

E6

IMPACT SUMMARY & MANAGEMENT FRAMEWORK

RISK MANAGEMENT PLAN



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6.1 INTRODUCTION

6.1.1 Hazard and risk

This section provides a high level assessment of the hazards and risks to people and airport operations that may be associated with the Sunshine Coast Airport (SCA) Expansion Project (the Project).

This risk assessment would provide the basis for future risk management as the Project progresses.

The focus of future risk management will transition through design, construction and into operations. The form of the risk processes will be dependent on the procurement approach adopted but will be necessary to address safety in design risks, construction risks and operational risks, which will be addressed through the processes discussed in **Sections 6.2 to 6.8**.

6.2 RISK ASSESSMENT

6.2.1 Approach

A risk assessment was completed for all aspects of the project delivery and operations based on the principles set out in *Australia/New Zealand AS/NZS ISO 31000:2009 Risk management—Principles and Guidelines*.

All phases of the Project were considered, including:

- Preconstruction
- Civil works
- Dredging
- Runway and taxiway pavements
- Operations.

The risk assessment considers the combined likelihood and consequence of a potential event on personal safety and airport operations. An example of a major impact on airport operations would be a breach of airside security.

The risk assessment considered only risks that are considered to be Project-specific. General site safety risks, for example, construction worker exposure to loud noise or sun, were not considered. It is expected these would be addressed in the contractor's health and safety management plan.

The risk was determined based on the consequence and likelihood, as shown in **Table 6.2a**.

Mitigation measures were determined for each risk, and the risk was re-assessed to determine the residual risk rating. All risks retained a residual medium or lower risk rating.

6.2.2 Risk register

The risks identified for each project phase are provided in **Table 6.2b**. Risks have been identified as safety risks (S) or airport operations risks (AO) in the risk type column.

6.2.3 Change in risk profile

The development of the new runway would reduce the operational risk for the airport, owing to the following:

- The new runway is fully compliant with MOS 139 for Code 4E aircraft, including compliance for:
 - Runway length and width
 - Runway graded strip and flyover area
 - Recommended 240 m runway and safety area.
 - There are considerably fewer residences in the Public Safety Area of the new runway compared with RWY 18/36
 - The alignment of the new runway significantly reduces the occurrence of cross-winds compared with RWY 18/36.

The likelihood of an aircraft crash on RWY 13/31 is considered to be highly unlikely. As with any aircraft incident, the potential consequences of a crash would include multiple fatalities. Nevertheless, given the very low likelihood of an incident (<1:10,000 chance of a fatality outside the Public Safety Area) the overall risk level is low.

Table 6.2a: Risk assessment matrix

		Consequence			
		Safety	No Injury	Injury	Fatality
		Airport Operations	Minor	Moderate	Major
Likelihood	Almost Impossible	Negligible (N)	Negligible (N)	Low (L)	Medium (M)
	Unlikely	Negligible (N)	Low (L)	Medium (M)	High (H)
	Possible	Low (L)	Medium (M)	High (H)	Extreme (E)
	Likely	Medium (M)	High (H)	Extreme (E)	

6.2.4 Health and safety

SCA operates under a Civil Aviation Safety Authority (CASA) approved Safety Management System.

6.2.5 Wildlife Hazard Management Plan and Aerodrome Operations Manual

SCA operates in accordance with a Wildlife Hazard Management Plan and Aerodrome Operations Manual. These documents provide the framework to manage and mitigate operational risks at the airport.

Both of these documents will be redrafted prior to the commissioning of Runway (RWY) 13/31 as part of the formal process for implementing the changes to airspace and aircraft management. The formal airspace change process is required to obtain certification to operate the new runway and will provide opportunity for Commonwealth and State agencies to contribute to the agreed plans.

6.2.6 Emergency Management Plan

SCA maintains an internal Airport Emergency Plan.

The aim of the Airport Emergency Plan is to provide a timely and coordinated response to, and recovery from, an emergency at the airport. It covers all manner of potential aviation related emergencies.

The plan details the arrangements for control and co-ordination of the response to, and initial recovery from, an emergency within the airport boundary or in the vicinity of Sunshine Coast.

The Airport Emergency Plan was developed to reflect the requirements of:

- Civil Aviation Safety Regulation Part 139 and ICAO Annex 14 to the Convention on International Civil Aviation
- *Disaster Management Act 2003*
- Sunshine Coast Council Emergency Operation Plan
- *Queensland Ambulance Service (QAS) Act 1991*
- QAS Multi Casualty Management Plan.

This document is supported by a number of Standard Operating Procedures (SOPs).

SCA would revise the existing Airport Emergency Plan to include operations on the new runway before it is commissioned.

SCA also maintains the following:

- A cyclone plan to address severe weather at SCA and weather events farther afield that might impact on ops at SCA
- A Pandemic Influenza Management Plan

All of these documents have been produced in concert with the relevant local, state and commonwealth agencies, including Airservices, Queensland Police Service, Queensland Fire and Emergency Service (QFES), Queensland Ambulance Service, State Emergency Service and the Local Disaster Management Group (LDMG). The LDMG is responsible for preparing and implementing Council's Local Disaster Management Plan.

6.2.7 Counter-terrorism and critical infrastructure protection

The *Aviation Transport Security Act 2004* (Cth) (ATSA) establishes a regulatory framework to safeguard against acts of unlawful interference with aviation, in respect of Australian registered aircraft in Australian airspace and airports.

SCA, as the airport operator, is responsible for security at the airport and is obliged to have a Transport Security Program (TSP) under the ATSA. The SCA Transport Security Program is confidential and only available to the airport and the Commonwealth Government.

6.2.8 Aviation Rescue and Fire Fighting Service

The Airport has a fully equipped Aviation Rescue and Fire Fighting Service (ARFFS) facility to address all aviation related fire and rescue events. ARFFS are regulated under the Civil Aviation Safety Regulations 1998 (CASR 1998) Part 139H, which specifies the requirements for the provision of aviation rescue and fire fighting services.

Airservices Australia (Airservices) currently provide Category 6 ARFFS for SCA. Airservices is responsible for the provision of personnel, training and facilities to support ARFFS.

The Project includes development of a site south of RWY 13/31 for establishment of a joint Air Traffic Control tower and new ARFFS station, which would be built by Airservices. Airservices would continue to provide ARFFS after commissioning the new runway in accordance with CASR 1998 Part 139H.

With respect to fires located on adjoining lands, ARFFS may, at the request of QFES, assist in off-site events provided that such assistance does not compromise their capacity to manage aviation incidents.

Table 6.2b: Risk identification

Aspect	Impact	Risk Type	Likelihood	Consequence	Risk	Mitigation	Likelihood	Consequence	Residual Risk
Preconstruction No project specific risks identified									
Civil Works									
Upgrade to Finland Road – installation of traffic lights at David Low Way intersection	Works at an active intersection could lead to a traffic accident	S	Possible	Fatality	H	Implement traffic controls and management plan during construction.	Unlikely	Fatality	M
Closure of RWY 12/30	Aircraft may land on the closed runway.	AO	Possible	Major	H	Implement closure in accordance with CASA requirements.	Unlikely	Major	M
Airside fence realignment	Breaches in the airside fence may lead to a breach of security.	AO	Possible	Major	H	Prescribe construction sequencing and security requirements during perimeter fence modifications	Unlikely	Major	M
Upgrade/ construction of site roads	Work on the airside fence realignment close to RWY 18/36 may extend up to 5 m into the OLS.	AO	Possible	Moderate	M	Issue Notice to Airmen (NOTAM) and/or schedule works to avoid aircraft movements.	Possible	Minor	L
Site clearing	Road works in airside areas may impinge on the OLS or introduce foreign object damage (FOD) to RWY 18/36.	AO	Possible	Major	H	Limit the height of equipment used for airside road work and/or schedule works to avoid aircraft movement. Implement dust control and clean up procedures.	Unlikely	Major	M
	Removal of vegetation may increase wildlife activity through dispersal of disturbed wildlife and potentially attract raptors, which could lead to bird strikes.	AO	Likely	Moderate	H	Stage clearing to minimise fauna movement into open areas (i.e. clear towards the remaining vegetation). Implement bird surveillance and dispersal techniques to discourage birds near the existing runway.	Unlikely	Moderate	L

Aspect	Impact	Risk Type	Likelihood	Consequence	Risk	Mitigation	Likelihood	Consequence	Residual Risk
No project specific risks identified									
Earthworks	Earthworks for site infrastructure (such as internal haul roads) could generate dust, which could present a hazard to aircraft movements.	AO	Likely	Moderate	H	Implement a dust management plan, with stringent requirements within 300 m of RWY 18/36.	Unlikely	Moderate	L
Construction of northern perimeter drain	The presence of standing water in the partially constructed drain could attract birds, which could lead to bird strikes.	AO	Likely	Moderate	H	Implement bird surveillance and dispersal techniques to discourage birds.	Unlikely	Moderate	L
	The use of large earthmoving machinery approx. 50 m from the VHF-omnidirectional radar (VOR) would affect its performance.	AO	Likely	Major	E	The VOR would need to be relocated before construction activities occur near the south-east end of the construction area.	Almost Impossible	Major	L
Construction of perimeter reclamation bund and polishing pond wall	The presence of site runoff within the bund could attract birds, which could lead to bird strikes. The polishing pond would be located approx. 2 km from RYW 18/36.	AO	Possible	Moderate	M	Implement bird surveillance and dispersal techniques to discourage birds.	Unlikely	Moderate	L
Dredge pipeline installation	Public safety at the construction site on Marcoola beach during pipeline assembly.	S	Possible	Fatality	H	The beach would be temporarily closed during assembly of the sand pipeline. Provision for alternative public and emergency vehicle access would be provided around the active construction site.	Unlikely	Injury	L
	Public safety when the pipeline is being dragged from the beach to the mooring point.	S	Possible	Fatality	H	The public would be asked to stay clear of the operational area during the works. Note: The Regional Harbour Master may require a temporary exclusion zone between the beach and the off-shore pump out location.	Unlikely	Fatality	M

Aspect	Impact	Risk Type	Likelihood	Consequence	Risk	Mitigation	Likelihood	Consequence	Residual Risk
No project specific risks identified									
Dredge pipeline installation	Public safety when the pipeline is being dragged from the beach to the pump-out site.	S	Possible	Fatality	H	The public would be asked to stay clear of the operational area during the works. Note: The Regional Harbour Master may require a temporary exclusion zone between the beach and the off-shore pump out location.	Unlikely	Fatality	M
	A member of the public could fall while trying to cross the sand pipeline.	S	Likely	Injury	H	Pedestrian access would be provided over the sand pipeline above the high-tide mark once it is installed. The access would be designed to ensure safe and universal access. A vehicle crossing point would be provided for emergency vehicles.	Unlikely	Injury	L
	Earthworks for site infrastructure (such as internal haul roads) could generate dust, which could present a hazard to aircraft movements.	AO	Likely	Moderate	H	Implement a dust management plan, with stringent requirements within 300 m of RWY 18/36.	Unlikely	Moderate	L
	Pipeline installation equipment taller than 4.5 m could impinge on the OLS of RWY 18/36.	AO	Likely	Major	E	If equipment greater than 4.5 m in height is used to install the sand pipeline, these works would be scheduled in consultation with Air Traffic Control (ATC) to occur during non-flying hours. The contractor would be in constant communication with ATC so that works could be halted and the area cleared if an unplanned flight were to occur.	Unlikely	Moderate	M

Residual Risk	Consequence	Likelihood	Mitigation	Risk	Consequence	Likelihood	Risk Type	Impact	Preconstruction	Aspect
			No project specific risks identified							
			An access ramp over the pipeline would be provided to ensure access to all areas of the airport.. The pipeline installation would be staged to ensure that access over the pipeline is available at all times.	H	Major	Possible	AO	The pipeline could inhibit access by Aviation Rescue and Firefighting Service (ARFFS) vehicles to the site of an incident at the airport.		Dredge pipeline installation
			An access ramp over the pipeline would be provided to ensure access to all areas of the airport.. The pipeline installation would be staged to ensure that access over the pipeline is available at all times.	H	Major	Possible	AO	The pipeline could inhibit access by ARFFS vehicles to the site of an incident at the airport.		
			The condition of the sand pipeline would be monitored and immediate action would be taken in the event of a significant leak.	L	Injury	Unlikely	S	A pipe burst could occur on Marcoola beach.		Sand pumping
			The condition of the sand pipeline would be monitored and immediate action would be taken in the event of a significant leak.	H	Major	Unlikely	AO	A pipe burst could occur in an airside area.		
			The pump-out area would be marked-out with buoys and advisory signs would be installed. Note: the Regional Harbour Master may require a temporary exclusion zone for the duration of the pumping activities.	H	Fatality	Possible	S	Potential interaction between the dredger and/or tug, and recreational or fishing vessels.		

Aspect	Impact	Risk Type	Likelihood	Consequence	Risk	Mitigation	Likelihood	Consequence	Residual Risk
No project specific risks identified									
Tailwater management	Tailwater in the polishing pond and water being pumped to site could attract birds, which could lead to bird strikes.	AO	Possible	Moderate	M	Implement bird surveillance and dispersal techniques to discourage birds.	Unlikely	Moderate	L
	The polishing pond wall could fail, releasing tailwater. Potential damage from a failure would be limited to on-site construction-phase infrastructure (such as the perimeter road).	S	Unlikely	Fatality	M	Design the pond wall with an appropriate factor of safety. Regular inspection of bund wall integrity.	Almost Impossible	Fatality	L
Tailwater management	The presence of approx. 1.5 m deep of water in the polishing pond could present a safety hazard. The polishing pond would be secured to prevent public access to the area.	S	Unlikely	Fatality	M	The pond wall would be designed with a wide enough crest to allow safe access around the pond.	Unlikely	Fatality	M
Pavement Construction									
Sand trimming	Earthworks during sand trimming could generate dust, which could present a hazard to aircraft movements.	AO	Likely	Moderate	H	Implement a dust management plan, with stringent requirements within 300 m of RWY 18/36.	Unlikely	Moderate	L
Pavement construction	Delivery of pavement materials to site would increase the movement of large vehicles between the source quarry and the site, which could introduce traffic hazards.	S	Possible	Fatality	H	Implement a traffic management plan, which would consider haul routes and approved travel times.	Unlikely	Fatality	M
	Stockpiling and preparing pavement materials could generate dust, which could present a hazard to aircraft movements.	AO	Likely	Moderate	H	Locate the pavement stockpiling and batching area away from RWY 18/36. Implement a dust management plan, with stringent requirements within 300 m of RWY 18/36.	Unlikely	Moderate	L

Residual Risk	Consequence	Likelihood	Mitigation	Risk	Consequence	Likelihood	Risk Type	Impact	Preconstruction	Aspect
L	Moderate	Unlikely	It is planned to temporarily operate RWY 13/31 with a displaced threshold so that RWY 18/36 could be temporarily closed during the works. At this time, all flights would be from/to RWY 13/31. Construction activities would be managed under a 'Method of Working Plan', which will be prepared in conjunction with SCA airport operations personnel and Airservices Australia.	E	Major	Likely	AO	No project specific risks identified Construction activities within the runway strip present an obstacle and dust/FOD hazard to aircraft.	Pavement construction within RWY 18/36 runway strip	
L	Moderate	Unlikely		H	Moderate	Likely	AO	Construction of the apron expansion and changes to the RWY 12/30 taxiways introduces conflicts for the existing GA facilities west of the terminal.	Apron extension and taxiway changes at the western General Aviation (GA) area	

Aspect	Impact	Risk Type	Likelihood	Consequence	Risk	Mitigation	Likelihood	Consequence	Residual Risk
No project specific risks identified									
Terminal upgrade	Public access to an active construction site presents safety hazards.	S	Possible	Injury	M	Cordon off construction areas and divert the public around unsafe areas. Erect appropriate warning signs.	Unlikely	Injury	L
	Works in airside areas could introduce dust and FOD hazards for aircraft.	AO	Possible	Moderate	M	Construction activities would be managed under a 'Method of Working Plan', which will be prepared in conjunction with SCA airport operations personnel and Airservices Australia.	Unlikely	Moderate	L
	Unauthorised airside access presents a security hazard.	AO	Possible	Major	M	Maintain and implement airside security measures. Only authorised construction workers to have airside access.	Unlikely	Moderate	L
Operations									
Implementation of new operating procedures	Improper implementation of flight procedures presents aircraft operations hazards.	AO	Possible	Major	H	Undertake commissioning and introduction of new procedures in accordance with established guidelines and in liaison with CASA and Airservices Australia including update of management plans to obtain runway certification. Issue appropriate NOTAM in lead-up to runway opening.	Unlikely	Major	M