

# Memorandum

**TO:** HONORABLE MAYOR AND  
CITY COUNCIL

**FROM:** John Aitken

**SUBJECT: FORMATION OF THE AD HOC  
ADVISORY COMMITTEE ON  
SOUTH FLOW ARRIVALS**

**DATE:** September 25, 2017

Approved

*D. D. S. L.*

Date

*9/26/17*

## SUPPLEMENTAL

### REASON FOR SUPPLEMENTAL

To provide additional information requested by the Transportation and Environment Committee at its hearing of September 11, 2017, on staff's recommendation to form the Ad Hoc Advisory Committee on South Flow Arrivals and to recommend Council appoint a Councilmember and an alternate to serve on the recommended ad hoc committee.

### RECOMMENDATION

If Council approves the formation of the Ad Hoc Advisory Committee on South Flow Arrivals, appoint a Councilmember and an alternate Councilmember to represent the City on the Committee.

### BACKGROUND

While the Transportation and Environmental Committee unanimously adopted staff's recommendations for the formation of the Ad Hoc Committee, the Committee requested more information for Council on the following two questions:

1. Given that the Airport has operated in south flow configuration for many years, why has it recently become such a significant problem? What has led to the high number of south flow complaints in the past year?
2. What are some of the possible options to address the south flow noise issue the Ad Hoc Committee could review?

Providing more information on these questions is the primary purpose of this memo.

## ANALYSIS

### **Why the Increase in Complaints Over the Past Year?**

There are two interrelated primary reasons the Airport has seen an exponential increase in the number of noise complaints related to south flow operations:

1. ***The use of NextGen technology to guide aircraft.*** Following complaints, staff observed a higher proportion of aircraft utilizing existing GPS approaches developed in 2011. The option to utilize this approach is part of the FAA's nationwide Next Generation (NextGen) project to upgrade U.S. air traffic control from a ground-based radar system to a satellite-based radar system. The purpose of the nationwide upgrade is to increase efficiencies by enabling planes to fly prescribed paths into and out of congested air space. The U.S. air traffic system transported 720 million passengers in 2011 and is predicted to reach one billion passengers by 2024. Congress and the FAA believe that the air traffic control system must become more efficient to handle such an increase in passenger volume. NextGen technology and procedures are meant to address that concern.

As a result, the concentration of flight paths over residential neighborhood during south flow operations has significantly increased as flights that were previously more dispersed are now more concentrated. Those residents not living directly under the flight path may actually be experiencing a drop in aircraft noise. However, those residents living directly under the flight path would be seeing more aircraft and therefore hearing more noise. Attachment A-1 and A-2 provide a graphic illustration of the increased concentration of flights for south flow arrivals with the use of NextGen technology and procedures.

2. ***A historical increase in the number of days and the amount of time requiring the use of south flow operations.*** South flow operations are initiated by the FAA when certain weather conditions exist. The primary weather conditions that causes south flow operations to be implemented are the direction and velocity of the wind.

The prevailing wind over the airfield blows from north (off the bay) to south. As a general rule, aircraft want to land *into* the wind. However, when wind direction changes and the wind over the airfield blow from south to north and when the northern winds reach a certain velocity (five knots or more), for safety reasons, the FAA implements south flow operations so that aircraft are again landing into the wind because it can be harder – and therefore less safe – for an aircraft to takeoff and/or land with the wind at its tail. The airfield remains in south flow configuration until wind conditions change sufficiently to warrant returning to the airfield to north flow operations (landing from the south and departing towards the north). Winds are measured at the airfield and not at other locations in the region. Wind conditions around the Bay Area may differ from the Airport, such that the Airport may be in south flow, yet people in other areas may not perceive a change in wind direction.

In a January 6, 2017 response to then Airport Director Kim Becker (see Attachment C of the attached staff report of August 21, 2017), the FAA stated the use of the south flow configuration *“is the least favorable configuration for both the Tower and the TRACON (Northern California Terminal Radar Approach Control) and is not utilized more than is necessary. Runway changes are complicated. They increase noise due to delay vectoring and holding and more importantly, introduce risk in the National Airspace System if done too often.”*

In the past year, the weather conditions creating the need for south flow operations have occurred more frequently and lasted longer. Anecdotal experience is that the southerly winds used to last from about 6:00 a.m. to 10:00 or 11:00 a.m. However, in the past year, the conditions have occurred with more frequency and are lasting longer into the day. In its January 6, 2017 correspondence to former Director Becker, the FAA states that in October 2015 only 2 percent of the Airport’s traffic landed under south flow configuration. However, in October 2106 about 33 percent of the Airport’s traffic landed under south flow configuration.

Attachment B shows the number of flight operations (takeoffs and landings) in south flow from 2011 to 2016. In 2015 there was an average of 66 south flow flight operations on days when the Airport was operating in south flow. In 2016 the average was 139 south flow take offs and landings per day while in operating in south flow configuration.

The two aforementioned factors (greater concentration of arriving flights and an increase in the number of days and length of time the Airport must operate in south flow configuration) are combining to result in an increase in the aircraft noise now heard in the Sunnyvale, Mountain View and Palo Alto areas (and to a lesser extent in other adjacent cities). Hence, the complaints to the Airport Commission from the impacted residents, the Commission’s call for a noise roundtable and staff’s recommendation to form the Ad Hoc Advisory Committee on South Flow Arrivals.

### **What are Some of the Options to Address South Flow Noise Impacts?**

The Committee also asked what are some of the possible options that may be recommended to the FAA to address the south flow noise impacts on the impacted communities? Airport staff does not have any role in determining flight procedures and has no technical expertise to address this key question. Nor will staff be proposing any solutions to the Committee. Identifying possible options to address the concern will be the primary objective of the Ad Hoc Advisory Committee. However, some of the options staff has heard most commonly raised include:

1. have aircraft come in at higher altitudes;
2. have aircraft approach in south flow from east of San José instead from west of San José; and
3. increase the dispersal of approaching aircraft.

The three aforementioned solutions are not necessarily exhaustive nor feasible. Committee members may introduce other proposed solutions and/or develop other possible solutions

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through the public discussions with the FAA. Members of the public may also propose solutions to the Committee or to individual Committee members through meetings in their communities. Thus, the range of possible solutions are not known at this time. In addition, the determination of feasibility for any proposed solution will rest solely with the FAA.

Ultimately, the Ad Hoc Advisory Committee is an opportunity to have a community discussion with the FAA to explore what feasible solutions may exist that will reduce the noise impacts on the impacted cities without adversely affecting the FAA's primary objective to manage air traffic in a safe and efficient manner.

### **Appointment of a San José Representative**

Should the Council adopt the recommendation to form the Ad Hoc Advisory Committee, staff recommends Council simultaneously appoint a Councilmember to represent the City on the Committee. Council should also appoint an alternate representative in the event the primary representative is unable to attend a meeting. However, the alternate Council representative will be required to attend Committee meetings only when the primary representative is unable to do so. This will ensure the City is continuously represented at all the Committee's meetings.

### **COORDINATION**

This memorandum was coordinated with the City Attorney's Office.

/s/  
JOHN AITKEN  
Director of Aviation

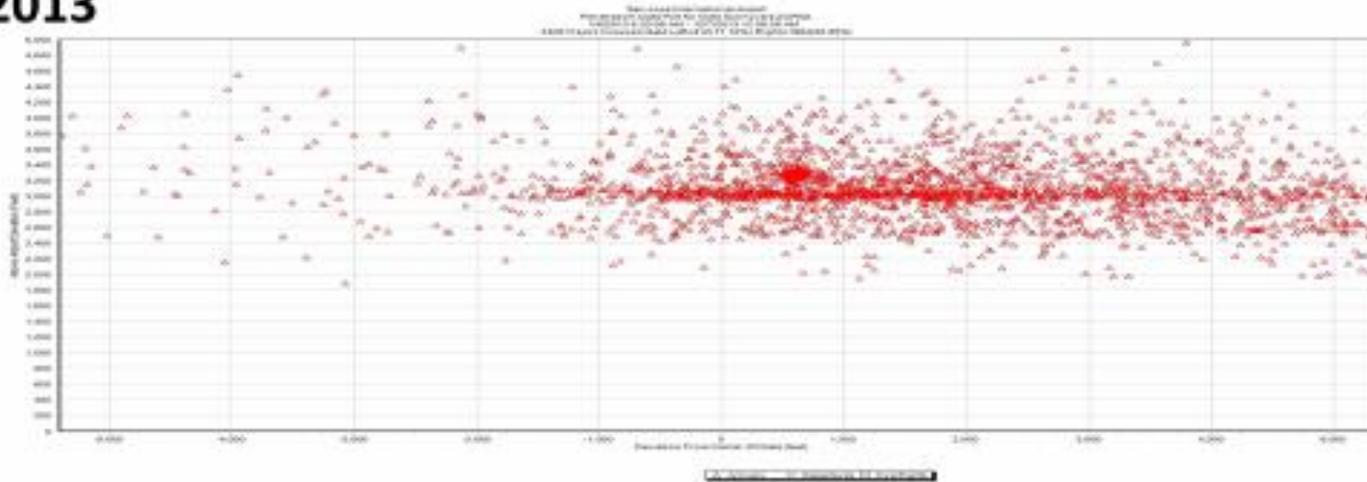
For questions please contact Jim Webb, Assistant to the Director, at 408-392-3609.

Attachments

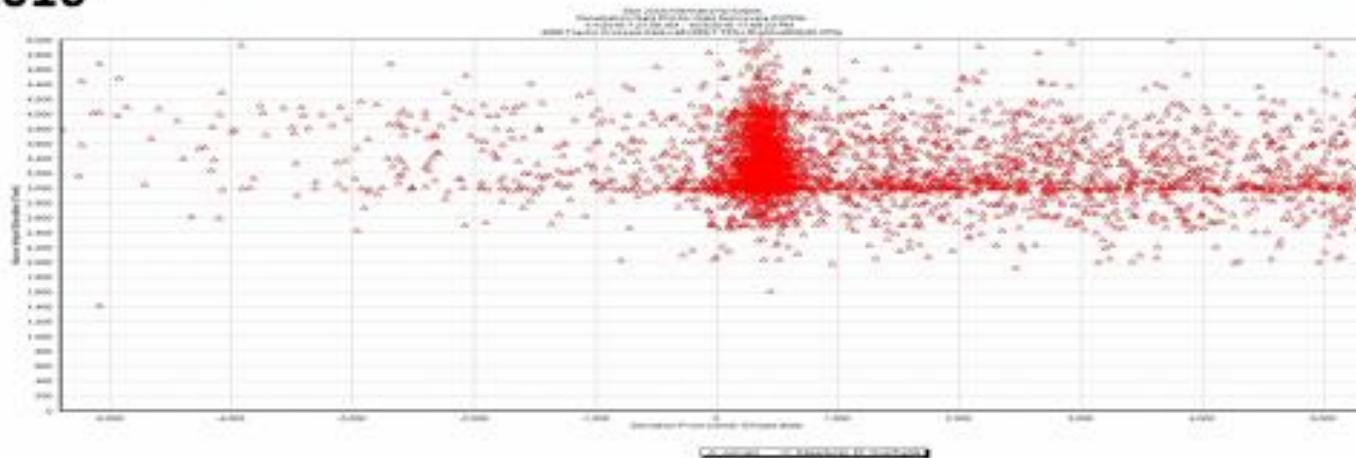
# SJC Flight Distribution Over Sunnyvale – 2013 vs 2016



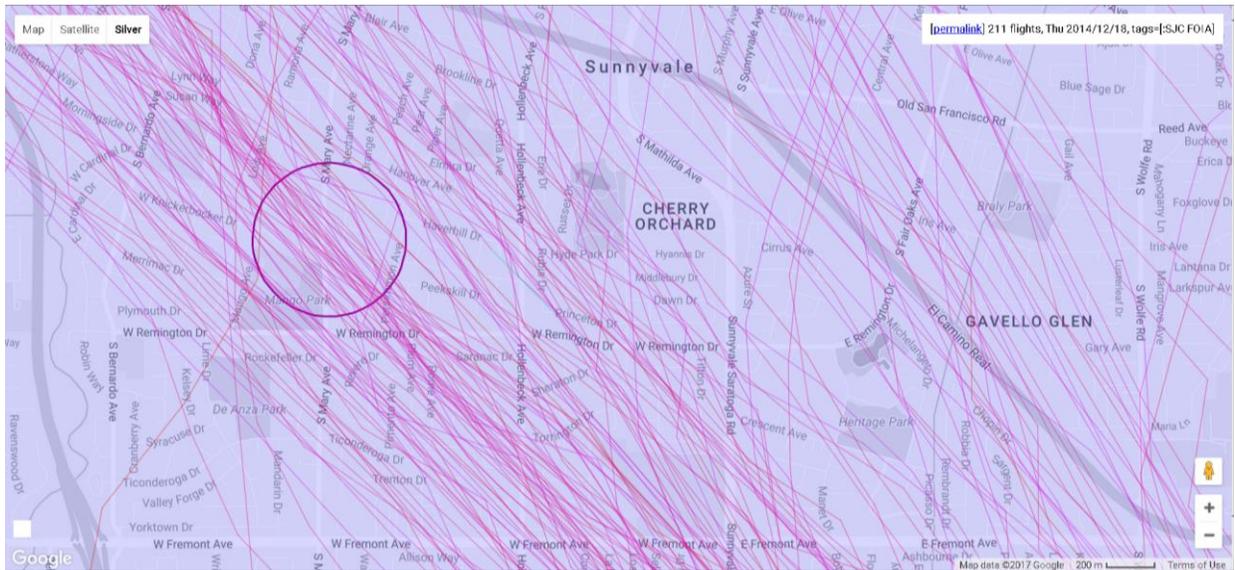
**2013**



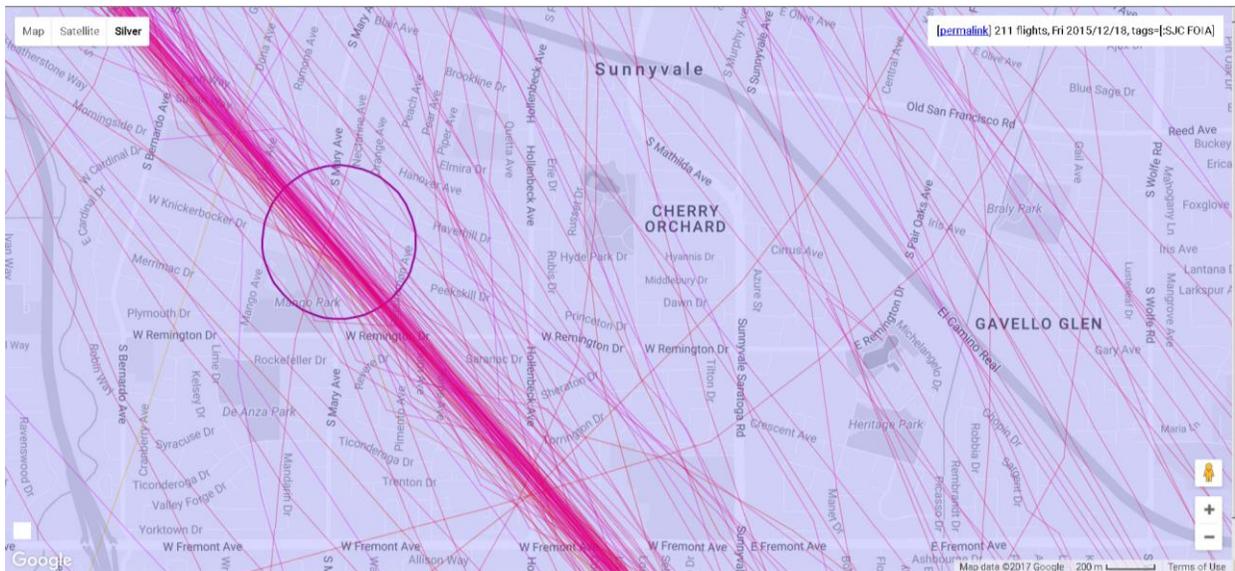
**2016**



# South Flow Flight Paths Before and After NextGen



Flights over Sunnyvale on December 18, 2014, before NextGen (above) and after (below). Circle is Waypoint ZORSA, near Mary Avenue and Knickerbocker Drive.



**Total Number South Flow Operations  
Compared to Total Number  
of SJC Operations – 2011-2016**

Year	Total Ops	South Flow Ops	% of Total Ops	Average Ops per South Flow Day
2016	153,419	24,033	15.7	139.7
2015	140,129	12,713	9.1	66.2
2014	135,872	21,473	15.8	117.3
2013	132,789	9,034	6.8	52.8
2012	127,181	18,639	14.7	90.0
2011	131,003	16,786	12.8	87.4

