



New Runway Project

PRELIMINARY DRAFT
MAJOR DEVELOPMENT PLAN

**VOLUME B: ENVIRONMENT,
HERITAGE AND TRAFFIC
ASSESSMENT** SECTIONS 8-18
MAY 2018





17

Environment and Heritage Management

This Section outlines how environment and heritage management will be implemented throughout the New Runway Project (NRP) to minimise impacts and achieve regulatory compliance.

Detail is also provided on the following areas:

- How will the environmental and heritage impacts of operations and construction be managed?
- What is the proposed environmental offset strategy?

17.1 Introduction

It is Perth Airport's objective that all environment and heritage impacts during construction and operation of the NRP are avoided or minimised as far as practicable. Extensive analysis and assessment has occurred in the planning and design of the NRP to achieve this outcome. However, there will be an unavoidable level of environment and heritage impact and disturbance attributable to the delivery and operation of the NRP.

To enable the construction contractor and Perth Airport to develop an appropriate construction environmental management plan (CEMP) and operational environmental management plan (OEMP) for the NRP, the following section outlines the key environmental and heritage issues to be addressed and the structure of the CEMP.

17.2 Summary of High and Medium Impacts

17.2.1 Environmental Impact Assessment

To effectively manage environmental impacts associated with the NRP, it was necessary to identify relevant environmental aspects and assess the significance of potential impacts. Environmental aspects and impacts are identified and described in the individual sections. A summary of potential impacts is summarised in Table 17-1.

The assessment of impacts of the NRP was first undertaken with standard mitigation applied (e.g. statutory compliance) to determine the initial risk. If the initial risk was found to be medium, high or very high the same assessment was repeated but with additional mitigation measures applied to determine the residual impacts, and hence the overall risk level.

A summary of the medium, high and very high levels of initial risk for the NRP is provided in Table 17-2. Impacts with low risk ratings are still addressed during the development of mitigation and management measures including appropriate measures to be included in future managements plans.

Aspects	Impacts	MDP Section
Geology and Soils	Disturbance of acid sulfate soils resulting in impacts to surface water, groundwater or ecological receptors	9
	Ground movement from dewatering, excavation or soil loading	
	Erosion and sedimentation	
	Impacts to surface or groundwater and ecological receptors from disturbance of existing hydrocarbon contaminants	
	Disturbance of asbestos containing material	
	Exposure of contaminated groundwater (Per- and poly fluoroalkyl substances (PFAS) or acid sulfate soils) with impacts to works or ecological receptors	
	Contamination from spills during construction or operation	
Hydrology	Contaminated runoff from pavement areas during operation	10
	Acidification of surface or groundwater due to dewatering	
	Erosion and sedimentation from opening of new drains, vegetation clearing or earthworks	
	Lowering of groundwater affecting vegetation or structures	
	Introduction of weeds, pollutants or sediment to Munday Swamp due to realignment of Northern Main Drain (NMD)	
	Change to hydroperiod and storage area in Munday Swamp affecting flora and fauna	
	Rise in groundwater levels due to vegetation clearing	
Flora and vegetation	Change in rainfall recharge pattern resulting in groundwater drawdown	11
	Spills or leaks during construction or operation causing contamination of stormwater	
	Loss of Commonwealth-listed flora species and ecological communities from clearing of vegetation	
Fauna	Flora habitat fragmentation leading to change in microclimate	12
	Potential spread of weeds and dieback	
	Loss of fauna habitats from clearing	
Ground-based noise	Loss of biodiversity from clearing	13
	Possible fragmentation of populations from clearing linked areas	
	Possible change in species interactions leading to possible population declines and behaviour of species	
Air quality and greenhouse gas	Growth in aircraft movements following construction of runway may lead to increased noise exposure for sensitive receivers	14, 23
	Excessive levels of dust generated by construction activities	
Heritage	Possible disturbance of known heritage values from unauthorised activities and ground works	16
	Possible disturbance of unknown heritage values from ground works	

Table 17-1 Summary of medium, high and very high risk environmental aspects and impacts of the New Runway Project

Source: Perth Airport

Section Number	Impacting Process	Impact Detail	Project Phase	Initial Assessment			Residual Assessment				
				Standard Mitigation	Significance/Consequence	Likelihood	Initial Risk	Additional Mitigation	Significance	Likelihood	Residual Risk
Section 9 Geology and Soils	Construction of new Northern Main Drain and Southern Main Drain	Disturbance, management and treatment of acid sulfate soils resulting in acidification of surface or groundwater or impacts to ecological receptors	Construction	Preparation and implementation of Acid Sulfate Soil and Dewatering Management Plan in accordance with DWER guidance	Moderate Adverse	Almost Certain	High	Further investigation prior to construction to delineate area of higher risk of encountering acid sulfate soils along Northern Main Drain and Southern Main Drain so that management can be targeted to high risk areas	Minor Adverse	Unlikely	Low
Section 9 Geology and Soils	Contaminated groundwater encountered during dewatering and groundwater management activities	Exposure of PFAS contaminants to surface water runoff which may impact surface-water and groundwater quality and construction workers or ecological receptors	Construction	Preparation and implementation of an Acid Sulfate Soils and Dewatering Management Plan including: <ul style="list-style-type: none"> re-injection of groundwater to align with proposed groundwater management strategies 	Moderate Adverse	Possible	Medium	PFAS evaluation and risk assessment of soil concentration and leachability, and of groundwater and surface water that may be impacted Consideration of soil placement to ensure no unacceptable increase in contamination risk, no increase in off-site release risk, and no increase in risk to groundwater and surface water Consideration of water extraction, handling and placement to ensure no unacceptable increase in contamination risk, no increase in off-site release risk, and no increase in risk to groundwater and surface water Conformance with the PFAS National Environmental Management Plan and other relevant guidance documents Ongoing monitoring of PFAS concentrations in groundwater and surface water throughout construction Reporting of evaluation, risk assessment, management activities and monitoring results to the Airport Environment Officer (AEO) Submission of the CEMP and ASSDMP to the AEO for review prior to commencement of bulk earthworks and dewatering activities	Moderate Adverse	Unlikely	Low

Table 17-2 Summary of environmental and heritage impacts and mitigation measures (with initial risk of medium or higher)
Source: Perth Airport

Section Number	Impacting Process	Impact Detail	Project Phase	Initial Assessment				Residual Assessment			
				Standard Mitigation	Significance/Consequence	Likelihood	Initial Risk	Additional Mitigation	Significance	Likelihood	Residual Risk
Section 9 Geology and Soils	Contamination spills (Early works and construction phase)	Storage and use of fuels, oils etc. resulting in the release of substances to soil, surface water or groundwater which may impact on ecological and social receptors	Construction	Preparation and implementation of a CEMP to include: <ul style="list-style-type: none"> • appropriate measures for the storage and use of hazardous substances as per statutory requirements • spill response procedures • regular maintenance of vehicles to prevent leaks or spills • monitoring of construction water quality-control measures 	Moderate Adverse	Possible	Medium	Select low impact or low toxicity chemicals during construction Physical spill containment bunds/barriers Pumping options to remove contaminated surface waters Incident register to be monitored to identify recurring problems which can then inform maintenance programs	Minor adverse	Possible	Low
Section 10 Hydrology	Realignment of open channel (NMD) – Munday Swamp	Introduction and spread of weeds in Munday Swamp affecting native flora and fauna habitat	Operation	Upstream treatment train to include a contaminant basin and a vegetated infiltration basin sized to fully infiltrate up to one exceedance per year storm to capture weed propagules	Moderate Adverse	Possible	Medium	Engagement with upstream stakeholders Active weed management of the NMD, gross pollutant, contaminant and infiltration basins post development	Moderate Adverse	Unlikely	Low
Section 10 Hydrology	Realignment of open channels (NMD)	Groundwater level fluctuations at Munday Swamp negatively affecting flora and fauna	Operation	Design: Drain levels to be at or above Master Drainage Strategy 2017 concept design levels	High Adverse	Unlikely	Medium	Detailed groundwater modelling specifically for the Munday Swamp area to be undertaken to a sufficient degree of detail to inform design	High Adverse	Highly Unlikely	Low
Section 10 Hydrology	NMD - Contamination of surface water from upstream sources	Major (based on volume) oil/chemical spills, most likely from upstream sources entering Munday Swamp	Operation	Engineered treatment train as described in the 'Infiltration Storage' section	Major Adverse	Highly Unlikely	Medium	Incident to be notified to Airport Control Centre (ACC) to action a spill response procedure which includes emergency services	High Adverse	Highly Unlikely	Low

Table 17-2 Summary of environmental and heritage impacts and mitigation measures (with initial risk of medium or higher) (Continued)

Section Number	Impacting Process	Impact Detail	Project Phase	Initial Assessment			Residual Assessment				
				Standard Mitigation	Significance/Consequence	Likelihood	Initial Risk	Additional Mitigation	Significance	Likelihood	Residual Risk
Section 10 Hydrology	Realignment of open channels (NMD)	NMD realignment with increased sediment loads, turbidity reporting to Munday Swamp impacting local water dependent flora and fauna	Operation	Integration of a gross pollutant control basin and infiltration basin upstream of Munday Swamp in the design Sediment to be captured in gross pollutant basin prior to entering infiltration basin Regular monitoring and maintenance of gross pollutant basin via PAPL MMS system Regular monitoring of surface water downstream of the gross pollutant basin i.e. within Munday Swamp via PAPL MMS system Design to consider plant species and other requirements to minimise bird strike risk	High Adverse	Unlikely	Medium	Maintenance of the treatment train pollution capturing elements to help ensure that capacity is available for pollutants Design of area between infiltration storage and swamp to be bioengineered to provide a high Manning value to keep stormwater velocity low enough to avoid sands and gravels being carried by water	Moderate Adverse	Highly unlikely	Low
Section 10 Hydrology	Normal construction operations - Accidental chemical, fuel spills or other dangerous goods	Accidental spills or leaks from construction equipment mobilised by stormwater runoff into the surface-water drainage system	Construction	CEMP to include: <ul style="list-style-type: none"> • appropriate measures for the storage and use of hazardous substances as per statutory requirements • spill response procedures • regular maintenance of vehicles to prevent leaks or spills • monitoring of construction water quality control measures 	Moderate Adverse (dependent upon nature, quantity and timing of spill or leak)	Possible	Medium	Select low impact or low toxicity chemicals during construction Physical spill containment bunds/barriers Pumping options to remove contaminated surface waters Incident register to be monitored to identify recurring problems which can then inform maintenance programs	Minor Adverse	Possible	Low
Section 10 Hydrology	Normal construction operations - Excavations	Exposure of ASS and other contaminants to surface-water runoff which may impact surface water and groundwater quality and ecological receptors	Construction	Acid Sulfate Soils and Dewatering Management Plan including: Release of treated groundwater to align with proposed groundwater management strategies	Moderate Adverse	Possible	Medium	PFAS strategy to be developed based on latest guidelines	Moderate Adverse	Unlikely	Low

Table 17-2 Summary of environmental and heritage impacts and mitigation measures (with initial risk of medium or higher) (Continued)

Section Number	Impacting Process	Impact Detail	Project Phase	Initial Assessment			Residual Assessment				
				Standard Mitigation	Significance/Consequence	Likelihood	Initial Risk	Additional Mitigation	Significance	Likelihood	Residual Risk
Section 11 Flora and Vegetation	Vegetation clearance	Loss of EPBC-listed Banksia Woodlands TEC	Construction	Restrict clearing footprint to NRP area, demarcate vegetation clearing extent and exclusion zones	Major Adverse	Almost Certain	Very High	Offsets in accordance with EPBC environmental offsets policy	Moderate	Almost Certain	High
		Loss of habitat for species of conservation significance (Commonwealth) (<i>Conospermum undulatum</i> , <i>Macarthuria keigheryi</i>)	Construction		High Adverse to Major Adverse	Almost Certain	High	Collection of plants, rootstock and seedbank Exclusion of predators, weed control <i>Phytophthora</i> management	High Adverse	Almost Certain	High
		Removal of regionally significant vegetation and loss of habitat for species of conservation significance (State)	Construction		Moderate Adverse (all Priority listed species)	Almost Certain	High	Fire management Conservation significant flora and vegetation management plan	Moderate	Likely	Medium
Section 11 Flora and Vegetation	Flora habitat fragmentation and edge effect	Change of microclimate (i.e. more light and higher climate in remaining habitat)	Construction	Restrict clearing footprint to NRP area	Minor Adverse	Likely	Medium	No additional mitigation measures identified	Minor	Likely	Medium
Section 11 Flora and Vegetation	Movement or introduction of dieback disease	New infestations of dieback in previously uninfested areas due to movement of vehicles, soil or water	Construction and operation	Demarcation of Infested areas Dieback management plan to be prepared to include vehicle movement and wash-down management procedures, stockpile management, active treatment if required during construction, dieback assessments and hygiene management Imported soil to be dieback free	Moderate adverse	Possible	Medium	Fence off dieback free areas not impacted by the NRP Location of stockpiles considered e.g. infested soil to be located downslope of uninfested areas Stockpile areas are away from drainage channels Test soil prior to importation as dieback free	Moderate adverse	Unlikely	Low
Section 12 Fauna	Loss of habitat	Decline in population survival	Construction	Well-defined and rationalised clearing footprint that avoids sensitive habitat where possible,	Moderate Adverse	Almost certain	High	Offset in accordance with EPBC offset policy. Acquire offsets	Moderate	Possible	Medium

Table 17-2 Summary of environmental and heritage impacts and mitigation measures (with initial risk of medium or higher) (Continued)

Section Number	Impacting Process	Impact Detail	Project Phase	Initial Assessment			Residual Assessment				
				Standard Mitigation	Significance/Consequence	Likelihood	Initial Risk	Additional Mitigation	Significance	Likelihood	Residual Risk
Section 12 Fauna	Loss of habitat	Population fragmentation	Construction and Operation	Clearing designed to retain linkage where possible, Restrict clearing footprint to NRP area Minimise edge effects through air quality (dust) and weed management	Moderate Adverse	Almost certain	High	Where possible replace or enhance connectivity	Moderate	Likely	Medium
Section 12 Fauna	Loss of habitat	Increased mortality	Operation	Wildlife Management Plan in place	Minor Adverse	Likely	Medium	Avoid Black-Cockatoo forage trees along high-speed roads	Minor	Possible	Low
Section 12 Fauna	Species interactions	Predation and competition leading to population decline	Operation	Existing control of feral species as per Perth Airport's estate-wide plan. Dieback management	Moderate Adverse	Likely	Medium	Extend fox control to target feral cats	Moderate	Possible	Medium
Section 12 Fauna	Dust, light, noise and vibration	Impacts to predator-prey interactions, changes to mating and nesting behaviour, increased competition and predation within and between invertebrates, frogs, birds and mammals	Construction and Operation	Management plans to incorporate measures to manage dust, light, noise and vibration in accordance with legal environmental limits	Moderate Adverse (invertebrates)	Likely	Medium	CEMP to include requirement to direct construction lighting away from retained native vegetation Further macroinvertebrate surveys/monitoring during and after construction	Moderate Adverse (invertebrates)	Possible	Medium
Section 13 Ground-based Noisemovements	Growth in aircraft following new runway construction	Increase in aircraft taxiing in line with growth in movements will impact on sensitive receivers	Operation	Taxiway design is undertaken in accordance with Manual of Standards (MOS) 139 - Aerodromes Part 6.3 Taxiways	Moderate Adverse	Likely	Medium	Improved communication of information to surrounding residents on ground-based noise	Minor Adverse	Possible	Low
Section 14 Air quality and greenhouse gas (ground)	Construction dust-generating activities	Excessive levels of dust generated resulting in complaints and adverse air-quality impacts	Construction	Dust management as part of the CEMP, including watering	High Adverse	Possible	Medium	Increased levels of watering, sealed roads, covers on exposed areas and stockpiles	Minor Adverse	Possible	Low
Section 16 Heritage	Unauthorised Activities	Disturbance of known values	Construction	WA AH Act - S18 approval and Ministerial conditions Perth Airport Consent DIRDC Airport Building Permit Aboriginal Heritage Monitors	High Adverse	Possible	Medium	Inductions – heritage Inductions – consents Onsite spot checks and auditing	Moderate Adverse	Unlikely	Low

Table 17-2 Summary of environmental and heritage impacts and mitigation measures (with initial risk of medium or higher) (Continued)

Section Number	Impacting Process	Impact Detail	Project Phase	Initial Assessment				Residual Assessment			
				Standard Mitigation	Significance/Consequence	Likelihood	Initial Risk	Additional Mitigation	Significance	Likelihood	Residual Risk
Section 16 Heritage	Authorised ground-disturbing works	Disturbance of known values	Construction, Operation and Maintenance	Perth Airport Consent DIRDC Airport Building Permit Aboriginal Heritage Monitors Inductions - heritage Inductions - consents Onsite spot checks and auditing	High Adverse	Almost Certain	High	WA AH Act - S18 Ministerial conditions Heritage Management Plan	Moderate Adverse	Almost Certain	High
Section 16 Heritage	Authorised ground-disturbing works	Disturbance of unknown values	Construction	Inductions - heritage Onsite spot checks and auditing	Moderate Adverse	Possible	Medium	WA AH Act - S18 approval and Ministerial conditions Heritage Management Plan	Minor Adverse	Possible	Low

Table 17-2 Summary of environmental and heritage impacts and mitigation measures (with initial risk of medium or higher) (Continued)

17.3 Consistency with Perth Airport Environment Strategy

Perth Airport has an Environment Strategy which is detailed in the Perth Airport Master Plan 2014. The Environment Strategy encompasses an Environmental Management Framework (EMF) which sets out how Perth Airport seeks to meet its obligations under Commonwealth and State legislation.

The Perth Airport EMF is presented in Figure 17-1.

Perth Airport expects the principles of the EMF to be incorporated into the CEMP during construction and the OEMP during operation of the NRP.

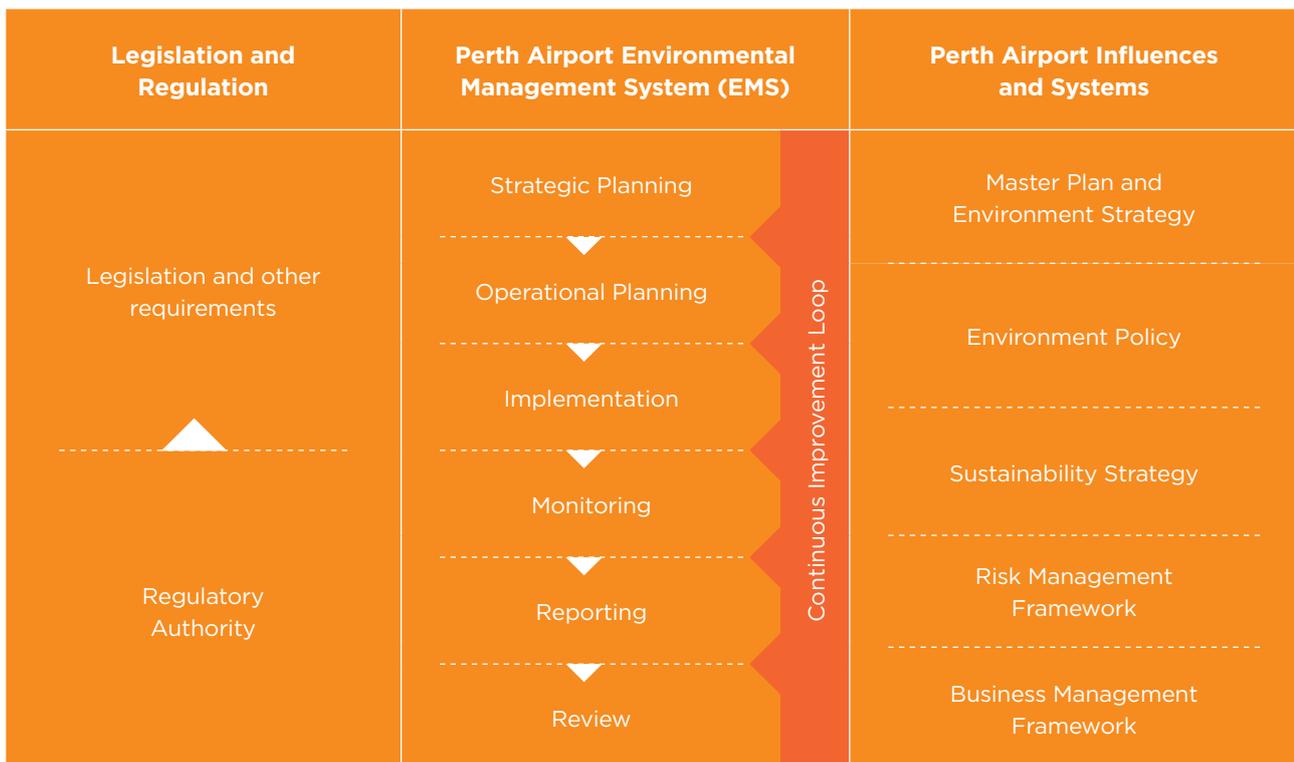


Figure 17-1 Perth Airport Environment Management Framework
Source: Perth Airport

17.4 Construction Environment Management Plan

This section outlines the intended structure of the CEMP, which the construction contractor is expected to develop and implement during construction activities for the NRP. The CEMP must address the environmental aspects and develop mitigation measures for the impacts identified throughout this MDP and within Tables 17-1 and Tables 17-2.

The construction contractor is expected to familiarise themselves with the background, context and environmental impact assessment described in the relevant technical chapters to assist with development of mitigation measures.

The CEMP must also address the consultative and reporting aspects for the NRP as follows:

- project management structure,
- environmental incidents,
- community complaints and consultation,
- performance monitoring, reporting and compliance with all aspects of the Perth Airport EMF,
- identify management measures for construction of the NRP that are in accordance with relevant legislation and policy, and with accepted Perth Airport standards. Details of these documents are provided in the relevant sections of the EMF and may be accessed through the Perth Airport web site, and
- address community and government expectations of transparency and accountability by identifying management actions.

The following sections outline the implementation requirements of the CEMP, such as details on the project management structure, training, risk assessment and management review expectations.

17.4.1 Project Management Structure

All Perth Airport personnel and contractors are responsible for the environmental performance of their activities and for complying with their general environmental duty. A project management structure which identifies roles and responsibilities will be included in the CEMP to inform its successful implementation.

17.4.2 Training and Awareness Program

Perth Airport will maintain a high level of on-site supervision of the construction contractors. Environmental performance of potential contractors will be reviewed as part of the tender evaluation process.

Individuals will also be responsible and accountable for their conduct through their conditions of employment or contract. Nonetheless, training and induction of all personnel involved in the NRP will be conducted to make individuals aware of their environmental responsibilities.

17.4.3 Risk Assessment

A risk assessment and identification of possible incidents which could arise will be undertaken by the construction contractor in consultation with Perth Airport and included in the CEMP. The risk assessment will be informed by the impacts and levels of risk identified in the MDP, but further developed to account for the specific construction methodology. The risk assessment will inform the development of appropriate mitigation measures based on the identified level of risk.

17.4.4 Contingency Management

The CEMP will include management actions and contingency strategies, which will be taken should proposed mitigation measures be compromised and cause significant and detrimental environmental or health impacts. The CEMP will also be aligned with Perth Airport's contingency management measures.

17.5 Operational Environmental Management Plan

Perth Airport will develop an OEMP for the NRP. The OEMP will be aligned with Perth Airport's EMF and will include the following:

- risk assessment and review,
- environmental incidents and reporting,
- community complaints and consultation,
- performance monitoring, reporting and compliance with all aspects of the Perth Airport EMF and legislative requirements,
- actions to be undertaken to manage the environmental impacts during operation of the runway, in accordance with legislative requirements and accepted Perth Airport standards,
- management and reporting structure, roles and responsibilities, training, monitoring and management review expectations, and
- contingency management.

17.6 Process for Heritage Management

Perth Airport has developed an Aboriginal Heritage Management Framework so that potential impacts to archaeological and ethnographic Aboriginal heritage values from the development and ongoing operation of the airport are considered, managed and mitigated. This framework is outlined in Section 16.

Perth Airport is in the process of incorporating the management of non-Aboriginal heritage values into this framework so that all Aboriginal and non-Aboriginal heritage values on the estate are managed in an efficient and consistent manner.

The Heritage Management Framework will be continuously reviewed and updated as necessary, including throughout the project development and construction.

Approval to impact on heritage sites is obtained through approval under section 18 of the State's *Aboriginal Heritage Act 1972* (AH Act).

Approval by the State Government was granted in May 2018.

17.8 Reporting and Incident Management

17.8.1 Environment

Environmental reporting will be included as part of the management framework for the NRP to inform the relevant regulators of the progress of the project, and compliance with approvals conditions and legislative requirements.

As part of Perth Airport's obligation to complete an Annual Environment Report, the relevant information will be also passed on to the Commonwealth Government in sufficient detail to allow for the impact of development activities on Perth Airport to be assessed.

Environmental Risk Register

Perth Airport will maintain an Environmental Risk Register for the NRP to summarise key risks identified in the MDP (and others identified as the project progresses) to inform and track the implementation of appropriate management measures.

It is proposed that the register is reviewed on a regular basis for relevance, timely close out and management of risks.

Environmental Management Review

The Perth Airport project manager, in consultation with the construction contractor, will have oversight for the review of environmental performance and compliance with environmental and heritage requirements at planned intervals. This review will consider the suitability, adequacy and effectiveness of environmental and heritage management strategies being implemented through the CEMP, and additional work instructions and procedures which may be required.

Management reviews by both Perth Airport and the construction contractor will include opportunities for assessing improvement opportunities in environmental management and conservation at planned intervals. Records of the management reviews will be retained as part of the NRP reporting process.

The following information will be used to inform management review:

- results of internal and external audits,
- evaluation of compliance with legal and other requirements,
- communications from external parties (including complaints),
- environmental performance report assessing compliance with management objectives and mitigation measures,
- status of corrective and preventive actions,
- follow up actions from previous management reviews,
- changing circumstances, including development of legal and other requirements related to environmental aspects are identified, and
- recommendations for improvement.

17.8.2 Heritage

In keeping with the conditions set by the State in relation to the application made under section 18 of the AH Act, a written report will be provided

to the Registrar of Aboriginal Sites within 60 days of the completion of the NRP and will detail:

- the extent of the impact on an Aboriginal site, including the level, effect and type of impact, and supported by photographs taken before and after the impact,
- any archaeological or cultural salvage undertaken on an Aboriginal site, including when and how such salvage took place, who was present at the salvage, where the material was relocated, and the results of the salvage and any subsequent analysis conducted, and
- the results and findings of any monitoring of ground distributing works.

As part of Perth Airport's obligation to complete an Annual Environment Report, the relevant information will be also passed on to the Commonwealth Government in sufficient detail to allow for the impact of development activities on Perth Airport to be assessed.

Incident Management

Environment and heritage incidents include events that directly or indirectly cause environment and heritage impacts or harm (physical or non-physical e.g. reputational). Events involving non-compliance with project procedures and 'near-miss' events, which may or may not have resulted in an actual environment or heritage impact, are required to be reported and managed. The CEMP and OEMP will outline specific incident-reporting procedures that will be adopted for the NRP, including notification of State or Commonwealth regulators where applicable.

Compliance Management

To review that environment and heritage management measures continue to be relevant and appropriate, a project audit and inspection program will be developed to assess project compliance with management strategies, any conditions of approval for the application submitted under section 18 of the *Aboriginal Heritage Act 1972*, and project performance to agreed objectives.

17.9 Application of Offsets

An environmental offsets proposal, aligned with the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012) (the offsets policy) and focused to address the impact specifically to the EPBC Act listed *Macarthuria keigheryi*, *Conospermum undulatum* and Banksia Woodlands TEC, will be implemented.

The total NRP area of 293 hectares has been designed to use the space in the most efficient and effective manner to provide all the required infrastructure. To deliver the project, 129 hectares of vegetation balanced with providing safe and critical airservice infrastructure in good or better condition will be cleared.

The NRP has been planned in its proposed location since the 1970s. Section 3 describes the options and alternatives that have been considered to meet the forecast growth in passenger and aircraft movements. The assessment determined that the development of a parallel runway system, through the construction of the NRP, is the only way to achieve the required airfield capacity. The clearing of the site is an unavoidable impact, and while mitigation measures have been considered where appropriate, the application of offsets is required.

17.9.1 Offsets Policy

Environmental offsets are a mechanism available through environmental impact assessment and approvals processes administered by the Commonwealth Department of the Environment and Energy (DEE) to compensate for the impacts of developments on those matters of national environmental significance by the EPBC Act. They are applied through approval conditions and are defined by the Commonwealth Government as “actions taken outside of a development site that compensate for the impacts of that development - including direct and indirect impacts”.

Although it is acknowledged that offsets do not reduce the actual impacts of a development, it may change the net effect of a proposal on the environment because of the reparation or ‘environmental gain’ achieved through those actions.

Options to apply offsets within the estate were not considered practical, suitable or effective.

Macarthuria keigheryi and *Conospermum undulatum* are specifically found within the NRP area. Perth Airport will identify alternate offset areas for protection or translocation, where possible, of impacted plants. Additionally, research to support the ongoing maintenance and development of alternate remnant communities is proposed.

Banksia Woodland of the Swan Coastal Plain threatened ecological community and black cockatoo habitat is, by its nature, considered generally inconsistent with the safe operations of an airport. Bird strikes present a critical risk to aircraft and passenger safety, in addition to the risks to the surrounding community. To that end, Perth Airport proposes that the protection of avifauna habitat is best served through offsite environmental offsets and protection.

17.9.2 Offsets Strategy

Perth Airport has prepared an offset strategy to guide the development of a whole of estate offsets proposal. The whole of estate offset strategy has been developed so that all future projects, as outlined in the Master Plan 2014, including the NRP, are considered holistically.

Perth Airport continues to engage with DEE and the State Department of Biodiversity, Conservation and Attractions (DBCA) so that the offset strategy is aligned with Commonwealth objectives while also having outcomes aligned to provide additional support to State priorities for biodiversity conservation.

The development of the offset strategy has included:

- undertaking an extensive assessment of the environmental values within the estate, and specifically the NRP area,
- identifying suitable offsite areas and assessing the values contained within those areas,
- applying the environmental offsets calculation guidelines to confirm that offsets areas met the policy requirements, and
- identifying suitable additional measures including indirect offsets such as research programs.

17.9.3 Draft Offsets Proposal

Perth Airport’s whole of estate offset proposal applies to EPBC Act listed conservation significant ecological values across multiple development sites on the estate, including the NRP area. Perth Airport anticipates that the whole of estate offsets proposal will be submitted for DEE advice in late 2018.

The draft proposal includes:

- acquisition of offsite land offsets consistent with the Commonwealth Environmental Offsets Policy (2012). This will be determined by:
 - assessing the extent and value of environmental values in the affected area and identifying suitable alternate areas with matching values,
 - purchasing and transferring land, at no cost, to DBCA for protection and management in perpetuity as part of the Western Australian Conservation Estate,
- undertaking research in initiatives which provide a benefit to the impacted species including, but not limited to, genetic research,

translocation practices, seeding and identification of alternate suitable locations, and

- funding State Government initiatives which seek to identify, protect and improve remnant listed populations.

To progress the offset proposal, the first land purchase was completed in February 2018, with Perth Airport acquiring a 315 hectare site in Orange Springs. The Orange Springs site is located approximately 130 kilometres to the north of Perth Airport and 50 kilometres north of Gingin, and borders the Moore River National Park. It is situated on Bassendean Dunes landform and supports 263 hectares Banksia Woodlands considered to be representative of FCT S09 - *Banksia attenuata* woodlands over dense low scrubland.

The Banksia Woodlands was found to be in mostly ‘Excellent’ condition, with some locations in lower slopes in ‘Very Good’ condition and some areas in ‘Degraded to Good’, ‘Degraded’ and ‘Completely Degraded’ condition. Based on the

condition and size of the patches mapped and grouped within the Banksia Woodlands on the site, the entire patch is considered eligible as the TEC.

The Orange Springs site is particularly important as it is of high environmental value to the State. It will also establish a Banksia corridor connecting to the Moore River National Park, as well as providing foraging value habitat for Carnaby’s Black Cockatoo.

The whole of estate offset proposal has been developed to be aligned broadly with the objectives of the species-specific recovery plans for relevant Commonwealth-listed species and communities impacted by the NRP. A summary of the alignment of this proposal with the objectives of the recovery plans are outlined in Table 17-3.

Species	Recovery Plan objective	Proposed Offset
<i>Conospermum undulatum</i>	Maintain or improve the conservation status of <i>Conospermum undulatum</i> by abating identified threats to populations	Funding for threat abatement programs and research projects, including propagation and translocation
<i>Macarthuria keigheryi</i>	To abate identified threats and maintain or enhance viable in situ populations to ensure the long-term preservation of the species in the wild	Funding for threat abatement programs and research projects, including propagation and translocation
Banksia Woodlands of the Swan Coastal Plan	To maintain or improve the overall condition of the community in the known locations and reduce the level of threat	Purchase of direct land offsets Funding for threat abatement programs, research projects, rehabilitation and restoration planting, maintenance of offset land
Forest Red-tailed Black Cockatoo habitat	To stop further decline in the breeding populations and to ensure their persistence throughout their range in the south-west of Western Australia	Purchase of direct land offsets Funding for black cockatoo nesting boxes, rehabilitation/restoration planting, and maintenance of offset land
Carnaby’s Black Cockatoo habitat	To stop further decline in the distribution and abundance of Carnaby’s cockatoo by protecting the birds throughout their life stages and enhancing habitat critical for survival throughout their breeding and non-breeding range, ensuring that the reproductive capacity of the species remains stable or increases	Purchase of direct land offsets Funding for black cockatoo nesting boxes, rehabilitation/restoration planting, and maintenance of offset land

Table 17-3 Alignment of draft offset proposal with recovery plans

Source: Perth Airport

			
Banksia Woodlands	Black cockatoo habitat	<i>Conospermum undulatum</i>	<i>Macarthuria keigheryi</i>
Direct Offset			
<ul style="list-style-type: none"> • Offsite land purchase 	<ul style="list-style-type: none"> • Offsite land purchase 	<ul style="list-style-type: none"> • Support existing translocation programs 	<ul style="list-style-type: none"> • Support existing translocation programs
Indirect Offset			
<ul style="list-style-type: none"> • Research projects (e.g. surveys, habitat requirements) • Threat abatement 	<ul style="list-style-type: none"> • Research projects (e.g. nesting boxes) • Threat abatement 	<ul style="list-style-type: none"> • Research projects (e.g. propagation, translocation) • Threat abatement 	<ul style="list-style-type: none"> • Research projects (e.g. propagation, translocation) • Threat abatement

Figure 17-2 Proposed Perth Airport draft environment offset strategy for the New Runway Project
 Source: Perth Airport

Figure 17-2 outlines Perth Airport’s draft offset strategy and the values within the NRP area which will need to be considered for offset measures within an offsets proposal.

17.10 Conclusion

Perth Airport has developed frameworks to identify, assess and manage environmental and heritage values on the estate. The Perth Airport environment and heritage management frameworks provide guidance and set out expectations on the level of mitigation undertaken, or offset required, to adequately manage construction and operational impacts from the NRP.

A summary of impacts which have been assessed to pose medium and high levels of risk from the NRP will guide construction contractors during the development of a construction environmental management plan (CEMP). Perth Airport will work closely with the construction contractor to develop an effective CEMP for the NRP. An operational environmental management plan (OEMP) will be

developed following construction to mitigate against environmental and heritage impacts from the operation of the NRP and current Perth Airport operating procedures will be updated where required.

Perth Airport will implement reporting and incident management processes to ensure ongoing compliance with legislative requirements and approval conditions.

A draft offset strategy has been prepared to guide the development of an appropriate offsets proposal to mitigate against the loss of EPBC Act listed values from activities associated with the NRP. Perth Airport continues to receive guidance from DEE and DBCA to address the impacts of the NRP through appropriate application of the Commonwealth Environmental Offsets Policy.



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