



# Santa Clara/Santa Cruz Counties Airport/Community Roundtable

Briefing on the Proposed  
PIRAT TWO Standard Terminal Arrival Route (STAR)

April 24, 2019

# Presentation Overview

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- Purpose of this Briefing
- Background on Standard Terminal Arrival Routes
- Overview of the Current PIRAT ONE STAR
- Overview of the Proposed PIRAT TWO STAR
- Differences Between the Two STARs
- Discuss Next Steps
- Answer Member Questions

# Purpose of this Briefing

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The purpose of this briefing is to:

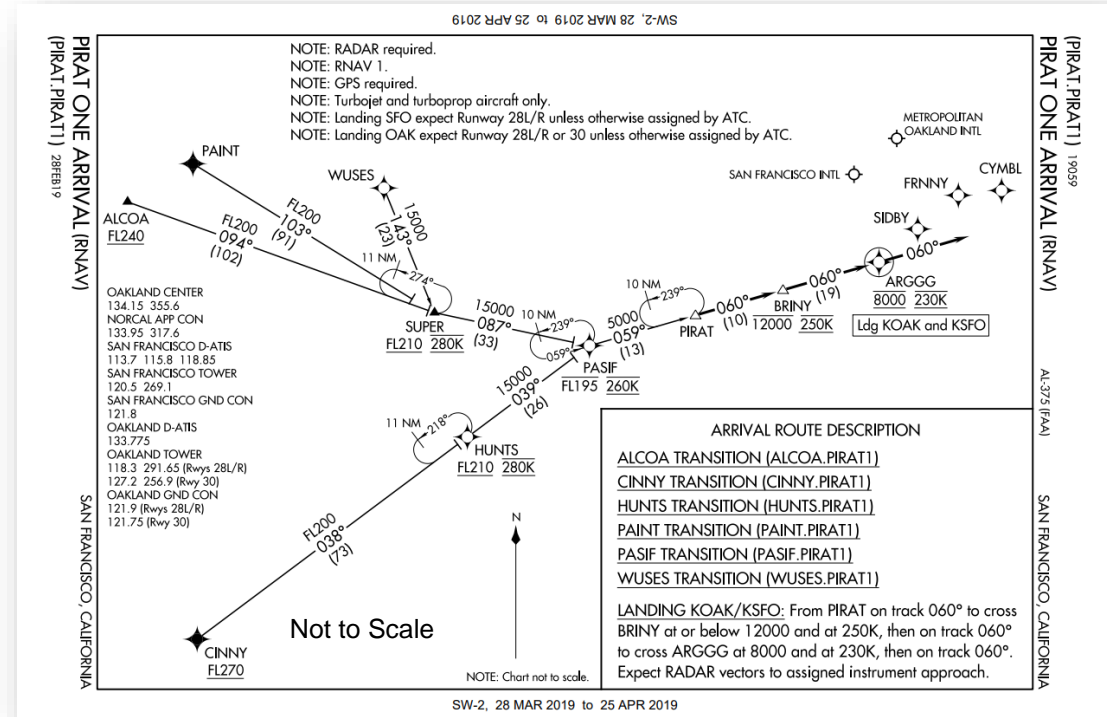
- Bring the proposed PIRAT TWO STAR for San Francisco International Airport (SFO) and Oakland International Airport (OAK) to the attention of the Roundtable members and interested public.
- Identify differences between the existing PIRAT ONE STAR and the proposed PIRAT TWO STAR.
- Provide for Roundtable member discussion regarding the proposed STAR and possible next steps.
- Answer Roundtable member questions.

# Background on Standard Terminal Arrival Routes



## Standard Terminal Arrival Routes (STARs):

- Provide predictability and repeatability regarding an aircraft's route of flight.
- Are carried by pilots in paper form or stored in tablets.
- Are stored in the aircraft's Flight Management System (FMS).



SOURCE: Federal Aviation Administration.



# Background on Standard Terminal Arrival Routes (cont.)



Procedure	Airport Name	Airport ID	City/State	Scheduled Pub Date	Status	Actual Pub Date	
SID SAN JOSE THREE SAN JOSE CA KSJC	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	8/15/2019	At Flight Check		<a href="#">Email FAA</a>
SID SUNOL ONE SAN JOSE CA KSJC	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	8/15/2019	At Flight Check		<a href="#">Email FAA</a>
STAR ROBIE FIVE SAN JOSE CA KSJC	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	8/15/2019	Awaiting Publication (NFDC)		<a href="#">Email FAA</a>
ILS OR LOC RWY 30 L, AMDT 26	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	7/16/2020	Pending		<a href="#">Email FAA</a>
RNAV (RNP) Z RWY 30 L, AMDT 3	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	7/16/2020	Pending		<a href="#">Email FAA</a>
RNAV (RNP) Z RWY 30 R, AMDT 2	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	7/16/2020	Pending		<a href="#">Email FAA</a>
SID LOUPE FIVE SAN JOSE CA KSJC	NORMAN Y MINETA SAN JOSE INTL	SJC (KSJC)	SAN JOSE, CA	4/25/2019	Awaiting Publication (NFDC)		<a href="#">Email FAA</a>

Showing results 1 - 7 of 7

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The FAA's Instrument Flight Procedures Information Gateway identifies upcoming procedure changes with their publication dates:

- Intended for National Airspace System users.
- Allows users to find procedures by airport.
- Not intended for public input.
- The Roundtable will monitor this site.

SOURCE: Federal Aviation Administration.

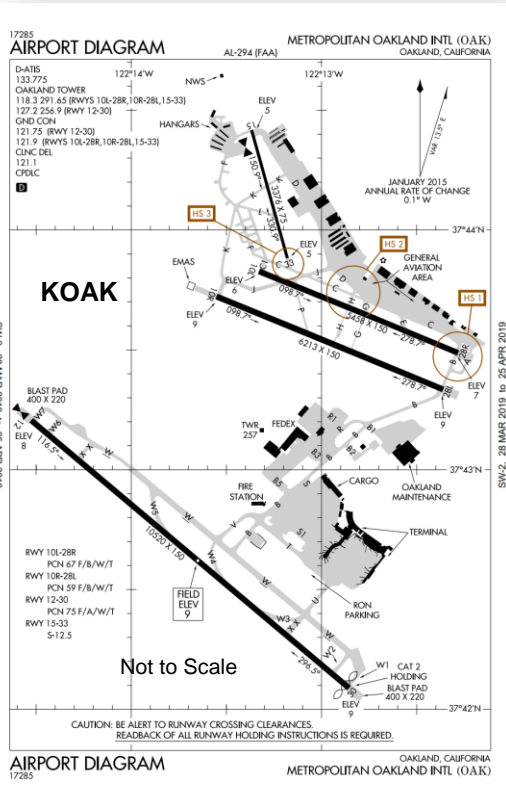
# Overview of the Existing PIRAT ONE STAR



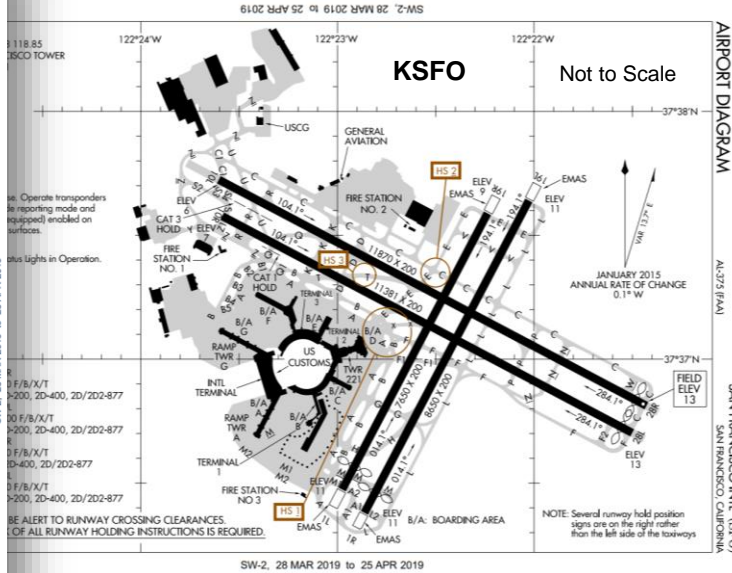
- SFO has 14 STARs covering several arrival configurations, including seven Area Navigation (RNAV) STARs. OAK has nine STARs, including eight RNAV STARs
- The FAA is proposing to modify the PIRAT ONE STAR, which is an RNAV STAR that can be used for aircraft arriving to SFO and OAK from the west over the ocean
- The proposed PIRAT TWO STAR is scheduled to be published by the FAA tomorrow, Thursday, April 25, 2019
- The FAA has indicated that the PIRAT TWO STAR will implement the Select Committee's recommendation to keep aircraft at 8,000 feet above Mean Sea Level (MSL) over the Woodside Very-High-Frequency Omnidirectional Radio (VOR) navigational aid when safety permits.\*

\* Item 2.3. Report of the Select Committee on South Bay Arrivals, November 17, 2016.

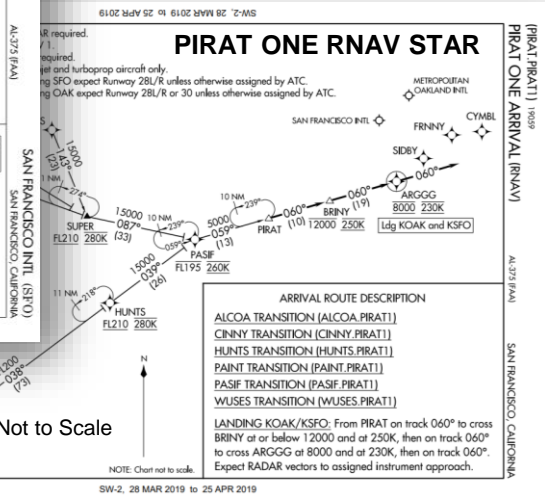
# Overview of the Existing PIRAT ONE STAR



SOURCE: Federal Aviation Administration.



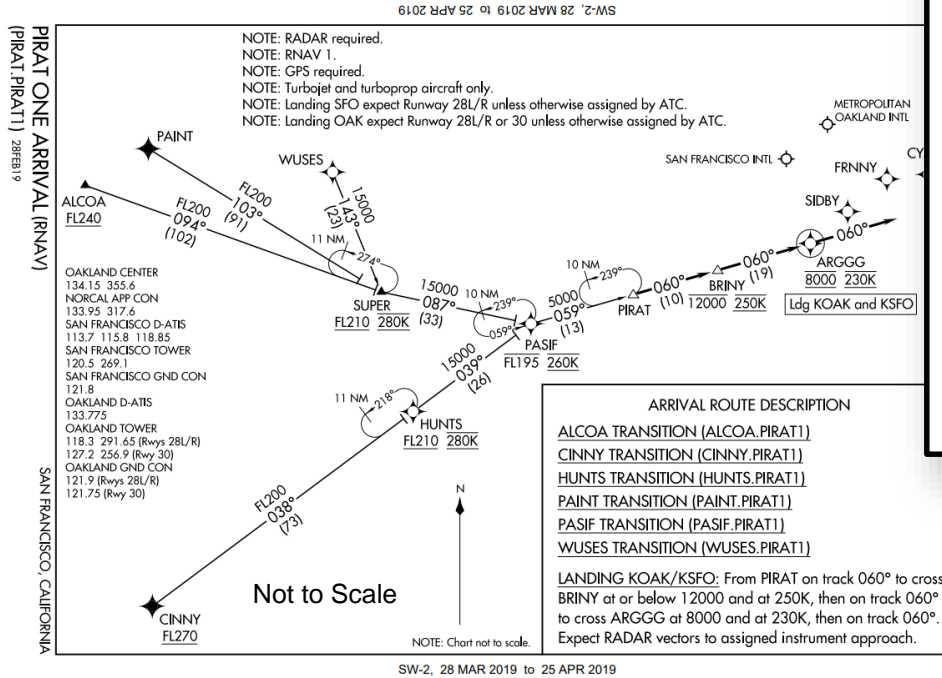
SOURCE: Federal Aviation Administration.



SOURCE: Federal Aviation Administration.



# Overview of the Existing PIRAT ONE STAR



## ARRIVAL ROUTE DESCRIPTION

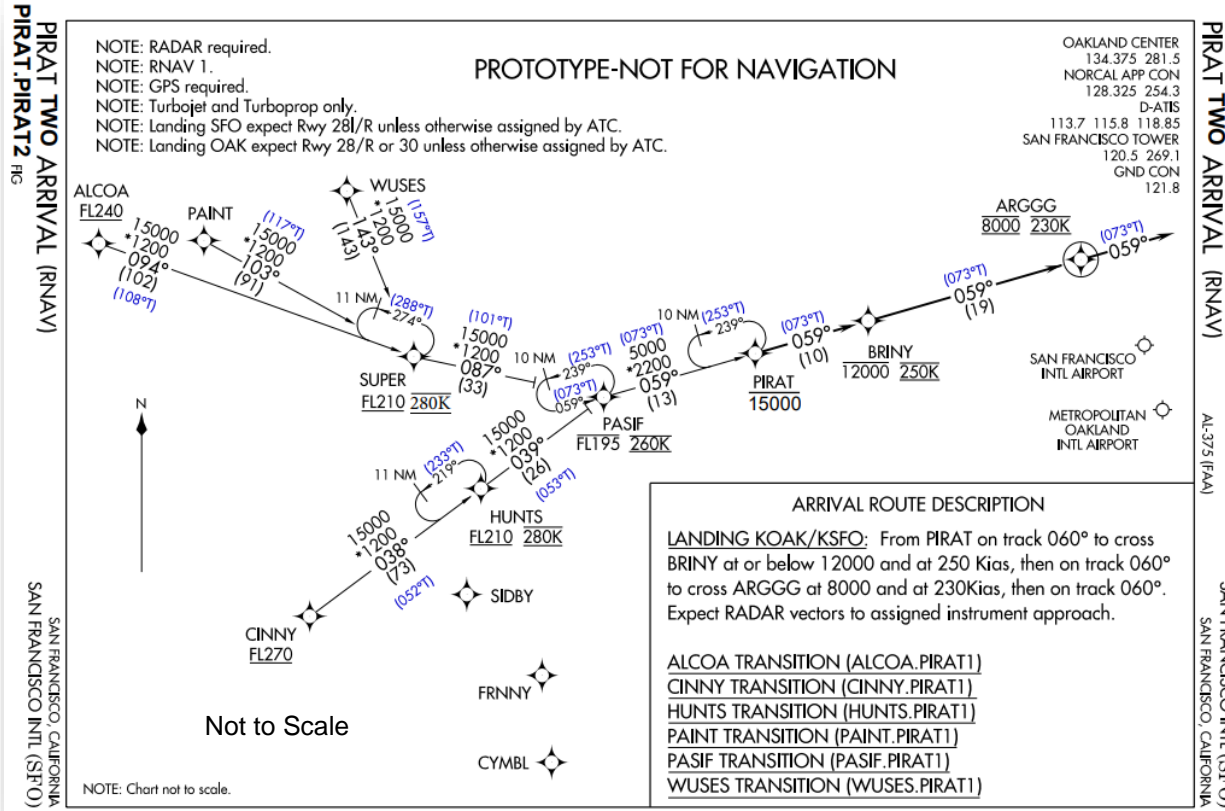
ALCOA TRANSITION (ALCOA.PIRAT1)  
CINNY TRANSITION (CINNY.PIRAT1)  
HUNTS TRANSITION (HUNTS.PIRAT1)  
PAINT TRANSITION (PAINT.PIRAT1)  
PASIF TRANSITION (PASIF.PIRAT1)  
WUSES TRANSITION (WUSES.PIRAT1)

LANDING KOAK/KSFO: From PIRAT on track 060° to cross BRINY at or below 12000 and at 250K, then on track 060° to cross ARGGG at 8000 and at 230K, then on track 060°. Expect RADAR vectors to assigned instrument approach.

SOURCE: Federal Aviation Administration.

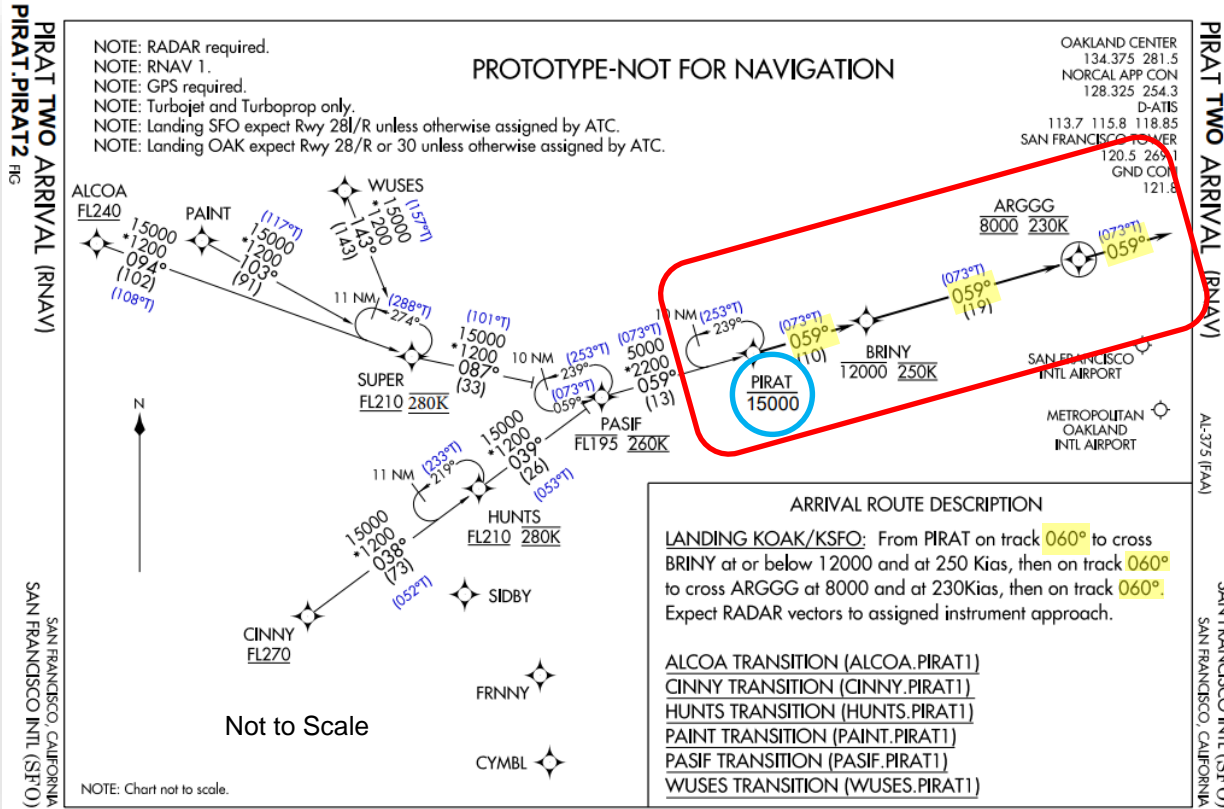
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# Overview of the Proposed PIRAT TWO STAR



SOURCE: Federal Aviation Administration.

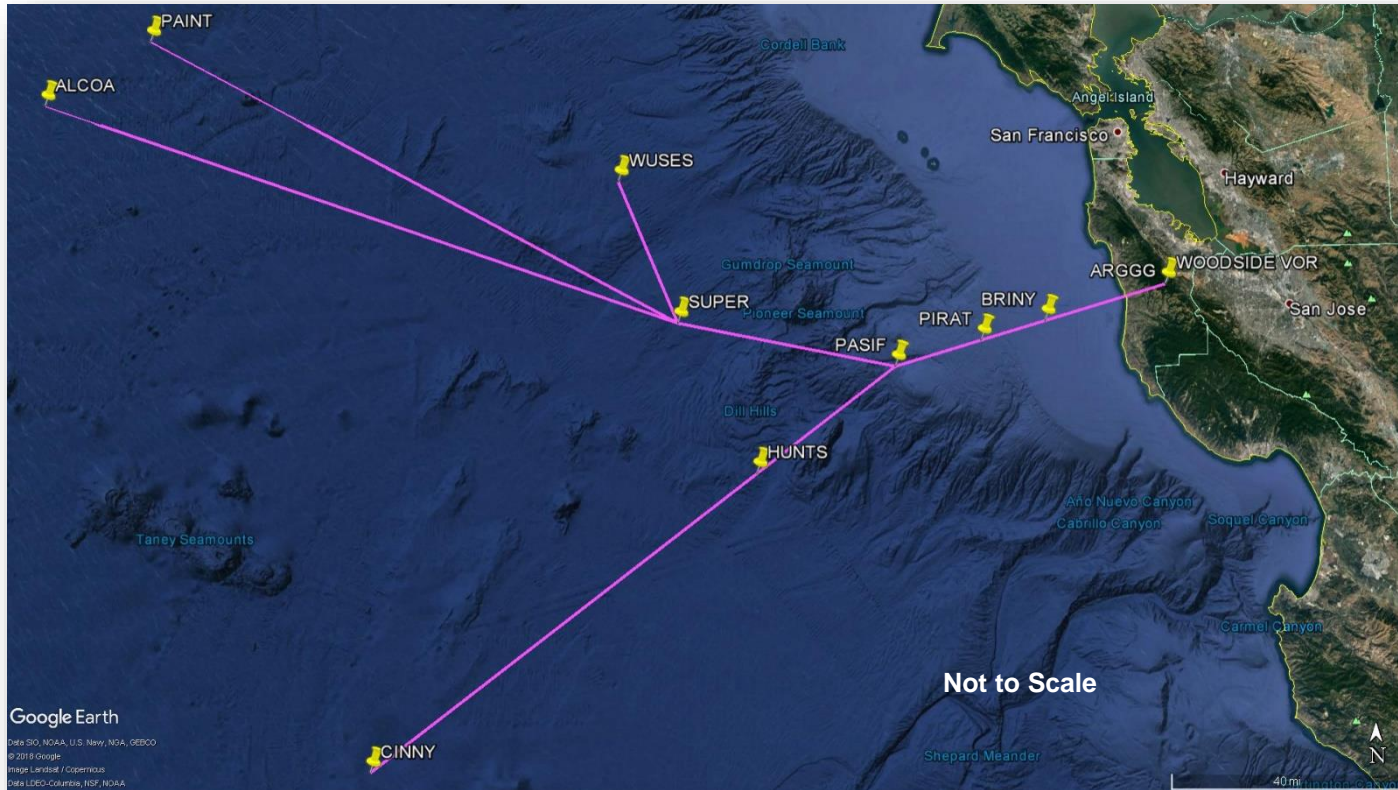
# Differences Between the PIRAT ONE and PIRAT TWO STARs



- Aircraft must now remain at or below 15,000 feet MSL at the PIRAT waypoint. The FAA indicates that this change was requested by the Air Traffic Organization.
- The magnetic headings between the PIRAT, BRINY, and ARGGG waypoints have changed from 060 to 059 degrees. The FAA did not give a reason for this change.
- The arrival route description remains the same except the headings did not change to 059 degrees.
- The locations of KSFO and KOAK are inaccurate relative to the location of the PIRAT TWO STAR.

SOURCE: Federal Aviation Administration.

# Overview of the Proposed PIRAT TWO STAR



SOURCE: Google Earth, ESA Analysis.

# Overview of the Proposed PIRAT TWO STAR



SOURCE: Google Earth, ESA Analysis.

# Discuss Next Steps

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It may be beneficial for the Roundtable members and the public to hear from the FAA at a future SCSC Roundtable meeting regarding the following questions:

- How do the PIRAT TWO STAR changes implement the Select Committee's recommendation to keep aircraft at 8,000 feet MSL over the Woodside VOR when safety permits?\*
- What environmental analysis was performed to evaluate the potential impacts of the PIRAT TWO STAR?
- May the Roundtable receive a copy of the PIRAT TWO STAR environmental analysis including the noise analysis to review?

The Roundtable may want to consider extending an invitation to the FAA to answer these questions and others at the May Roundtable meeting.

\* Item 2.3. Report of the Select Committee on South Bay Arrivals, November 17, 2016.



## *Roundtable Member Questions?*