APPENDIX B

SAFETY RISK MANAGEMENT DOCUMENT

Scottsdale Airport (SDL)
New ATC Procedures Related To
Hold-Line Relocation 2010
Safety Risk Management Document (SRMD)

Final Version 5.0
August 28, 2013

SRMD-SDL-HLRELO-2010-001

SRMD Change Page

Action/Change made to the SRMD	Date	Version Number
Initial SRMP Planning Meeting	August 12, 2010	N/A
First Draft SRMD	August 26, 2010	1.0
Second Draft SRMD	September 22, 2010	2.0
Third Draft SRMD	September 28, 2010	3.0
Fourth (Final) Draft SRMD	June 24, 2013	4.0
Final SRMD	August 28, 2013	5.0
QCG Review	TBD	5.0

Signature Page

Title: Revised ATC Procedures Related to Scottsdale Hold-Line Relocation 2010 SRMD

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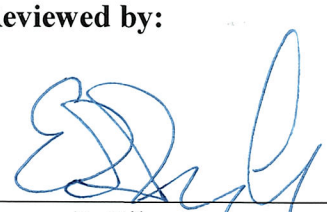
Submission Date: **August 28, 2013**
SRMD Number: **SRMD-SDL-HLRELO-2010-001Version 5.0 (Final SRMD)**

Reviewed by:



9/10/2013

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Executive Summary

In 2006, a recommendation was originally tendered from ATO's RSAT (predecessor to Office of Runway Safety) to the AWP ADO and the ATM at SDL to relocate SDL's Runway 3/21 Hold-Lines outboard from their current distance of 152 feet from the RCL to a range of 200-250 feet. The recommendation is based on current runway to taxiway distance standards (250 feet plus elevation correction) contained in AC 150-5300-13 for a D-2 category airport.[1]

A SRMP composed of members from the SDL Airport Management Staff, AWP Office of Runway Safety, AWP ADO, SDL ATCT, Phoenix TRACON, AZD Safety Assurance Staff, Aircraft Owners and Pilots Association, AZD Operations Support (Procedures) Staff, Western Service Area Quality Control Group (AJV-W11), NATCA, Flight Standards, SDL FBO's, and the NBAA was convened to complete the functions, components and principals of the SMS process pursuant to the ATO Safety Management System Manual Version 2.1.

[1] Although SDL is not a Part 139 Airport, the airport has accepted and plans to continue to accept AIP grant funds, which will be used for Runway and/or Taxiway rehabilitation/improvements in the future

The panel convened on several dates beginning on August 12, 2010. The panel applied the Safety Risk Management process, starting by conducting a Preliminary Hazard Analysis. Each hazard was reviewed to identify causes, system states, possible effects, severity, existing controls, likelihood, and current risks of construction. The panel assessed and ranked each of the risks identified in this SRMD. Once this assessment was completed and the hazards mitigated, the results of the safety assessment were captured in a Risk Matrix.

On March 21, 2013, simulation was conducted in the Phoenix ATCT TSS platform to verify the application of the revised ATC procedures and observe, via simulation, the safety impact of those revised ATC procedures.

Based on the safety analysis conducted by the SRMP, combined with the recorded results from the TSS simulation, some of the revised ATC procedures that would be required in support of the Hold-Line Relocation change cannot currently be introduced into the NAS with an acceptable level of risk, as defined in the FAA SMS Manual. Although hazards P50-3 and SDL-4 were mitigated, they could not be mitigated below high risk even with additional controls as identified by the SRMP.

There were four (4) initial high-risk hazards identified by the panel. Two (2) of these risks could not be sufficiently mitigated. All of the remaining seven (7) identified risk hazards however could be mitigated. In the interest of clerical economy and by way of capturing the work of the panel and notwithstanding those other residual high risk hazards, this document describes the tracking and monitoring of those remaining mitigations as fully set forth in a SRMD, which specify what changes can be introduced to the NAS.

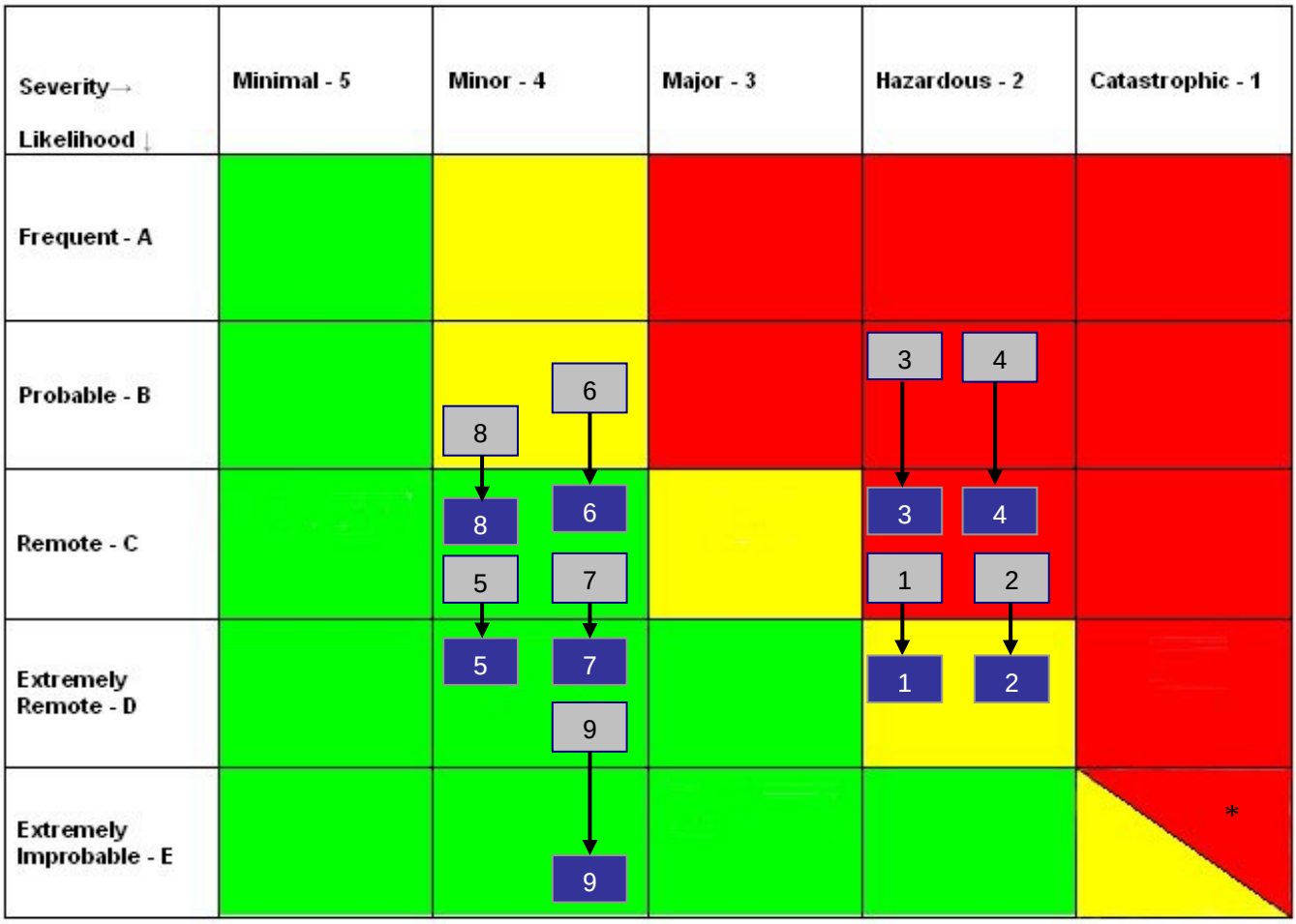
The appropriate personnel will conduct tracking of all mitigations. Section 9 of the report identifies who would be assigned tracking responsibility for risk mitigations. Table 1below and Figure 1 on page vi shows the Hazards along with the initial and predicted risk level.

Table 1 – Preliminary Hazards List with Risk Level

Hazard Number	Hazard	Initial Risk	Predicted Residual Risk
SDL 1	Ground Controller overload due to limited infrastructure availability, increased runway crossings, and sterilized operations for Design Group 3 aircraft	2C	2D
SDL 2	Local Controller overload due to loss of reduced runway separation capability, increased spacing/workload runway operations, and sterilized operations for Design Group 3 aircraft	2C	2D

P50 3	TRACON Biltmore Controller overload due to delay vectors, no-notice holding and required in trail spacing/enhanced TM involving Design Group 3 aircraft	2B	2C
SDL 4	Increased rate of runway incursions related to increased runway crossings	2B	2C
SDL 5	Poor visibility for pilot's holding short to cross the runway; i.e., FAC may be behind the aircraft rather than at 90°angle	4C	4D
SDL 6	Low altitude go-arounds	4B	4C
SDL 7	ATC Influenced Runway Excursions	4C	4D
SDL 8	Unauthorized Class B airspace penetration (LoSS) due to extended VFR down-winds	4B	4C
SDL 9	Pilot Confusion with new markings; resulting in a Runway Incursion	4D	4E

Figure 1: Initial and Predicted Residual Risk



* Not acceptable with single point or common cause failure

0x Initial Risk

0x Predicted Residual Risk

Risk Matrix

High Risk

Medium Risk

Low Risk

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Introduction

The Scottsdale Airport opened in June 1942, as Thunderbird Field II, a basic training facility for World War II Army Air Corps pilots. After the war, ASU acquired the airport in order to implement its own aviation program. The Arizona Conference of Seventh Day Adventists subsequently purchased the Airport in 1953 and established the first combined-use design of a clean industrial park surrounding an airport. The City of Scottsdale acquired the airfield in 1966 and has continued to own and operate the airport since that time. The first business jets landed at Scottsdale Airport in August 1967. By December 1969, 127 aircraft and 20 helicopters were based at the Scottsdale Airport. In 2004, there were over 450 aircraft based at Scottsdale Airport, from single engine recreational planes to numerous corporate jets. Approximately 200,000 takeoffs and landings occurred, making Scottsdale the second busiest single-runway airport in the country, and the busiest corporate jet facility in the state.

Scottsdale Airpark, the 2,600 acre commercial area which surrounds the Airport, has become a national model for airport-based business parks. The Scottsdale Airport/Airpark is headquarters for over 25 national/regional corporations and home to more than 2,200 small to medium-sized businesses. The industrial airpark has easy airport access and seven miles of non-movement area taxiway access. One of the most significant aspects of Scottsdale Airport is the major economic stimulus that it provides to the City of Scottsdale and north Valley region. A recent study indicated that the airport generates more than 182 million dollars annually in revenue to the region's economy and the combined annual impact of the airport/airpark is approximately $2.5 - 3.0 billion dollars. The SDL Airpark complex employs over 40,000 people in a variety of industries.

When the airport was built in 1942, there were no design standards established. Over the years, the airport has evolved to service aircraft that routinely operate at weights and speeds that were not present in 1942. Present modern day design standards, with regard to taxiway/runway centerline distances, are designed with two factors in mind. First, the increased distances ensure no signal degradation for ground-based precision landing navigational systems.[2] Second, the increased distances provide for an increased lateral runway safety area in the event of a veer-off runway excursion.[3] A veer-off runway excursion is defined as, an event where an aircraft leaves the runway laterally crossing the runway edge line in an uncontrolled situation during landing or take-off.

SDL airport's runway holding position markings are located 152 feet from the runway center line. This distance does not support the Airport Reference Code D-II; i.e., design aircraft Gulfstream IV. The standard for Part 139 Airports, or as in the case of SDL considering they are requesting federal AIP grant funding, requires a minimum of 250 feet (plus a correction for airport elevation) between the

[2] SDL does not have a precision instrument approach

[3] AC 150/5300-13A, Airport Design, Table 3-8 provides the minimum runway to taxiway separation standards based on Airplane Design Group. These standards are determined by landing and takeoff flight path profiles and physical characteristics of aircraft. However, if there is a need for direction reversal between the runway and the parallel taxiway when using a high-speed exit, it is also necessary to use Table 3-9, which provides the minimum and recommended separation distances between a runway and parallel taxiway and runways for such turns based on Taxiway Design Group. In that case, use the greater value from Table 3-8 and Table 3-9. See paragraph 411.c for additional information on the effect of exit taxiway design on runway/taxiway separation. The runway to taxiway/taxilane centerline separation standards are for sea level. At higher elevations, an increase to these separation distances may be required to keep taxiing and holding aircraft clear of the inner-transitional OFZ

runway centerline and the runway holding position marking unless a MTS has been approved by FAA ADO. [4] The City of Scottsdale Aviation Department submitted ALP approval requests in the late 1990's, CY2000 and CY2008, which contained legacy hold-line distances and specifically referenced the MTS. Although the City considered this action as a conveyance of a formal request for a MTS, the ADO apparently did not, citing specific requirements of FAA Order 5300.1F which they allege were not fully developed. Although the MTS request may run parallel to an existing ALP submission, it carries with it, a specific application process of its own. This correspondence is attached hereto as Appendix "E". Notwithstanding this semantics argument, the Office of Runway Safety stated that maintaining the status quo was not an acceptable option.[5]

Aircraft exiting a runway, in the absence of air traffic control instructions, are required to continue to taxi forward until all parts of the aircraft are beyond the runway holding position marking. Presently, the location of the holding position marking permits most aircraft to exit the runway and yet remain off the parallel taxiway, permitting an uninterrupted flow of traffic on the parallel taxiways ALPHA and BRAVO in most situations.

Moving the hold-lines outboard from the runway would require aircraft exiting the runway to taxi onto the parallel taxiway to clear the holding position markings, thereby interrupting the flow of traffic on the parallel taxiway(s); i.e., nose-to-nose situation.[6] In preliminary discussions that took place in 2006, ATC predicted that this condition would have a domino effect on delays for both arriving and departing traffic. Specifically, the new ATC procedures that were identified, as being required to support the change consisted of:

1. In some cases, outbound taxiing aircraft would be required to hold on or near the ramp, waiting for traffic exiting the runway to taxi clear.

2. In many cases (during peak traffic), arrivals would need to be turned off of the runway on the opposite side of intended parking. This would be required to ensure a one-way racetrack type pattern around the runway to keep traffic flowing via ensuring aircraft could exit the runway on to the parallel taxiway without impacting traffic taxiing outbound. It was determined that the best circular flow would be clockwise when referenced to either of the runway thresholds. Due to airport geometry, it was also determined that nearly all aircraft destined for the east side Air Center™ FBO, on a RWY 21 configuration, would require a double-crossing of the active runway.

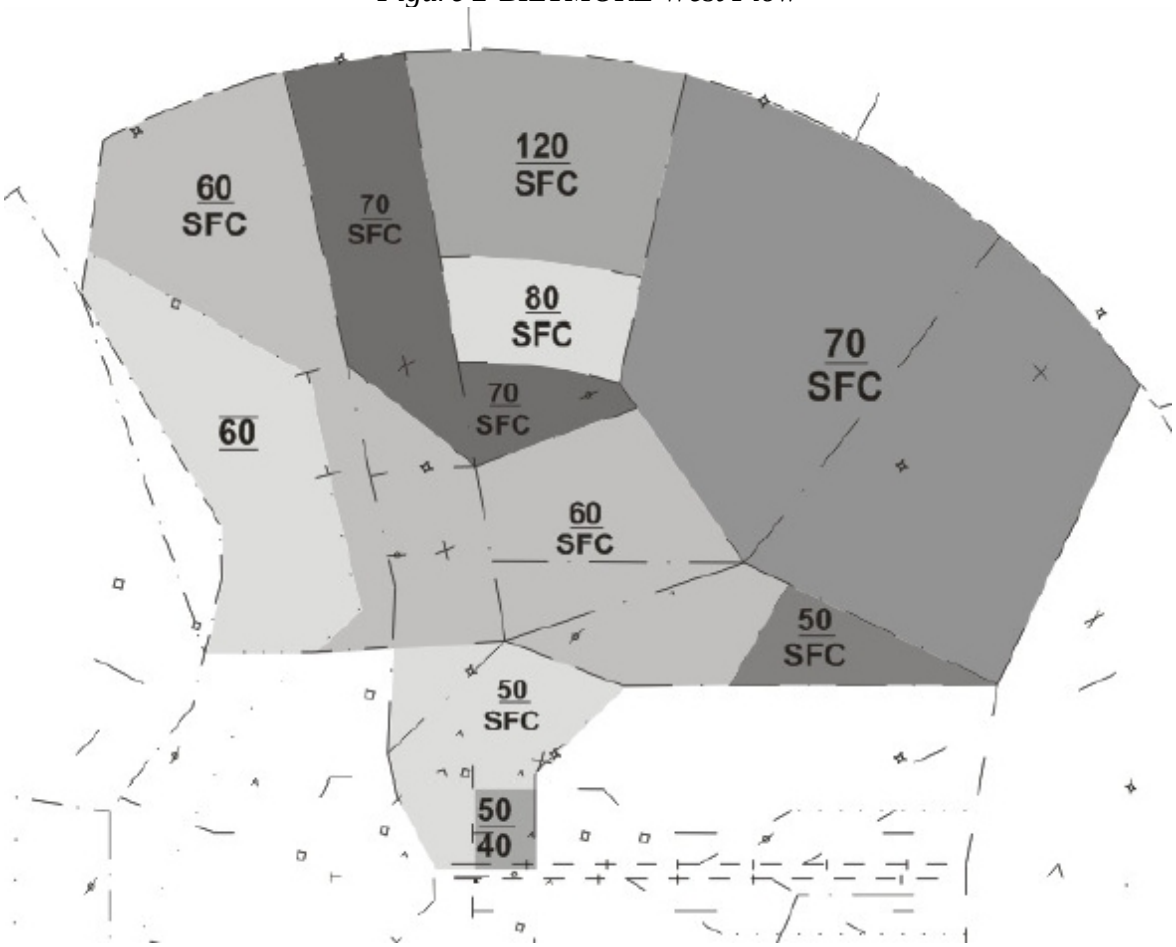
3. Airport Sterilization procedures, similar to those in use at Core 30 airports for the A380, AN225 and B747-800, would need to be utilized whenever a Design Group 3 (wingspan greater than 79 feet) would be taxiing on either taxiway ALPHA or BRAVO. This would be required because the wing would hang over the hold-lines at each connecter taxiway. The newly developed procedures would require close coordination with Phoenix TRACON and would also have some collateral impact on the DVT operations and the DVT ATCT, as most IFR departure procedures between the two airports, are interdependent. This issue is further discussed on the following page.

[4] Ref. AC-150/5300-13A
[5] Memo from AWP-1R dated August 6, 2006
[6] IAW AC 150/5300-13A, Runway Safety Area width for a Runway Design Code of D-II is 500 feet.

Phoenix TRACON is the IFR controlling facility for the SDL Airport. IFR release authority, as well as the sequencing of inbound IFR arrivals, is accomplished by the BILTMORE RADAR Sector. BILTMORE is located within Area-B of the Phoenix TRACON. Because of the proximity of SDL to the Deer Valley (DVT) and Phoenix Sky Harbor (PHX) airports, many of the IFR operations that take place within BILTMORE between the three airports are dependent.[7]

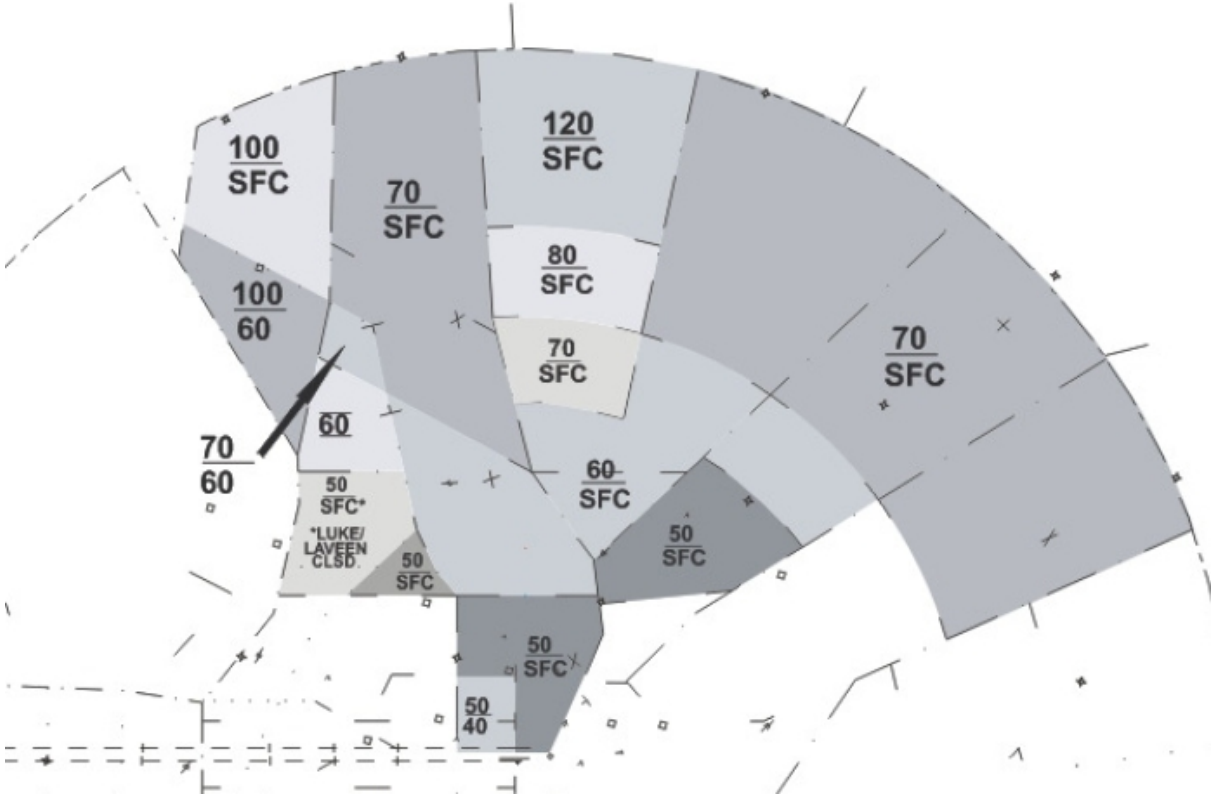
Figures 2 and 3 depict the STARS video maps for the BILTMORE RADAR Sector in both configurations.

Figure 2-BILTMORE West Flow



[7] FAA Order JO 7110.65

Figure 3-BILTMORE East flow



TSS simulation was conducted on March 21, 2013, and it was revealed that the new ATC procedures (colloquially referred to as the one-way ***"racetrack"*** procedure), as well as the taxiway sterilization procedures for Design Group 3 aircraft, required in support of the hold-line relocation, will have an impact on the airport's VFR arrival/departure capacity and IFR AAR/ADR. In addition, it was determined that this, in turn, had the potential to adversely impact P50 TRACON's traffic flow by causing delays to arriving and departing aircraft at SDL, DVT and potentially PHX as well. No-Notice holding must also be anticipated.

To provide the SRMD decision makers with an adequate frame of reference, the following is a chronological progression of meetings, topics, and discussions that took place addressing this hold-line relocation issue.

Spring of 2001:

Coffman & Associates Airport Consultants were contracted by the City of Scottsdale to complete a Runway Safety Area Standards Evaluation for the Airport.

December 2001:

Coffman & Associates completed the Runway Safety Area Standards Evaluation Report. This report is attached to this SRMD as Appendix A.

May 4, 2006-Meeting Decision/Course of Action:

The decision was made to form a team comprised of representatives from Terminal Operations Western Service Area, Western-Pacific Region Flight Standards and Airports Divisions, Aviation Systems Standards (Airspace Evaluation Procedures) and Western-Pacific Region Runway Safety Office. The team's purpose was to develop a plan to bring SDL runway holding position markings up to standards or to provide an equivalent level of safety through revised ATC procedures or other actions. The plan included a near-term interim strategy that instituted control measures by providing an acceptable level of safety and a long-term strategy to effect changes that would bring the airport up to standards. Five options discussed were:

1. Maintain the status quo
2. Move the holding position lines to meet standards
3. Change the airplane design group and have the larger aircraft use an alternate airport
4. Implement some form of airport procedures as appropriate to ensure the continued safety of aircraft operations until standards are met
5. Move the existing runway holding position markings and signs to the very edge (throat) of the parallel taxiway

> ***Note: Based on the present geometry of the SDL airport, all of the parties involved in this SRMD, agree that, attaining the 250' standard is not currently possible. Moving the hold-line to the 250' standard would place the hold-line directly over the top on the taxiway centerlines on taxiways ALPHA and BRAVO.***

June 1, 2006 Meeting:

The AWP Airports Operations Team discussed the history of the holding position markings and the impact on traffic at SDL, if the markings were moved. In 2006, SDL ATCT indicated that moving the hold lines back to the parallel taxiway would all but halt their operations. Airports Division stated that, "the present positions of the lines were not acceptable under the current operating scheme".

The team reviewed the options brought forward during the previous meeting. Airports Division representatives indicated that they would work with the City of Scottsdale (airport sponsor) to develop pavement that would assist in bringing the airport up to modern standards, which may include but perhaps not be limited to, constructing run-up areas, turnouts, and physically moving taxiways.

Before proceeding, the team required additional information such as a determination on whether or not a wing tip in the Runway Obstacle Free Zone constituted a Runway Incursion, acquiring additional information regarding airport surfaces, standards, aircraft design groups, a sampling of traffic that operated at SDL and impact statements if lines were moved further back from the runway.

June 27, 2006 Meeting:

Runway Safety researched the regulations regarding the wings of taxiing aircraft extending into the Runway Obstacle Free Zone (ROFZ) and the impact, if any, of simultaneously conducting runway

operations. It was determined that a taxiing aircraft wing tip should not penetrate the ROFZ while conducting operations to associated runway.

Runway Safety also provided a quick reference sheet of standards and terms relating to runway holding position markings and airport surface areas, and aircraft design groups, which was disseminated by e-mail.

Airports Division developed a PowerPoint that contained slides of the Airport Layout Plan depicting the location of the runway holding position marking with a 200-foot ROFZ, which was disseminated by e-mail.

PHX TRACON provided two days (January 1/2, 2005), of SDL operations that contained aircraft call-signs, types of aircraft, and the time of day for both arrivals and departures. The information revealed that during this two-day period, the largest wingspan was the ASTR with a wingspan of 93 feet 6 inches and a Gulfstream III with a wingspan of 77 feet 10 inches.

Runway Safety used the SDL operations data to sample the volume of traffic by type aircraft that operated at SDL. There were no aircraft operating at SDL with a wingspan wider than 94 feet in the two-day sample. With the Hold-Lines moved to 200 feet, aircraft of less than 100-foot wingspans may taxi without the wing tip penetrating the ROFZ, provided the aircraft are aligned with the taxiway centerline. This fact has been a source of controversy with the Office of Runway Safety and the ADO providing ATC at times, with conflicting direction. The most recent direction by the Office of Runway Safety is that operations to the active runway must be suspended anytime a design category three (3) aircraft is present on either taxiway ALPHA or BRAVO.

Figure 4 shows an aerial photograph of the distances contained in the preceding paragraph. For reference, the white runway edge line can be seen in the very lower right corner of the photograph.

Figure 4 –Revised Hold-Line Relocation

The yellow pin denotes the new proposed position of the Hold-Lines at 200 feet.

SDL Tower provided an impact assessment for Options 4 and 5. There were no alternative procedures identified suitable to the Office of Runway Safety that would provide an equivalent level of runway excursion safety such as moving the lines further from the runway centerline.

Although local businesses requested to discuss delay impact as it relates to finance and business efficiency, these areas of concern were beyond the scope of the panel and therefore were not discussed. The panel did discuss the operational and safety impact of moving the runway holding position lines back to 200 feet on operations and local businesses. The concern of ATC was the potential congestion on the taxiways and the resulting backup of traffic for both SDL arrivals and departures.

Major concerns brought forth at the meeting were:

1. Impact on businesses when delays are incurred by congestion on the taxiways.

2. A significant increase of workload for air traffic regarding coordination between LC and GC for aircraft exiting the runway, de-conflicting opposite-direction traffic on the taxiway, and added runway crossings.

3. Additional wake turbulence concerns with the use of intersection departures at Taxiways A3, B3, A13, and B13.

4. Traffic flow concerns resulting from the new configuration and an overall inability to have aircraft exit the runway and hold short of the parallel taxiways.

2006 Determination:

AWP Airports Division and the ATO Office of Runway Safety advised that the decision to move the runway holding position marking back to 200 feet from the centerline of the runway is the first step to bringing the airport up to standards thus providing additional runway safety area in the event of a runway excursion. The SDL ATM and the Arizona District Safety Assurance Department did not agree and felt that relocating the taxiways would be the natural first step. According to the ADO, the near term plan is to work with the airport to build new run-up areas and turnouts that would permit the movement of traffic that would otherwise be restricted with the relocation of the runway holding position markings. The long-term goal would be to work with SDL airport to develop a plan that would permit the airport to meet standards.

The Airport Division agreed to make a special effort to include the funding of the building of run-up areas, turnouts, the repainting of the runway holding position markings and moving the runway holding position signs in FY07 AIP if the sponsor revised its ACIP.

This action would have given ATC about 1 year to develop and train on the new procedures and to acquire additional staffing for a new Local Assist position, which would be developed to accommodate

the relocation of the hold-lines. Additionally, the Office of Runway Safety stated that this would provide the time necessary to educate the airport users of the changes in airport design and procedures.[8]

The Airports Division, in an effort to support the movement of the Hold-Lines and continue the optimum flow of traffic at SDL will work with the airport in:

1. Building new holding bays/run-up areas to replace the existing holding bays that would be lost due to moving of the holding position lines.

2. Paving the northwest section of the airport, providing the room to taxi aircraft to a new run-up area and the approach end of Runway 21. This would cause the airport to lose tie- down spots and the area used to conduct engine and prop testing.

3. Developing new pavement that would assist in bringing the airport to standard

To that end, in 2007, the airport sponsor entered into negotiations with a tenant to buy back leases on a hangar building, which would need to be razed in order to make room for the relocation of the west parallel taxiway ALPHA. This was done pursuant to the commitment from AWP ADO to: ***"make a special effort to include the funding of the building of run-up areas, turnouts, the repainting of the runway holding position markings and moving the runway holding position signs in FY07".***

Unfortunately, however it was subsequently determined that the hangar lease buy-back was not AIP grant eligible and the City lacked the financial resources to continue with the buy-back absent AIP grant funding.

One major issue is the high proportion of light aircraft that exit Runway 21 towards Taxiway ALPHA, typically at A10, A11 and A12, inbound to the terminal ramp areas. A significant number of aircraft also use Taxiway ALPHA outbound from the terminal ramp to Runway 21. Under the existing holding position marking configuration, light aircraft exiting onto A10, A11 and A12 may clear the runway and hold short of Taxiway A until outbound traffic clears and/or is held short of A6 or A7. ATC believes that the only viable way to routinely work moderate to heavy volume would be to:

1. Hold outbound aircraft on or near the ramp, often needlessly, to determine if aircraft were exiting opposite direction;

   and/or

2. Create a one-way ***"race track"*** taxi pattern around the runway using the parallel taxiways ALPHA and BRAVO.[9] This option appears to satisfy the nose-to-nose and ground collision concerns. This procedure would entail requiring many landing aircraft to exit the runway on the opposite side from where the aircraft parks and then taxi down the taxiway for a subsequent runway crossing down field, or alternatively, exit the runway by turning the wrong direction (toward the approach end of Runway 21), followed by instructions to pull

[8] This decision predated the ATO SMS process but was never implemented. Current SMS process do not allow for the decision implementation described without the current required level of SMS process.
[9] Direction of one-way taxi operations would be flow dependent based on the runway direction in use.

into a non-movement area; i.e., Kilo ramp, etc., until outbound traffic was cleared or held. This requirement would be present anytime the outbound parallel taxiway was in use and in-trail spacing on the FAC, prevented the landing aircraft from rolling long for a runway exit downfield. In addition, this scenario would also be required when filling a departure hole with minimum in-trail spacing on the final. It would also require runway crossings for outbound taxiing aircraft during periods of high volume, to establish the departure on the correct side of the runway for the one-way taxi outbound including some double runway crossings. Significant workload increases to both the Tower Local and Ground Control positions would frequently result, as would pilot workload, inbound and outbound taxi times.

ATC was concerned that this procedural change simply shifts the risk from an incident with a historically low rate of occurrence within the NAS, estimated at 3.25 excursions per million operations, to incidents involving a significantly higher rate of adverse occurrence (runway incursion) within the NAS. The FAA Office of Runway Safety has provided well-settled metrics involving runway incursions, as occurring at a rate of 23 incidents per million flight operations within the NAS. Although the Office of Runway Safety has publically stated that they began compiling excursion statistics in September 2011, they have thus far, been unable to provide the panel with any excursion statistics. According to the ICAO Runway Safety Directorate the total veer-off excursion metric for ICAO member states is 3.25 per million operations. The data from ICAO and other European Aviation sources indicates that in the takeoff phase, 40 percent of all runway excursions are veer off excursions while in the landing phase, 53 percent are veer off excursions.[10]

We reasonably believe the NAS runway excursion rate to be higher than the ICAO rate, based on the greater number of GA operations in the United States, general lack of night VFR operations in Europe where the practice is highly discouraged or banned by regulation, i.e., Ireland, Sweden etc., and differing rules on intersection departures. But again, absent any reliable data from the Office of Runway Safety the SRMP was forced to use the ICAO statistics.

While ATC certainly agrees that increasing the runway to hold line distance will create an increase in the margin of safety in the event of a veer off runway excursion, they believe that the change, when implemented, has the potential to have the exact opposite of the desired effect and will ultimately result in a serious degradation of safety at the SDL. ATC bases this assertion on the forecast significant increase in runway crossings and the well-founded historical metric regarding the relationship between runway crossings and runway incursions. It is very important to note that this concern, which drove the high-risk hazard initial and residual risk determinations by the SRMP, was ultimately supported by hard data and simple math.

While these issues are best adjudicated by and through the SRM process itself, i.e., mitigation strategies etc., it forms the core basis of present safety concerns and has been therefore included in this introduction to allow the reader/decision maker greater insight into the discussions and processes captured in the sections that follow.

Accordingly, a safety analysis has been conducted for the new ATC procedures required to support the Hold-Line Relocation. The purpose of the safety analysis was to apply the FAA-defined Safety Risk Management (SRM) process in the FAA Safety Management System (SMS) Manual, Version 2.1 dated

[10] "A Study of Runway Excursions from a European Perspective" http://www.skybrary.aero/bookshelf/books/2069.pdf

May 2008 to the proposed ATC procedural changes in order to ensure that the actions of the ATO, the Airport Sponsor, and system-users identify and mitigate hazards and risks associated with the proposed ATC procedural changes.

Present Day:

SDL supports corporate, small general aviation and some limited military aircraft, serving a large population in central Arizona. SDL has one runway.

The safety analysis identifies, assesses, and determines mitigations for operational safety hazards to air traffic operations at SDL associated with new ATC procedures in support of the Hold-Line Relocation. The safety analysis addresses impacts to both airborne and ground traffic operations. The Safety Assurance Department, Arizona District and the WSA QCG, Organizational Evaluations Branch organized the SRMP.

The SRM process involves five phases:

- Describe the system
- Identify the hazards
- Determine the risks
- Assess and analyze the risks
- Treat the risks (i.e., mitigate, monitor and track)

Section 1 – Current System (System Baseline)

Scottsdale Airport (SDL) has a single runway. Runway 3/21 has a length of 8249 feet and a width of 100 feet (2514 x 30 m).

The runway has two full-length parallel taxiways; Taxiways ALPHA and BRAVO. Figure 4 on the next page shows the current SDL airport diagram. The current 250 feet runway and parallel taxiways separation meets AC-5300-13A Runway Design Code of a B-II with visibility minimums not lower than ¾ mile.[11]

Below is a listing of the instrument approach systems at SDL:

RNAV (GPS) D
RNAV (GPS) E
RNAV (RNP)-Z RWY 3
VOR C
RNAV (RNP)-Y RWY 3
RNAV (RNP) RWY 21
VOR/GPS-A

Table 2 indicates the historical percentages of operations on the runway filtered by aircraft type/category, as well as future predictions. The tables were assembled by the Panel to evaluate and

[11] Runway Design Code of a B-II with visibility minimums not lower than 3/4 mile is purely based on the runway to parallel taxiway separation. The standard runway to parallel taxiway separation for a B-II with visibility minimums not lower than 3/4 mile is 240 feet. This separation standard is for sea level. At higher elevations, an increase to the separation distance may be required to keep taxiing and holding aircraft clear of the inner-transitional OFZ (refer to AC 150/5300-13A, paragraph 308c). Using this standard to justify a decrease in runway to taxiway/taxilane separation in not permitted.

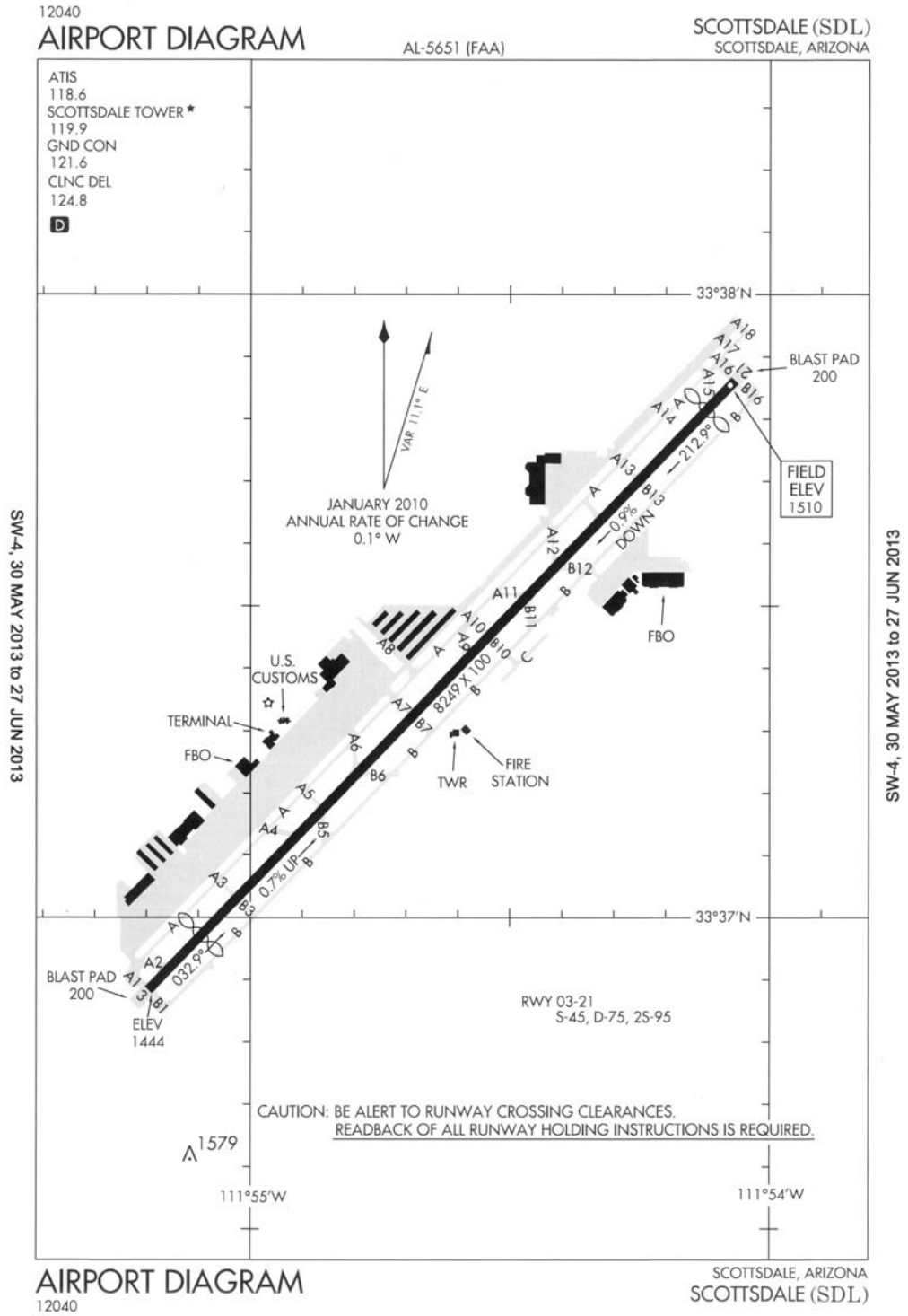
predict the impact of the Hold-Lines change on ATC operations and were subsequently updated with the most current data for inclusion into this SRMD.

Table 2: SDL Fleet Mix and Fleet Mix Forecast[12]

DESIGN CATEGORY	2012	2017	2022	2027	2032
A-I	534	620	697	705	619
B-I	4,384	5,049	5,714	6,462	7,386
B-II	9,491	10,842	12,263	13,863	15,789
B-III	127	155	209	392	442
C-I	2,649	2,788	2,961	2,937	2,742
C-II	6,531	7,435	8,187	9,007	10,172
C-III	388	558	836	1,136	1,548
D-I	924	929	941	940	885
D-II	2,168	2,602	3,031	3,720	4,644
D-III	Not Avail	--------**Insufficient data to calculate forecast**--------			
Total Jet Operations	27,196	30,977	34,839	39,161	44,226
Total Civ. Itinerant Ops.	89,513	93,870	99,540	105,840	113,400

[12] Source: TFMSC; Coffman & Associates Analysis

Figure 5 -: SDL Airport Diagram



Section 2 – Proposed Changes – Revised ATC Procedures; Re: SDL Hold-Line Relocation

In support of the Hold-line Relocation, SDL ATCT developed new ATC procedures. These overall philosophies of these new procedures are as follows:

1. Establish and maintain a one-way "racetrack" pattern around the runway during moderate or greater volume.

2. Sterilize the runway whenever a design category D3 aircraft is taxing on the parallel taxiways.

Section 3 – Safety Risk Management Planning and Impacted Organizations

The Safety Risk Management Panel associated with this study consisted of the major stakeholders involved with managing air traffic and the SDL airfield. The panel was organized by the, Safety Assurance Department, Arizona District and facilitated by WSA OSG. The change agent is the SDL ATCT. The Air Traffic Manager, Phoenix-Deer Valley ATCT who also served as the former Manager-Safety Assurance for the Arizona District, compiled the document as technical writer. The panel and/or portions of the panel met six times to discuss and determine the hazards associated with the change and complete simulation of the change.

The stakeholders associated with this effort were identified with the assistance of Western Terminal Service Area SMS/SRM Team. The SRM panel met on August 12, 2010 at the SDL airport and on September 28, 2010, October 26, 2010 and January 25, 2011 at the Phoenix Tower/TRACON to discuss hazards, risks, mitigation strategies, and other related issues. These meetings were followed up with TSS simulation on March 21, 2013. Table 6 below lists all the panel members who participated in identifying and mitigating the hazards. It is important to note that due to the enlarged time-frame from the start of the SRM process until the completion of this SRMD, many of the panel members have changed positions or roles and/or retired from the Federal or Private Sector. The table below identifies the panel participants and/or SMEs based on their position at the time most germane to their participation in the process. Also, not all panel members participated in every meeting as the scope of some meetings were tailored in such a way that full participation would be unnecessarily costly.

Table 3- SRM Panel (in alphabetical order)

SRM Panel Members	Organization/Qualifications	Panel Role/E-mail	Phone Number
Mary Anne Addis	FAA ATO, ATCS SDL ATCT, P50 TRACON, DVT ATCT, CRQ ATCT. 25 years ATC.	SME mary.a.addis@faa.gov,	480.609.7585
Dan Burkhart	NBAA	SME-Pilot dburkhart@nbaa.org	202.415.1296
Ruben Cabalbag	Acting Manager, AWP ADO	SME-Airports Ruben.Cabalbag@faa.gov	310.725.6688
Ken Casey	Director, Pinnacle Aviation	SME-Pilot/FBO Operator kc@pinnacleaviation.com	480.998.8989
Kimberly Ann Cooley-Miller	FAA ATO, ATCS SDL ATCT, JNO ATCT, DVT ATCT. 22 years ATC.	SME kimberly.a.cooley@faa.gov	480.609.7585

SRM Panel Members	Organization/Qualifications	Panel Role/E-mail	Phone Number
Tim Crea	CPC, P50 TRACON/NATCA Rep.	NATCA Rep. (VP) timothy.crea@faa.gov	480.609.7585
Tim Deaton	CPC, SDL ATCT/NATCA Rep.	NATCA Rep. Tim.Deaton@faa.gov	480.609.7585
Chris Diggons (IPM and 1st Mtg. only-replaced on panel by J. O'Leary)	Asst. Program Manager, AWP Office of Runway Safety	SME-Runway Safety Chris.Diggons@faa.gov	310.725.6705
Curt Faulk	Manager, Operations Support, AZD	SME-ATC/Procedures Curt.Faulk@faa.gov	602.306.2514
Paul Gaudette	General Manager, Landmark Aviation	SME-Pilot/FBO Operator pgaudette@landmarkaviation.com	480.443..7270
Mark Guan	AWP Airports Program Manager	SME-Airports Mark.Guan@faa.gov	310.725.3626
Jim Guthrie	FAA SDL FSDO	SME-Pilot/Regulation James.H.Guthrie@faa.gov	602.379.4864
James M. Harris	President, Coffman & Associates; B.S. in Civil Engineering University of Nebraska, 31 Yrs. Exp. Exclusively in Airport Planning Registered Professional Engineer Arizona, MEMBER: American Association of Airport Executives, American Society of Civil Engineers, Arizona Airports Association, AOPA; Jim has been involved in more than 200 airport planning assignments and has managed more than 70 airport master plans. Jim has established a continuous services program with many of his clients to provide airport management to effectively plan, coordinate, finance, design and construct airport development projects.	SME-Airport Design jmharris@coffmanassociates.com	602.993.6999
Kurt Haukohl (IPM and 1st Mtg. only-replaced on panel by J. O'Leary)`	Analyst, AWP Office of Runway Safety;	SME-Runway Safety Kurt.ctr.Haukohl@faa.gov	310.725.6688
Jackie Jacobs	FAA ATO, Air Traffic Manager SDL ATCT, Operations Manager C90, Frontline Manager ZOB ARTCC, Staff Support Specialist CID ATCT, Certified Controller CID ATCT, CVG ATCT, ZOB ARTCC. 8 years as Manager. 22 years ATC.	SME jacqueline.m.jacobs@faa.gov	480.609.7585
Chris Kleen	FAA WTSA QCG	SME-ATC Chris.Kleen@faa.gov	

SRM Panel Members	Organization/Qualifications	Panel Role/E-mail	Phone Number
Bob Little	FAA P50 TRACON	SME-ATC (Area B) Bob.Little@faa.gov	602.305.2566
Gary Mascaro	Aviation Director, City of Scottsdale	SME/Airport Sponsor gmascaro@scottsdaleaz.gov	480.312.7735
Dave L. Miller	FAA ATC SA-AZD 28 years ATC experience. 3 yrs. Exp. PHX/AZ District Safety Assurance. 15 years FLM, RNO ATCT/TRACON. 2 years Training Specialist/Quality Assurance Specialist, Burbank TRACON/DISTRICT. 3 years ATC experience Burbank TRACON. 28 years ATC experience. 5 years ATC Experience MSN ATCT/TRACON.	SME-ATC/CO-DC Dave.L.Miller@faa.gov	602.306.2525
Tom Norwood	P50 TRACON TMU/ BDL TRACON PVD Tower/TRACON. Last 15 years at P50; first seven as ARTS specialist. Traffic Management Coordinator since 2002. ARTS specialist at A90 TRACON.	SME-ATC/TMU Tom.Norwood@faa.gov	602.306.2561
John O'Leary	FAA Retired, Former ATM LAX ATCT	SME-Runway Safety John.CTR.O'Leary@faa.gov	310.725.6684
Steven Oetzell	AWP Airports Div. Safety Insp. Presently FAA Safety Management System Specialist for the Western-Pacific Region. Retired Captain for Continental Airlines with over 15,000 hours flight experience. Has over two years field experience in Airfield Operations and has four years' experience in FAA as an Airport Certification/Safety Inspector.	SME-SRM Steven.Oetzell@faa.gov	310.725.3611
Neal Osborne	FAA WTSA QCG	FACT Neal.Osborne@faa.gov	425.203.4373
Steve Raulston	FAA Front Line Manager, SDL ATCT	SME-ATC Steve.Raulston@faa.gov	480.609.7585
Chris Read	Aviation Department, SDL Airport	SME/Airport Sponsor cread@scottsdaleaz.gov	480.312.2674
Brian Ready	NBAA,	Alternate SME-Pilot bready@sri-az.com	623.298.0513
Eugene Riley	FAA ATO, ATM DVT ATCT, TMO Phoenix Tower/TRACON, Manager-Safety Assurance- AZD, Operations Manager P50, FLM P50 TRACON, PDX ATCT, AWO ATCT, Staff Splst. P80/PDX, Certified Controller MXF ATCT, VCV RAPCON, VOK RAPCON, ZDV ARTCC, P80 TRACON, PDX ATCT, AWO ATCT, P50 TRACON. 19	CO-FACT/DC Eugene.Riley@faa.gov	602.306.2503

SRM Panel Members	Organization/Qualifications	Panel Role/E-mail	Phone Number
	years as Manager. 33 years ATC. Credentialed Aviation Safety (Accident) Investigator (ISASI). 31 years Private Pilot, ASEL, FAA GSI (Basic).		
Art Rosen	Private Pilot	SME-AOPA Designated Rep. aopa@cox.net	
Mark E. Taylor	FAA WTSA QCG	Lead FACT Mark.E.Taylor@faa.gov	425.203.4353
Rob Voss	FAA ATM SDL ATCT, 22 years ATC experience, SDL, MDW, SFO, STS and SQL ATCTs. 3 years facility support specialist, 5 years management. Experience as airport ATC consultant and as the NASA air traffic research analyst specializing in airport design/ATC issues.	SME-ATC Rob.Voss@faa.gov	480.609.7585
Tommy Walker	General Manager, Scottsdale Air Center	SME--Pilot/FBO Operator twalker@scottsdaleaircenter.com	480.951.2525
Leemay Wu	FAA ATC SA, AZD Worked for FAA for 8 years as a contractor on NY/NJ/PHL Metro Area Airspace Redesign Project. Employed by FAA. Presently at P50 for 2 years as Safety Technician.	CO-DC Leemay.Wu@faa.gov	602.306.2513

Section 4 – Assumptions

The panel compiled a list of assumptions in order to make the Panel evaluation as efficient as possible during discussions. Scottsdale ATCT and SDL Airport City Operations determined the assumptions. Below is a list of the assumptions associated with the Hold-Line Relocation change:

- Scottsdale ATCT and the Phoenix TRACON Area-B controllers will be fully briefed on the change.
- Traffic Management (TMU) programs will be in place during projected peak traffic periods consistent standard TM processes.
- SDL ATCT will staff recommended positions during peak traffic periods. This will include opening Clearance Delivery/Flight Data as a stand-alone position (vs. combined with ground control).
- The City of Scottsdale will conduct briefings to the airport users explaining the change and issue required NOTAMs.
- Other existing airfield lighting, signing, and marking conform to FAA standards on the runway and taxiway.
- The City of Scottsdale Airport Operations staff conducts full-length runway and safety area inspections daily.
- All of the Hold-Lines (paint) would be changed during a single 8-hour mid-shift when the ATCT is closed.

- Signage would be relocated ASAP after the change in implemented.
- Airports Division would issue an approved Modification to Standards at 200 feet from runway centerline.[13]

The SDL ATCT ATM, SDL Airport Operations Department and the Western Desert Quality Control (formerly Safety Assurance) Department will closely track all assumptions.

Section 5 – System Description

SDL ATCT is a terminal air traffic control (ATC) facility that provides traffic advisories, spacing, sequencing, and separation services to visual flight rules (VFR) and instrument flight rules (IFR) aircraft operating on the surface of the airport and within the tower delegated airspace surrounding the airport.

ATCS' at SDL use a combination of direct observation and pilot reports to direct traffic on the airport surface. The controllers give pilots instructions to operate on the airport movement area so traffic flows smoothly and efficiently. Air traffic controllers at SDL use a combination of direct observation and certified STARS RADAR displays to control airborne traffic. The complexity of the operation is a function of traffic volume and airport surfaces available to move aircraft.

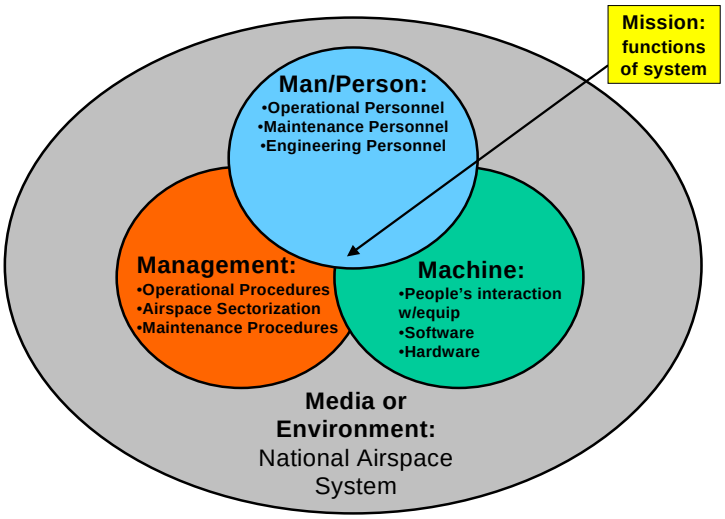
P50 TRACON is a terminal air traffic control (ATC) RADAR facility that provides traffic advisories, spacing, sequencing, and separation services to visual flight rules (VFR) and instrument flight rules (IFR) aircraft operating within their delegated airspace.

Air traffic controllers at P50 TRACON primarily use STARS displays to direct traffic in the TRACON airspace. A large portion of TRACON airspace has been designated Class B airspace. The controllers give pilots instructions to operate in the airspace so traffic flows smoothly and efficiently. The complexity of the operation is a function of traffic volume, available runways at the various airports and Traffic Management initiatives in place.

The 5M model, as described in the ATO SMS Manual, was used as a reference to assist in ensuring that all necessary and relevant information was captured in the system description. The 5M model is shown on the following page in Figure 6.

[13] The hard 250' standard plus elevation correction cannot possibly be obtained due to airport geometry.

Figure 6 – 5M Model



Mission:
Provide safe and efficient operation of SDL and the air traffic system.

Hu (Man):

ATC Specialist (CPCs)	Pilots (Patrons & Participants)
Airport Management	Tech-Ops
Flight Standards	Flight Service Personnel
Airports Division	SDL Airport Rescue and Fire Fighting (ARFF)
Military Operators	Flight Procedures
Airlines	System Ops
Fixed Base Operators	Operations Support Group

Management:

FAA Order 7110.65	FAA Order 7210.3
SDL Order 7110.1 (SOP)	FAA Order 7210.634
P50/ZAB ATC LOAs	Letters to Airman
NOTAMS	Advisory Circulars
FAR Part 91	SMS Manual Version 2.1
P50 Order 7110.1 (SOP)	ATSAP Program

Machine Element:

Airfield Lighting	Aircraft
Navigational Aids	Airport Signage
STARS (incl. Tower display)	Ground Moving Map (Garmin, Honeywell etc.)

Media/Environment:

The environment or portion of the National Airspace System (NAS) affected by this project is the Scottsdale Airport/delegated airspace/airport movement area the P50 TRACON airspace and to a small extent the Phoenix-Deer Valley ATCT (due to the interdependency of IFR arrival/departure procedures).

Section 6 – Identified Potential Hazards

The Panel has identified the possible hazards associated with the SDL Hold-Line Relocation. See Appendix B for the Preliminary Hazard Analysis and Matrix. Below is a detailed description of the hazards identified during the panel meetings.

Description of Hazards

SDL 1 – This hazard captures the SRMPs concerns that the Ground Controller could become overloaded due to limited infrastructure availability, increased runway crossings and sterilized operations for Design Group 3 aircraft. The result of this overload was deemed to be a potential for a Category A RI with LoSS.

SDL 2 – This hazard captures the SRMPs concerns that the Local Controller could become overloaded due to loss of reduced runway separation capability, increased spacing/workload runway operations and sterilized operations for Design Group 3 aircraft. The result of this overload was deemed to be a potential for a LoSS.

P50 3 – This hazard captures the SRMPs concerns that the TRACON Biltmore Controller could become overloaded due to the requirement for additional delay vectors, no-notice holding and additional required in trail spacing/enhanced TM involving Design Group 3 aircraft. The result of this overload was deemed to be a potential for a potential LoSS involving less than 33percent of the required separation.

SDL 4 – This hazard captures the SRMPs mathematical concerns that established metrics predict that as a result of the new "racetrack" pattern ATC procedure and the associated increase in runway crossings (many in the high energy segment of the runway) SDL will experience a significant increase in runway incursions that could lead to a Category A RI or LoSS of separation on the runway.

SDL 5 – This hazard was identified by a prior Air Carrier Captain/SRMP member and thus captures the SRMPs concerns that there is a potential for poor visibility for pilot's holding short to cross the runway; i.e., FAC may be behind the aircraft rather than at 90°angle. Possible outcome was determined to be a Category C RI.

SDL 6 – This hazard captures the SRMPs concerns that low altitude go-arounds will increase due to the requirement to turn arriving aircraft off at the end or hold on the runway for traffic on the parallel taxiways. Possible outcome was determined to be an airborne LoSS.

SDL 7 – This hazard captures the SRMPs concerns that ATC may influence a runway excursion via attempting to seek compliance from a flight crew to exit the runway prior to what is prudent under the circumstances. Possible outcome was determined to be a runway excursion.

SDL 8 – This hazard captures the SRMPs concerns that the SDL could cause an unauthorized Class B airspace penetration (LoSS) due to extended VFR down-winds in support of the expanded in-trail requirement and/or movement area sterilization required for Design Group 3 aircraft. Possible outcome was determined to be a LoSS (legacy OD).

SDL 9 – This hazard captures the SRMPs concerns that there may be confusion with local pilots due to the new markings; resulting in a Category C RI.

Section 7 – Hazard Analysis & Risk Assessment

The safety Risk Management Panel (SRMP) methodology for risk analysis is based on the approach outlined in the FAA's System Safety Management Program and the five-step process detailed in the SMS Manual:

1. Describe the System
2. Identify the Hazards
3. Analyze the Hazards
4. Assess the Risk
5. Treat the Risk

7.1 Hazard Analysis:

The Preliminary Hazard Analysis (PHA) form was developed to record the hazards, causes, system states, existing controls, possible effects, severity rationale, likelihood rationale, current risk, recommended safety requirements, and predicted residual risk. The completed PHA is found in Appendix B.

7.2 Risk Assessment:

Risk is the composite of predicted severity and likelihood of the potential effect of a hazard in the worst credible system state. Each hazard was evaluated by two factors; first the severity was determined using Table 8, followed by a determination of likelihood using Table 9. These tables used to determine the severity and likelihood were derived from the SMS Manual (Table 3.3 and 3.4 in the SMS Manual). Risk is determined by the two factors: severity of consequence and likelihood of occurrence. Risk is not determined simply by the likelihood that the hazard will occur, but that the worst credible outcome will occur. The Risk Matrix, described in Chapter 3 of the FAA SMS Manual, Version 2.1 (Table 3.9), was used to determine the current ("initial") risk of each hazard.

The SRM Panel identified the severity and likelihood of each hazard, as described above. Appendix B shows the severity and likelihood along with the rationale for the adopted severity and likelihood for each hazard. The severity and likelihood of the risk for each hazard was determined on the basis of qualitative data derived from the subject matter experts on the Panel. The Hazard Analysis and Risk Matrix can be found in Appendix B.

Following is additional rationale on the hazards identified above:

Note: The worst credible system state was defined as high volume operations between sunset and sunrise consistent pursuant to the 4-5 scheduled special events per year; i.e., bowl games, Barrett-Jackson, Phoenix Open PGA, etc., where SDL sees these significantly higher traffic counts. See Appendix D photographs.

SDL 1 – In keeping with the worst credible system state, the SRMP cited an increase in controller workload, new taxi procedures (racetrack), new design category D3 movement area sterilization procedures and overall additional coordination resulting from these changes as possibly causing a loss of ground controller situational awareness. The panel discussed how the racetrack pattern would operate and potential traps at the connector taxiways. After a discussion of approximately 1 hour, in which consensus could not be reached, a vote of panel members determined that although likelihood was considered remote, this loss of situational awareness could result in a Category A RI with a LoSS in the low energy portion of the runway since that is where we anticipate most crossings will occur. The SRMP did discuss the potential for a LoSS in the high-energy segment however the consensus was that these crossing would be so infrequent that a LoSS in this location was not credible. The Office of Runway Safety and the ADO did not concur with the Severity and Likelihood determinations by the majority panel members and dissented.

SDL 2 – The SRMP cited an increase in controller workload, new taxi procedures (racetrack), larger D3 aircraft sterilization procedures and overall additional coordination as possibly causing a loss of local controller situational awareness. The panel discussed at length how the LC would manage turn-offs, pinch points at the connector taxiways, and maintaining awareness with aircraft on the FAC with the runway occupied by a landing and departing aircraft. After a lengthy discussion, in which consensus could not be reached, a vote of panel members determined that based on the established credible system state of night operations and heavy volume, there was a remote chance that a loss of situational awareness could result in a Category A RI with a LoSS. The Office of Runway Safety and the ADO did not concur with the Severity and Likelihood determinations by the majority panel members and dissented.

P50 3 – The SRMP cited an increase in controller workload, no notice holding, the interdependency of SDL/DVT/PHX instrument procedures, enhanced in-trail and more complex TM initiatives; i.e., FEA, FCA etc., as possibly causing a loss of controller situational awareness. The panel discussed the current coordination procedures between the P50 TMU and the Area B controllers. Also discussed were the current routes into SDL both from P50 and LUF RAPCON, and the complexities from a TM standpoint. The panel discussed the potential to more routinely establish a FCA or at a minimum a FEA and/or other TMIs. GDPs were discussed with the most likely programs being required cited as either a UDP or GAPP. Because of these added complexities there was a consensus by the SRMP that the Biltmore RADAR controller could experience a loss of situational awareness resulting in a LoSS. Via statistics from Super-Bowl XLII, in which the Biltmore sector experienced 2 Operational Errors (one involved a NMAC) in one day (February 4, 2008-day after the game), the SRMP found the likelihood to be probable considering the position of operation would be even more complex than it was in 2008. The Office of Runway Safety did not concur with the Severity and Likelihood determinations by the majority panel members including the ADO, and thus dissented.

SDL 4 – The SRMP cited an increase in controller workload, new taxi procedures (racetrack), larger D3 aircraft sterilization procedures, and overall additional coordination as possibly causing a loss of

controller situational awareness. Although all ATC SMEs were in agreement on this hazard based on their experience, it was thoroughly supported via established metrics and the applied mathematics based on those metrics and statistics. Based on the established metric of 23 runway incursions per million operations, along with the sheer volume of new runway crossings (racetrack procedure) SDL would expect to see an incursion increase by an order of magnitude. Based on the math alone the SRMP established the likelihood as probable and this combined with the definition of a runway incursion prima facie as hazardous resulted in the finding of 2B within the matrix. The Office of Runway Safety and the ADO did not concur with the Severity and Likelihood determinations by the majority panel members and dissented.

SDL 5 – This panel discussed this hazard and the concern of a potential for poor visibility for pilot's holding short to cross the runway; i.e., FAC may be behind the aircraft rather than at 90°angle. Possible outcome was determined to be a potential for a Category C RI at the departure (low energy) end of the runway. Research by the panel revealed that this hazard is widely present at a great number of airports in the NAS and its widespread effect and lack of any significant adverse data contributed to the panel's finding of a remote likelihood. The panel obtained consensus.

SDL 6 – There was quite robust discussion on this potential hazard and the SRMPs concerns that low altitude go-arounds will increase due to the requirement to turn arriving aircraft off at the end or hold on the runway for traffic on the parallel taxiways. The panel discussed that the in-trail on the FAC may diminish to the point where increased go-arounds will be realized. Due to the runway geometry, and available turn off connectors, this could result in go-arounds within 1 mile of the threshold where the aircraft will be operating at a lower altitude in a "dirty" configuration. Notwithstanding the issue of a go-around itself there was significant discussion as to what impact the go-arounds would have and moreover, what hazards the go-arounds actually presented given that go-around's are not uncommon within the NAS. While the SRMP reached consensus on the likelihood as probable, the panel was sharply divided over severity outcomes. The panel took a vote and a LoSS involving 66 percent or more of the required separation was accepted as a reasonable outcome. The Office of Runway Safety and the ADO did not concur with the Severity determination by the majority panel members and dissented.

SDL 7 – This hazard captured the SRMPs concerns that ATC may influence a runway excursion via attempting to seek compliance from a flight crew to exit the runway prior to what is prudent under the circumstances. The SRMP representative from NBAA as well as an panel member, who previously worked as a Captain for a major US Air-Carrier, argued that this hazard while perhaps possible with an inexperienced pilot or student, would simply not be credible with a professional flight crew. After hearing this testimony from these SMEs, the SRMP concurred with that assessment and set likelihood as extremely remote. In addition, since the SRMP determined likelihood of such an incident would probably occur in a small aircraft operating a slow speed, the severity remained limited to minor as the SRMP did not feel that this type of excursion would result in injury or death beyond any likelihood of extremely remote. Consensus was obtained.

SDL 8 – This hazard captured the SRMPs concerns that the SDL Local Controller could cause an unauthorized Class B airspace penetration (LoSS-Legacy OD), due to extended VFR down-winds in support of the expanded in-trail requirement and/or movement area sterilization required for Design Group 3 aircraft. The SRMP was quick to reach consensus on this hazard and agreed that a credible outcome could be a LoSS. The SRMP further determined that this hazard was probable to occur after

the change and before the controllers became completely comfortable and proficient with the new procedures.

SDL 9 – This hazard captured the SRMPs concerns that there may be confusion with local pilots due to the new location markings; thus resulting in a Category C RI. Again, quick consensus was reached on this hazard. The SRMP discussed their belief that locally based pilots at airports are somewhat used to using other subtle visual clues in addition to the actual markings and signage. Pilots who have been used to stopping at a specific place hundreds or perhaps thousands of times over the years can experience issues when geometry changes are effectuated. The SRMP called upon FSDO SMEs and they verified they have seen this trend, albeit rarely, in the past. Although it is typically short lived it is a real potential hazard. Therefore the SRMP set likelihood as extremely remote but was in complete agreement that, if it did occur, it would certainly be classified as a runway incursion. Consensus was obtained.

Table 4 - Severity Definitions

Effect On: ↓	Hazard Severity Classification				
	Minimal 5	**Minor 4**	**Major 3**	**Hazardous 2**	**Catastrophic 1**
ATC Services	Conditions resulting in a minimal reduction in ATC services, or a loss of separation resulting in a Category D Runway Incursion (RI)[1], or proximity event.	Conditions resulting in a slight reduction in ATC services, or a loss of separation resulting in a Category C RI[1], or Operations Error (OE)[2]	Conditions resulting in a partial loss of ATC services, or a loss of separation resulting in a Category B RI[1], or OE[2]	Conditions resulting in a total loss of ATC services, (ATC Zero) or a loss of separation resulting in a Category A RI[1], or OE[2]	Conditions resulting in a collision between aircraft, obstacles, or terrain
Flight Crew	– Flight crew receives TCAS Traffic Advisory (TA) informing of nearby traffic, or, – PD where loss of airborne separation falls within the same parameters of a Category D OE[2] or proximity Event Minimal effect on operation of aircraft	– Potential for Pilot Deviation (PD) due to TCAS Prevention Resolution Advisory (PRA) advising crew not to deviate from present vertical profile, or – PD where loss of airborne separation falls within the same parameters of Category C (OE)[2], or Reduction of functional capability of aircraft but does not impact overall safety e.g. normal procedures as per AFM	– PD due to response to TCAS Corrective Resolution Advisory (CRA) issued advising crew to take vertical action to avoid developing conflict with traffic, or – PD where loss of airborne separation falls within the same parameters of a Category B OE[2], or Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per AFM	– Near mid-air collision (NMAC) results due to proximity of less than 500 feet from another aircraft of a report is filed by pilot or flight crew member that a collision hazard existed between two or more aircraft. – Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per AFM	– Conditions resulting in a mid-air collision (MAC) or impact with obstacle or terrain resulting in hull loss, multiple fatalities, or fatal injury.
Flying Public[1]	– Minimal injury or discomfort to passengers	– Physical discomfort to passenger(s) (e.g. extreme braking action, clear air turbulence causing unexpected movement of aircraft causing injuries to one or two passengers out of their seats) – - Minor[3] injury to greater than zero or less than\or equal to 10% of passengers.	– Physical distress on passengers (e.g. abrupt evasive action, sever turbulence causing unexpected aircraft movements) – - Minor[3] injury to greater than 10% of passengers	– Serious[4] injuries to passenger(s)	Fatalities[5] or fatal injury to passenger(s)

1 – As defined in the 2005 Runway Safety Report
2 – As defined in FAA Order 725L0.56, *Air Traffic Quality Assurance*, and Notice JO 725L0.663, *Operational Error Reporting, Investigation, and Severity Policies*
3 – Minor Injury - Any injury that is neither fatal nor serious.
4 – Serious Injury - Any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) Involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.
5 – Fatal Injury - Any injury that results in death within 30 days of the accident.

Table 5 - Likelihood Definitions

	NAS Systems & ATC Operational	NAS Systems		ATC Operational		Flight Procedures
	Quantitative	Qualitative				
		Individual Item/System	ATC Service/ NAS Level System	Per Facility	NAS-wide	
Frequent A	Probability of occurrence per operation/operational hour is equal to or greater than 1x10-3	Expected to occur about once every 3 months for an item	Continuously experienced in the system	Expected to occur more than once per week	Expected to occur more than every 1-2 days	Probability of occurrence per operation/ operational hour is equal to or greater than 1x10-5
Probable B	Probability of occurrence per operation/operational hour is less than 1x10-3, but equal to or greater than 1x10-5	Expected to occur about once per year for an item	Expected to occur frequently in the system	Expected to occur about once every month	Expected to occur about several times per month	
Remote C	Probability of occurrence per operation/operational hour is less than ~~or equal~~ to 1x10-5 but equal to or greater than 1x10-7	Expected to occur several times in the life cycle of an item	Expected to occur numerous times in system life cycle	Expected to occur about once every years	Expected to occur about once every few months	Probability of occurrence per operation/ operational hour is less than or equal to 1x10-5 but equal to or greater than 1x10-7
Extremely Remote D	Probability of occurrence per operation/operational hour is less than ~~or equal~~ to 1x10-7 but equal to or greater than 1x10-9	Unlikely to occur, but possible in an item's life cycle	Expected to occur several times in the system life cycle	Expected to occur about once every 10-100 years	Expected to occur about once every 3 years	Probability of occurrence per operation/ operational hour is less than or equal to 1x10-7 but equal to or greater than 1x10-9
Extremely Improbable E	Probability of occurrence per operation/operational hour is less than 1x10-9	So unlikely that it can be assumed that it will not occur in an item's life cycle	Unlikely to occur, but possible in system life cycle	Expected to occur less than once every 100 years	Expected to occur less than once every 30 years	Probability of occurrence per operation/ operational hour is less than 1x10-9

Section 8 – Treatment of Risks/Mitigation of Hazards

The SRM Panel identified the risks and then recommended safety requirements that would help mitigate or control the hazards thus, reducing the likelihood of the possible effects in each hazard. Below is a list of the hazards along with the recommended safety requirements determined by the SRMP.

Controls and mitigation for the medium and high initial risk hazards are described below and in section 9 of this report. Parties responsible for implementing mitigation strategies are also responsible for tracking said implementation throughout the change.

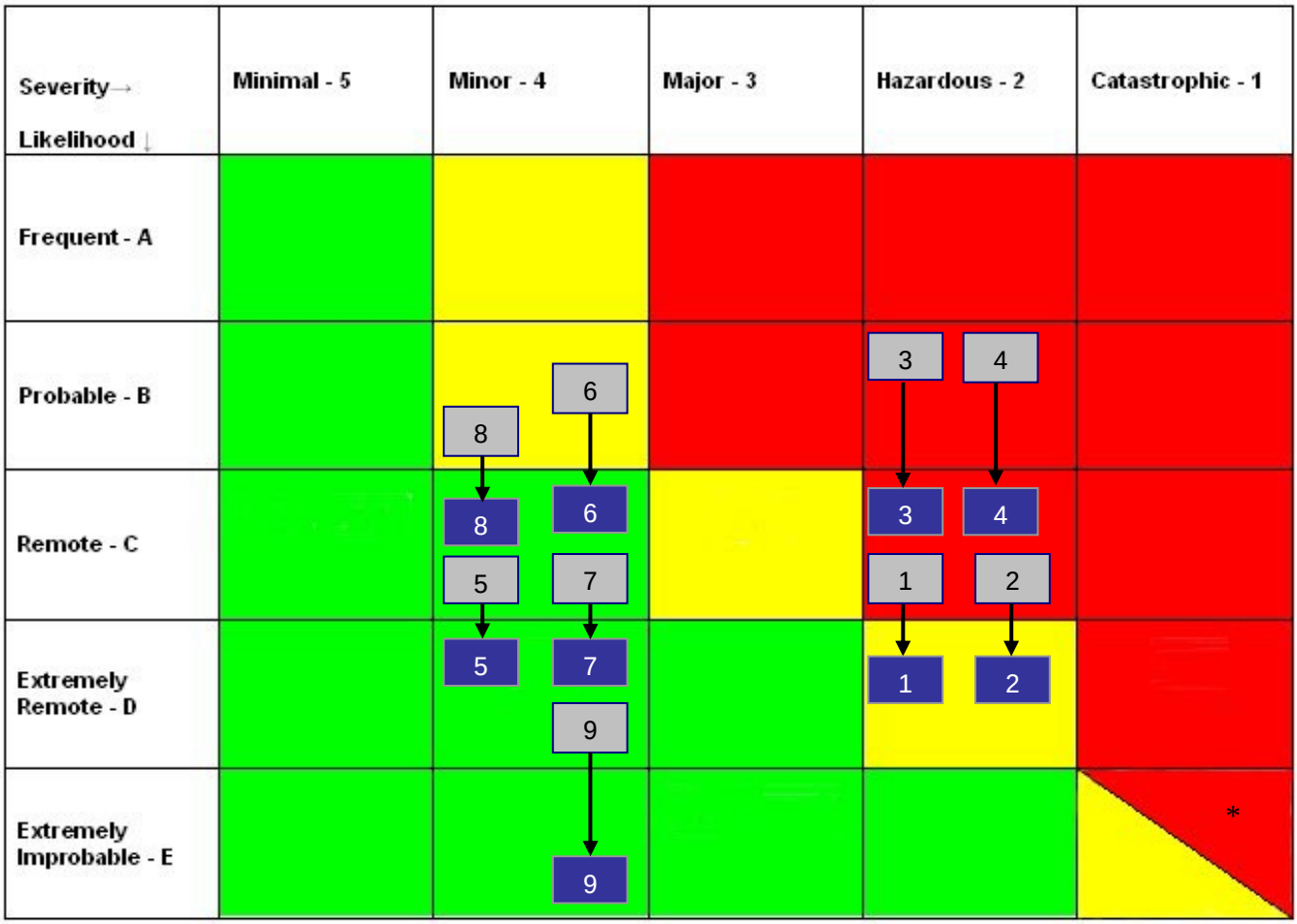
The panel also determined mitigations for the low risk hazards as well. These mitigations are also listed in Table 6 below. The SDL ATCT ATM and the City of Scottsdale Aviation Department will closely monitor all low risk mitigations for compliance before and after the change.

Table 6 - Recommended Safety Requirements

Hazard Number	Hazard	Recommended Safety Requirements
SDL 1	GC Loss of Situational Awareness	• Acquire ground based RADAR with Safety Logic; i.e., ASDE-X, ASDE /w AMASS • Install Runway Safety lighting
SDL 2	LC Loss of Situational Awareness	• Acquire ground based RADAR with Safety Logic; i.e., ASDE-X, ASDE /w AMASS • Install Runway Safety lighting • Develop a Local-Assist Position • Assign a P50 TMC to SDL ATCT during high profile events; i.e., Super-Bowl, Phoenix Open etc.
P50 3	P50 Loss of Situational Awareness	• Implement enhanced TMIs to include at a minimum a FEA/FCA for SDL/DVT during peak volume events and adjust MAP number. • Staff the Biltmore RADAR sector with 3 people during peak volume events. • Assign a dedicated TMC to manage the FEA/FCA.
SDL 4	Increased Runway Incursions	• Install RY safety Lighting and in-ground lighted hold bars
SDL 5	Poor Pilot Visibility-RY Environment	• Add informational note to AFD and other publications as appropriate.
SDL 6	Low Altitude Go-Arounds	• Acquire ground based RADAR with Safety

Hazard Number	Hazard	Recommended Safety Requirements
		Logic; i.e., ASDE-X, ASDE /w AMASS • Develop a Local-Assist Position
SDL 7	ATC Influenced RY Excursions	• Develop simulation problems based on this risk and require semi-annual simulation training in the TSS.
SDL 8	Unauthorized Class B Penetration	• Develop Local Assist Position • Consider tagging some VFR targets in STARS
SDL9	Pilot Confusion with Change/Signage	• Add informational notes to AFD and other publications as appropriate. • Install runway safety lighting including in-ground lighted hold-bars • Effect change concurrent with normal chart change date

Figure 7- Initial and Predicted Residual Risk



* Not acceptable with single point or common cause failure

0x Initial Risk

0x Predicted Residual Risk

Risk Matrix

High Risk
Medium Risk
Low Risk

Section 9 – Tracking and Monitoring of Hazards

The SMS process requires that each initial high and medium hazard be tracked and monitored until its risk is mitigated to low (when possible) and the effectiveness of the mitigations verified for the life cycle of the change. Hazards will be re-validated after a year. Bonnie Henderson, Management Program Analyst at the Western Service Center, will track all hazards in the FAA's Hazard Tracking System (HTS).

The SMS process requires that all existing and recommended safety requirements have been validated and verified prior to commissioning the change. After the hazards were defined and possible effects were identified, means to control the hazards were determined. The approach taken was based on the Safety Order of Precedence, depicted in Table 3.5 of the FAA SMS Manual.

Table7 - Control Implementation & Monitoring Plan

Task-CI	Responsible	Due Date	Status
Acquire Ground based RADAR with Safety Logic	Toby Jones, SM, Requirements & Planning	2018	Ongoing
Acquire Runway Safety Lighting	WP ADO	2018	Ongoing
Develop LC Assist Position	Jackie Jacobs, ATM, SDL ATCT	2015	Ongoing
P50 TMC to SDL ATCT	Kenny Shick, STMC P50 TRACON	2015	Ongoing
Dedicated Biltmore TMC	Kenny Shick, STMC P50 TRACON	2015	Ongoing
Develop Biltmore 3-Person Ops.	Don Curtis, OM P50 TRACON	2015	Ongoing
Implement enhanced TMIs/FEA/FCA	Kenny Shick, STMC P50 TRACON	2015	Ongoing

Task-Monitor	Responsible	Frequency	Status
Acquire Ground based RADAR with Safety Logic	Karen Seals, SM-Safety Assurance	Quarterly	Pending
Acquire Runway Safety Lighting	Karen Seals, SM Safety Assurance	Quarterly	Pending
Develop LC Assist Position	Karen Seals, SM Safety Assurance	Quarterly	Pending
P50 TMC to SDL ATCT	Karen Seals, SM Safety Assurance	Quarterly	Pending
Dedicated Biltmore TMC	Karen Seals, SM Safety Assurance	Quarterly	Pending
Develop Biltmore 3-Person Ops.	Karen Seals, SM Safety Assurance	Quarterly	Pending
Implement enhanced TMIs/FEA/FCA	Karen Seals, SM Safety Assurance	Quarterly	Pending

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Appendix A

Appendix A – FAA Documents Related to the SDL Hold-Line Relocation SRMD
The following list of documents (orders, directives, regulations, handbooks, and manuals) addresses NAS safety management that relates to the procedural ATC changes involving the SDL Hold-Line Relocation Project and the SRM Process. In some cases, the document listed below may have been updated since this list was compiled. Please refer to the office of primary interest for the most recent version of the document.

Advisory Circulars and Airport Local Rules:

- Advisory Circular 150/5300-13A
- Scottsdale Airport City Rules & Regulations

Air Traffic Control:

- Order JO 7110.65, Air Traffic Control
- FAA JO 7210.3 Facility Operation & Administration
- SDL 7210.3 (Facility Order- Standard Operating Procedures)

Safety Risk Management:

- Order 8040.4, Safety Risk Management ATO SMS Manual – Version 2.1
- Appendix – Hazard Identification Tools
- Description/information on the different tool(s)/method(s)/technique(s) used during the SRM process.

Appendix B – Preliminary Hazard Analysis Form (PHA) SRMD-SDL-HLRELO-2010-001

Hazard Number	Hazard Description	Causes	System State	Possible Effect	Existing Controls	Severity / Rationale	Likelihood / Rationale	Current Risk	Recommended Safety Controls or Requirements	Predicted Residual Risk
SDL1	GC overload and loss of situational awareness	• New D3 sterilization procedures • Increase in controller workload • Increased runway crossings • Increased traffic conflicts • Increased LC/GC coordination • Increased TM responsibility	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots	Unauthorized/ Authorized entry onto runway resulting in a CAT A/B/C/D Runway Incursion with LoSS, < 33% based solely on controller actions	• Controller scanning • Pilot situation awareness • Operational supervision • Lighting • Frequency monitoring • FAA Order 7110.65 • SDL Order 7110.1 • Present training practices • ATIS • NOTAMS	2 – Hazardous Conditions resulting in a LoSS < 33% are deemed prima facie Hazardous by definition Based on Subject Matter Expertise of SDL/P50 ATC personnel	C – Remote Based on Subject Expertise of SDL/P50 ATC personnel and NBAA/ AOPA personnel.	2C – High Risk	• Acquire ground based RADAR with safety logic; i.e., ASDE-X, AMASS etc. • Install RY Safety Lighting, in ground lighted hold-bars, wig-wags, guard lights • Ensure no other position combined at GC	2D – Medium Risk
SDL2	LC overload and loss of situational awareness	• Increased separation requirements • New D3 sterilization procedures • Increase in controller workload • Increased runway crossings • Increased traffic conflicts • Increased LC/GC coordination • Increased TM responsibility	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots	Authorized but unsafe entry onto runway resulting in a LoSS < 33%	• Controller scanning • Pilot situation awareness • Operational supervision • Lighting • TCAS • STARS & RADAR • CA/MSAW • Frequency monitoring • Traffic Management • FAA Order 7110.65 • SDL Order 7110.1 • Present training practices • ATIS • NOTAMS	2 – Hazardous Conditions resulting in a LoSS < 33% are deemed prima facie Hazardous by definition Based on Subject Matter Expertise of SDL/P50 ATC personnel	C – Remote Based on Subject Expertise of SDL/P50 ATC personnel and NBAA/ AOPA personnel	2C – High Risk	• Develop/Staff Local Assist Position • Increased Traffic Management controls • Local assist does RY crossing coordination • Assign P50 TMC to SDL ATCT during special events • Acquire ground based RADAR with safety logic; i.e., ASDE-X, AMASS etc. • Install RY Safety Lighting, in ground lighted hold-bars, wig-wags, guard lights	2D – Medium Risk

Appendix B – Preliminary Hazard Analysis Form (PHA) SRMD-SDL-HLRELO-2010-001

Hazard Number	Hazard Description	Causes	System State	Possible Effect	Existing Controls	Severity / Rationale	Likelihood / Rationale	Current Risk	Recommended Safety Controls or Requirements	Predicted Residual Risk
P50 3	P50 TRACON Biltmore Controller overload and	• Numerous dependent satellite airport operations • Airspace/sector limitations • Increased coordination • Increased traffic • No-notice holding • Additional delay vectors • Additional required in trail spacing • Normal Holding • Enhanced TM involving Design Group 3 aircraft	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots • Dependent Ops with DVT	LoSS < 33%	• Controller scanning • Pilot situation awareness • Operational supervision • TCAS • STARS & RADAR • CA/MSAW • Frequency monitoring • Traffic Management • FAA Order 7110.65 • SDL Order 7110.1 • Handoff position is staffed	2 – Hazardous Conditions resulting in a LoSS < 33% are deemed prima facie Hazardous by definition Based on Subject Matter Expertise of P50 ATC personnel and events of February 4, 2008	B – Probable Based on Subject Matter Expertise of P50 ATC personnel and events of February 4, 2008	2B – High Risk	• Staff Sector 3-person • Enhanced TMIs; Re: FEA/FCA and GDPs • Assign Dedicated TMC	2C – High Risk
SDL 4	Pilot error resulting from loss of situational awareness and/or confusion.	• Increased cockpit workload • Increased complexity • Pilot unfamiliarity • Pilot confusion • Increased runway crossings	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots	Unauthorized entry onto runway resulting in a CAT A/B/C/D Runway Incursion with LoSS <33%	• Controller scanning • Pilot situation awareness • Operational supervision • FAA Order 7110.65 • SDL SOP • Airport Diagram • Signage • Painting • Airport Lighting • Moving Map • ATIS	2 – Hazardous Conditions resulting in a LoSS < 33% are deemed prima facie Hazardous by definition	B – Probable Based on math results of established metrics that predict significant increase in runway incursions Subject Matter Expertise of SDL/P50 personnel	2B – High Risk	• Acquire ground based RADAR with safety logic; i.e., ASDE-X, AMASS etc. • Install RY Safety Lighting, in ground lighted hold-bars, wig-wags, guard lights	2C – High Risk

Appendix B – Preliminary Hazard Analysis Form (PHA) SRMD-SDL-HLRELO-2010-001

Hazard Number	Hazard Description	Causes	System State	Possible Effect	Existing Controls	Severity / Rationale	Likelihood / Rationale	Current Risk	Recommended Safety Controls or Requirements	Predicted Residual Risk
SDL 5	Poor visibility for pilot's holding short to cross the runway; i.e., FAC may be behind the aircraft rather than at 90°angle.	• Airport geometry • Hold-Line Relocation	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots	Category C RI	• Controller scanning • Pilot situation awareness • Operational supervision • Lighting • Frequency monitoring • Traffic Management • FAA Order 7110.65 • SDL Order 7110.1 • Present training practices • ATIS • NOTAMS • Moving Map • ATIS	4 – Minor Based on Subject Matter Expertise of SDL/P50/ ATC personnel and NBAA SME	C – Remote Based on Subject Matter Expertise of SDL/P50/ ATC personnel and NBAA SME	4C – Low Risk	• Add Informational note to AFD	4D – Low Risk
SDL 6	Low altitude go-arounds	• Single use RY • Increased traffic • Pilot unfamiliarity • Aircraft size (group 3) • Requirement to turn arriving aircraft off at the end or hold on the runway for traffic on the parallel taxiways	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots	TCAS RA and/or LoSS > 33-66% or proximity event	• Controller scanning • Pilot situation awareness • Operational supervision • TCAS • STARS & RADAR • CA/MSAW • Frequency monitoring • Traffic Management • FAA Order 7110.65 • SDL Order 7110.1 • P50 sequencing • Present training practices • Pilot knows plan – traffic is exchanged	4 – Minor Based on Subject Matter Expertise of SDL/ P50 ATC personnel and NBAA SME and FSDO SME	B – Probable Based on Subject Matter Expertise of SDL/ P50 ATC personnel and NBAA SME and FSDO SME	4B – Medium Risk	• Develop/Staff LA • Acquire ground based RADAR with safety logic; i.e., ASDE-X, AMASS etc.	4C – Low Risk
SDL 7	ATC influenced runway excursions	• Pilot unfamiliarity • Unclear pilot read-backs • Attempting to seek compliance from a flight crew to exit the runway prior to what is prudent under the circumstances.	• Heavy traffic under special events volumes • Reduced Visibility • Night • Unfamiliar Pilots • Wet RY	Low Speed Runway Excursion with no injuries	• Controller scanning • Pilot situation awareness • Operational supervision • Frequency monitoring • FAA Order 7110.65 • Airfield Lighting • Present training practices • Pilot Training • SDL Order 7110.1 • P50 sequencing	4 – Minor Based on Subject Matter Expertise of SDL / P50 ATC personnel and FSDO /NBAA SMEs	C – Remote Based on Subject Matter Expertise of SDL / P50 ATC personnel and FSDO /NBAA SMEs	4C – Low Risk	• Develop TSS simulation and require semi-annual recurrent training	4D– Low Risk

Appendix B – Preliminary Hazard Analysis Form (PHA) SRMD-SDL-HLRELO-2010-001

Hazard Number	Hazard Description	Causes	System State	Possible Effect	Existing Controls	Severity / Rationale	Likelihood / Rationale	Current Risk	Recommended Safety Controls or Requirements	Predicted Residual Risk
SDL 8	Unauthorized Class B airspace penetration (LoSS)	• Visual vs. instrument approaches vs. VFR • Increased separation requirements • Extended down-winds in support of the expanded in-trail • RY sterilization required for Design Group 3 aircraft.	• Heavy traffic under special events volumes • MVFR • Night • Unfamiliar Pilots	LoSS > 33-66%	• Controller scanning • Pilot situation awareness • Operational supervision • Pilot Navigation • STARS & RADAR • CA/MSAW • Frequency monitoring • Traffic Management • FAA Order 7110.65 • SDL Order 7110.1 • Present training practices • ATIS • Biltmore ATCS awareness	4-Minor Based on Subject Matter Expertise of SDL / P50 ATC personnel	B-Probable Based on Subject Matter Expertise of SDL / P50 ATC personnel	4B-Medium Risk	• Develop/Staff LA • Consider tagging some VFR Targets in STARS	4C-Low Risk
SDL 9	Local Pilot confusion with new markings.	• Pilot familiarity • Other long-time visual clues	• Heavy traffic under special events volumes • MVFR • Night • Unfamiliar Pilots	Category C RI (past hold-line but short of runway edge line)	• Controller scanning • Pilot situation awareness • Operational supervision • Lighting (airfield) • Frequency monitoring • FAA Order 7110.65 • SDL Order 7110.1 • Present training practices • NOTAMS	4-Minor Based on Subject Matter Expertise of SDL / P50 ATC personnel and FSDO SME	D-Extremely Remote Based on Subject Matter Expertise of SDL / P50 ATC personnel and FSDO SME	4D-Low Risk	• Change Hold-Line Location coincident with chart dates • Pilot briefings/handout • Add informational note to AFD • Install RY Safety Lighting, in ground lighted hold-bars, wig-wags, guard lights	4E-Low Risk

Appendix C

Acronyms:

A

AAR – Airport Acceptance Rate
AC – Advisory Circular
ACIP – Airport Capital Improvement Plan
ADO – Airports Division Office
ADR– Airport Departure Rate
AFD– Airport Facility Directive
AFM– Aircraft Flight Manual
AIP– Airport Improvement Program
ALP– Airport Layout Plan
AMASS – Airport Movement Area Safety System
AOPA – Aircraft Owners and Pilots Association
AOV – Office of Air Traffic Oversight
ARC – Airport Reference Code
ARTCC – Air Route Traffic Control Center
ASAP – As Soon As Possible
ASDE – Airport City Surface Detection Equipment
ASDE-X – Airport City Surface Detection Equipment-Model X
ASTR – Astra-Israel Aircraft Industries Business Jet
ASU – Arizona State University
ATC – Air Traffic Control
ATCS – Air Traffic Control Specialist
ATCT – Airport City Traffic Control Tower
ATIS – Automatic Terminal Information Service
ATM– Air Traffic Manager
ATO – Air Traffic Organization
AWP – FAA Western Pacific Region
AZD – Arizona District (Legacy)

C

CD – Clearance Delivery
CY– Calendar Year

D

DC – Document Coordinator
DVT – Phoenix-Deer Valley Airport

F

FAA – Federal Aviation Administration

FAAO – Federal Aviation Administration Order

FAC – Final Approach Course
FACT – Facilitator
FAR – Federal Aviation Regulation
FBO – Fixed Base Operator
FCA – Flow Constrained Area
FD – Flight Data
FEA – Flow Evaluation Area
FSDO – Flight Standards District Office
FY – Fiscal Year

G

GA – General Aviation
GAP – General Aviation Program (a traffic management ground delay program)
GC – Ground Control
GDP – Ground Delay Program

H

HTS – Hazard Tracking System

I

ICAO – International Civil Aviation Organization
IFR – Instrument Flight Rules
IMC – Instrument Meteorological Conditions
IOC – Implementation of Controls

J

JO – Joint Order

L

LA – Local Assist
LC – Local Control
LoSS – Loss of Standard ATC Separation

M

MAC – Mid-Air Collision
MAP – Monitor Alert Parameter
MTS – Modification To Standards
MVFR – Marginal Visual Flight Rules

N

NAS – National Airspace System
NATCA – National Air Traffic Controllers Association (a Labor Union)
NBAA – National Business Aviation Association
NOTAM – Notice to Airmen
NMAC – Near Mid-Air Collision

O

OD – Operational Deviation
OE – Operational Error
OM – Operations Manager

P

P50 – Phoenix TRACON
PD – Pilot Deviation
PE – Proximity Event
PHA – Preliminary Hazard Analysis
PHL – Preliminary Hazard List
PHX – Phoenix Sky-Harbor International Airport

Q

QCG – Quality Control Group

R

RA– Resolution Advisory
RADAR– Radio Detection and Ranging
RCL – Runway Center Line
RI – Runway Incursion
ROFZ – Runway Obstacle Free Zone
RSAT – Runway Safety Action Team
RWY – Runway

S

SA – FAA Air Traffic Control Safety Assurance
SDL– Scottsdale Airport
SFC– Surface
SM – Support Manager

SME – Subject Matter Expert
SMS – Safety Management System
SOP – Standard Operating Procedure
STARS – Standard Terminal Automation Replacement System
SRM – Safety Risk Management
SRMD – Safety Risk Management Document
SRMP – Safety Risk Management Panel
STMC – Supervisory Traffic Management Coordinator

T

TM – Traffic Management
TMC – Traffic Management Coordinator
TMI – Traffic Management Initiatives
TMU – Traffic Management Unit
TRACON – Terminal RADAR Approach Control
TSS – Tower Simulation System
TWE – Terminal West (an FAA office designation)
TWY – Taxiway

U

UDP – Unified Delay Program
US – United States

V

VFR – Visual Flight Rules

W

WDD – Western Desert District (an FAA office designation)
WSA – Western Service Area (an FAA office designation)

Z

ZAB – Albuquerque Air Route Traffic Control Center

Appendix D

Special Events Volume Photographs:


N918JM

APPENDIX E

City of Scottsdale/FAA ADO Correspondence

SCOTTSDALE AIRPORT

15000 N. Airport Dr. Ste. 2000 Scottsdale, AZ 85260
(480) 312-2321 • Fax (480) 312-8480
www.ci.scottsdale.az.us/airport

FILE

May 1, 2002

Mr. Kevin Flynn, AWP-623
Supervisor, State of Arizona, Standards Section
FEDERAL AVIATION ADMINISTRATION
WESTERN-PACIFIC REGION AIRPORTS DIVISION
15000 Aviation Blvd.
Lawndale, CA 90261

RE: ***Scottsdale Airport - Airport Layout Plan (ALP) - Revalidation***

Dear Kevin:

We are pleased to submit, for revalidation, eight (8) signed copies of the *"revised"* **Airport Layout Plan (ALP) for Scottsdale Airport.** The revised ALP reflects current conditions at the Airport. Since revalidation of the last ALP (April 2001) changes include:

- **Completion of Taxiway B (Bravo), and Exit Taxiways.**
- **Completion of the displacement of Runway 21 (400').**
- **Changes to the ALP Scale and creation of a Data Sheet.**
- **Revisions to the Data Blocks.**
- **Other minor changes, edits, and updates.**

Upon completion of your approval process, please distribute the approved ALP's as follows:

- **FAA - (Four Copies)**
- **Scottsdale Airport - (Two Copies)**
- **ADOT - Aeronautics Division (One Copy)**
- **Coffman Associates (One Copy)**

In addition, the City of Scottsdale respectfully requests FAA's approval of the Modifications to Standards and a Runway Safety Area Determination as illustrated on the Airport Data Sheet (Sheet #2). The evaluation of these design standards was included in the *Runway Safety Area Standards Evaluation Report (December 2001),* that was submitted to your office under separate cover.

In the meantime, if you should require further information, or have any questions, please do not hesitate to call.

Sincerely,

Scott T. Gray, C.A.E.
Aviation Director

Enclosures

c. Jim Harris, Coffman Associates, Inc.
Dave Gilbertson, Gilbertson Associates, Inc.
Gary Adams, ADOT - Aeronautics Division

U.S. Department of Transportation
Federal Aviation Administration

Western-Pacific Region
Airports Division

P.O. Box 92007
Worldway Postal Center
Los Angeles, CA 90009

October 17, 2000

Mr. Scott Gray
Airport Director
Scottsdale Airport
15000 North Airport Dr.
Scottsdale, AZ 85260

Dear Mr. Gray:

Scottsdale Airport
Revalidation of Airport Layout Plan

The enclosed copies of the Airport Layout Plan (ALP) for the subject facility, previously approved on February 20, 1997, have been reviewed and are hereby revalidated. The revalidation indicated by my signature is given subject to, but not limited to, the following terms and conditions:

Existing Conditions:

The following elements of the existing airport do not meet current airport design standards. A modification to standards for these elements has not been approved and the evaluation of these items is ongoing.

a. Runway 3 safety area length.

b. Runway 3 object free area length.

c. Runway centerline to the holdline.

d. Runway centerline to the parallel taxiway centerline.

e. Runway centerline to aircraft parking area.

f. Runway object free area width.

g. Runway 21 object free area length.

h. Taxiway shoulder width.

We recognize that there are many reasons for an airport not to meet current design standards such as standards have changed since the airport was constructed, the design aircraft may have changed, or other existing constraints limit standards attainment. We strongly encourage you to evaluate each element to determine if and how the current

standards can be met and ensure that the necessary development is identified on the Airport Capital Improvement Plan (ACIP). We also encourage you to implement airport procedures as appropriate to ensure safety of aircraft operations, until standards can be met.

This revalidation does not commit this agency to participate in cost for any development not currently programmed, nor does it negate notification and review requirements imposed by Part 77 and Part 157 of the Federal Aviation Regulations as it pertains to all proposed structures shown on this plan. Further, the FAA cannot prevent erection of any structure in the vicinity of airports. Airport environs can only be adequately protected through such means as local zoning ordinances.

If you have any questions or would like to discuss any issue in more detail, please call me at (310)725-3632.

Sincerely,

Kevin Flynn
Supervisor, Arizona Standards Section

Cc: ADOT
Coffman Associates

d:\airports\scottsdale\ALPCONDREVAL.doc

G.M's Copy

Aviation Division

15000 N. Airport Drive, Suite 200
Scottsdale, AZ 85260

PHONE 480-312-2321
FAX 480-312-8480
WEB www.ScottsdaleAZ.gov/airport

February 10, 2004

Mr. Kevin Flynn, AWP - 623
Supervisor, Arizona Team
FEDERAL AVIATION ADMINISTRATION
WESTERN - PACIFIC REGION
15000 Aviation Boulevard
Lawndale, CA 90261

RE: Scottsdale Airport - Runway Safety Area Improvements

Dear Kevin,

In response to your recent request, the following provides an outline of Runway Safety Area projects and/or improvements that have recently been undertaken or completed at the Scottsdale Airport.

1. Runway Safety Area Standards Evaluation Report.
2. Formal request for a Runway Safety Area Determination.
3. Formal request for a Runway Object Free Area Modification to Standards.
4. Displacement of Runways 3 and 21 Thresholds and application of "Declared Distances".
5. Runway and Parallel Taxiway drainage improvements.
6. Runway Safety Area erosion control improvements.
7. Construction of Runway Shoulders.
8. Kilo Ramp aircraft tie-down relocations.
9. Delta Ramp aircraft tie-down relocations.
10. Airport Perimeter Road paving and location adjustments/relocation.
11. Relocation of Weather Equipment/ASOS.

The City is still waiting for FAA's response to our request for a Runway Safety Area Determination and the approval of the Runway Object Free Area Modification to Standards. Following your response to this request the Airport Layout Plan will be modified accordingly and the "Declared Distances" published in the Airport Facilities Directory.

In the meantime, if you have any questions or need additional information, please do not hesitate to give me a call.

Sincerely,

Scott T. Gray, C.M., C.A.E.
Aviation Director

c. Jim Harris - Coffman Associates
Dave Gilbertson - Gilbertson Associates

Aviation Division

15000 N. Airport Drive, Suite 200
Scottsdale, AZ 85260

PHONE 480-312-2321
FAX 480-312-8480
WEB www.ScottsdaleAZ.gov/airport

September 30, 2004

Mr. Eric Vermeeren, P.E.
Civil Engineer, AWP 623.3
FEDERAL AVIATION ADMINISTRATION
WESTERN PACIFIC REGION
15000 Aviation Boulevard
Lawndale, CA 90261

RE: Scottsdale Airport

Dear Eric:

As a follow-up to your request during the September 14th Joint Planning Conference at the ADOT–Aeronautics Division Offices, the City of Scottsdale is pleased to submit the following:

1. *Airport Layout Plan (dated September 30, 2003) – Nine (9) copies*
2. *Runway Safety Area Standards Evaluation (dated December 2001) – Two (2) copies*

Please note that each of these documents had been previously submitted to Kevin Flynn and copies of the original transmittal letters are enclosed for your information and files. Once again, the City respectfully requests FAA's review and re-validation of the ALP, review and approval of the airport's modification to design standards, and a runway safety area determination. In February of 2004, Kevin Flynn also requested a letter from the City outlining runway safety area projects and/or improvements that have recently been undertaken or completed at the Scottsdale Airport. A copy of this letter (February 10, 2004) is also enclosed. Please note that since that letter was sent, the City has initiated construction on the runway safety area erosion protection project which is being funded with FAA Airport Improvement Program (AIP) Grants #19 and #20.

Finally, as you know, the City of Scottsdale is currently in discussions with several commuter airlines that are proposing to initiate scheduled passenger service at the airport. As a result, the City will eventually need to obtain airport certification under Federal Aviation Regulation Part 139. In order to be adequately prepared to obtain Part 139 certification, we are also requesting that the FAA conduct a "preliminary" certification inspection to identify additional improvements or steps that the City must taken to be fully compliant with the regulations. It would also seem to make sense to have the independent runway safety area inspection done at the same time.

We greatly appreciate your attention to these requests and look forward to your response. In the meantime, if you have any questions or need additional information, please do not hesitate to call me at 480-312-7735.

Sincerely,

Scott T. Gray, C.M., C.A.E.
Aviation Director

c. Jim Harris – Coffman Associates
Dave Gilbertson – Gilbertson Associates

FILE

Aviation Division

15000 N. Airport Drive, Suite 200
Scottsdale, AZ 85260

PHONE 480-312-2321
FAX 480-312-8480
WEB www.ScottsdaleAZ.gov/airport

December 9, 2004

Mr. Eric Vermeeren
Civil Engineer, AWP-623.3
FEDERAL AVIATION ADMINISTRATION
Western-Pacific Region Airports Division
15000 Aviation Boulevard
Hawthorne, California 90261

RE: ***Scottsdale Airport Runway Safety Area Standards Evaluation and Airport Layout Plan Revalidation***

Dear Eric:

Thank you for the numerous phone conversations over the past week to discuss Scottsdale Airport's Runway Safety Area Standards Evaluation (RSASE) and Airport Layout Plan (ALP) submittal. As you are aware, due to the inability to locate our original submittal in your office, we resubmitted the RSASE dated December 2001 and requested a formal Runway Safety Area determination. We also submitted our ALP dated, September 30, 2003, for revalidation and approval of the requested modification of standards as indicated (see attached letter dated September 30, 2004). I appreciate you taking the time to start processing these documents.

Based on our recent conversations, it is my understanding that you are requesting that the City of Scottsdale resubmit our ALP and change our Airport Reference Code (ARC) from D-II to B-II. While this suggestion would result in the ALP being approved as meeting B-II standards, and would also negate the need for the Runway Safety Area Determination and approval of Modification of Standards, I would respectfully disagree that this is a practicable alternative for us to pursue. Instead, I would request that the formal process of having the FAA Regional Airports Division Manager provide a Runway Safety Area determination as indicated in AC 150/5300-13 and FAA Order 5200.8, as well as the Modification of Standards based on our original submittal.

As the FAA is well aware, the City of Scottsdale has continually made improvements to the RSA at Scottsdale Airport as was indicated in our correspondence to the FAA dated February 10, 2004 (attached). In correspondence to another airport in this region, the FAA's Director of Airport Safety and Standards has made it clear that smaller RSA are considered acceptable. He also indicated that alternatives to meeting RSA standards should only be employed if they do not interfere with the utility of the airport. As is the case at Scottsdale, all practicable alternatives have been, or are being, implemented and options such as reclassifying the airport as B-II and relocating the hold lines result in severely reduced utility and operational aspects of our Airport.

I look forward to receiving the Airports Division Manager's Runway Safety Area Determination and an approved ALP, however; in the meantime I would be happy to assemble my staff, and consultants for a conference call to discuss this in more detail.

Sincerely,

Scott T. Gray, C.M., C.A.E.
Aviation Director

Attachment: 1) Letter dated September 30, 2004
2) Letter dated February 10, 2004

c. Mr. Michael Agaibi, Western Pacific Region, Supervisor, Arizona Standards Section
Mr. Mark McClardy, Western Pacific Region, Airports Division Manager
Mr. Dave Gilbertson, Gilbertson Associates
Mr. Jim Harris, Coffman Associates

U.S Department
of Transportation
Federal Aviation
Administration

Western-Pacific Region
Los Angeles Airports District Office

P.O. Box 92007
Los Angeles, CA 90009

SEP 18 2008

September 16, 2008

Mr. Scott Gray
Airport Director
Scottsdale Airport
15000 North Airport Dr.
Scottsdale, AZ 85260

Dear Mr. Gray:

Scottsdale Airport
Airport Layout Plan Update
Airspace Case No. 07-AWP-0893-NRA

The enclosed original copies of the Scottsdale Airport Layout Plan (ALP) have been reviewed and are conditionally approved. The conditional approval indicated by my signature is given subject to, but not limited to, the following conditions and comments:

Environmental:

The proposed airport development may be subject to evaluation in accordance with the National Environmental Protection Act (NEPA). Each proposed project will be evaluated on a case-by-case basis and be subject to the necessary review and approval as required by law.

Based on our review of this conditionally approved ALP, the following is a preliminary list of proposed development that will require environmental review and approval by the Federal Aviation Administration (FAA) prior to construction:

a. Release of surplus airport property located west of 73rd street for non-aeronautical use.

b. Release of surplus airport property for the relocation of 73rd street for non-aeronautical use.

c. Acquiring land for aeronautical development located north and south of Runway 3/21.

Existing Conditions:

The following elements of the existing airport do not meet current airport design standards. A modification to standards for these elements has not been approved and the evaluation of these items is ongoing.

a. Runway Safety Area (RSA) width and length

b. Declared Distances

c. Separation distance from Runway centerline to Taxiway holdlines

d. Separation distance from Runway centerline to parallel taxiway centerlines

e. Taxiway Alpha shoulder width

f. Taxiway Object Free Area (TOFA) width

g. Structures obstructing the Runway Object Free Area (ROFA)

h. Runway 3/21 shoulder width

i. Taxiway Safety Area width

k. Temporary or permanent aircraft and helicopter parking in ROFA

We recognize that there are many reasons for an airport not to meet current design standards such as standards have changed since the airport was constructed, the design aircraft may have changed, or other existing constraints limit standards attainment. We strongly encourage you to evaluate each element to determine if and how the current standards can be met and ensure that the necessary development is identified on the Airport Capital Improvement Plan (ACIP). We also encourage you to implement airport procedures as appropriate to ensure safety of aircraft operations, until standards can be met.

Proposed Development:

The following elements proposed as future development at the airport do not meet current airport design standards. A modification to standards for these elements has not been approved and the evaluation of these items is ongoing.

a. Construction of connector taxiways to Runway 3/21 with hold lines located 152 feet from Runway 3/21 centerline.

Future ALP Updates:

This ALP satisfies the grant assurance for an updated ALP. The ALP, however, does not completely address all elements called for in the various Advisory Circulars and FAA checklists. Therefore, it is recommended that the next ALP update addresses the following:

a. Add future ACIP projects to the ALP drawing so that those ACIP projects will become eligible for federal funding in fiscal years 2009 and beyond.

b. Change the size of visual Runway Protection Zones to protect future non-precision approaches from non-compatible land uses.

c. Request an Overall Development Objective (ODO) for acquiring land located north of Runway 3/21 to allow the relocation of the terminal, hangars, automobile parking areas, aircraft and helipad parking areas and Taxiway Alpha. Taxiway Alpha would be relocated 300 feet from Runway 3/21 centerline and Taxiway Alpha hold lines would be relocated 250' feet from Runway 3/21. The ODO would be a multi-year phased project and would resolve "Existing Conditions" items c, d, e, f, g, I, and k as related to Taxiway Alpha.

Federal Compliance Obligation:

Conditional approval of this ALP does not relieve the sponsor from complying with the various obligations (surplus property, grant, exclusive rights, etc.). The following items are currently being evaluated from a compliance standpoint:

a. Release of surplus airport property for the relocation of 73rd street

b. Release of surplus airport property for non-aeronautical use located west of the 73rd Street relocation project.

This approval does not commit this agency to participate in cost for any development not currently programmed, nor does it negate notification and review requirements imposed by Part 77 and Part 157 of the Federal Aviation Regulations as it pertains to all proposed structures shown on this plan. Further, the FAA cannot prevent erection of any structure in the vicinity of airports. Airport environs can only be adequately protected through such means as local zoning ordinances.

If you have any questions or would like to discuss any issues further, please contact me at (310) 725-3644.

Sincerely,

ORIGINAL SIGNED BY
ERIC B. VERMEEREN

Eric B. Vermeeren
Acting Manager, Los Angeles Airports District Office

Enclosures: SDL ALP

[redacted]
ADOT
Ms. Kimchi Hoang, Program Manager, LAX-600.11

U.S Department
of Transportation
Federal Aviation
Administration

Western-Pacific Region
Airports Division
Los Angeles Airport District Office

P.O. Box 92007
Los Angeles, CA 90009

FEB - 4 2010

Ms. Kim Hanna
Assistant Aviation Director
Scottsdale Airport
15000 N. Airport Drive, Suite 200
Scottsdale, AZ 85260

Dear Ms. Hanna:

This is in response to your letters dated December 11 and 18, 2009 regarding Scottsdale Airport (SDL). Your letters requested the Federal Aviation Administration (FAA) change in the Airport Master Record (FAA Form 5010-1) in Data Element 36 the runway data gross weight from "75 0" to "100 0*" based on prior permission only (PPR) and add a remark in Data Element 110 to indicate as follows: *"E 36 Limited by Airport to 75, except PPR. Contact the Aviation Director at 480-312-2321"*. To support your request you provided FAA with pavement evaluation documents by *All About Pavements, Inc., (API)* and *Wilcox Professional Services, LLC (Wilcox)*. In addition, you also requested the declared distance information in your approved Airport Layout Plan be published in the FAA Form 5010-1.

We understand that the Gulfstream V (G-V) and the Bombardier Global Express (BGE) aircrafts currently operate at SDL in compliance with the City's administrative weight limit of 75,000 lbs gross weight. We further understand that you are requesting the change to accommodate fully loaded G-V and BGE aircrafts up to a maiximum 100,000 lbs gross weight while operating at SDL.

We have reviewed your request and offer the following comments:

1. We reviewed the pavement analysis documents dated October 31 2007 by *API* entitled, *Final Report of Structural Evaluation Results from Nondestructive Deflection Testing (NDT) of Airside Pavements at Scottsdale, AZ.* and the validation document dated December 10, 2009 prepared by *Wilcox* entitled *Pavement Evaluation Report to Accompany Request for Prior Permission Scottsdale Airport, Scottsdale, Arizona.* We found the documents acceptable, although the pavement condition index's (PCN's) determined from two independent analyses of the same non-destructive test (NDT) data are inconsistent for Runway 3-21 Original, Runway 3-21 Extension and Taxiway A Original. The layer moduli from the *Wilcox* report are believed to be more consistent with FAA assumptions for asphalt and base course material than the layer moduli from the API report. The random sample of NDT data used by *Wilcox* resulted in less variability than presented in the *API* report, which used all NDT data.

2. SDL Airport Sponsor in coordination with SDL Air Traffic Control Tower Manager should review procedures for accommodating the heavier aircraft and make a determination whether or not a modification

will create no adverse impact upon air traffic operations or procedures.

We take no exception to your request of publishing 100,000 lbs on dual wheel gear based on PPR for Runway 3/21 and Taxiway B for a limited time, approximately one or two years, followed by a re-evaluation. PPR for the heavier aircraft is prudent since the Wilcox report indicated some pavements have been in service well beyond the normal design life and that near term SDL pavement rehabilitation projects were planned. The recommendation for frequent visual inspection for up to 60 days (completion up to 60 minutes after each departure initially) is also prudent, especially if Taxiway A and the Landmark Apron and other weak pavement are loaded by the heavier aircrafts. Visual inspections could be less frequent if no signs of premature failure materialize.

We would like to note the Department of Defense procedures for determining PCN used by *API* and *Wilcox*, though similar, did not give results consistent with the system of guidance used by the FAA. Henceforth, we recommend that future evaluations for SDL should utilize FAA's system of guidance for evaluating pavements.

With respect to your request to publish the declared distance information, we have already taken this action on November 17, 2009. We expect that the declared distance information should be effective on February 10, 2010 in the FAA publications.

We are pleased that you are amenable to perform a safety risk assessment/evaluation regarding moving back the location of your runway holdlines and of possible operational changes to air traffic control procedures, as applicable. As you are aware, we are keenly interested in the continued efforts of mutually resolving this longstanding issue. We agree that this effort would fall most appropriately under a comprehensively planned update of your master plan and orderly funding and implemenation of capital improvements at Scottsdale Airport. In addition, please be advised that FAA objects to moving forward with the rehabilitation of the runway funded under AIP-23 until such time the preparation of the environmental documents for the proposed increased runway strength is completed at Scottsdale Airport.

If you require additional information, please contact me at (310) 725-3621.

Sincerely,

Ruben C. Cabalbag
Assistant Manager

cc: ADOT

Thank you.

Ruben C. Cabalbag
Assistant Manager
Los Angeles Airport District Office
Federal Aviation Administration
Tel: (310) 725-3621
Fax: (310) 725-6849

Rob Voss---01/21/2010 11:50:16 AM---Mr. Cabalbag: Thank-you for providing the opportunity to review the

From:	Rob Voss/AWP/FAA TWH-SDL, Scottsdale ATCT, AZ
To:	Ruben Cabalbag/AWP/FAA@FAA
Date:	01/21/2010 11:50 AM
Subject:	Re: FAA's Draft Response to PPR request for SDL

Mr. Cabalbag:

Thank-you for providing the opportunity to review the ADO's draft response to the City of Scottsdale Airport (SDL) request regarding changes to the published maximum gross aircraft weight. I anticipate that the potential operation of these aircraft at increased weight will create no adverse impact upon air traffic operations or procedures.

As you know, these aircraft already utilize the Scottsdale Airport and have done so for many years, without known impact to air traffic operations. Modifying maximum operating weights are transparent to controllers and does not affect runway surface operations. Even if unrestricted, of course, these aircraft cannot land at weights significantly above the existing weight limit. With an increased takeoff weight, there could be small changes in performance during initial climbout- ATC procedures already account for such variances and are unaffected by these subtle differences.

My sole concern is the suggestion of a requirement for the airport staff to conduct more frequent runway inspections following departures of these aircraft. Though runway inspections are conducted regularly and their frequency varies based upon a number of factors, it is possible that some adverse impact or risk might be created. This could include brief arrival or departure delays and an increased risk of runway incursion. Accordingly, a safety risk analysis could be necessary to address this change. Initially, I project minimal risk if such runway inspections weren't required immediately (i.e., permissible completion up to 60 minutes following departure) and it were a temporary requirement (i.e., 60 days).

I have also reviewed the correspondence of 12/18/2009 to your office, from Kim Hanna/Scottsdale Airport regarding the proposal and a short term action plan. I consider it immaterial to include discussion of a safety risk assessment (SRM) of airport design elements or in consideration of the Runway Safety Action Team Recommendations . As you may know, when the SRM process was introduced, it was clearly stated that existing variances and procedures- including discrepancies in airport design requirements- were not subject to the SRM analysis process. It is my understanding that the SRM serves to evaluate "new" risk introduced to the system. The aircraft involved were already utilizing Scottsdale Airport when SRM was introduced. The 2006 RSAT recommendations and airport design requirements regarding runway/taxiway distances and holding points discussed within AC150/5300-13 have no relationship to aircraft weight- only size (i.e., wingspan and tail height)- and the guidance specified within Advisory Circular is advisory in nature for non-Part 139 airports. I am not aware of any immediate plans to certify SDL as a Part 139 airport and no changes to the size of aircraft using SDL have been proposed. Therefore, it is my recommendation that no SRM be conducted regarding airport design requirements and that the RSAT study continue to be addressed separately.

If you would like to discuss this further or desire a Safety Risk Decision Memo summarizing these recommendations, please so advise.

Rob Voss/AWP/FAA
TWH-SDL, Scottsdale ATCT, AZ

01/26/2010 08:21 AM

To Phillip Thornton/AWP/FAA@FAA
cc eugene.riley@faa.gov, leemay.wu@faa.gov
bcc
Subject Fw: FAA's Draft Response to PPR request for SDL

Phil, if possible, I'd like to brief you & Geno on this. I've got a meeting w/ Kim Hanna Friday to draft a joint-response to the RSAT people.
I'll be at P50 both today (Tech Ops meeting 10-12) & all-day tomorrow.
Rob

Rob Voss
Air Traffic Manager
Scottsdale ATCT
(480)609-7585

----- Forwarded by Rob Voss/AWP/FAA on 01/26/2010 08:05 AM -----

Ruben Cabalbag/AWP/FAA
AWP-LAX-ADO, Los Angeles, CA

01/26/2010 07:48 AM

To Rob Voss/AWP/FAA@FAA
cc Brian Armstrong/AWP/FAA@FAA
Subject Re: FAA's Draft Response to PPR request for SDL

Rob> Thank you for your comments, including ATCT's confirmation that these larger aircrafts proposed to operate at SDL with 25,000 lbs of additional fuel will not change your local procedures and requirements. We appreciate the feedback as it eliminates one of the two issues that we had for allowing the PPR. The other issue is what will be the acceptability of the runway and taxiway pavements once these heavier aircrafts are allowed on them. As you know, we asked the airport to perform analysis for this purpose.

With regard to your concern of more frequent runway inspections I would like to offer these comments. The ADO expects that the airport protect airfield pavement from damage or early deterioration. Many airport projects at SDL have been funded with federal AIP grants most of which involve pavement. As a result, the ADO and SDL have made significant investments in airfield pavement and have an interest in assuring that the pavement remains in acceptable condition for its design life, normally at least 20 years. The policy of assuring reasonable access to the airport and the interest in protecting the investment in airfield are both extremely important, but is clear that they can potentially work against each other in a particular case. The PPR is designed to implement use of the pavement by the heavier aircraft to protect pavement not designed for aircraft of that weight. We want to ensure that SDL check for early sign of pavement distress since we believe this is when it will likely occur. Your concerns with the frequent inspections of the pavement is noted. We will reword our final draft to address your concerns, ie., include language that you suggest below in your 3rd paragraph.

With regard to the outstanding RSAT recommendation regarding the runway holdlines, I would like to offer these comments. We plan to address this separately and independent of the PPR and of any future request for a Part 139 certificate by the airport. Our response letter address' the holdline issue because we were hoping to gain traction on this matter with the airport and with ATCT, thru a collaborative process. We would like to this preferably early-on during planning stage. Because FAA Airports has no SRM process in place yet, we in the ADO is dependent on the ATO SRM process. Short of another RSAT meeting, I was not aware of other formal processes such as the SRM that does this collaboratively and where we can work this issue in the most effective manner. I am open to any other suggestions that you may have.