview of the Council's Bylaws.

(2) Upon appointment of the officially designated representatives by the governing board or executive head of agencies, corporations and associations and neighborhood groups with respect to USER and PUBLIC representation, and by the governmental units with respect to GOVERNMENT representation, the appointing authority shall file in the office of the Council a notice of the appointment of such designated representatives setting forth their names, email addresses, and mailing address.

(3) Representatives shall be appointed to serve for a two (2) year term or until their successor is appointed. Vacancy shall be filled by the appointed authority for a new two (2) year term commencing with the date of appointment of such successor representative.

Voting membership of the Council is as follows:

USER REPRESENTATION

One (1) representative from the Minnesota Army National Guard.
Seven (7) at-large airport user representatives to be determined by the MAC.

PUBLIC REPRESENTATION

One (1) representative from the Dayton's Bluff District 4 Council.
One (1) representative from the CapitolRiver District 17 Council.
One (1) representative from the Payne-Phalen District 5 Council.
One (1) representative from the West Side District 3 Council.
One (1) representative from the North End District 6 Council.

GOVERNMENT REPRESENTATION

One (1) representative from the City of Saint Paul.
One (1) representative from the City of South Saint Paul.
One (1) representative from the City of West Saint Paul.

Changes in the composition of the Council or in the USER, PUBLIC and/or GOVERNMENT representation thereon, through amendment of the Bylaws, shall be entertained to permit active participation of additional members in the user, public or

government categories or as may be required to reflect material changes in the population of directly affected governmental units or change in the impact on governmental units by reason of changed flight patterns.

(4) In addition to the designated USER, PUBLIC and GOVERNMENT representatives non-voting membership to the Council should include representatives from the following category:

TECHNICAL ADVISOR - Officially recognized organization or agency that directly deals with aircraft operations to include: Federal Aviation Administration (FAA), Minnesota Pollution Control Agency (MPCA), Commissioner(s) and/or staff members from the Metropolitan Airports Commission (MAC), and any other organization or agency that can provide technical assistance with majority approval by the Council.

(5) ATTENDANCE – The Committee membership shall consist of sixteen (16) officially designated representatives. In the absence of any designated representative, an alternate representative may be appointed by the designated representative to participate in the Council meeting on their behalf with authority to act upon all matters within the purview of the Bylaws.

(6) UNEXCUSED ABSENCES – Designated members who miss two (2) consecutive Council meetings in the course of one (1) calendar year, without appointing an alternate, may be subject to removal from the Council. If a member is removed from the Council in this manner, the same member cannot be reappointed to the Council.

ARTICLE V

Powers and Duties of Membership

Subject to the voting provisions herein set forth, the membership shall have the following powers and duties:

(1) To appoint and remove at pleasure all officers of the Council other than representatives; to prescribe such duties for them as may be consistent with the law.

(2) To conduct, manage and control the affairs and activities of the Council, relating to the GOAL and PURPOSE of the Council, and as more fully set out in these Bylaws; and to make such recommendations consistent with the law or these Bylaws, as they may deem best.

(3) To fix, from time to time, the office of this Council.

(4) To do and perform every act and thing whatsoever that may pertain to their function as representatives; and to exercise all powers and perform all acts which this Council can legally exercise and perform under its Bylaws.

ARTICLE VI

Voting Rights of Membership

(1) At all meetings of the Council, attendance by two (2) USER REPRESENTATIVES, one (1) PUBLIC REPRESENTATIVE and one (1) GOVERNMENT REPRESENTATIVE, shall constitute a quorum for the conduct of business.

(2) Each USER, PUBLIC and GOVERNMENT REPRESENTATIVE, or their appointed alternate, shall have one (1) vote.

(3) These Bylaws may be amended or altered by majority vote of membership provided that notice of such proposed amendments shall have been given ten (10) days prior to a general membership meeting. Voting may be conducted via email, or by members in attendance at a meeting in-person or through use of virtual collaboration tool.

ARTICLE VII

Chairperson of the Council

The representatives shall by majority vote of the membership present at the time of voting (in-person or through virtual collaboration tool) elect from amongst the constituency of the Council a Chairperson who shall serve for a two (2) year term or until their representation on the Council terminates, whichever occurs first; and until their successor is elected. The powers and duties of the Chairperson are as follows:

(1) To preside at all meetings of the Council.

(2) To call special meetings of the Council as he/she deems necessary, or upon request by any three (3) USER, or two (2) PUBLIC, or one (1) GOVERNMENT REPRESENTATIVE(S).

(3) To sign as Chairperson of this Council, with the approval of the membership, certifications and other papers and instruments in-writing that may require such signature.

(4) To form a Sub-committee as necessary, and appoint its members, for special projects.

(5) To perform such other duties and tasks as these Bylaws or as the membership shall from time to time prescribe.

ARTICLE VIII

Vice-Chairperson

The representatives shall by majority vote of the membership present at the time of voting (in-person or through virtual collaboration tool) elect from amongst the constituency of the Council a Vice-Chairperson who shall serve for a two (2) year term or until their representation on the Council terminates, whichever occurs first; and until their successor is elected. The powers and duties of the Vice-Chairperson in the absence of the Chairperson are as follows:

(1) To preside at meetings of the Council.

(2) To call meetings.

(3) To perform the duties and exercise the powers of the Chairperson.

ARTICLE IX

Technical Coordinator

The Manager of the Saint Paul Downtown Airport shall be the Technical Coordinator of the Council. The duties of the Technical Coordinator or designee shall include the following:

(1) To prepare the agenda in consultation with the Chairperson, members of the Council and technical advisors for meetings of the Council and its committees.

(2) To keep a full and complete record of the proceedings of the Council and of the meetings of the members.

(3) To maintain an up-to-date roster of Council membership, including the dates of appointment and time of service of each representative.

(4) To inform each member as to the termination of the term of service of each representative, no less than thirty (30) days prior to such termination.

(5) To make service and publication of all notices that may be necessary or proper.

ARTICLE X

Council Meetings

(1) The Council shall meet biannually each calendar year, or as determined necessary by the Council. Special meetings of the Council shall be held on-call as heretofore provided.

(2) The Technical Coordinator or designee shall email notice and the agenda of general Council meetings or special Council meetings, and minutes of the previous meeting, to each representative. Matters requiring Council discussion may be considered which are not on the agenda by majority vote of representatives in attendance.

(3) All meetings shall be held at Saint Paul Downtown Airport (644 Bayfield St, St. Paul, MN 55107) or at such other place or places as determined by a majority vote of participating Council representatives. The place and time of meeting shall be set forth in notices of the meeting.

(4) The Council shall use Robert's Rules of Order to decide all questions of order not otherwise provided for by the Bylaws.

Proposed DAAC Work Plan
2020-2021

1. 2020 STP Annual Noise Monitoring Study

2. Review of aircraft noise complaints and aircraft operations summary

3. Tenant Highlight

4. Metropolitan Airports Commission Update
   a. St. Paul MAC District G Commissioner Richard Ginsberg
   b. St. Paul Mayor Representative Ikram Koliso

5. Reliever Airport Advisory Commission Update

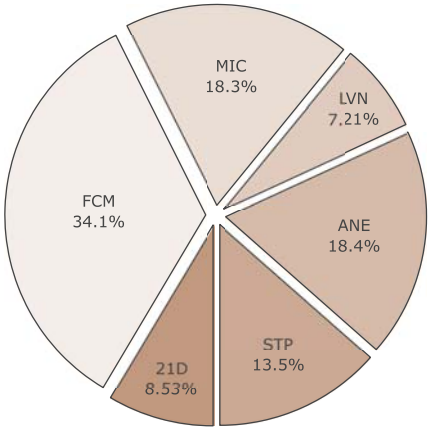
6. STP development and planning efforts
   a. Visioning Study
   b. Long Term Comprehensive Plan

7. Airport/Community Events

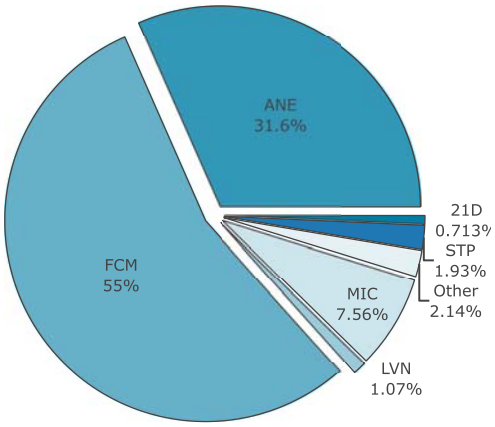
8. Airport Tour and Tenant Engagement in Summer

Metropolitan Airports Commission (MAC)
Reliever Airport Operations and Noise Complaint Report

AIRCRAFT OPERATIONS



NOISE COMPLAINTS

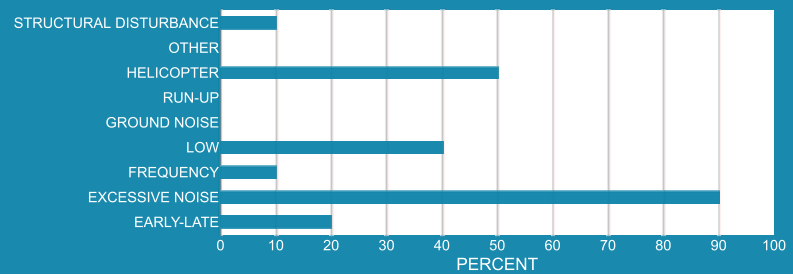


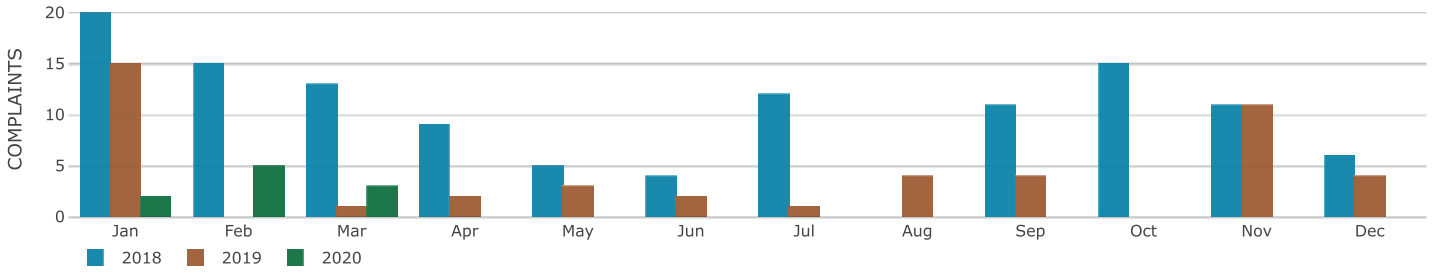
Lake Elmo Airport (21D) — 1ST QUARTER 2020

COMPLAINTS

2020	**10** COMPLAINTS	**3** LOCATIONS	**2** NIGHTTIME COMPLAINTS	**1** NIGHTTIME HOUSEHOLDS
2019	**16** COMPLAINTS	**2** LOCATIONS	**2** NIGHTTIME COMPLAINTS	**1** NIGHTTIME HOUSEHOLDS

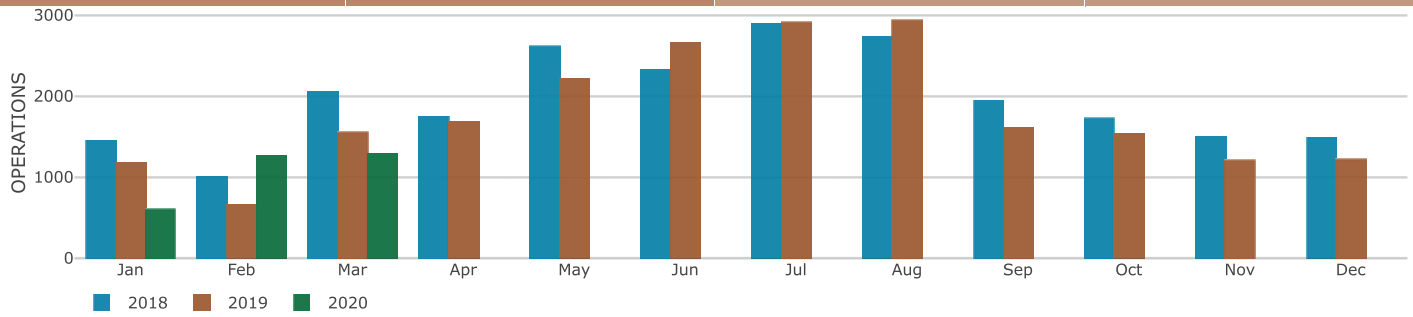
COMPLAINT DESCRIPTORS





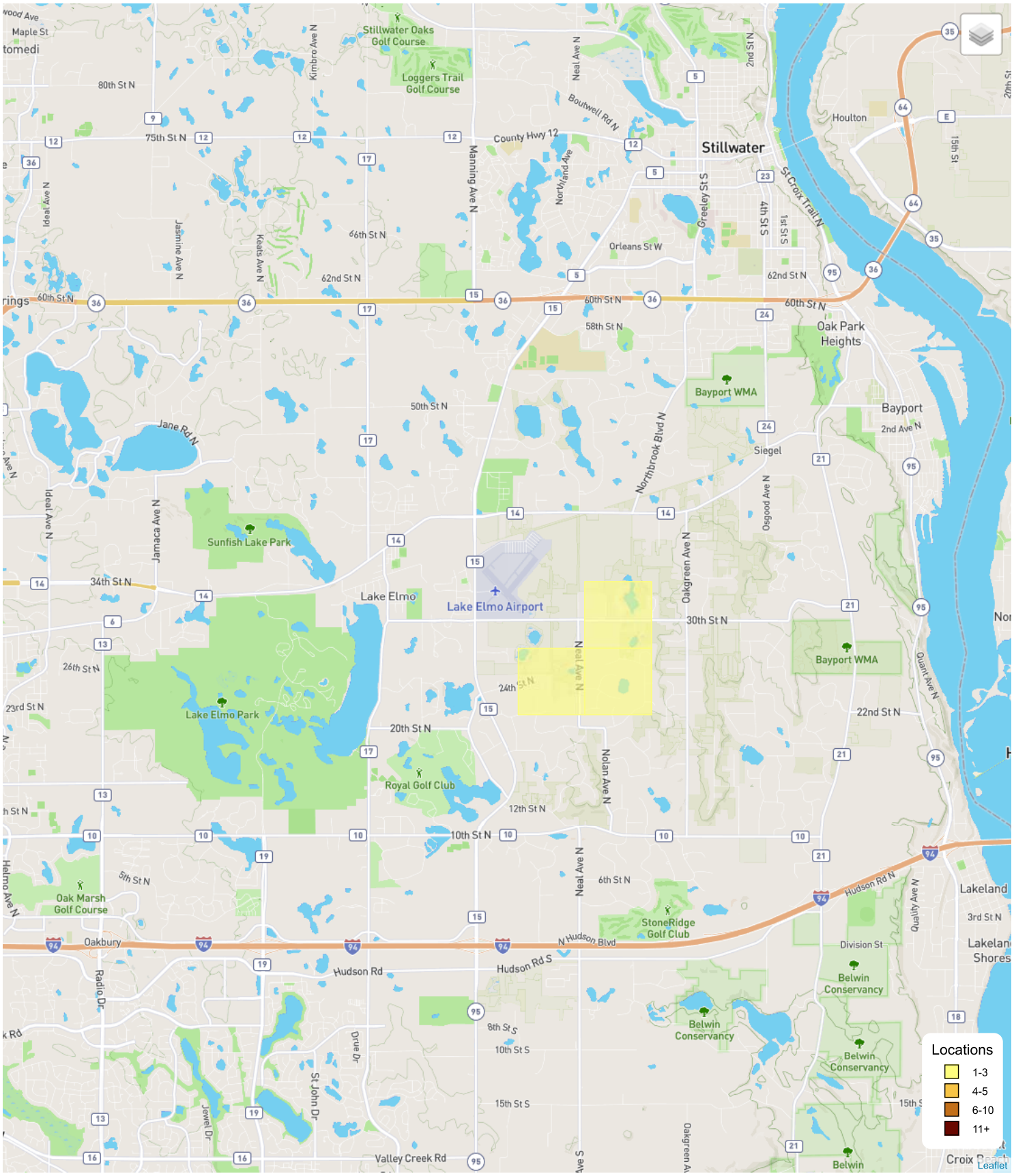
OPERATIONS

2020		2019	
3169 OPERATIONS	**16** NIGHTTIME OPERATIONS	**3390** OPERATIONS	**18** NIGHTTIME OPERATIONS



AIRCRAFT TYPE	OPERATIONS	%	COMPLAINTS	%
JET	4	0.1 %	0	0.0 %
PISTON	2947	93.0 %	7	70.0 %
TURBO-PROP	11	0.3 %	1	10.0 %
UNKNOWN	203	6.4 %	1	10.0 %
RUN-UP	N/A	0.0 %	0	0.0 %
NOT-CORRELATED	N/A	0.0 %	0	0.0 %

Lake Elmo Airport (21D) - COMPLAINTS HEATMAP

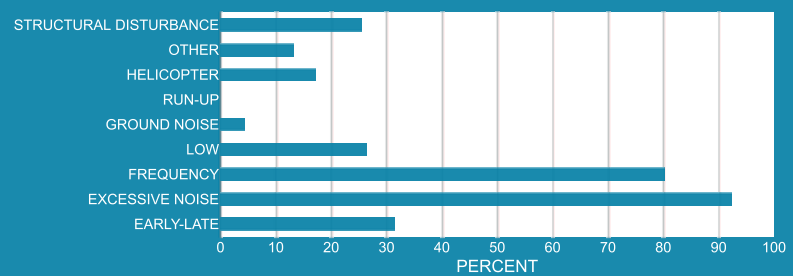


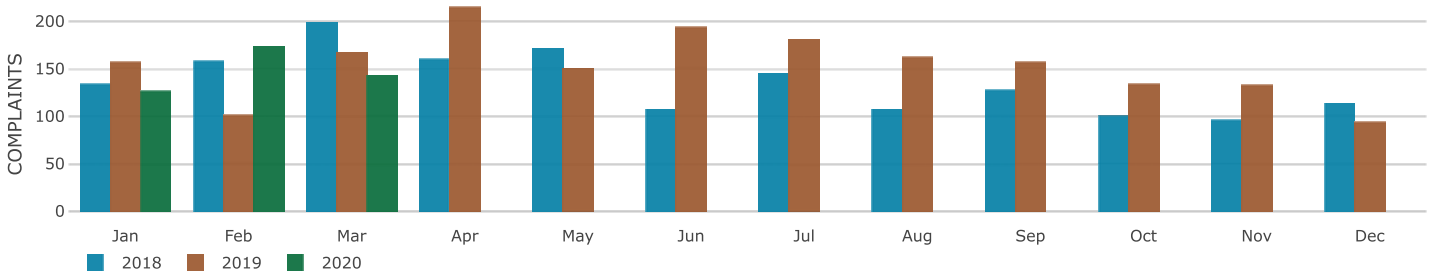
Anoka County-Blaine Airport (ANE) 1ST QUARTER 2020

COMPLAINTS

2020	**443** COMPLAINTS	**13** LOCATIONS	**105** NIGHTTIME COMPLAINTS	**7** NIGHTTIME HOUSEHOLDS
2019	**425** COMPLAINTS	**13** LOCATIONS	**133** NIGHTTIME COMPLAINTS	**10** NIGHTTIME HOUSEHOLDS

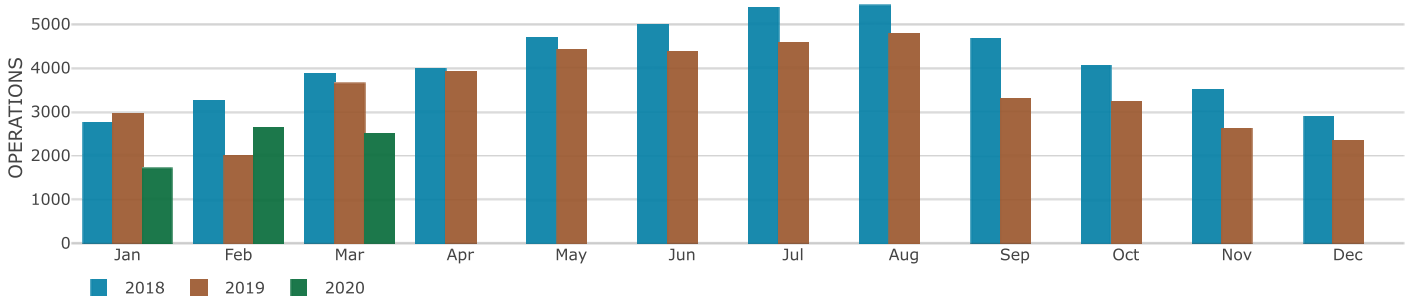
COMPLAINT DESCRIPTORS





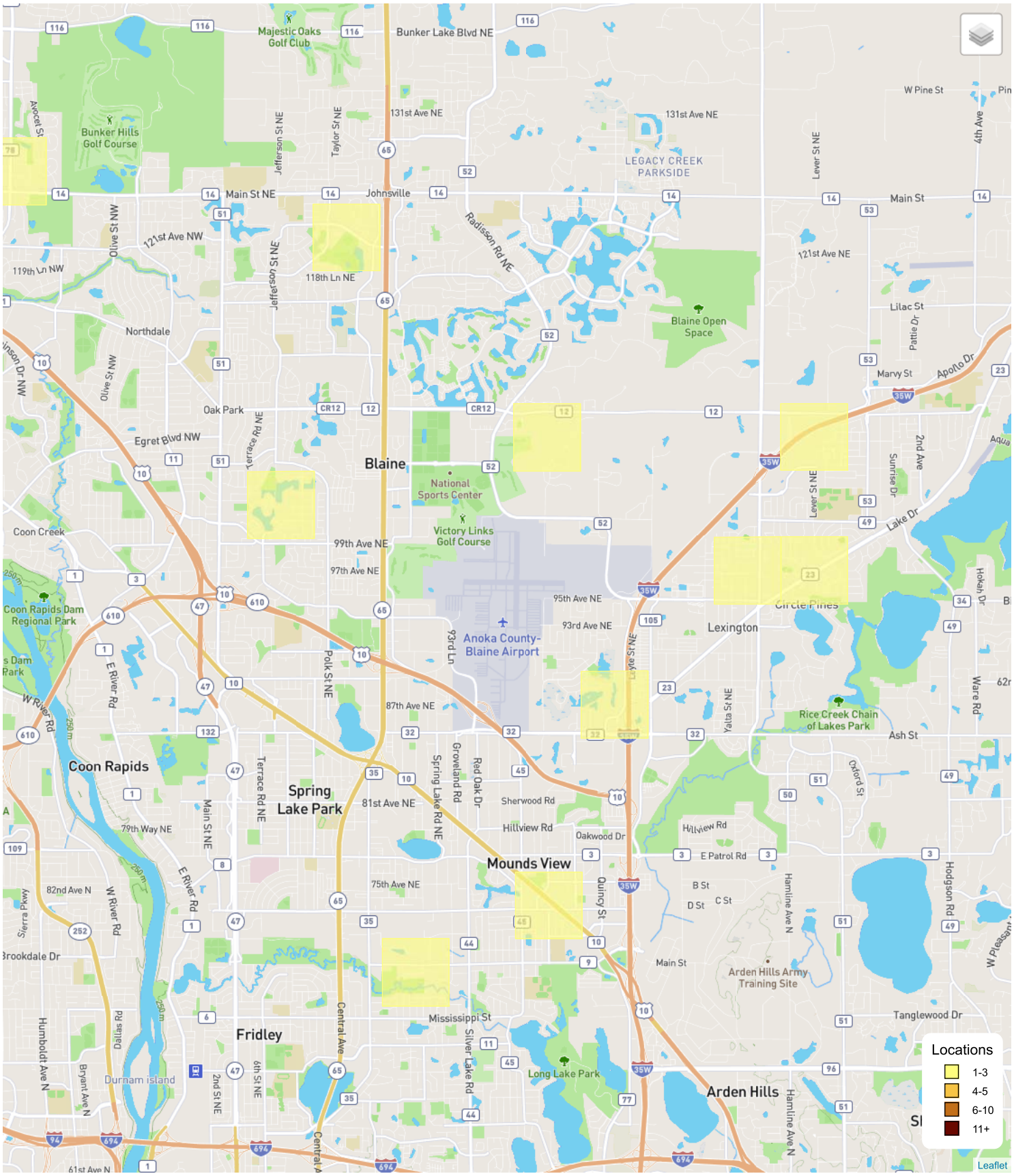
OPERATIONS

2020		2019	
6846 OPERATIONS	**405** NIGHTTIME OPERATIONS	**8625** OPERATIONS	**562** NIGHTTIME OPERATIONS



	AIRCRAFT TYPE	OPERATIONS	%	COMPLAINTS	%
	HELICOPTER	404	5.9 %	82	18.5 %
	JET	369	5.4 %	36	8.1 %
	PISTON	4976	72.7 %	183	41.3 %
	TURBO-PROP	671	9.8 %	103	23.3 %
	UNKNOWN	415	6.1 %	37	8.4 %
	RUN-UP	N/A	0.0 %	0	0.0 %
	NOT-CORRELATED	N/A	0.0 %	1	0.2 %

Anoka County-Blaine Airport (ANE) - COMPLAINTS HEATMAP

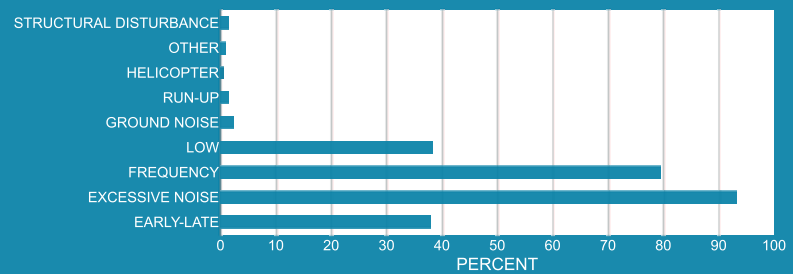


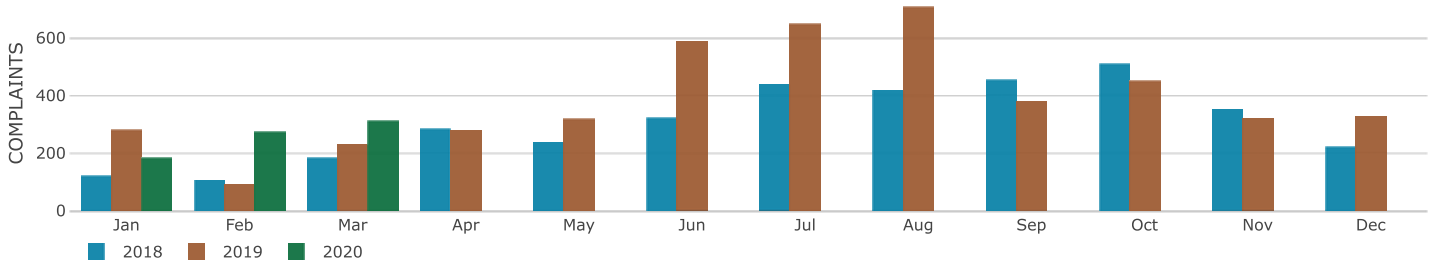
Flying Cloud Airport (FCM) — 1ST QUARTER 2020

COMPLAINTS

2020	**771** COMPLAINTS	**25** LOCATIONS	**189** NIGHTTIME COMPLAINTS	**20** NIGHTTIME HOUSEHOLDS
2019	**601** COMPLAINTS	**41** LOCATIONS	**201** NIGHTTIME COMPLAINTS	**24** NIGHTTIME HOUSEHOLDS

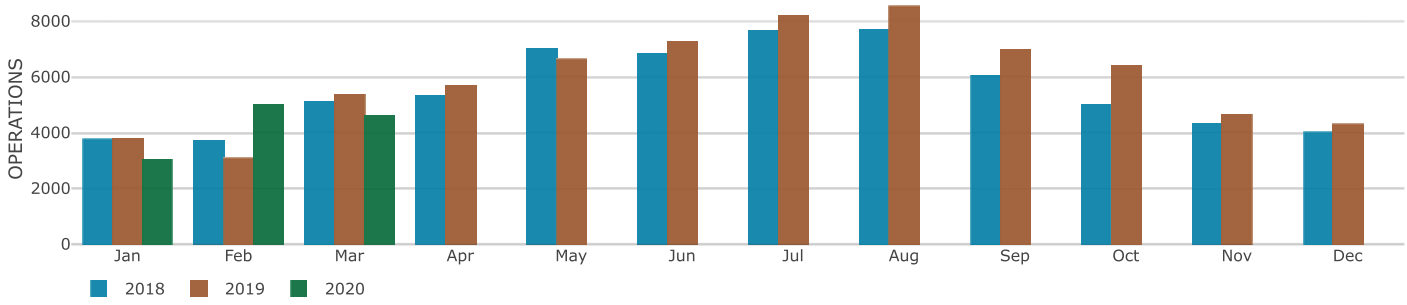
COMPLAINT DESCRIPTORS





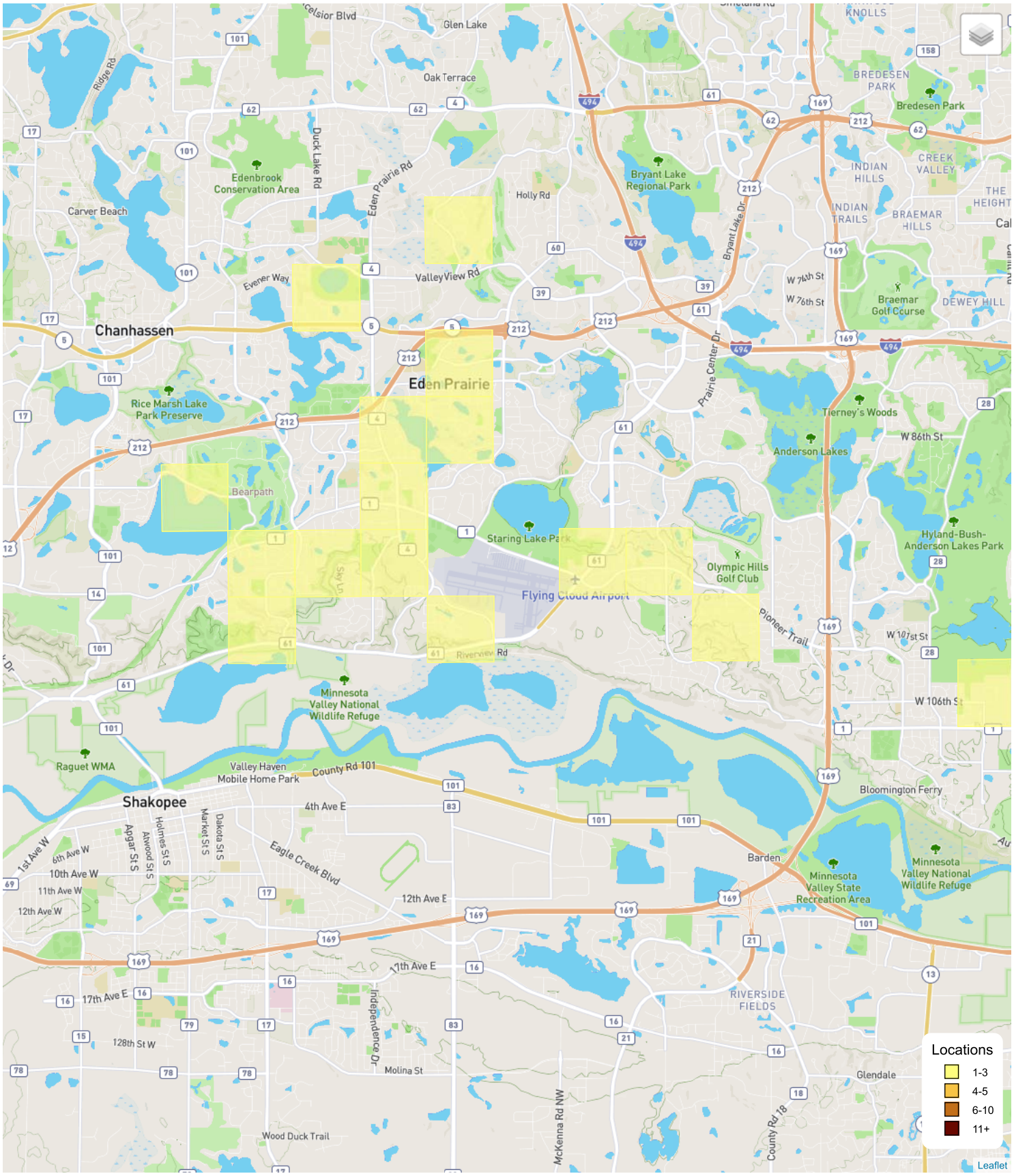
OPERATIONS

2020		2019	
12661 OPERATIONS	**518** NIGHTTIME OPERATIONS	**12221** OPERATIONS	**577** NIGHTTIME OPERATIONS



	AIRCRAFT TYPE	OPERATIONS	%	COMPLAINTS	%
	HELICOPTER	132	1.0 %	5	0.6 %
	JET	1943	15.3 %	139	18.0 %
	PISTON	8931	70.5 %	456	59.1 %
	TURBO-PROP	1313	10.4 %	150	19.5 %
	UNKNOWN	339	2.7 %	19	2.5 %
	RUN-UP	N/A	0.0 %	0	0.0 %
	NOT-CORRELATED	N/A	0.0 %	2	0.3 %

Flying Cloud Airport (FCM) - COMPLAINTS HEATMAP

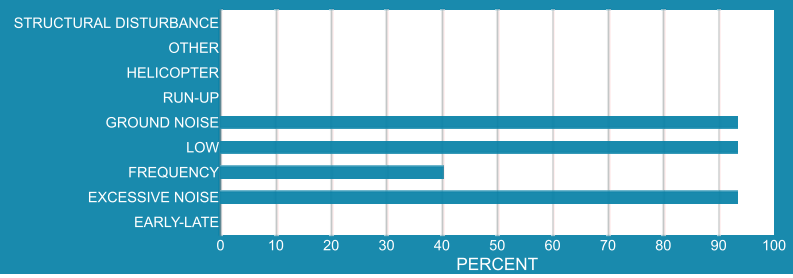


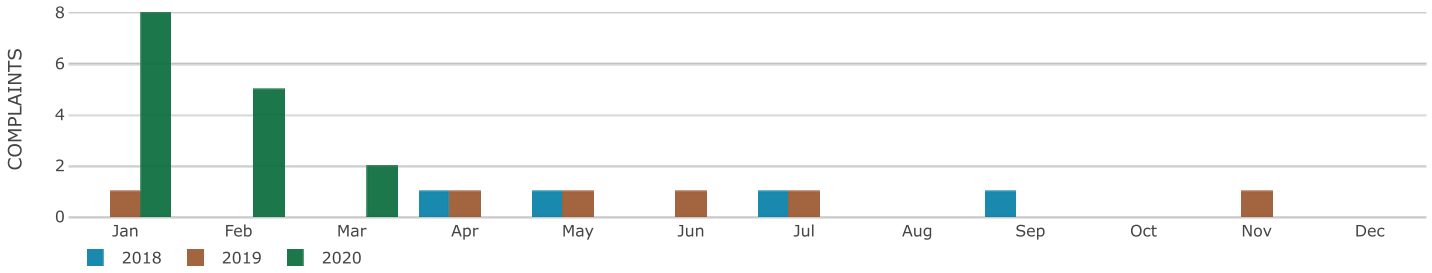
Airlake Airport (LVN) — 1ST QUARTER 2020

COMPLAINTS

2020	**15** COMPLAINTS	**1** LOCATIONS	**0** NIGHTTIME COMPLAINTS	**0** NIGHTTIME HOUSEHOLDS
2019	**1** COMPLAINTS	**1** LOCATIONS	**0** NIGHTTIME COMPLAINTS	**0** NIGHTTIME HOUSEHOLDS

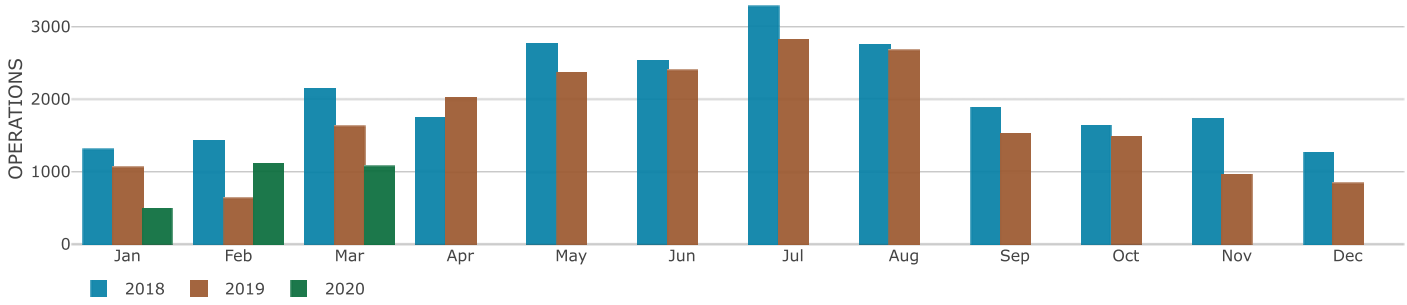
COMPLAINT DESCRIPTORS





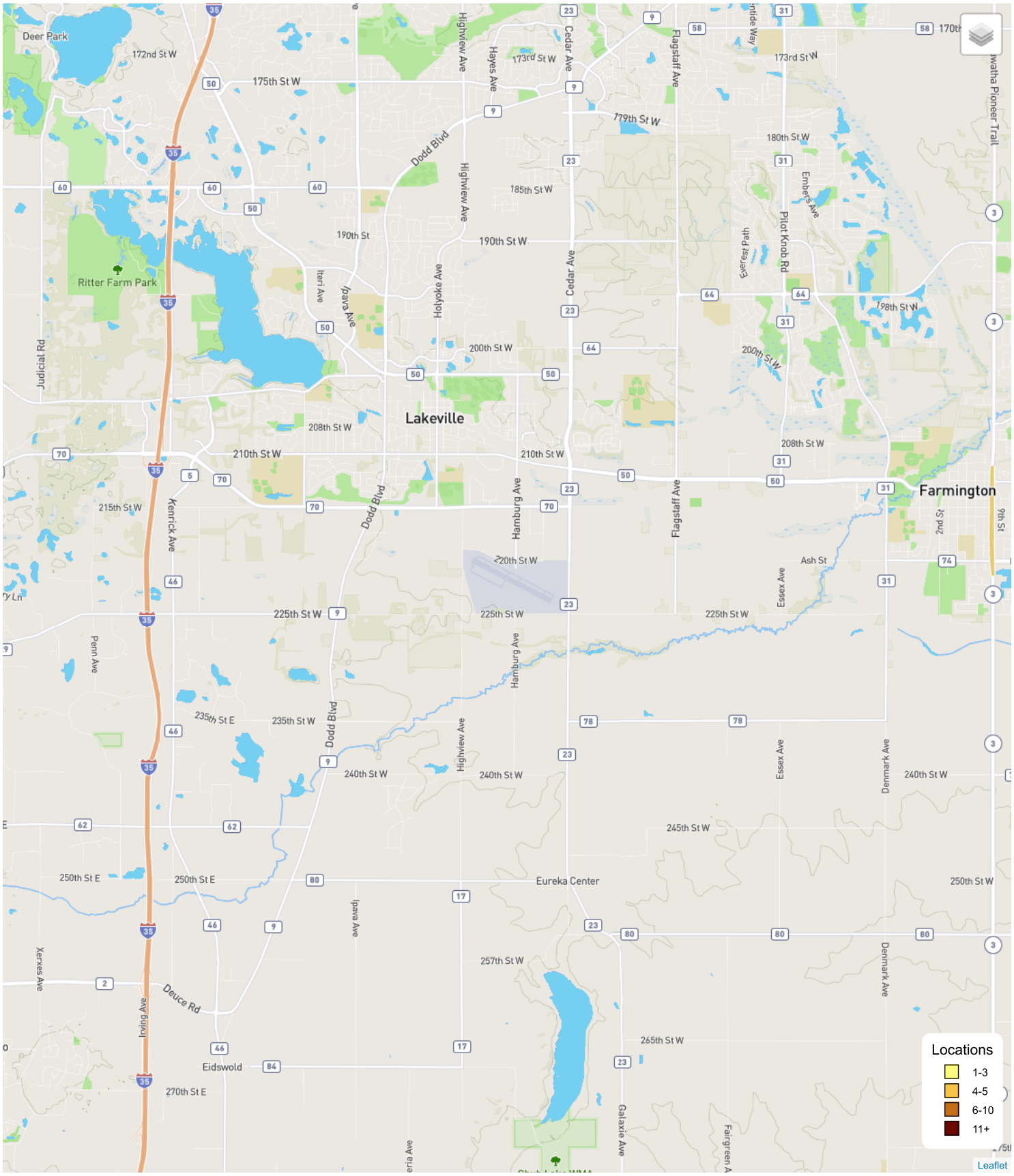
OPERATIONS

2020		2019	
2677 OPERATIONS	**32** NIGHTTIME OPERATIONS	**3343** OPERATIONS	**31** NIGHTTIME OPERATIONS



AIRCRAFT TYPE	OPERATIONS	%	COMPLAINTS	%
HELICOPTER	12	0.4 %	0	0.0 %
JET	51	1.9 %	1	6.7 %
PISTON	2368	88.5 %	6	40.0 %
TURBO-PROP	54	2.0 %	0	0.0 %
UNKNOWN	180	6.7 %	8	53.3 %
RUN-UP	N/A	0.0 %	0	0.0 %
NOT-CORRELATED	N/A	0.0 %	0	0.0 %

Airlake Airport (LVN) - COMPLAINTS HEATMAP

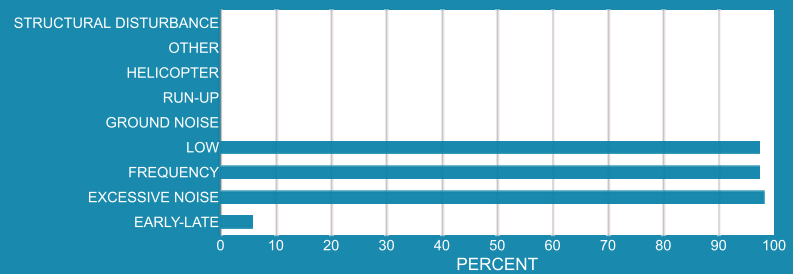


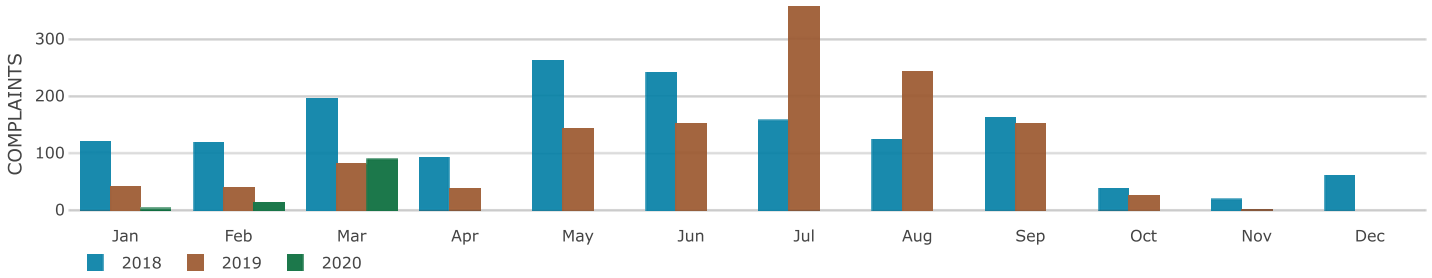
Crystal Airport (MIC) 1ST QUARTER 2020

COMPLAINTS

2020	**106** COMPLAINTS	**3** LOCATIONS	**0** NIGHTTIME COMPLAINTS	**0** NIGHTTIME HOUSEHOLDS
2019	**162** COMPLAINTS	**4** LOCATIONS	**5** NIGHTTIME COMPLAINTS	**3** NIGHTTIME HOUSEHOLDS

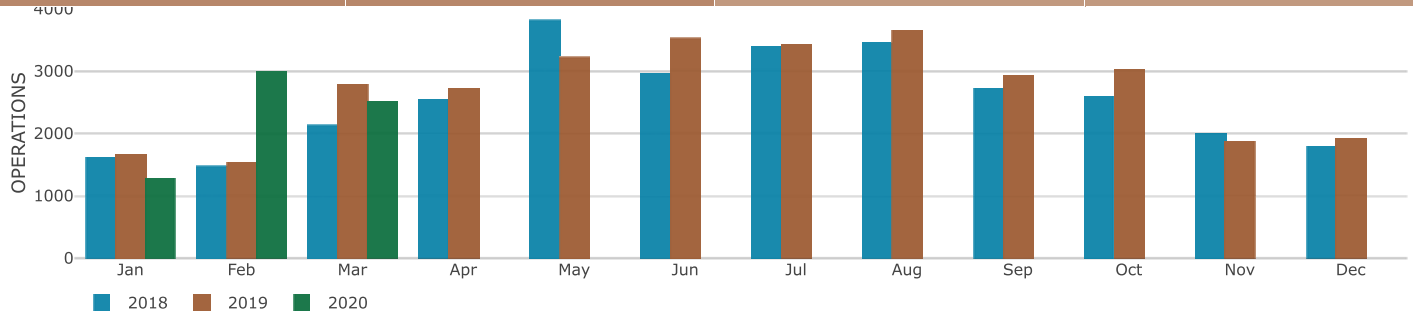
COMPLAINT DESCRIPTORS





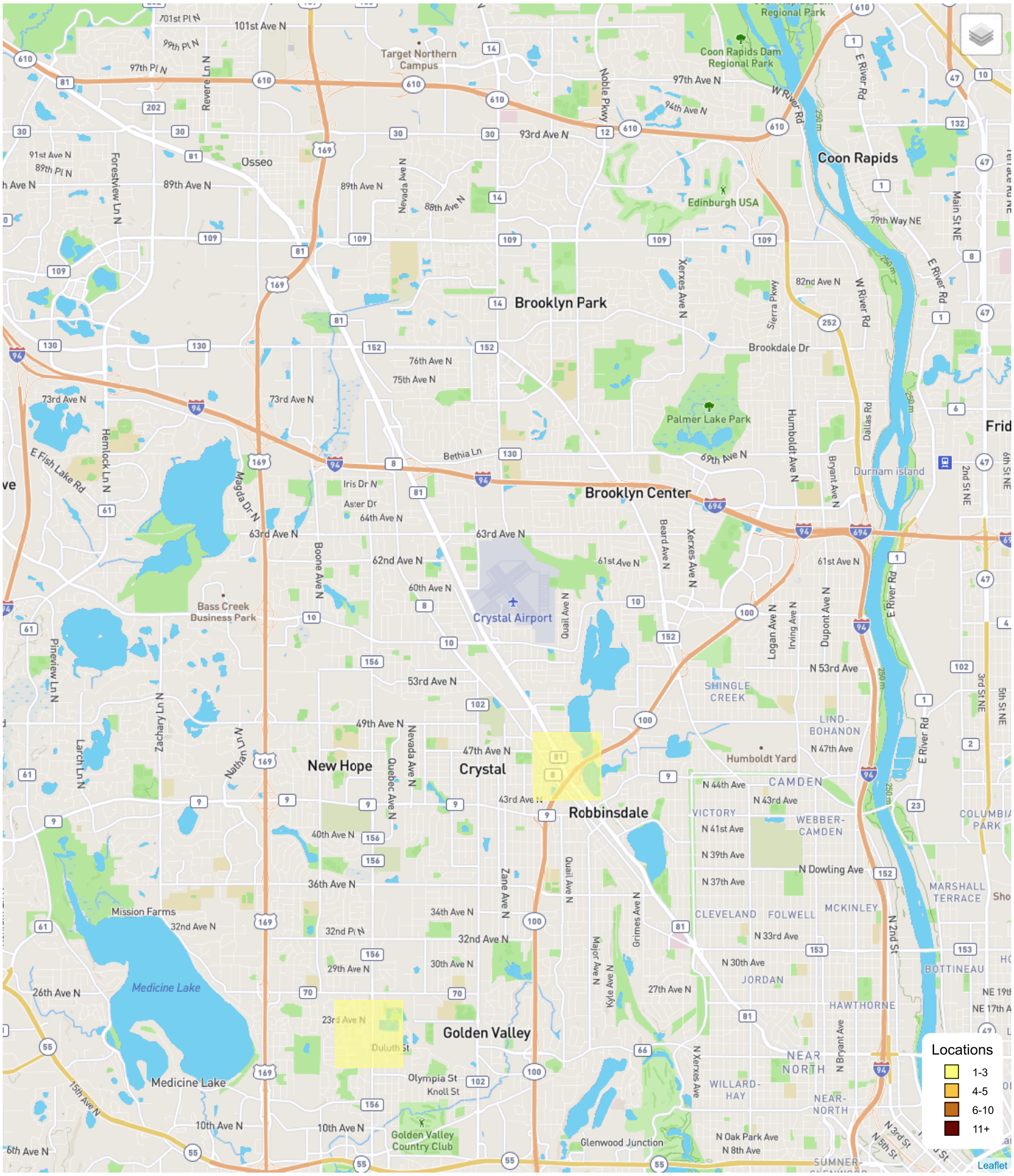
OPERATIONS

2020		2019	
6781 OPERATIONS	**53** NIGHTTIME OPERATIONS	**5986** OPERATIONS	**55** NIGHTTIME OPERATIONS



	AIRCRAFT TYPE	OPERATIONS	%	COMPLAINTS	%
	HELICOPTER	49	0.7 %	2	1.9 %
	PISTON	6461	95.3 %	95	89.6 %
	TURBO-PROP	8	0.1 %	2	1.9 %
	UNKNOWN	263	3.9 %	5	4.7 %
	RUN-UP	N/A	0.0 %	0	0.0 %
	NOT-CORRELATED	N/A	0.0 %	0	0.0 %

Crystal Airport (MIC) - COMPLAINTS HEATMAP

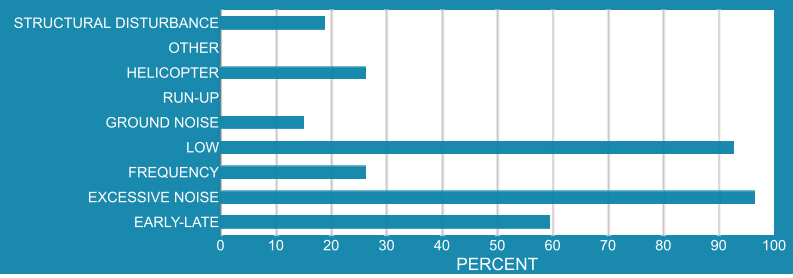


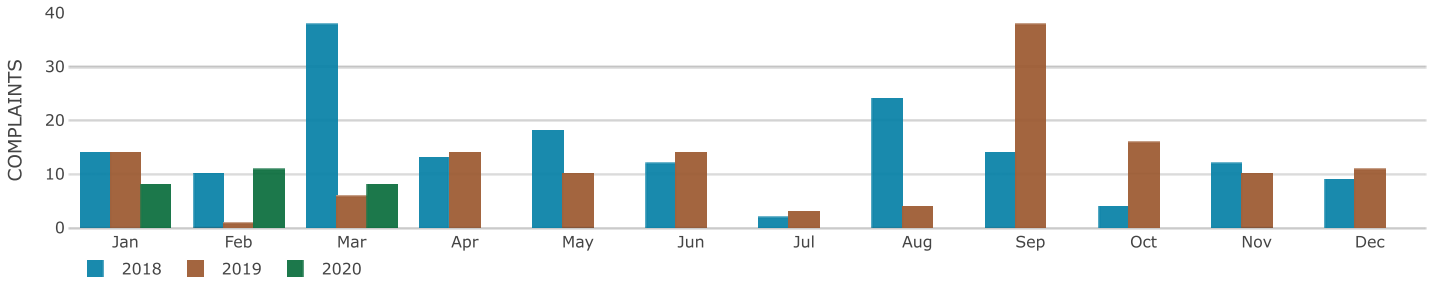
St. Paul Downtown Airport (STP) 1ST QUARTER 2020

COMPLAINTS

2020	**27** COMPLAINTS	**7** LOCATIONS	**15** NIGHTTIME COMPLAINTS	**4** NIGHTTIME HOUSEHOLDS
2019	**21** COMPLAINTS	**4** LOCATIONS	**17** NIGHTTIME COMPLAINTS	**1** NIGHTTIME HOUSEHOLDS

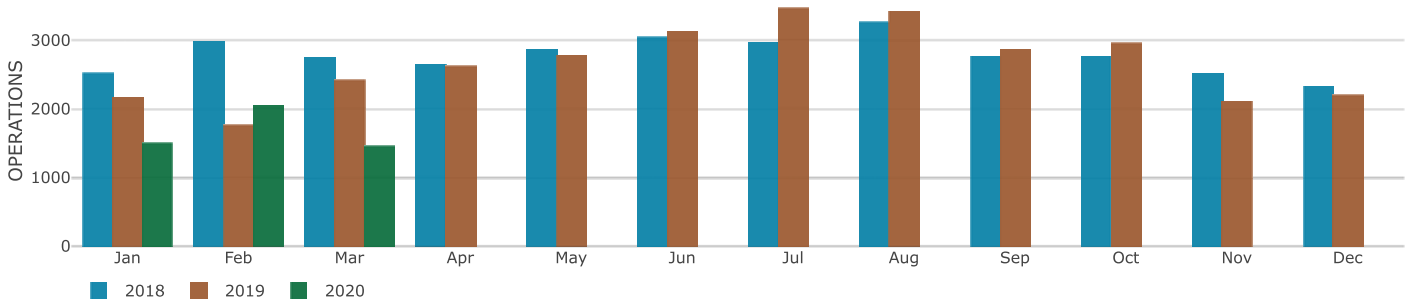
COMPLAINT DESCRIPTORS





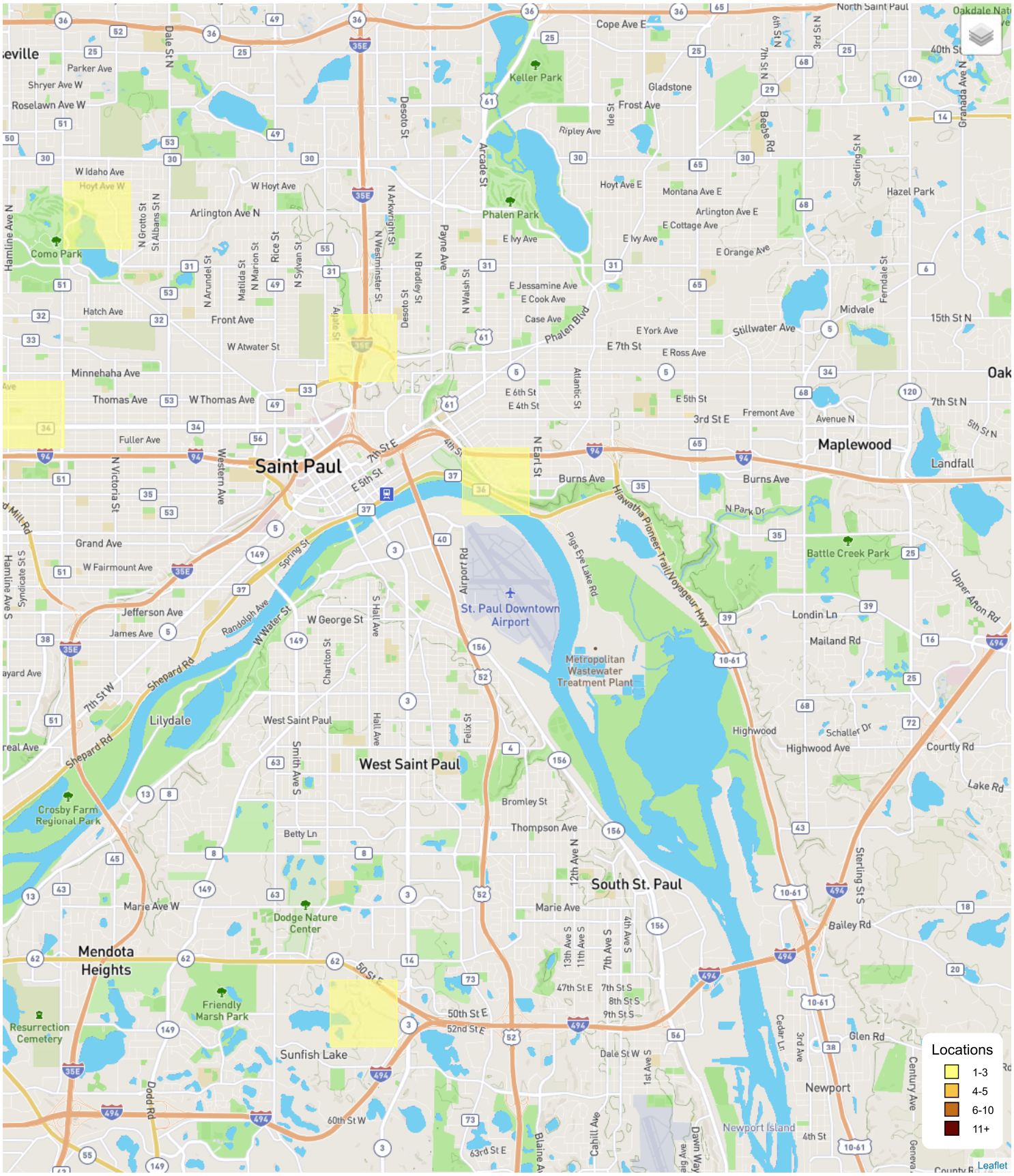
OPERATIONS

2020		2019	
5011 OPERATIONS	**512** NIGHTTIME OPERATIONS	**6351** OPERATIONS	**542** NIGHTTIME OPERATIONS



AIRCRAFT TYPE	OPERATIONS	%	COMPLAINTS	%
HELICOPTER	328	6.5 %	5	18.5 %
JET	2152	42.9 %	5	18.5 %
PISTON	852	17.0 %	4	14.8 %
TURBO-PROP	1024	20.4 %	6	22.2 %
UNKNOWN	655	13.1 %	7	25.9 %
RUN-UP	N/A	0.0 %	0	0.0 %
NOT-CORRELATED	N/A	0.0 %	0	0.0 %

St. Paul Downtown Airport (STP) - COMPLAINTS HEATMAP



St. Paul Downtown Airport (STP)
Annual Aircraft Noise Study
July 11-17, 2019

Metropolitan Airports Commission
Community Relations Office
6040 28th Avenue South
Minneapolis, MN 55450

Table of Contents

1.0 Introduction

The purpose of the St. Paul Downtown Airport (STP) Annual Aircraft Noise Study (Study) is to evaluate STP aircraft operations and associated noise events occurring in neighborhoods that surround the airport. This report evaluates data collected during the Study period beginning July 11, 2019 at 12:00 a.m. and ending on July 17, 2019 at 11:59 p.m. The dates for this study period and the data collection locations were determined by the St. Paul Downtown Airport Advisory Council (DAAC) members during the group's meeting held on April 23, 2019.

Data collected for this Study includes STP aircraft operations details (e.g.; aircraft types, runways used, time of operation, etc.), sound data related to STP aircraft operations and community activity, aircraft noise complaints submitted during the Study period, and weather conditions during the Study period.

Section 2 of this Study shares the details of the sound data collection. Section 3 summarizes the findings of the analyses, and compares data in 2019 with results of previous Study periods. A glossary of terms is provided in Section 4.

2.0 Sound Data Collection

The data collection and analysis conducted for this Study were performed by Metropolitan Airports Commission (MAC) Community Relations Office staff. An initial sound calibration was performed on system deployment, and system checks were made throughout the study period to ensure the system was operating and within tolerances. Details about the instrumentation and data collection sites are provided below.

2.1 Instrumentation

Each noise data collection site consists of laboratory-quality sound monitoring instrumentation manufactured by Larson Davis Incorporated (LD) and PCB Piezotronics. The main components of each site consisted of a Type-1 noise analyzer (LD 831), a preamplifier (LD PRM831), and a microphone (LD 377B02). These instruments are certified by an independent accredited laboratory and traceable to National Institute of Standards and Technology (NIST).

2.2 Analysis Parameters

Sound data analyzers were positioned at six different monitoring locations. Each site operated continuously utilizing slow response with A-weighting (dBA), as federally-prescribed by standards for collecting aircraft noise in the Federal Aviation Administration's (FAA) 14 CFR Part 150. Events were recorded when the analyzer detected a sound level over 65 dBA for four seconds or longer. These parameters are consistent with those used for each of the STP Annual Noise Studies conducted since 2007.

Recorded events were correlated with flight track data collected by MAC's Noise and Operations Monitoring System (MACNOMS). Parameters used to correlate noise events and radar flight tracks include distance, altitude and time.

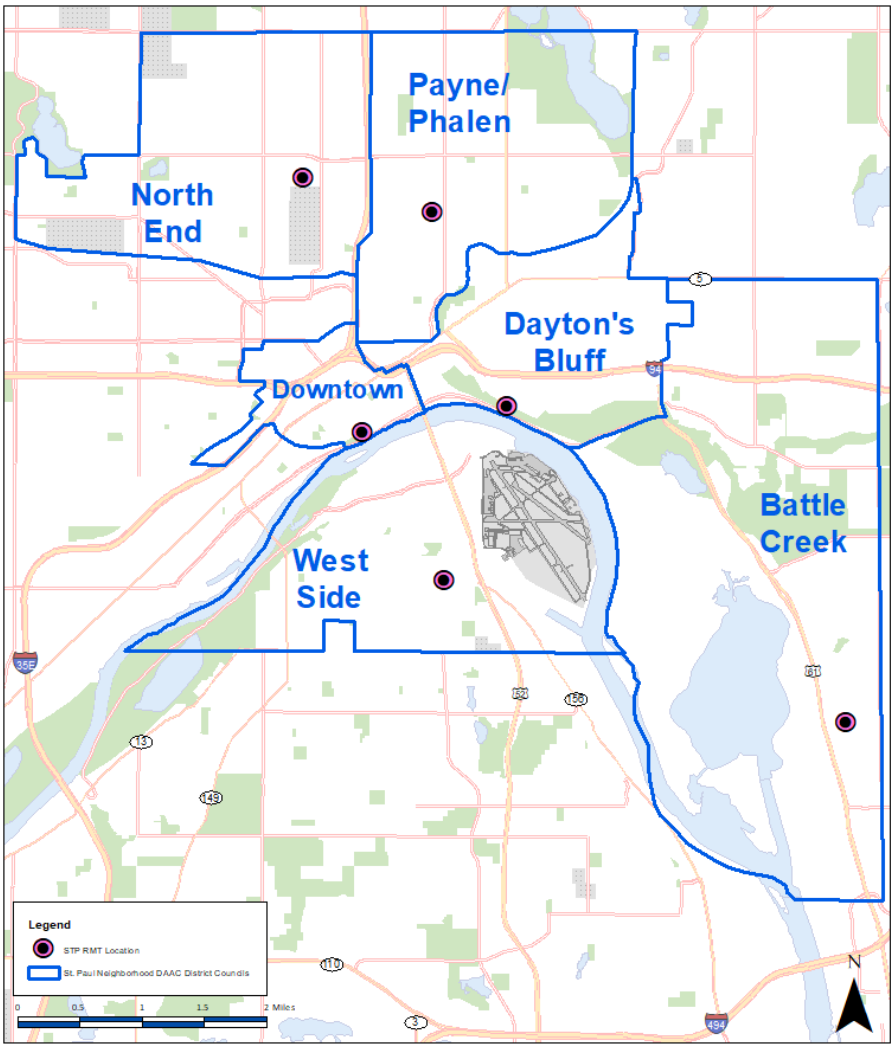
It important to note that aircraft activity occurs throughout the twin cities area airspace as flights travel to and from a variety of airports. The purpose of this Study is evaluate sounds of aircraft activity associated with STP only. Sources of sounds that were unable to be correlated with STP aircraft operations, including non-STP aircraft operations, are reflected in this report as community events.

2.3 Sound Data Collection Locations

Sound data collection equipment was set up to record events simultaneously from six different locations. One data collection site was located in each of the St. Paul community districts adjacent to STP. Representatives from each of these districts make up the community membership on the DAAC. **Figure 1** depicts a map of the district council areas and locations for all six data collection sites used during the 2019 study period.

All six of the data collection sites were placed in the same location that were used for data collection during the previous study period in 2018.

Figure 1: Noise Data Collection Locations
7/11/2019-7/17/2019



Photos of each noise data collection site are provided in **Figure 2**. All sites were inspected before the data collection was initiated. Each site was found to be acceptable and able to meet the project objectives expressed by the DAAC.

Figure 2: Noise Data Collection Location Photos
7/11/2019-7/17/2019

Site 1
Mt. Hope Drive & Prescott Street

Site 4
Indian Mounds Park

Site 2
Union Depot

Site 5
Skyway Drive & Henry Park

Site 3
Jenks Avenue & Jessie Street

Site 6
Abell Street & Jessamine Avenue

2.4 Weather Data Collection

Weather conditions (e.g.; temperature, precipitation, wind, etc.) affect the way sound is heard and recorded. It also impacts runway use decisions and performance of aircraft. For these reasons, weather data are documented during the study period, and summarized by date in **Figure 3**.

Figure 3: Weather Observations
7/11/2019-7/17/2019

Jul-2019	Temperature (°F)			Dew Point (°F)			Humidity (%)		Sea Level Pressure (Inches)		Wind Speed (miles per hour)		Precip. (Inches)
	high	avg	low	high	avg	low	high	low	high	low	high	low	Total
Thursday, July 11	81	74.3	65	63	57.8	51	87	36	29.2	29.1	15	3	0.22
Friday, July 12	86	77.5	69	73	65	60	82	53	29	28.9	30	3	0
Saturday, July 13	85	78.1	70	65	62.2	59	73	43	29.2	29	10	0	0
Sunday, July 14	91	81.6	72	71	68	64	87	48	29.2	29	12	5	0
Monday, July 15	91	77.3	71	74	69.9	66	93	55	29.1	28.9	24	0	0.01
Tuesday, July 16	85	77.7	71	73	67.9	63	87	63	29	28.9	15	0	1.75
Wednesday, July 17	85	77.8	70	72	69.5	66	91	53	29	28.9	17	0	0.01

Source: https://www.wunderground.com/history/monthly/us/mn/saint-paul/KMSP/date/2019-7

3.0 Summary of Findings

The following information summarizes the findings of the 2019 STP Annual Aircraft Noise Study.

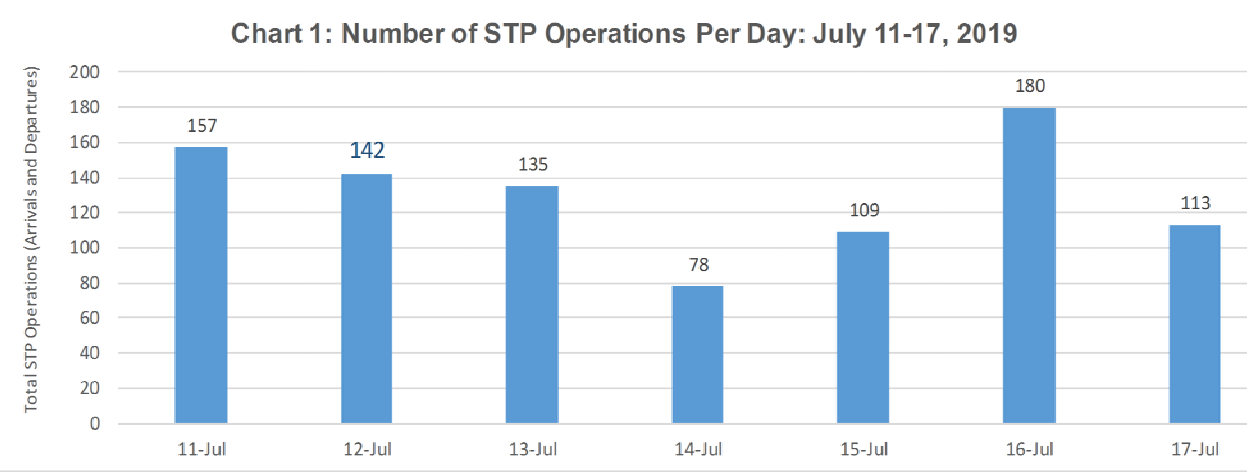
3.1 Aircraft Operations

STP flight activity was observed during the study period and flight tracking data were used to report runway use patterns. There were 914 total operations at STP during the study period. This level is 32% greater than what occurred during the previous study period in May 2018. During nighttime hours of 10 p.m.—7 a.m., there were 79 STP operations. This is nearly double the number of nighttime operations reported in the 2018 study period.

The primary runway used at STP for arrivals and departures is Runway 14/32. Runway 14 was used for 57% of the arrivals and 51% of the departures during the Study period. Runway 32 was used for 36% of arrivals and 42% of departures. The highest count of STP aircraft operations occurred on Wednesday, July 16, 2019 with 180 total operations. Eighty-seven operations were arrivals and 93 were departures.

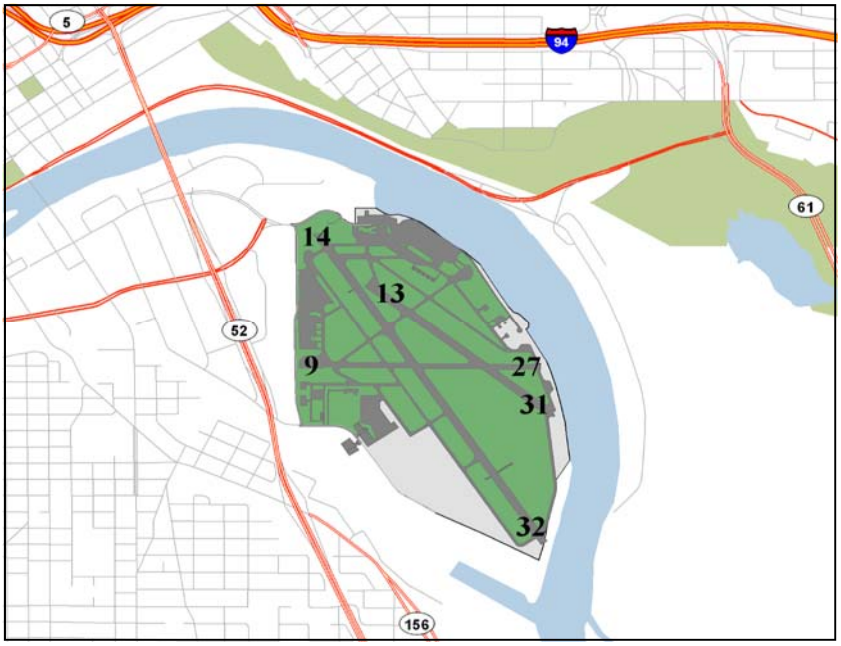
Chart 1 below displays the aircraft operations count during each day of the 2019 study period.

Figure 4 shows the detailed count of operations for each STP runway during the 2019 Study period.



Source: MACNOMS

Figure 4: Runway Use
7/11/2019-7/17/2019

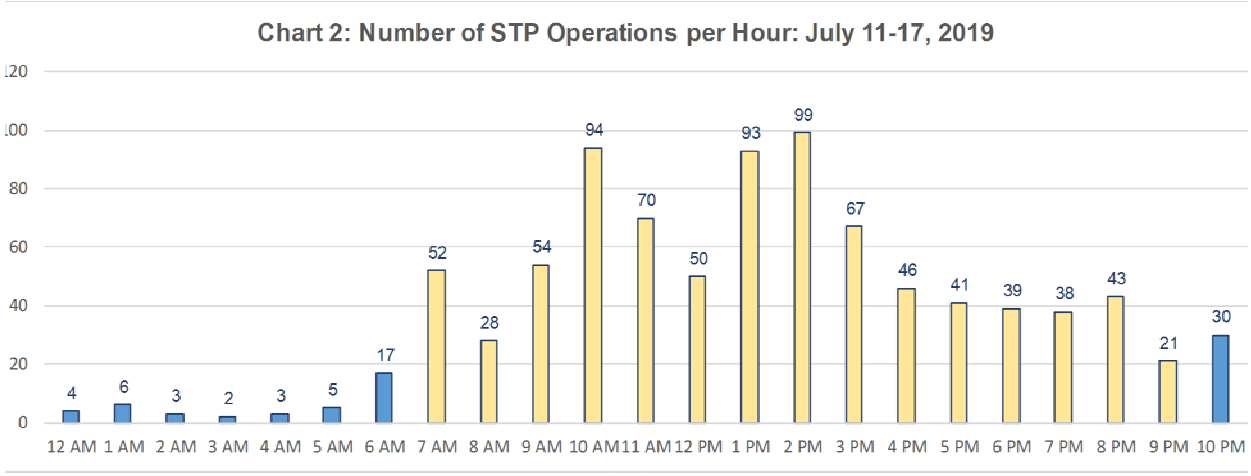


Operations (24 Hour Days)		
Arrivals		
Runway	Count	Percent
9	4	0.9%
13	2	0.4%
14	264	57.4%
27	11	2.4%
31	10	2.2%
32	167	36.3%
Unknown	2	0.4%
Total	460	100.0%
Departures		
9	4	0.9%
13	8	1.8%
14	233	51.3%
27	10	2.2%
31	7	1.5%
32	192	42.3%
Unknown	0	0.4%
Total Departures	454	100.0%
Total Operations	**914**	

Nighttime Operations (10 p.m. - 7 a.m.)		
Nighttime Arrivals		
Runway	Count	Percent
9	0	0.0%
13	0	0.0%
14	18	47.4%
27	1	2.6%
31	0	0.0%
32	19	50.0%
Unknown	0	5.0%
Total Arrivals	38	100%
Nighttime Departures		
9	1	2.4%
13	0	0.0%
14	19	46.3%
27	1	2.4%
31	0	0.0%
32	20	48.8%
Unknown	0	0.0%
Total Departures	41	100.0%
Total Nighttime Operations	**79**	

Source: MACNOMS

The hours that accommodated the highest volume of aircraft operating at STP during the Study period were 10 a.m., 1 p.m., and 2 p.m. The hourly operation details are shown below in **Chart 2**, with daytime hours shown in yellow and nighttime hours shown in blue.

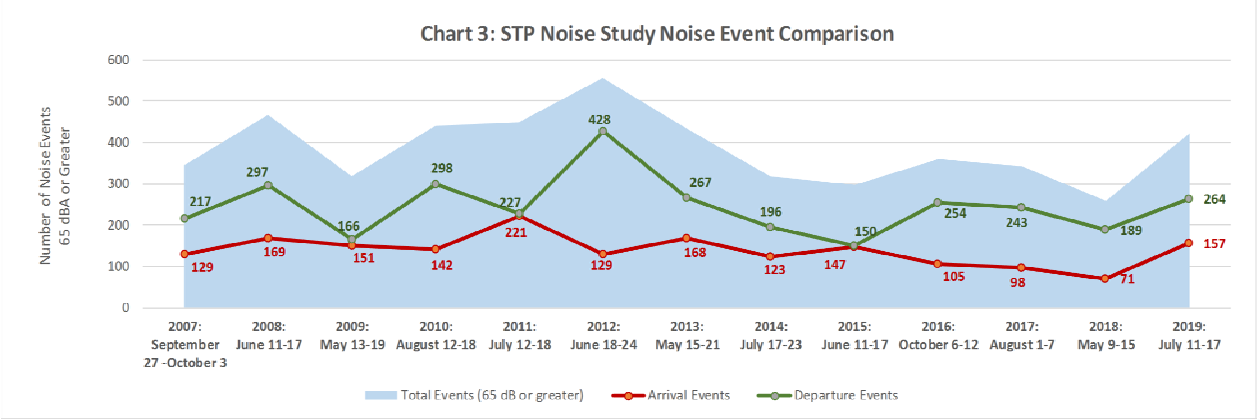


Source: MACNOMS

Figure 5 shows two maps with flight tracks associated with the STP during the Study. On each map, green tracks represent departing aircraft and red tracks represent arriving aircraft. One map shows the STP flights occurring during daytime hours (7 a.m.– 10 p.m.), and the other map shows the STP flights occurring during nighttime hours (10 p.m.-7 a.m.).

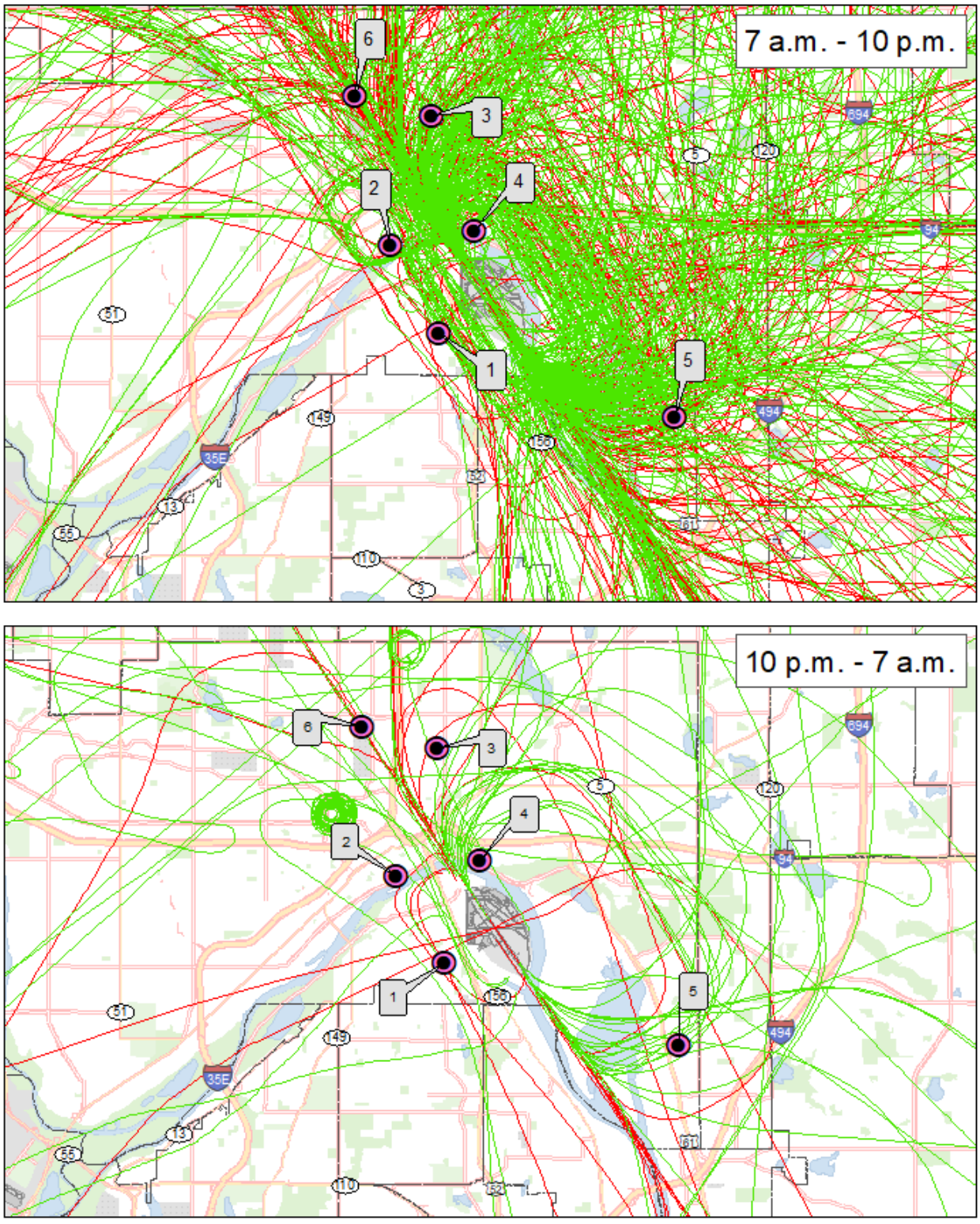
3.2 Noise Events

During the 2019 study period there were a total of 421 aircraft noise events recorded above 65 dBA: 157 arrival noise events, and 264 departure noise events. This level is 62% greater than the number of aircraft noise events recorded during the 2018 study period. **Chart 3** below provides a comparison of events recorded in the 2019 Noise Study compared with studies conducted since 2007. Seasonal trends show a greater number of events during summer months that coincide with greater levels of flight activity that also typically occur during summer.



Source: MACNOMS

Figure 5: STP Daytime (7 a.m.-10 p.m.) and Nighttime (10 p.m.—7 a.m.) Flight Activity 7/11/2019-7/17/2019



Source: MACNOMS

Figure 6 details the number of aircraft noise events that exceeded 65 dBA, 80 dBA, 90 dBA, and 100 dBA. The highest number of arrival noise events was recorded at Site 6 with a total of 83. The highest number of departure noise events was recorded at Site 4, with a total of 109. These sites also recorded the highest number of arrival and departure noise events respectively during the 2018 study period.

Figure 6: Aircraft Noise Events
7/11/2019-7/17/2019

Arrival-Related Events

Site	Location	>=65dBA LA_{max}	>=80dBA LA_{max}	>=90dBA LA_{max}	>=100dBA LA_{max}
1	Mt. Hope Drive and	9	1	0	0
2	Union Depot	10	0	0	0
3	Jenks Avenue and Jessie Street	14	0	0	0
4	Indian Mounds Park	26	1	0	0
5	Skyway Drive and Henry Park	15	0	0	0
6	Abell Street and	83	2	0	0
Total Arrival Noise Events		**157**	**4**	**0**	**0**

Departure-Related Events

Site	Location	>=65dBA LA_{max}	>=80dBA LA_{max}	>=90dBA LA_{max}	>=100dBA LA_{max}
1	Mt. Hope Drive and Prescott Street	11	0	0	0
2	Union Depot	25	0	0	0
3	Jenks Avenue and Jessie Street	57	4	0	0
4	Indian Mounds Park	109	3	0	0
5	Skyway Drive and Henry Park	40	2	0	0
6	Abell Street and Jessamine Avenue	22	3	0	0
Total Departure Noise Events		**264**	**20**	**0**	**0**

Source: MACNOMS

Figure 7 provides a list of the top ten loudest aircraft sound events recorded at each site. It is important to note that some aircraft type details were unavailable during the Study; these operations are noted with “UKN.”

Figures 8-10 summarize aircraft and community noise data collected during the study period. The Day-Night Average Noise Level (DNL) calculations for Aircraft DNL in **Figure 8** reflect aircraft noise DNL and community DNL. The community DNL in **Figure 8** reflects all non-STP aircraft noises recorded during the study period. (*See Section 4.0 Glossary for details about DNL*)

The background noise levels for each site (i.e. the amount of noise that occurred 90% of the time) are charted in **Figure 9**, and **Figure 10** contains the hourly distribution of all aircraft and community sounds recorded at each site during the study period.

Based on data collected during the 2019 noise study period, daily average aircraft noise levels from operations associated with STP do not meet the Federal Aviation Administration’s (FAA) criteria of significance for noise-sensitive land uses. However, it is important to note that single events may at times be considered significant by individuals based on the intrusiveness of events and varying individual tolerance levels.

DNL noise contours are not part of this annual noise study; however, noise contours are generated with software developed by the FAA and calculated using historical aircraft operations data as a normal process within the STP Long Term Comprehensive Plan (LTCP) Update. Preparation of the next STP LTCP Update is anticipated to begin in 2020.

3.3 Aircraft Noise Complaints

There were three aircraft noise complaints from two households reported for STP during the 2019 Study. One of the complaints pertained to a medical helicopter that operated during nighttime hours at a nearby hospital, not STP. The other two complaints were related to flights at STP during daytime hours. **Figure 11** shows the locations and complaint time detail for all three complaints.

Figure 7: Top 10 Loudest Aircraft Noise Events
7/11/2019-7/17/2019

Site 1 - Mt. Hope Drive & Prescott Street

Date/Time	Flight ID	Aircraft Type	Arr./Dep.	Runway	LAmax (dBA)	Duration (seconds)
7/13/2019 10:26		HELO	A	14	81.5	30
7/13/2019 11:14		UKN	A	14	74.8	8
7/11/2019 21:44		UKN	A	14	74.1	22
7/13/2019 11:19		UKN	D	14	73.8	10
7/16/2019 21:57		UKN	A	14	73.4	21
7/12/2019 13:21		UKN	D	27	72.8	11
7/11/2019 20:25		UKN	D	32	72.7	38
7/17/2019 18:29		UKN	D	14	72.6	22
7/12/2019 13:17		UKN	D	27	71.9	12
7/14/2019 17:23		UKN	A	14	71.1	9

Site 2 - Union Depot

Date/Time	Flight ID	Aircraft Type	Arr./Dep.	Runway	LAmax (dBA)	Duration (seconds)
7/11/2019 20:25		UKN	D	32	79.4	29
7/13/2019 10:27		HELO	A	14	78.6	25
7/16/2019 21:57		UKN	A	14	77.8	35
7/15/2019 13:44		UKN	D	27	75.1	16
7/13/2019 13:13	N27493	B25	D	14	74.8	20
7/13/2019 0:41	N119SP	HELO	D	27	74.2	14
7/16/2019 20:28	N119SP	HELO	D	14	74	28
7/13/2019 16:02		UKN	D	14	73.4	18
7/16/2019 20:31	N119SP	HELO	D	14	72.8	18
7/17/2019 20:45		UKN	D	27	72.3	20

Site 3 - Jenks Avenue & Jessie Street

Date/Time	Flight ID	Aircraft Type	Arr./Dep.	Runway	LAmax (dBA)	Duration (seconds)
7/13/2019 13:01	N27493	B25	D	14	84.4	20
7/12/2019 12:08	N387LS	BE40	D	32	81.8	18
7/11/2019 10:45	N473K	FA7X	D	32	81.2	22
7/14/2019 11:34		UKN	D	14	80	18
7/12/2019 16:47	N200VW	PA31	D	32	78.3	14
7/15/2019 10:50		UKN	A	14	78.3	23
7/16/2019 8:14	N351JL	CL35	D	32	77.7	18
7/11/2019 13:09	N135FT	GALX	D	32	75.9	13
7/11/2019 14:10	EJA799	CL35	D	32	75.1	15
7/12/2019 15:40	N598DR	BE40	D	32	75	13

Figure 7: Top 10 Loudest Aircraft Noise Events — Cont'd
7/11/2019-7/17/2019

Site 4 - Indian Mounds Park

Date/Time	Flight ID	Aircraft Type	Arr./Dep.	Runway	LAmax (dBA)	Duration (seconds)
7/11/2019 14:15	N478DR	BE40	D	32	88.4	20
7/11/2019 21:58		UKN	A	14	85.3	25
7/16/2019 7:13	N351CG	C56X	D	32	82.2	17
7/11/2019 12:37	N26LJ	BE58	D	32	82.2	28
7/11/2019 16:43	N14MN	BE36	A	14	79.5	16
7/12/2019 15:30	N337VG	C337	D	32	79.2	27
7/17/2019 16:58	N986AC	PC12	A	14	78.1	10
7/12/2019 9:52		UKN	A	14	77.3	9
7/11/2019 10:54		UKN	D	32	77.3	19
7/12/2019 13:40	N83M	GLF5	D	32	77.2	17

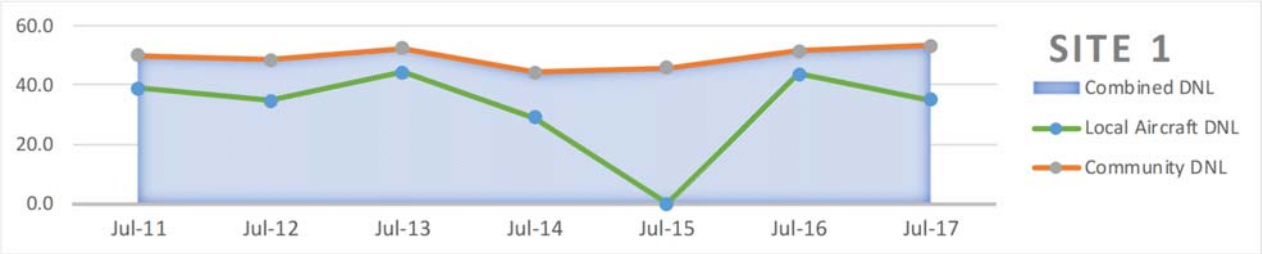
Site 5 - Skyway Drive & Henry Park

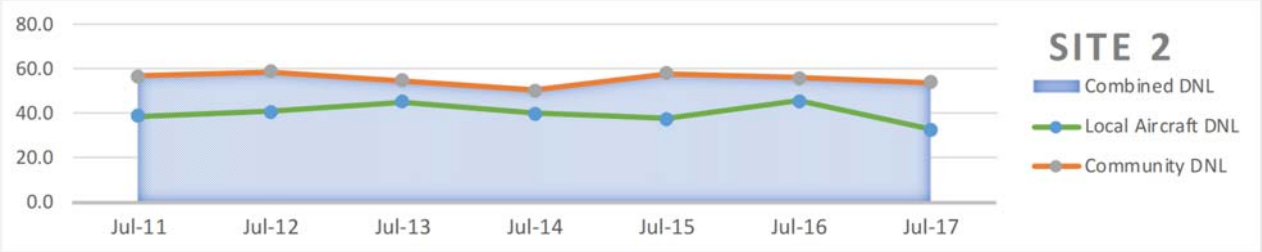
Date/Time	Flight ID	Aircraft Type	Arr./Dep.	Runway	LAmax (dBA)	Duration (seconds)
7/13/2019 11:07	N27493	B25	D	14	88.1	24
7/17/2019 9:28	N244SA	SW3	D	14	80.9	8
7/15/2019 8:40	BLR54	FA50	D	14	79.0	15
7/13/2019 13:20	N27493	B25	D	14	78.2	17
7/13/2019 17:57	N80GA	BE55	D	14	77.6	13
7/11/2019 10:40	N287LS	BE40	A	32	77.5	16
7/12/2019 22:10		UKN	D	32	77.3	13
7/12/2019 23:00		UKN	D	32	76.3	16
7/16/2019 14:10		UKN	A	31	75.8	20
7/13/2019 13:00	N27493	B25	D	14	74.9	16

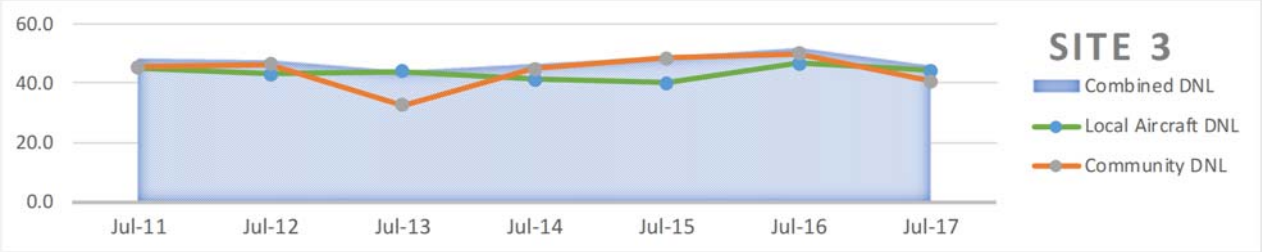
Site 6 - Abell Street & Jessamine Avenue

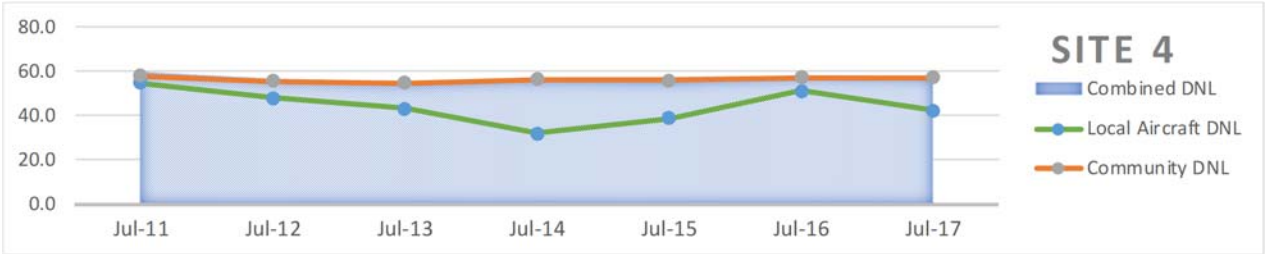
Date/Time	Flight ID	Aircraft Type	Arr./Dep.	Runway	LAmax (dBA)	Duration (seconds)
7/16/2019 21:05		UKN	D	14	83.1	18
7/15/2019 16:51		UKN	A	14	83.1	19
7/13/2019 13:02	N27493	B25	D	14	82.3	20
7/15/2019 15:00		UKN	A	14	81.2	20
7/14/2019 19:06	N954SG	FA50	D	14	80.4	14
7/14/2019 19:27		UKN	D	14	79.7	16
7/13/2019 16:32		UKN	A	14	78.8	20
7/17/2019 18:22	N690XL	C56X	A	14	78.4	11
7/12/2019 11:32		UKN	A	14	76.5	13
7/17/2019 16:48	N621DJ	CL60	A	14	76.4	12

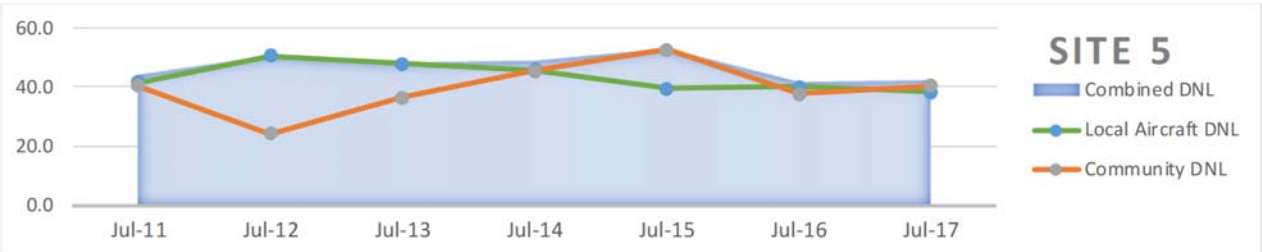
Figure 8: Aircraft and Community DNL by Site
7/11/2019-7/17/2019











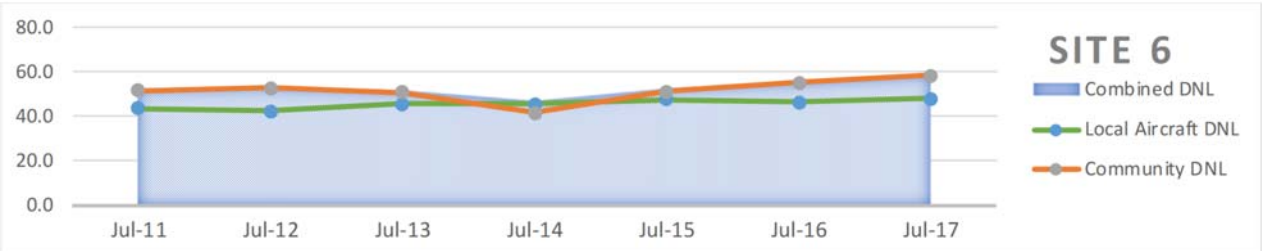


Figure 9: Average Background Sound Levels (LA_{90})
7/11/2019-7/17/2019

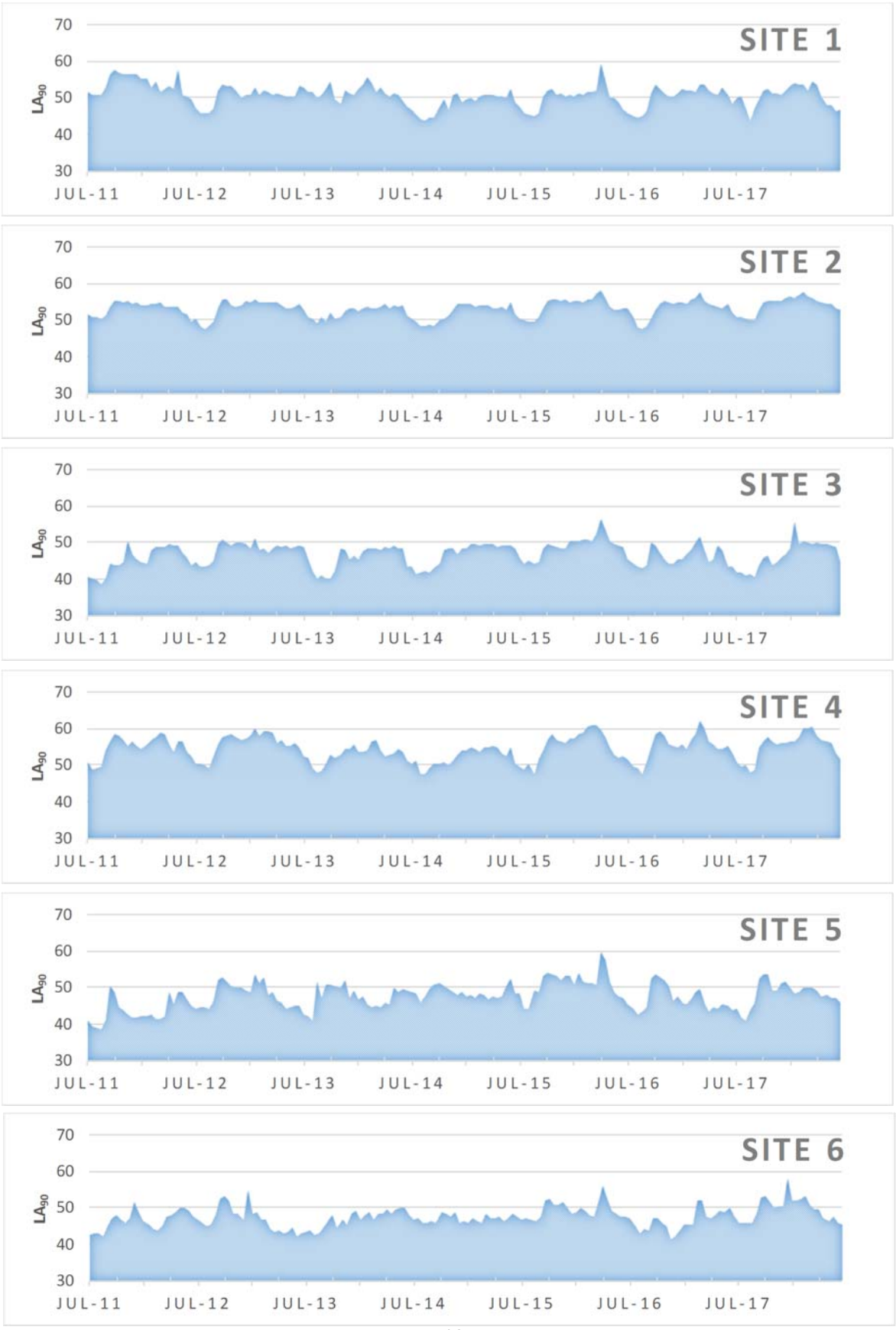
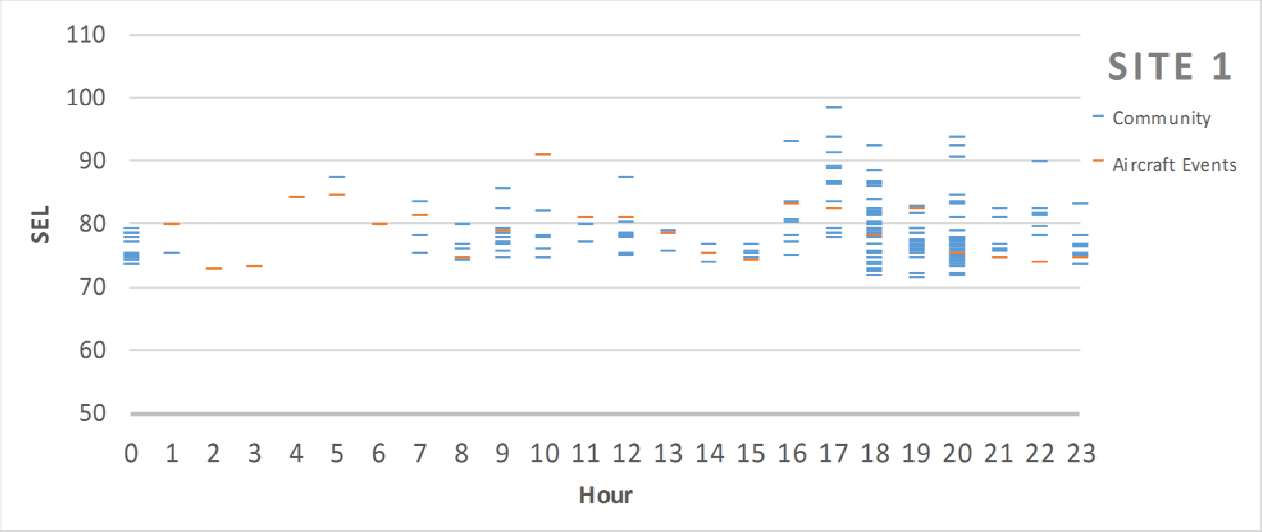
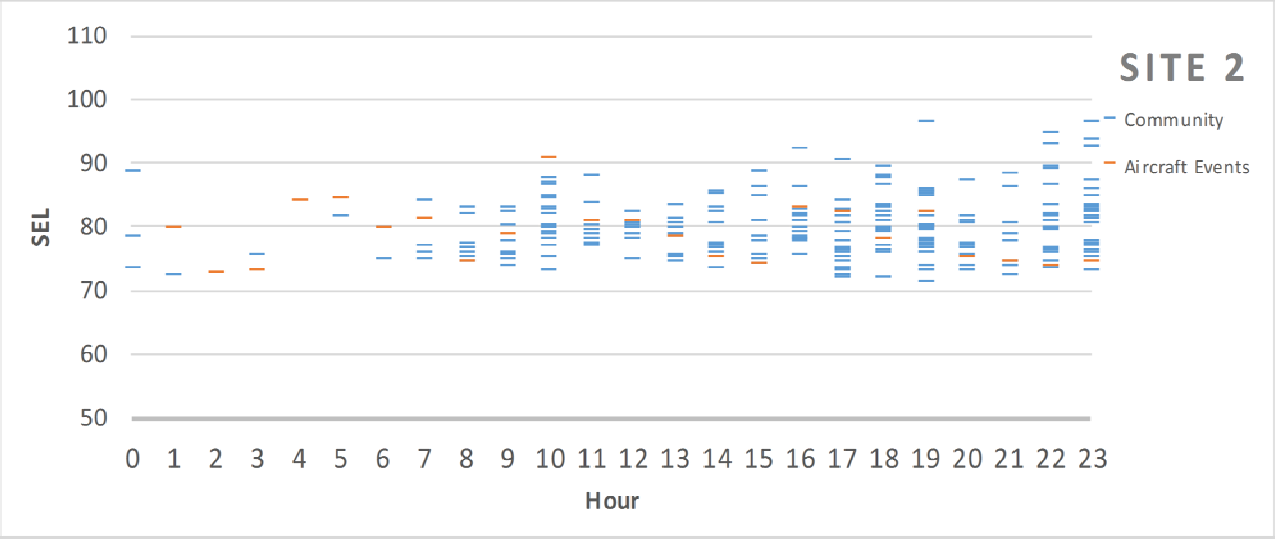


Figure 10: Hourly Distribution of Noise Events (SEL)
7/11/2019-7/17/2019





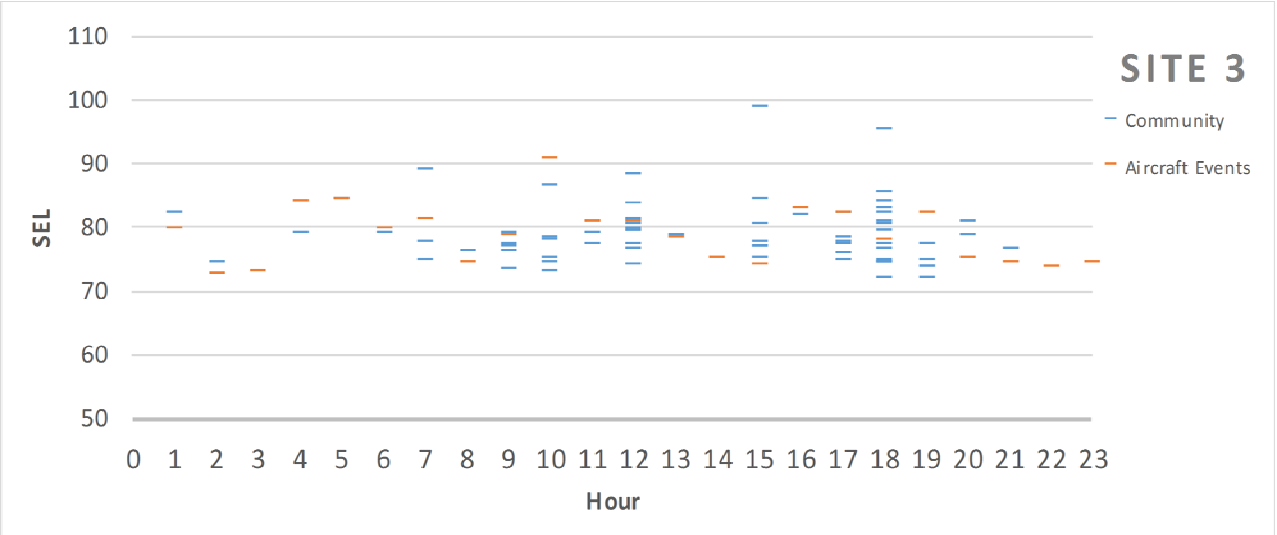
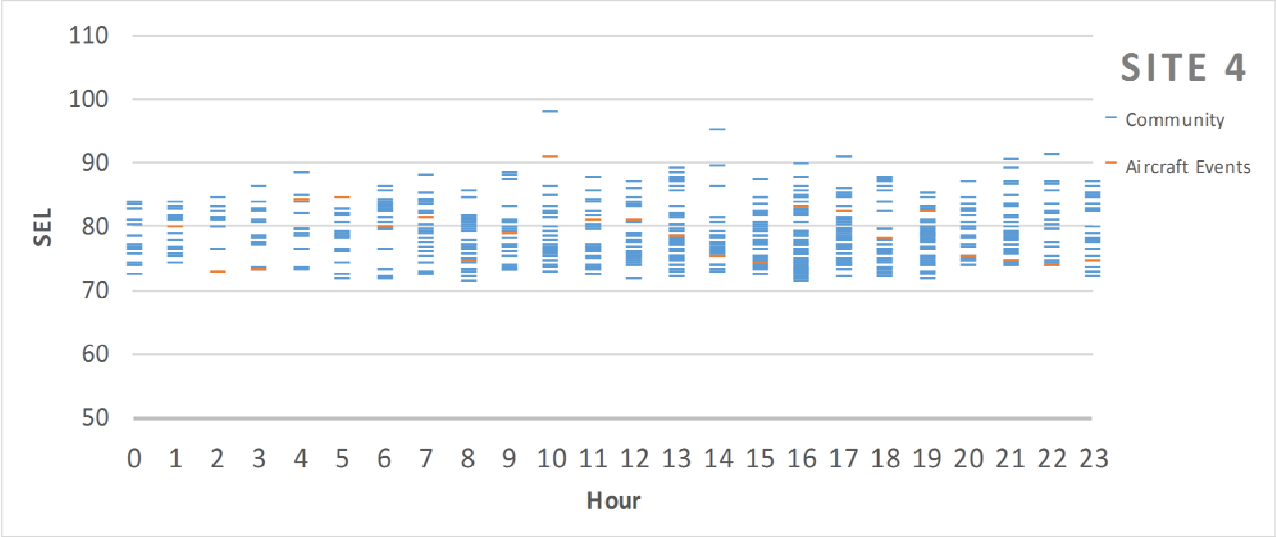
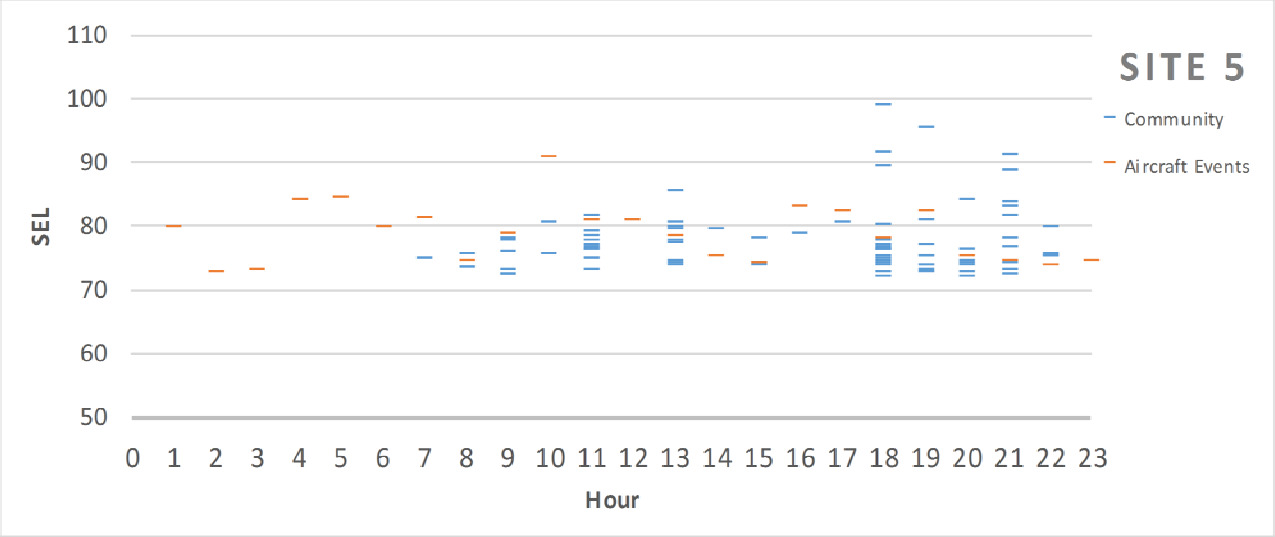


Figure 10: Hourly Distribution of Noise Events (SEL) — Cont'd
7/11/2019-7/17/2019





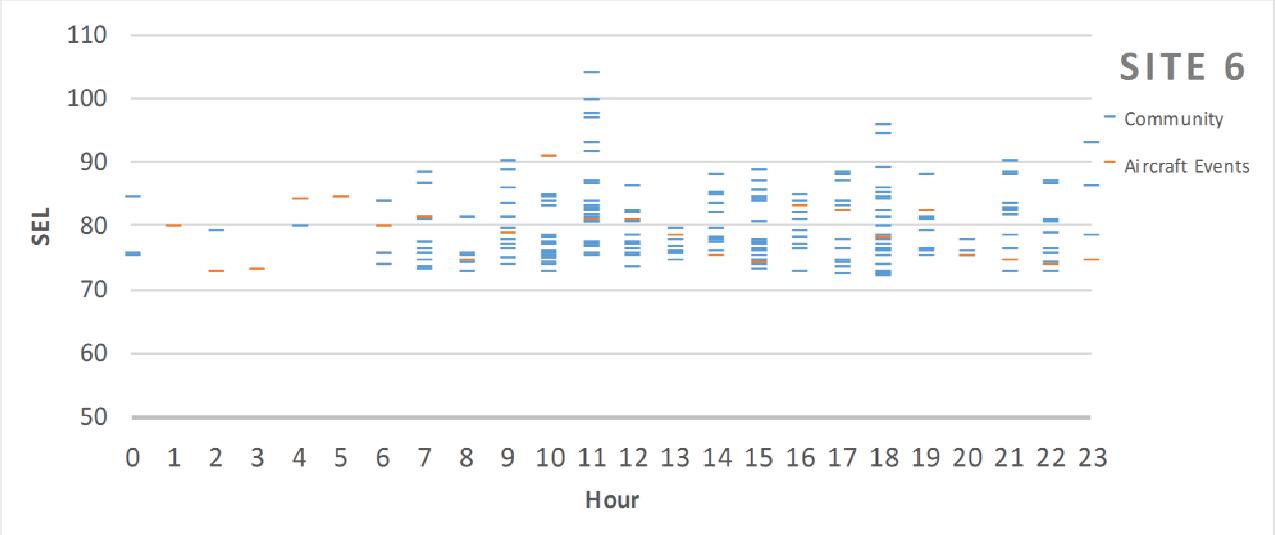
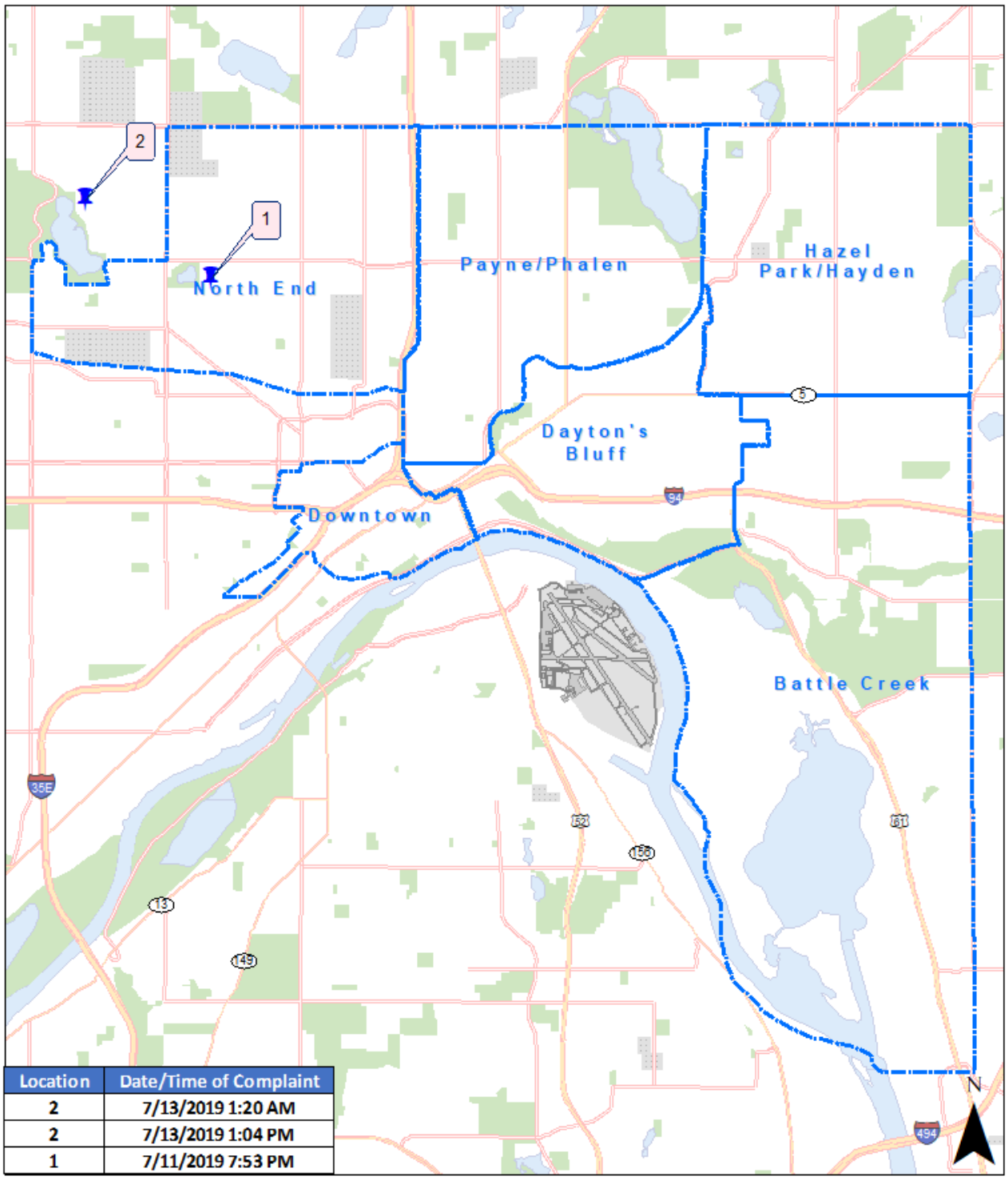


Figure 11: STP Aircraft Noise Complaint Locations during STP Study Period 7/11/2019-7/17/2019



Location	Date/Time of Complaint
2	7/13/2019 1:20 AM
2	7/13/2019 1:04 PM
1	7/11/2019 7:53 PM

Legend
2019 STP Complaint Locations
St. Paul Districts Represented on the DAAC

STP Aircraft Noise Complaint Locations
During Study Period
July 11-17, 2019

0 0.5 1 1.5 2 Miles

Source: MACNOMS

4.0 Glossary of Terms

A-weighted Sound level

The sound level obtained by the use of A-weighting. Unit: dB. Unit symbol: dBA. A-weighting significantly de-emphasizes sound at low and high frequencies and is most commonly used when evaluating environmental sound to account for human sensitivity.

Background Sound Level

Background sound level is a metric used to express a baseline sound level for any given location excluding extraneous sound events. We are using the L90 statistical method to estimate the background sound level.

Decibel (dB)

Decibel is a unit of measurement for sound and noise. dBA is used when sounds and noises are measured using an A-weighted scale (see A-weighted sound level definition above).

DNL (Day-Night Average Sound Level)

Day-night average sound level, used to describe the cumulative or total sound exposure during a period of time. DNL is an energy level averaged over a 24-hour period, with a 10 dBA penalty for sound events occurring between 10:00 p.m. and 7:00 a.m.

- **Aircraft DNL** - DNL for aircraft sound and noise events only
- **Community DNL** - DNL for community sounds and noises only (everything but STP aircraft events in this Study)

FAA (Federal Aviation Administration)

The federal agency that is responsible for the safe and efficient movement of aircraft through the National Airspace System. The FAA has broad legislative authority to create and enforce Federal Aviation Regulations.

FAR Part 150

Federal Aviation Regulations 14 CFR Part 150, Airport Noise Compatibility Planning.

LA_{eq} (Equivalent Sound Level)

Equivalent sound level, the representation of a time-varying sound as an equivalent steady-state A-weighted sound level for the period or interval of interest.

LA_{max} (Maximum Sound Level on A-weighted Scale)

Maximum sound level on an A-weighted scale. Also known as the maximum level (dBA) during a particular sound event.

LA_{90} (Sound Level Exceeded 90 Percent of the Time)

The sound level exceeded 90 percent of the time. Values of LA_{90} are often used to represent

the background sound, or levels of sound that are present most of the time.

SEL (Sound Exposure Level)

Sound Exposure Level is the total sound level someone would experience if all of the sound energy occurred in one second. This allows for the comparison of sound events that have different durations.

SPL (Sound Pressure Level)

Sound Pressure Level is a measure of the sound pressure of a given sound source relative to a standard reference value (typically the quietest sound that a young person with good hearing can detect).

STP (St. Paul Downtown Airport)

The aeronautical abbreviation for Holman Field, which is also known as St. Paul Downtown Airport is STP. The abbreviation may also be shown as KSTP, which denotes that the airport is located in the United States.