# 30 Introduction

## 30.1 Background

On 15 April 2014 the Australian Government announced that the Commonwealth-owned land at Badgerys Creek would be the site for a Western Sydney airport. The proposed airport would cater for ongoing growth in demand for air travel, particularly in the rapidly expanding Western Sydney region. The airport site was selected following extensive studies completed over a number of decades and culminating in the release of the *Joint Study on Aviation Capacity in the Sydney Region* (Department of Infrastructure and Transport 2012), referred to as the 'Joint Study', in March 2012 and *A Study of Wilton and RAAF Base Richmond for Civil Aviation Operations* (Department of Infrastructure and Transport 2013) in April 2013.

The proposed airport is planned to be operational by the mid-2020s. It would service both domestic and international markets and development would be staged in response to ongoing growth in aviation demand. A revised draft Airport Plan has been prepared in accordance with the requirements of the *Airports Act 1996* (the Airports Act), setting out the Australian Government's requirements for the initial airport development.

The revised draft Airport Plan sets out details of the initial development for which authorisation is being sought (referred to as Stage 1). The Stage 1 development would include a single 3,700 metre runway on a north-east/south-west orientation and aviation support facilities for an operational capacity of approximately 10 million passengers annually, as well as freight traffic. Stage 1 is designed to cater for the predicted demand for five years following services commencing.

The revised draft Airport Plan also refers to the potential long term development of the proposed airport. As demand increases beyond 10 million annual passengers, additional aviation infrastructure and aviation support precincts would add capacity to meet growing aviation demand. Incremental development of the proposed airport would continue as additional taxiways, aprons, terminals and support facilities are developed.

The proposed airport may ultimately expand to have a second parallel runway on a north-east/south-west orientation and supporting facilities, increasing aviation capacity to approximately 82 million passengers annually. The need for a second runway will be triggered when the operational capacity approaches 37 million annual passengers, which is forecast to occur around 2050. The long term passenger capacity of approximately 82 million annual passengers is forecast to occur around 2063.

This Environmental Impact Statement (EIS) has been prepared in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* and will inform the determination of the Airport Plan.

Determination of the Airport Plan would authorise the Stage 1 development encompassing the construction and operation of the proposed airport to an annual operational capacity of approximately 10 million passengers. This EIS provides a detailed consideration of likely environmental impacts arising from the Stage 1 development based upon clearly defined design and operational parameters described in the revised draft Airport Plan.

However, it is recognised that approval of the proposed Stage 1 airport infrastructure would facilitate future growth in aviation capacity and consequently, additional impacts beyond the level assessed for the Stage 1 development would be expected. While the long term airport development described in this document would not be authorised by the Airport Plan, a strategic level assessment (this volume) of the potential implications has been undertaken to support consideration of the Stage 1 development and long term planning and land use strategies.

This approach ensures that the extent of potential impacts for the long term development (including noise exposure), are considered as part of the initial approvals process. Future developments would be subject to separate approval processes in accordance with the requirements of the Airports Act.

## 30.2 The long term development

### 30.2.1 Progressive development and approvals

It is expected that the proposed airport would be progressively developed as demand increases beyond 10 million passengers annually. Additional aviation infrastructure and support services such as taxiways, aprons, terminals and support facilities would be required to service the growing demand. Future developments beyond the scope of Stage 1 would be subject to the requirements of the Airports Act.

A second runway is forecast to be required by around 2050 and would be located parallel to the first runway with a centre line separation distance of around 1,900 metres. The need for a second runway would be triggered when the operational capacity approaches 37 million passengers per year, which is equivalent to approximately 185,000 air traffic movements including freight traffic.

The long term capacity of the airport is forecast to service approximately 82 million passengers per year, which is equivalent to approximately 370,000 air traffic movements including freight traffic. Indicative possible configurations of the progressive development of the proposed airport are presented in Figure 30–1. The layout of the long term airport development would form part of a subsequent master plan in accordance with the requirements of the Airports Act.

The proposed airport is anticipated to be developed and operated by an Airport Lessee Company (ALC). The Airport Plan will provide the strategic direction for the airport site from the date of its determination until the first master plan is in place. As required under the Airports Act, within five years of an airport lease being granted to the ALC, or in a longer period as approved by the Infrastructure Minister, the ALC will be required to submit a draft master plan for approval. The master plan would, among other purposes, set the strategic direction for the airport site for a period of 20 years. Under the Airports Act, the ALC will be required to prepare new master plans every five years. Once an airport lease is granted, the ALC would also be required to prepare major development plans and seek building approvals in accordance with the provisions of Part 5 of the Airports Act for all future development at the airport site.

All future development would be subject to further assessment and approval requirements in accordance with the Airports Act. It is anticipated that assessment of each development stage will be considered in the context of the rapidly changing regional land use setting and will be reflective of technological advances in the aviation industry.

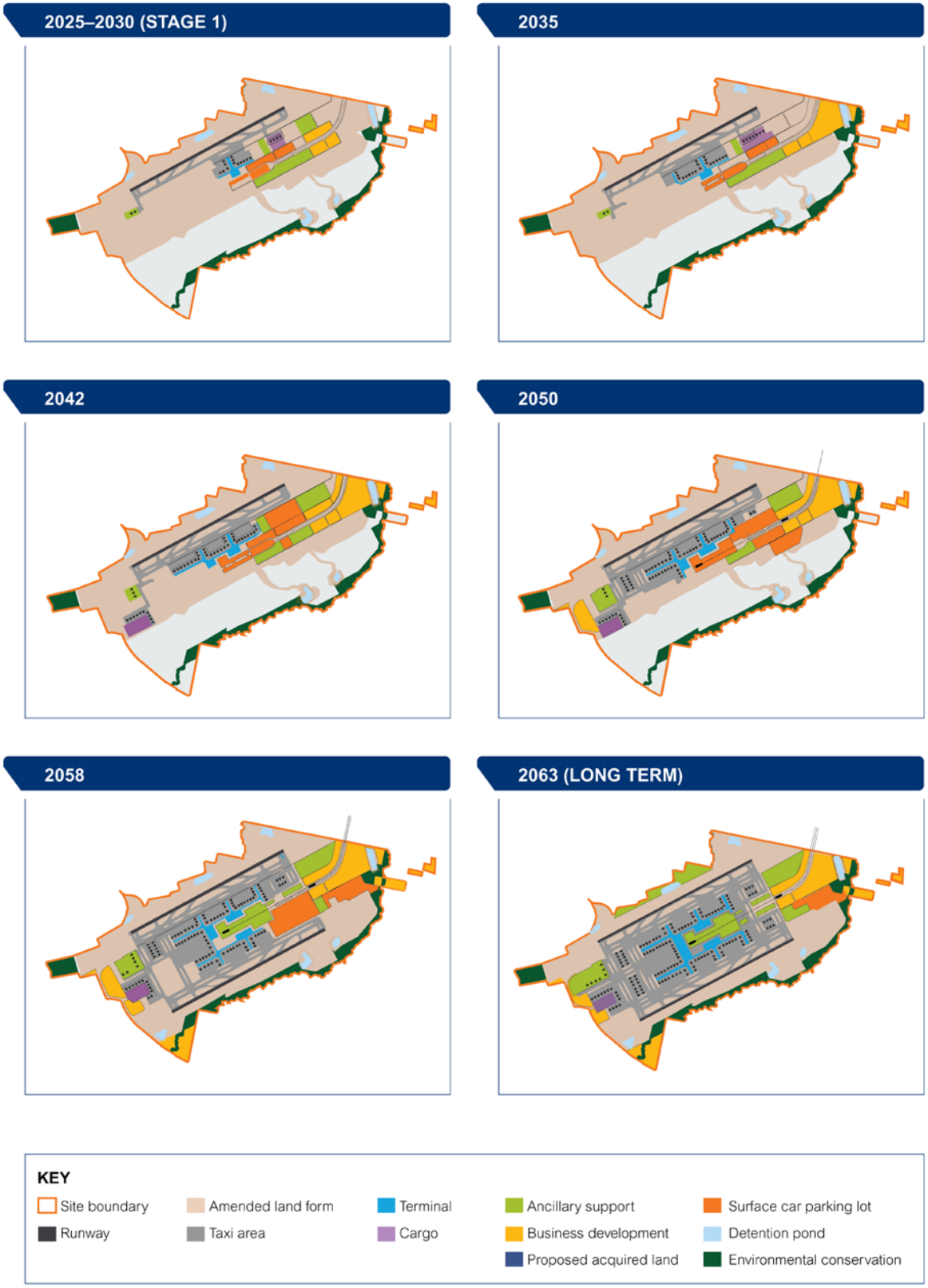



**Figure 30–1** Potential indicative configurations and sequencing for the progressive development of the proposed airport

### 30.2.2 Preliminary airspace design

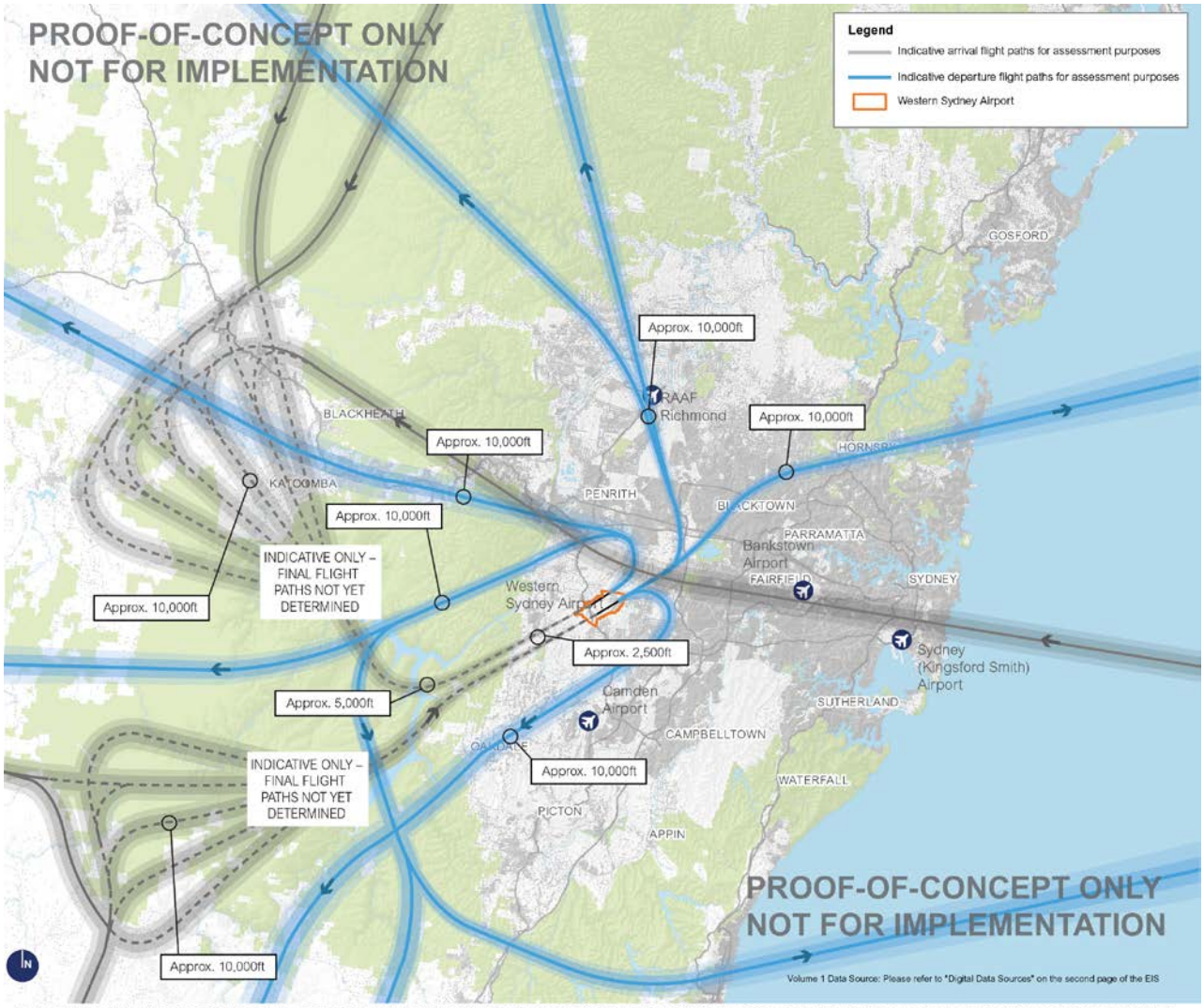
Airservices Australia provided a preliminary assessment of one potential air traffic management arrangement for airspace in the Sydney region associated with the introduction of flights to and from the proposed airport (Airservices Australia 2015). The preliminary airspace assessment was limited to a conceptual proof-of-concept design to establish whether safe and efficient operations could be introduced at the proposed airport. Both single and parallel runway operations were considered in this analysis.

In the long term, the operation of parallel runways at the proposed airport could potentially achieve around 100 aircraft movements per hour (one landing or one arrival constitutes an aircraft movement), with Sydney (Kingsford Smith) Airport maintaining a movement rate of 80 per hour. The preliminary analysis also suggests that the following issues would need to be assessed in detail as part of the future airspace design process prior to the commencement of parallel runway operations at the proposed airport:

- changes to Sydney Airport flight paths to maintain independent operations at the proposed airport and Sydney Airport, and to achieve the anticipated capacity;
- changes to flight paths serving Bankstown Airport, in particular instrument flight rules operations, in order to maintain independent operations at the proposed airport and Bankstown Airport, and to achieve the proposed airport's anticipated capacity;
- resolution of a potential constraint associated with the restricted airspace area over the Defence Establishment Orchard Hills; and
- further consideration of noise and visually sensitive receivers, such as residential areas and tourism attractions within the Greater Blue Mountains World Heritage Area.

Any proposal to introduce a new airspace regime for parallel runway operations at the proposed airport would comply with relevant legislation governing airspace and air traffic management and national environmental law.

Indicative flight paths for proof-of-concept long term operations at the proposed airport with parallel runways are presented in Figure 30–2 and Figure 30–3.




Note: Indicative flight paths as presented in this figure are based on Airservices Australia's Western Sydney Airport: Preliminary Airspace Management Analysis, that provides a preliminary assessment at a conceptual level of airspace management design. The Australian Government has announced that aircraft arrivals for the proposed Western Sydney Airport will not converge through a single merge point over Blaxland or any other single residential area. The formal flight path design process will start from determination of the Airport Plan and optimise flight paths on the basis of safety, efficiency, capacity, and noise and environmental considerations.

**Figure 30–2** Long term indicative flight paths for operating mode 05

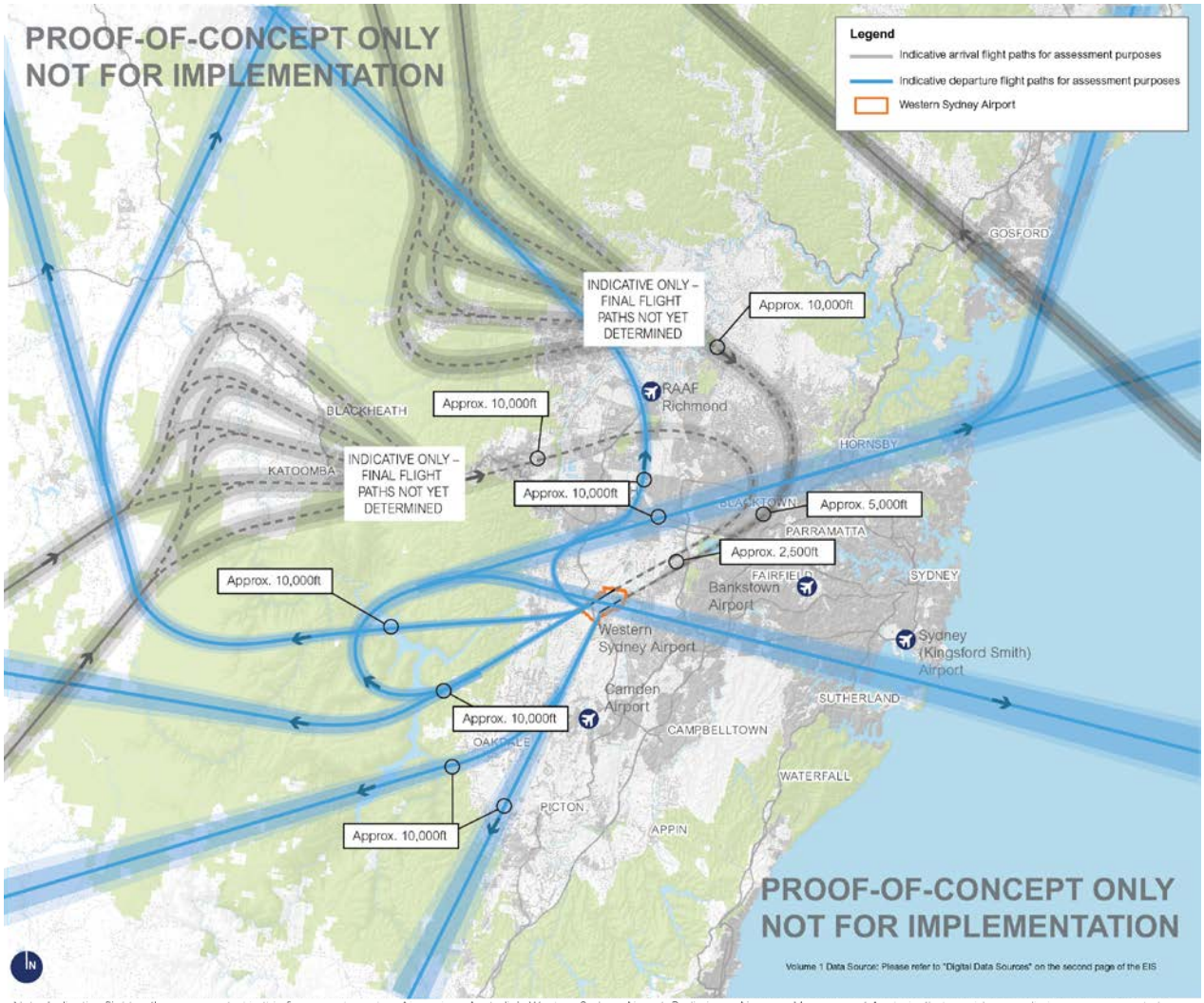



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**Figure 30–3** Long term indicative flight paths for operating mode 23

## 30.3 Strategic level assessment

A detailed assessment of environmental impacts potentially arising from the construction and operation of the Stage 1 development is presented in Volume 2 of this EIS. The assessment is based upon clearly defined construction and operation parameters described in detail in Volume 1 of this EIS and in Part 3 of the revised draft Airport Plan.

Volume 3 provides a strategic level assessment of an indicative long term airport development, which is expected to include two parallel runways and supporting facilities with capacity for up to 82 million annual passengers and approximately 370,000 air traffic movements to be reached by around 2063. A strategic level approach reflects the difficulty in attempting an assessment within the context of a number of significant uncertainties relevant to the long term proposal, including:

- the far-reaching horizon over which predictions are required to be made extending between 35-50 years into the future;
- the indicative concepts for the future configuration and operation of the site by the future ALC;
- the actual aviation demand realised in future years;
- advances in technology and changes to combustion emissions;
- changes in land use patterns and population density over the forecast period; and
- the currently available environmental information and limited data on likely future baseline conditions.

The focus of the strategic level assessment for the long term development therefore centres on the key potential impacts of the expanded airport operations. Owing to the incremental nature of infrastructure provision over the period between Stage 1 and any potential longer term developments, and consistent with the strategic approach adopted, construction impacts are not considered. Key issues include: noise, air quality, traffic, transport and access, surface and groundwater, planning and land use, landscape and visual amenity, social impacts and impacts on the Greater Blue Mountains World Heritage Area. Other environmental matters are also considered in a concise and consolidated chapter.

It is recognised that aircraft noise is one of the most sensitive issues associated with the development of the proposed airport and an increase in air traffic movements has the potential to increase the extent and magnitude of noise disturbance to the surrounding community. Taking this into consideration, an additional assessment of aircraft noise from a potential 2050 airport development scenario – where the single runway is operating at or near its expected capacity of around 37 million annual passengers or approximately 185,000 aircraft movements per year – has been conducted. To achieve aircraft movements in excess of the Stage 1 forecast, it is anticipated that additional infrastructure such as expansion of the taxiway system, apron and terminal would also be required. These additional infrastructure and capacity expansions would be subject to separate approvals in accordance with the Airports Act.

Consistent with the strategic approach adopted and the uncertainties noted above, Volume 3 does not provide any specific mitigation measures. Instead, issues for future consideration have been provided where relevant.

## 30.4 Purpose and structure of this volume

This volume is intended to provide additional information to support the consideration of the Stage 1 development assessment. For the likely key operational impacts of the proposal, additional strategic level impact assessment has been undertaken in accordance with the EIS Guidelines and using similar methods and procedures as for the Stage 1 development documented in Volume 2a.

In addition to its primary role, to support the authorisation of the Airport Plan, it is also intended that the information in this volume would be of interest to NSW Government agencies as well as the community and could be used to inform longer term land use planning strategies. It is noted, however, that the future airport development concepts and subsequent impacts predicted are indicative and may change as a result of future design and development processes.

The remainder of this volume is structured as follows:

- Chapter 31 Noise;
- Chapter 32 Air quality;
- Chapter 33 Traffic, transport and access;
- Chapter 34 Surface water and groundwater
- Chapter 35 Planning and land use;
- Chapter 36 Landscape and visual amenity;
- Chapter 37 Social;
- Chapter 38 Greater Blue Mountains World Heritage Area;
- Chapter 39 Other environmental matters; and
- Chapter 40 Conclusion and recommendations.

The EIS technical reports in Volume 4 also contain more detailed information regarding the potential impacts and implications of the long term airport development.