



Sent to Council: \_\_\_\_\_

# Memorandum

**TO:** HONORABLE MAYOR AND CITY COUNCIL      **FROM:** John Aitken

**SUBJECT:** 2020 Annual Noise Report      **DATE:** 03/4/2021

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Approved

Date

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## INFORMATION

Attached for distribution is the Norman Y. Mineta San Jose International Airport 2020 Annual Noise Report outlining air carrier activities related to the noise-based curfew in place at the Airport between January 1, 2020 and December 31, 2020.

In addition to the information provided in the attached report, the Airport publishes Quarterly Noise reports including noise exposure maps and Monthly Noise Summary data on the Airport's website for further explanation of air carrier activities and noise impacts to the community.

JOHN AITKEN

Director of Aviation

Attachments:

2020 Annual Noise Report

Norman Y. Mineta  
San José International Airport  
2020 Annual Noise Report



NORMAN Y. MINETA  
**SAN JOSE**  
INTERNATIONAL  
AIRPORT  
SILICON VALLEY'S AIRPORT

## **Introduction and Purpose**

The purpose of this annual report is to communicate the efforts undertaken by the City of San José (“the City”) and Norman Y. Mineta San José International Airport (“SJC” or “Airport”) to minimize the airport’s noise impact on the surrounding communities. This report contains an explanation of the curfew and violation process, as well as a summary of records for the calendar year detailing the number and type of curfew violations, and community noise complaints received.

The Coronavirus (“COVID-19”) Pandemic, which began to impact aviation in early 2020, greatly curtailed the amount of air carrier activity at SJC. Airlines were forced to significantly reduce the amount of scheduled flights amid widespread travel restrictions and public health orders to shelter in place or otherwise dissuade people from traveling. International air service (apart from Mexico) was completely suspended for most of the year. Between the disruption to global air traffic and the shift of a large portion of the economy to “stay-at-home” work, the effect of COVID-19 on noise complaints and total aircraft operations was quite large.

## **Operational Restrictions and the Curfew**

Chapter 25 of the San José Municipal Code (“SJMC”) details the city ordinances regarding Airport-related noise as well as the Airport curfew. The SJMC defines the curfew as, “. . . a time use restriction that limits the hours in which the city will allow certain aircraft operations to be conducted and that prohibits the scheduling and operation of certain aircraft operations at the airport during curfew hours.” The weight-based curfew for the Airport was originally formulated in 1984, with subsequent revision to a noise-based curfew in 2003.

The noise-based curfew restricts flight activity into and out of the Airport between the local hours of 11:30 PM and 06:30 AM for aircraft operations by jet aircraft with Federal Aviation Administration (“FAA”) certified and published Effective Perceived Noise level in decibels (“EPNdb”) above 89.0. Aircraft types grandfathered in to be exempt from this noise level requirement, as well as those that are compliant with the curfew are listed for easy reference on the Schedule of Authorized Aircraft. This document is regularly maintained and posted to the “Curfew” page on the Airport’s website. Several models of aircraft were added to the Schedule in 2020, including Honda’s HA-420 Hondajet and Embraer’s Phenom 100 and 300.

Responsibility for monitoring and managing the airport noise and curfew programs at SJC belongs to the City’s Airport Operations Division.

## **Types of Curfew Violation**

Any jet aircraft operation whose EPNdb is above 89.0, is not on the Schedule of Authorized Aircraft, and that departs from or arrives at the Airport between the local hours of 11:30 PM and 06:30 AM is defined as an intrusion. An intrusion is then further defined as being either exempt (from citation) or a violation. An exempt intrusion is one with documentation provided by the operator explaining why it occurred during curfew hours due to circumstances outside of the operator’s control (e.g. Air Traffic Control delays, Weather delays, etc.) which are referred to in the SJMC as “Force Majeure” events. A violation is defined as an intrusion that did not have acceptable documentation provided justifying its occurrence during curfew hours. Fines for violations are \$2,500 each.

## **Actions Taken by Airport Operations Department**

Throughout the year, Airport Operations staff publishes Monthly Noise Summary charts on the Airport’s website, which detail the total number of curfew-compliant and non-compliant operations as well as the number of noise complaints submitted. Additionally, Airport Operations staff use data from the FAA along with data from an airport noise monitoring system to compile a Quarterly Noise Report and Noise Exposure Map for the public. These documents are posted to the “Noise Reports” page on the Airport’s website.

The noise monitoring system mentioned above was originally installed in November of 1992, with updated hardware and software installed more recently. The system records and measures aircraft noise levels at

strategic locations in noise-sensitive locations under the aircraft arrival and departure paths. In 2020, the Noise Office upgraded the modems used by these monitors to ensure their continued operation and improve reliable connectivity into the future.

The noise system also compiles flight track and flight identification information, noise complaints and complainants' addresses, and noise events. The quarterly noise monitoring and reporting is conducted in compliance with State regulations.

Additionally, as of early 2021, server components of the noise monitoring system have transitioned to being vendor-hosted vs on-site at the Airport. This should improve overall system reliability and allow for quicker implementation of new features to more efficiently manage and respond to complaints, and better analyze aircraft operations.

Airport Operations staff continually investigate and respond to noise complaints, track flight activity, review curfew operations for compliance with the SJMC, and assess fines as necessary. Airport Operations staff also participate in Airport Commission meetings to communicate the findings contained in the Monthly Noise Summary Charts and to respond to questions from residents of surrounding communities.

In 2020, a new noise abatement page geared towards General Aviation pilots was added to the airport website with the goal of educating that community on best practices and procedures to minimize their noise impact to the surrounding residents.

Airport staff review airline-provided justification for curfew violations, and work with aircraft operators to minimize the number of non-compliant operations during curfew hours, thereby reducing the disturbance to the public. The Airport Operations staff strives to take a proactive approach to managing the noise associated with SJC and the need to be respectful neighbors to the surrounding residential communities.

### **2020 Operations During Curfew**

In calendar year 2020, there were 379 commercial or cargo jet operations during the curfew hours out of the 108,955 total operations for the Airport (approximately .38%). For comparison, calendar year 2019 had 3,112 curfew operations out of the 198,372 total operations for the airport (approximately 1.57%). Of the 379 curfew operations, 150 were found to be intrusions, which represent approximately .14% of all operations at SJC. Of those 150 intrusions, 35 were found to be violations and were cited; these violations represent approximately .03% of all operations at SJC which results in a curfew compliance rate of over 99.96%

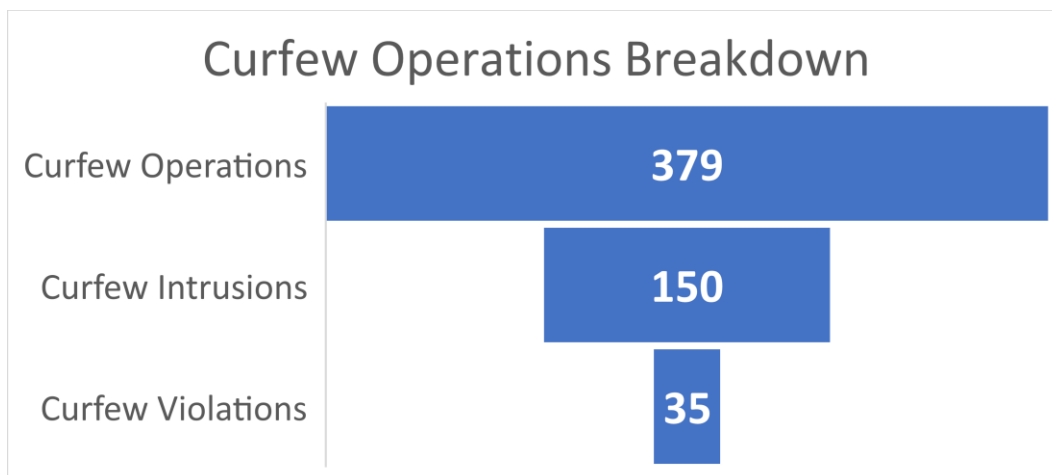


Chart of 2020 Curfew Operations Breakdown

In 2020, the airport hosted 14 Commercial Air Carrier tenants and 2 Air Cargo tenants. Of those 16 total operators, Aeromexico, Air Canada, All Nippon Airways, British Airways, FedEx Express, Hainan Airlines, and Volaris each committed zero curfew intrusions.

In 2020, Southwest Airlines, Alaska Airlines, and Delta Air Lines (or their contracted regional airline partners) were responsible for the majority (65% combined) of curfew intrusions. The following chart and table depict the commercial and air cargo carriers’ annual intrusions and related violations for calendar year 2020. **Note:** No single airline in the “Other” category had more than 5 intrusions or 1 violation.

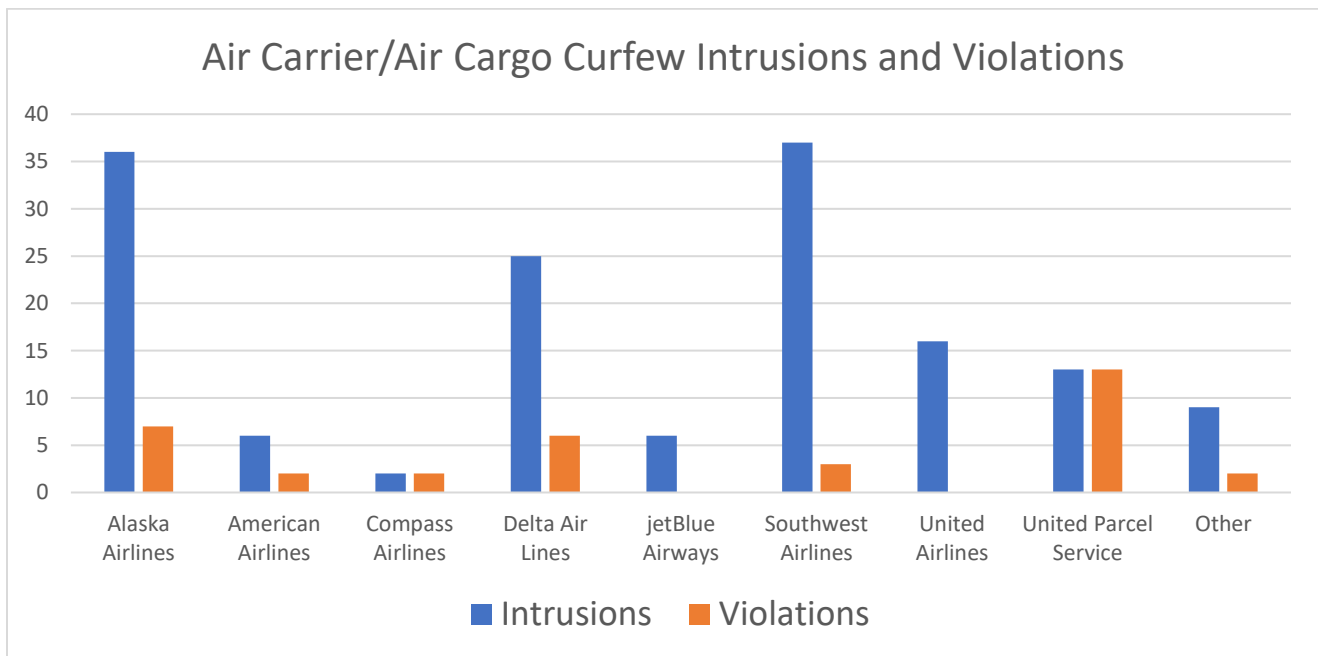


Chart of 2020 Air Carrier/Air Cargo Intrusions

SJC Air Carrier/Cargo Curfew Data		
Operator	Intrusions	Violations
Southwest Airlines	37	3
Alaska Airlines	36	7
Delta Air Lines	25	6
Frontier Airlines	2	0
JetBlue Airways	6	0
United Airlines	16	0
American Airlines	6	2
United Parcel Service	13	13
Hawaiian Airlines	5	0
Compass Airlines	2	2
<b>TOTAL</b>	<b>148</b>	<b>33</b>

Table of 2020 Air Carrier/Air Cargo Intrusions/Violations

As mentioned previously, the COVID-19 pandemic has caused a steep drop in both total operations and curfew intrusions by the airlines, most of which fell significantly in 2020. Compared to 2019, the airlines combined committed around 85% fewer intrusions, and reduced their violations (except for United Parcel Service, which was slightly higher) by 37%. Far fewer scheduled operations was the largest factor of the change. Delay-prone late-evening operations to the east coast were suspended for the majority of the year, as were most flights to the Midwest (excluding AUS, DEN, DFW and IAH). All flights to and from Hawaii were also suspended for several months.

**Alaska Airlines, American Airlines and Delta Air Lines** incurred violations for early departures. The flights were scheduled to depart around the end of the nightly curfew (6:30 AM) but took off prior to that time. American Airlines operated the flights involved directly, while Delta Air Lines’ and Alaska Airlines’ intrusions were operated by regional partners SkyWest Airlines and Horizon Airlines. Changes in scheduled departure time, operating airline, and equipment type (from curfew-compliant to non-curfew-compliant aircraft) may have played a role in the occurrences. Management of all airlines is aware of and have made efforts to educate their employees on the curfew program to prevent future occurrences. While not formally obligated to enforce the restrictions of the curfew program, Air Traffic Control (ATC) has historically reminded pilots about the curfew and has been asked to continue doing so when feasible.

**United Parcel Service (UPS)** informed Airport Operations staff that due to the annual increase in holiday-related packages through the Bay Area, as in 2018 and 2019, they would be adding additional arrivals during the curfew hours between 4:00 AM and 5:00 AM. Airport Operations staff reminded UPS of the airport’s curfew and commitment to minimizing its noise impact on the surrounding communities. This year, UPS again chose to hold most departures until the curfew timing expired, but still committed thirteen violations, for which they were cited.

The table below shows the various charter operators who committed curfew intrusions. All charter-operated intrusions were determined to be violations and were cited by the Airport.

<b>Charter Operator</b>	<b>Intrusions</b>	<b>Violations</b>
Atlas Air	1	1
Swift Air/iAero Airways	1	1

Table of 2020 Charter Operators’ Curfew Intrusions/Violations

In general, the plurality of the delays are due to poor weather, ATC congestion or mechanical issues that are experienced by the specific aircraft flying throughout the day on its given routing. Oftentimes, the original aircraft scheduled to operate a flight will be taken out of service for maintenance and another will be substituted. Occasionally there are also delays for specific incidents, such as required security sweeps, power or computer systems outages, or when a crew member calls in sick. The next chart illustrates the breakdown of the proportion of flights affected by weather, mechanical, air traffic control, or other delays. Some intrusions were not caused by a delay, and they are noted as “None” and included in the Other category. Not every intrusion notice sent by the Airport was responded to. In these instances, citations were automatically generated.

### SJC Air Carrier Intrusion Delay Types

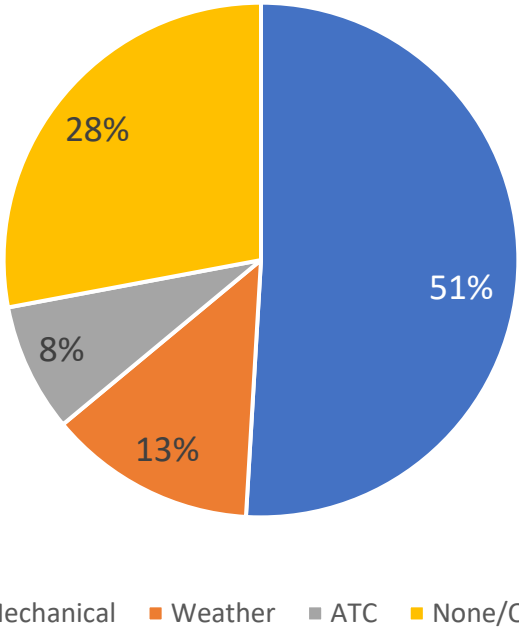


Chart of 2020 Air Carrier Intrusion Delay Types

Most curfew intrusions occur during the first 90 minutes of its onset, with a dramatic fall-off after 1:00 AM. This indicates that aircraft operators are attempting to serve their passengers while also creating as minimal of a noise impact as possible by adhering to the curfew restriction period. Intrusions occurring between 6:00 and 6:30 AM tend to be early departures.

### Curfew Intrusion Times at SJC by All Operators

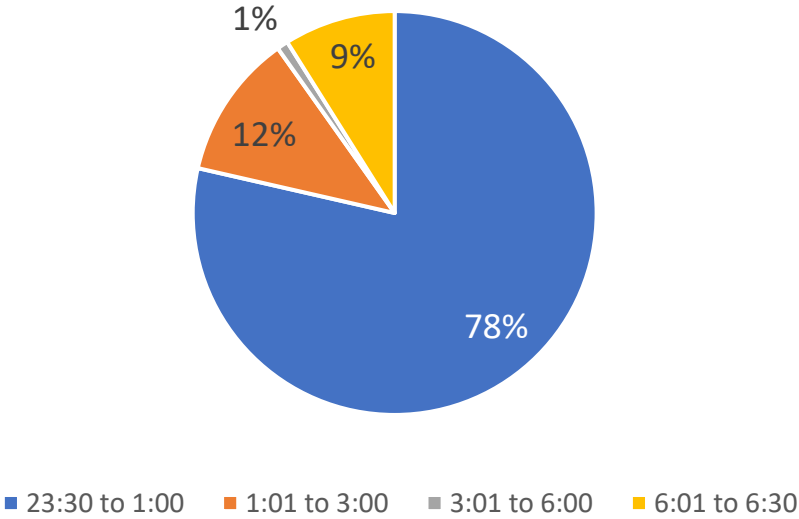


Chart of 2020 Curfew Intrusion Times at SJC

## **Engine Runs**

In addition to takeoff and landing restrictions at the Airport, Airport Operations staff also limit maintenance and engine run-ups during the curfew hours to help minimize the noise generated during curfew hours. If an aircraft operator must perform an engine maintenance run-up to prepare for a ~06:30 AM flight, Airport Operations will direct the aircraft to the north end of the airfield to avoid generating noise towards the surrounding residential areas at the Southeast end of the airfield. Those engine maintenance run-ups can be performed as early as 2 hours before the scheduled departure time, as published in the SJMC.

Airport Operations staff record the number of high (>90%) or full-power engine run-up maintenance checks performed during curfew hours. In 2020, zero high or full-power engine maintenance run-ups were performed during curfew hours.

## **Airport Noise Complaints**

Like many other airports in noise sensitive communities, the Airport collects noise complaints from residents of the City of San José as well as the surrounding municipalities through the “WebTrak” webpage, phone messages, e-mails, and a dedicated complaint form hosted on the airport’s website. Webtrak allows residents to monitor a slightly delayed live feed of aircraft operations in the south Bay Area. Community members regularly use this tool to investigate deeper into their noise disturbances and report them to the Airport’s Noise Management Office.

Airport staff respond to curfew-related complaints whenever possible by including the reason the flight in question operated during curfew hours, an explanation of the approach or departure procedures to the Airport, and acknowledgement of whether a late-night operation was a curfew violation (and therefore cited). Additionally, responses from Airport staff may include whether a flight was operating at another airport in the area, or its status as an emergency response, police, or military aircraft.

In 2020 there were a total of 23,507 complaints submitted by 313 individual residents throughout the area. This group of 313 submitters represents approximately .0003% of the total San José population (1.04 Million).

This compares to a total of 115,241 complaints made by 611 individual residents in 2019. Of the 2020 complaints, just over 65% (15,701) were submitted by 5 individuals, which means most complaints were from only 1.6% of the total submitters. The top reporter (a Los Gatos resident) submitted 4,350 complaints in 2020. Year over year, the population of total complaint submitters has decreased, along with the number of complaints received.

<b>Submitters</b>	<b>Proportion of Complaints Submitted</b>
<b>Top 5</b>	67%
<b>Top 10</b>	80%
<b>Top 20</b>	88%
<b>Top 30</b>	91%

Table of 2020 Complaints Received by Top Submitters



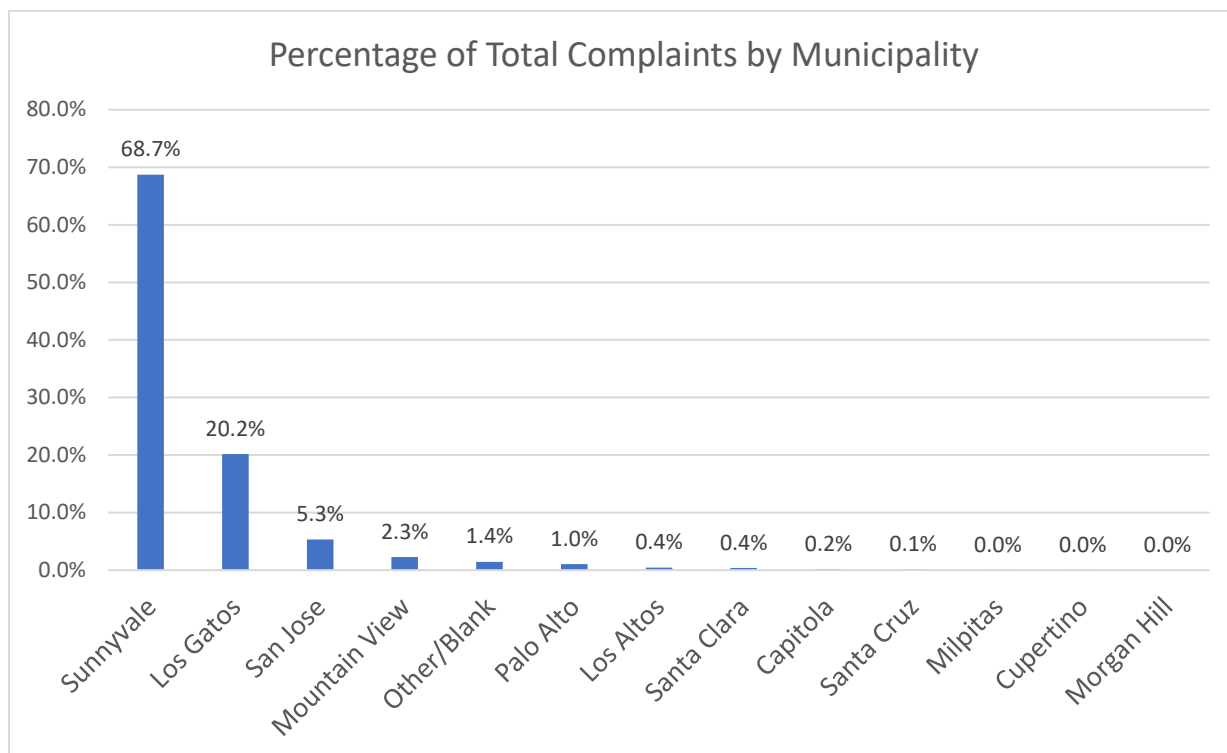


Chart of 2020 Complaints by Municipality

Sunnyvale residents continued to submit a significantly higher amount of noise complaints than other neighboring cities. In 2020, there were 16,149 complaints submitted by Sunnyvale residents, which represents an 85% decrease over 2019, in which they submitted 106,211 complaints. This decrease in Sunnyvale complaints correlates to a 50% decrease in the amount of South Flow operations (9.05% of all operations in 2020 compared to 18% in 2019) and overall reduction in total operations. Complaints from San Jose residents continue to represent a small proportion (5.3%) of the overall total.

2016 - 2020 Complaints by Municipality					
	2016	2017	2018	2019	2020
<b>San Jose</b>	1262	3332	3778	1808	1252
<b>Sunnyvale</b>	36056	118281	100442	106211	16149
<b>Mountain View</b>	285	313	1208	2346	533
<b>Santa Clara</b>	1100	382	368	517	87
<b>Los Gatos</b>	2320	1211	671	1550	4740
<b>Palo Alto</b>	590	969	765	1235	243
<b>Morgan Hill</b>	22	10070	2929	391	0
<b>Los Altos</b>	81	211	205	165	98
<b>Capitola</b>	0	0	4	122	40
<b>Cupertino</b>	838	5923	1512	53	5
<b>Milpitas</b>	514	395	33	51	6
<b>Santa Cruz</b>	8	56	72	43	18
<b>Other/Blank</b>	3110	6961	2016	749	336
<b>TOTAL</b>	46186	148104	114003	115241	23507

Table of 2016-2020 Complaints by Municipality

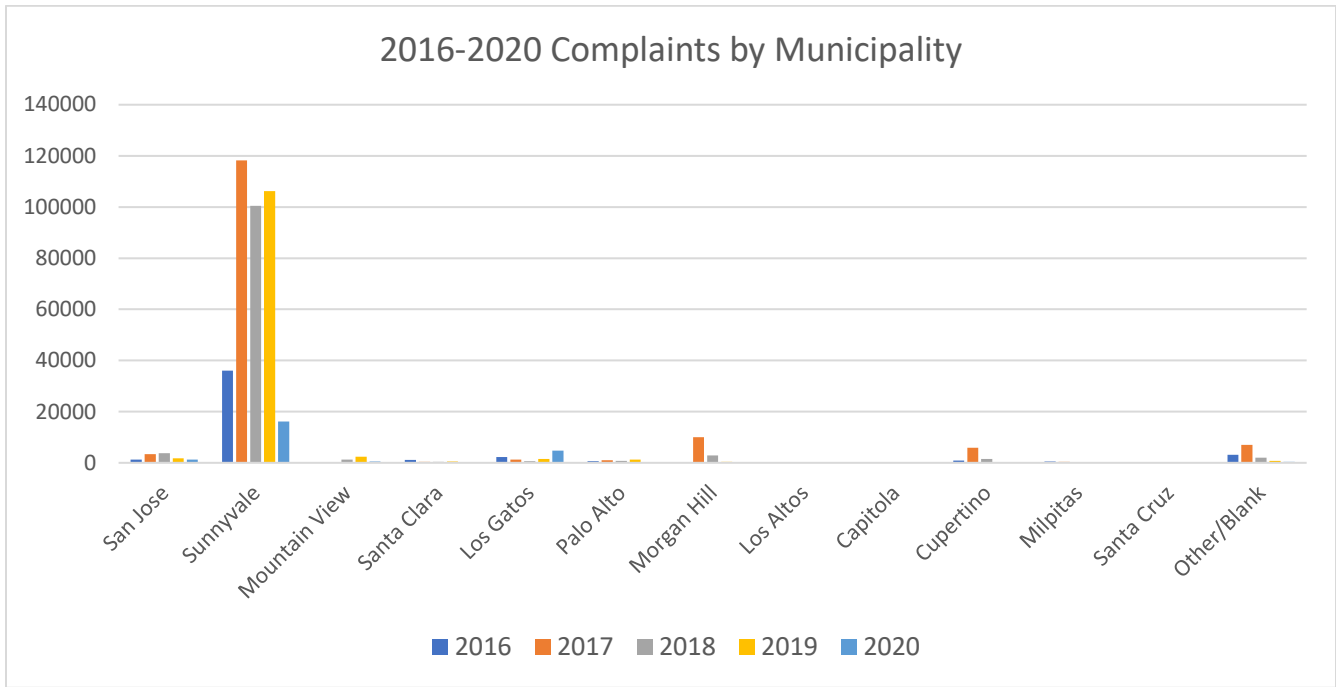


Chart of 2016-2020 Complaints by Municipality

### South Flow Operations

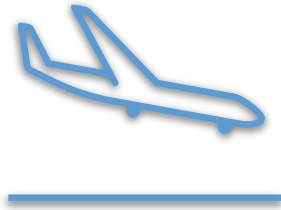
Commonly during times of poor weather, arriving flights at SJC will land from the north on Runways 12R or 12L instead of approaching the airfield from the south and landing on Runways 30L or 30R. When the airport operates in “South Flow” conditions, the communities in Sunnyvale, Santa Clara, Cupertino, Mountain View, and Palo Alto become more impacted by SJC arrivals than they are under normal “prevailing weather” operating conditions. Similarly, residents of San Jose living south of the airport are impacted due to the change in departures direction and resulting increase in noise levels from those aircraft (compared to quieter noise levels from arriving aircraft). In 2020, the FAA (Air Traffic Control) utilized South Flow Operations for approximately 9.05% of all operations throughout the year, compared to 2019, when 17.84% of traffic operated in South Flow.

2016 - 2020 South Flow Summary					
	Operations	Days*	South Flow Days*	South Flow Operations	Avg SF Days/Month*
<b>2016</b>	16%	31%	113	24031	9.4
<b>2017</b>	14%	22%	80	22035	6.6
<b>2018</b>	11%	21%	78	19471	6.5
<b>2019</b>	18%	32%	115	34515	9.58
<b>2020</b>	9%	21%	78	10101	6.5

Table of 2016-2020 South Flow Summary Data

\*At least 10+ Runway 12L/12R operations on that day

Norman Y. Mineta  
San José International Airport  
2020 Annual Noise Report Summary



Total Operations  
108,955 (-45%\*)

Curfew Intrusions  
150 (-84%\*)



Curfew Violations  
35 (-36%\*)

Complaints  
23,507 (-80%\*)



\*Year over Year