



Western Sydney Airport

Sustainability Plan

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**Western
Sydney
Airport**



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1. Version and Authorisation

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Revision History

Revision	Date	Description	Author	Reviewer
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Plan Authorisation

Position	Name	Signature	Date
Executive Sustainability Manager	S Concha		15/05/2020

2. Key Terms and Definitions

Term	Definition/Description
ALC	Airport Lessee Company, which is WSA
Airport Plan	The airport plan for the Airport Site as determined by the Infrastructure Minister under section 96B of the Airports Act 1996 in December 2016 as varied from time to time in accordance with that Act
Approver	The Infrastructure Minister or an SES employee (as defined in the Public Service Act 1999 (Commonwealth)) in the Infrastructure Department
ASL	Airport Site Layout
BEC	Bulk Earthworks Contractor
CAPEX	Capital Expenditure
CEMP	Construction Environmental Management Plan
CPTED	Crime Prevention Through Environmental Design
D&C	Design and Construction
Delivery Partner	Entity engaged by WSA to provide services for design and/or construction of Western Sydney Airport.
DPIE	NSW Department of Planning, Industry & Environment
DITRDC	Department of Infrastructure, Transport, Regional Development and Communications
DOORS	Dynamic Object Oriented Requirements System (requirements management tool)
EEW	Early Earthworks
EIS	Environmental Impact Statement
'Eligible Building'	"a building, or part of a building, on the Airport Site which is not being constructed by a Commonwealth Body and is of a type of class of building to which the rating scheme described in that section may apply"
EPA	NSW Environmental Protection Authority
GBCA	Green Building Council of Australia
GRI	Global Reporting Initiative
GSAP	Green Star Accredited Professional
IAP2	International Association for Public Participation
IS	Infrastructure Sustainability
ISAP	Infrastructure Sustainability Accredited Professional
ISCA	Infrastructure Sustainability Council of Australia
Learning workers	Referring to apprentices and trainees as part of the workforce.
MAP	Million Annual Passengers
NABERS	National Australian Built Environment Rating System
NCC	National Construction Code

Term	Definition/Description
OEMP	Operational Environmental Management Plan
OPEX	Operational Expenditure
ORAT	Operational Readiness and Airport Transfer
Package of work	Referring to the six packages of work through which Western Sydney Airport will be designed and constructed, including Experience Centre and Site Office, Early Earthworks Package, Bulk Earthworks Package, Runway Pavement and Airside Civils, Terminal Complex and Landside Facilities.
PM Definition	Project Manager (PM) Definition for Western Sydney Airport is initially responsible for the design of Package 2 and Package 3, until this responsibility is handed over to the Delivery Partner at a later stage of design.
Project phases	Planning, design, procurement, construction, and operation.
Proposed Building	The building to be rated by the Green Star Design and As Built rating tool, as designed and modelled by the project team.
RAATM	Requirement Analysis and Allocation Traceability Matrix
RACI	Responsible, Accountable, Consulted, Informed
'rating'	"a reference to a rating is a reference to the rating obtained by using the most recent version of the relevant rating tool for that rating which is available on the date on which an application for the rating is registered".
Reference Building	A term used in Green Star ratings to describe a hypothetical building of the same size, shape, floor area and glazing areas as the Proposed Building, but whose building fabric and building services characteristics are based predominantly on the NCC Section J Deemed-to-Satisfy provisions.
Scope 1 emissions	Emissions released to the atmosphere as a direct result of an activity, or series of activities at a facility/site, such as emissions from a manufacturing process, fuel burning or production of electricity.
Scope 2 emissions	Emissions released to the atmosphere from the indirect consumption of an energy commodity, including the use of electricity produced by burning coal in another facility.
Stage 1 Development	Stage 1 of Western Sydney Airport development, constituting the developments specifically authorised by Part 3 of the Airport plan, including a single runway, a terminal and supporting facilities.
Subcontractor	An entity contracted by WSA's major contractors to provide services for the design and/or construction of Western Sydney Airport.
Supplier	An entity that provides goods or services to WSA to aid in the design and/or construction of Western Sydney Airport.
Sustainability Plan	Western Sydney Airport Sustainability Plan, being this document.

Term	Definition/Description
Sustainability rating credit	Credits that can be achieved under a variety of different sustainability rating schemes including ISCA, Green Star and NABERS. These credits are achieved through fulfilling specific sustainability criteria during design, construction and operation of Western Sydney Airport.
The project	The development and operation of Western Sydney Airport, also referred to as 'Western Sydney Airport' or 'Airport'
TSP	Technical Service Provider
VOC	Volatile Organic Compound
Workforce	Referring to the workforce as direct (WSA employees) and indirect (contractors and subcontractors) representatives.
WSA	Western Sydney Airport Co Limited
WSA EMS	WSA Executive Manager Sustainability - Aviation
WSI	Western Sydney International (Nancy-Bird Walton) Airport

3. Introduction

3.1 Project Overview

Western Sydney International (Nancy-Bird Walton) Airport (hereon referred to as Western Sydney International, WSI or the Airport) is being built to not only provide a much-needed boost to Sydney's aviation capacity, but to act as a catalyst for high-quality jobs and business opportunities across the region.

As Sydney's new airport, Western Sydney International will mean that for the first time, airlines and passengers will have a choice about which airport they want to use.

Home to one in 10 Australians and the nation's third largest economy, more people live in Western Sydney than cities such as Perth and Adelaide, which have sustained their own international airports for decades. As well as being a new airport for the whole of Sydney, Western Sydney International will also be a long overdue airport for the Western Sydney region itself.

Western Sydney International's first stage will have the capacity for around 10 million passengers each year, but will eventually grow with demand to become one of the largest gateways to Australia.

Western Sydney International will be a full-service international, domestic and freight airport. Stage one will include a single runway capable of handling any commercial aircraft, including Airbus A380s, Boeing 787s and the next generation of ultra-long haul airliners. A second parallel runway is projected for the 2050s.

The Airport will have a combined international and domestic passenger terminal, which means a simpler experience for passengers and more seamless transfers between flights. The initial concept designs for the terminal are now being refined. It will be bright, open and easy to navigate and will give passengers a reliable and stress-free airport experience.

The project is focussed on sustainability and minimising Airport's impact on the environment. There are strong rules around the sustainability standards that must be met as the Airport is designed and built, but the project is looking for opportunities to go further in ensuring the Airport represents a commitment to future generations.

Master planning is nearing completion for Western Sydney International's on-airport business park. Separate from the surrounding Aerotropolis, our business park will feature unrivalled connectivity with easy motorway access and a dedicated Metro train station. At almost 200-hectares, the business park is set to be home to dozens of employers, from airlines and hotels, to the technology and corporate sectors.

The Airport will open with a modern air-freight facility designed in partnership with freight industry leaders. For manufacturers and producers across the region and beyond into regional NSW, the Airport's unrestricted operations will be the key to growing their businesses by unlocking access to lucrative export markets and will also provide easy access to Australia's largest consumer market.

Western Sydney Airport (WSA) is the name of the organisation that is building and will eventually operate Western Sydney International. WSA is owned by the Australian Government, so there is strong official oversight to ensure a responsible and transparent approach to developing the Airport.

Stage 1 Development of the Airport began in the second half of 2018 and involves the construction of a single 3.7-kilometre runway. Earthworks is well underway on the site. More than 1.8 million cubic metres of earth has already been moved during Early Earthworks package. Building WSI is one of the biggest earthmoving challenges in Australian history, with a total of 25 million cubic metres of earth to move around to level the site.

WSA is now in various stages of market sounding or procurement for more major works contracts for terminal, runway and taxiway construction, as well as the construction of internal roads and other supporting infrastructure on the Airport. The phasing of the works as described in the Construction Plan is as follows:

- **Bulk Earthworks and Drainage P1-A and P1-B:** further decontamination, earthworks and drainage across the whole site of the Stage 1 Development.
- **Runway Pavement and Airside Civil P1-C:** development of airside infrastructure such as runway, taxi ways and other airside civil works.
- **Passenger Terminal Complex P2:** development of terminal building, terminal precinct, airside facilities & technology, and specialty works and services.
- **Landside Civil and Buildings P3:** development of landside buildings, car parking, ground transport and utilities.

Western Sydney International is on track to open for its first passengers in 2026 and The Airport will be progressively developed for future Stages, including provision of a second parallel runway, to reach its long-term design capacity of 82 MAP. This is forecast to occur circa 2063. The Sustainability Plan will be updated for future Stages, however this version of the Plan only covers Stage 1.

3.2 Purpose and Scope of the Sustainability Plan

The Western Sydney Airport Sustainability Plan (Sustainability Plan) is required by the Airport Plan for Western Sydney Airport. The Sustainability Plan addresses multiple requirements in condition 29 (Sustainability) of the Airport Plan. This condition requires the Sustainability Plan to be developed to take into account and comply with specified parts of the EIS.

The purpose of the Sustainability Plan is to provide an overall framework and objectives for incorporating sustainability into the development of Western Sydney Airport. It spans the design, procurement, construction and operation phases of Stage 1 Development.

The Sustainability Plan addresses the minimum benchmark for compliance for Stage 1 Development, and will be updated annually to reflect increasing sustainability ambitions beyond minimum requirements, as the design develops.

The development of Western Sydney Airport is split into multiple packages of work, and this Plan is regarded as an overarching document with project-wide application, across all project phases. Sub-plans, work method statements and procedures, including sustainability plans developed for each specific package of work, must conform to the requirements of this Plan.

The Early Earth Works contract was awarded prior to final approval of the Sustainability Plan. Subsequently the sub-plans, work method statements and procedures for this package have referred to the draft Sustainability Plan. Specific sustainability requirements for this package are included formally within the contract and these are consistent with the Sustainability Plan. The Early Earth Works contractor will update plans and procedures and reference the final approved Sustainability Plan as required.

The Bulk Earth Works package was awarded post approval of revision 2 of the Sustainability Plan. Minor amendments have been made to develop revision 3, which the Bulk Earth Works Contractor will reference.

The Sustainability Plan will be reviewed annually at a minimum and updated as required over time to address emerging sustainability issues or changes in requirements that arise as the project moves into new packages or stages. Condition 41 requires a review after 5 years and Table 28-38 requires that an update of the plan be undertaken prior to operations commencing.

The Sustainability Plan includes requirements for the Airport asset only, not for the operation of aircraft. Western Sydney Airport will aim to collaborate with stakeholders such as airlines to influence outcomes in areas outside of the Airport's operational control, and to demonstrate leadership in the aviation industry.

In line with the base requirements, the Sustainability Plan includes the following elements:

- The framework for developing and implementing sustainable practices, integrated into the design, procurement, construction and operation of the Stage 1 Development.
- The governance structure for sustainability, including responsibility for the Sustainability Plan.
- A description of the consultation activities with stakeholders to form this Plan.



- Sustainability targets and management measures for achieving those targets, with specific description of:
 - Construction and operational targets for sustainability aspects;
 - Processes to manage complaints;
 - Processes for stakeholder engagement; and
 - Consideration and management of emerging environmental issues.
- A high-level pathway for achieving sustainability ratings, including:
 - Infrastructure Sustainability (IS) ratings (Design, As Built and Operations), administered by the Infrastructure Sustainability Council of Australia (ISCA).
 - Green Star ratings (Design & As Built and Interiors), administered by the Green Building Council of Australia (GBCA).
 - National Australian Built Environment Rating System (NABERS) assessment (Energy and Water schemes), administered by the NSW Department of Planning, Industry and Environment (DPIE, formerly known as OEH).
- Sustainability controls and the process for monitoring, reporting and auditing to assess effectiveness.

3.3 Project Drivers

Western Sydney Airport has regulatory and corporate drivers that influence how it will be developed. The drivers and objectives listed below have been considered during the development of the Sustainability Plan and Sustainability Policy.

3.3.1 Corporate Objectives

WSA has the following corporate objectives for the delivery of the Western Sydney Airport:

- **improving access to aviation services in Western Sydney** by providing a broad range of freight and passenger services;
- **resolving the long-term aviation capacity issue in the Sydney basin** by maximising the aviation capacity of the site, noting the constraints at Sydney (Kingsford Smith) Airport;
- **maximising the value of Western Sydney Airport as a national asset** including consideration of benefits the Airport will bring within and around Western Sydney, NSW and Australia;
- **optimising the benefit of Western Sydney Airport on employment and investment in Western Sydney** by recognising that the Airport will be a major catalyst for growth and development in Western Sydney;
- **effectively integrating with new and existing initiatives in the Western Sydney area** by ensuring long-term planning considers the Airport's economic, social and environmental impact in Western Sydney; and
- **operating on commercially sound principles having regard to the Australian Government's intention to preserve its options with respect to ownership and**

governance arrangements by applying private sector discipline in the management of WSA.

These corporate objectives are publicly available online on WSA's website¹. In particular, the considerations to long term planning provide context to sustainability considerations, highlighting WSA's intention to be socially and environmentally responsible in the development of this significant asset.

3.3.2 Procurement Approach

In addition, WSA has a publicly announced procurement approach, which includes:

- assigning risks to parties that are best capable of managing the risks;
- packaging the works to commence bulk earthworks as soon as practicable;
- defining interfaces between the various works packages clearly;
- undertaking enabling activities to facilitate the main airport works packages;
- ensuring the works are fully integrated prior to operational readiness testing providing opportunities for innovation and sustainable outcomes within each package and consistent with the Environmental Impact Statement (EIS) and Airport Plan; and
- incorporating mechanisms for achieving appropriate urban design, amenity outcomes, sustainability objectives and seamless integration with other transport modes.

3.3.3 Airport Plan

The Airport Plan sets out the vision for development and operation of Western Sydney Airport at Badgerys Creek, and provides authorisation for the construction and operation of Stage 1 Development.

Within the sustainability context, the foreword of the Airport Plan outlines the intentions for this Sustainability Plan, and its importance as a condition of the EIS for Western Sydney Airport.

There is an expectation on WSA to innovate and keep pace with advances in sustainability initiatives for the life of the Airport. The Sustainability Plan will be updated periodically to incorporate increasing sustainability aspirations.

WSA is required to comply with the Airport Plan including its objectives, specific developments and conditions. The table in Appendix A identifies the high-level sustainability requirements as prescribed by the Airport Plan, and where those requirements are addressed in this Sustainability Plan.

3.3.4 Environmental Impact Statement (EIS)

The EIS for Western Sydney Airport provides detailed consideration of the environmental, social and economic impacts of the proposed Airport and is presented in four volumes. Two key tables in Section 28.8 of the EIS present sustainability requirements which are addressed by the Sustainability Plan.

EIS Table 28-37 must be considered in the Sustainability Plan. The table in Appendix A outlines the topics of Table 28-37 and where these are addressed in the Plan.

¹ WSA: <http://www.wsaco.com.au/about/corporate-objectives>, accessed June 2018

3.3.5 External Sustainability Drivers

A number of external sustainability drivers exist, which also influence WSA's decisions on sustainability for Western Sydney Airport. These include:

- increasing frequency and rigour of application of the IS and Green Star ratings to infrastructure projects, particularly in NSW;
- the Modern Slavery Act in NSW and Commonwealth Modern Slavery Bill 2018 and the implications for workforce and supply chain management;
- broad national commitments, including greenhouse gas emission targets aligned to the Paris Agreement;
- desire to positively contribute towards global sustainability initiatives, such as the UN Sustainable Development Goals, to be seen as a pro-active corporate citizen;
- external stakeholder expectation for the Airport to demonstrate leadership;
- investor valuation of sustainable assets, as demonstrated by sustainability rating systems, such as Global Real Estate Sustainability Benchmark (GRESB);

3.4 Consultation to Develop the Sustainability Plan

In order to develop the Sustainability Plan, and in accordance with the requirements of the EIS, WSA consulted with the following NSW Government agencies as specified by the NSW Department of Premier and Cabinet: DPIE and EPA.

WSA also engaged with the relevant organisations for the sustainability rating systems: ISCA, GBCA and DPIE (NABERS).

WSA engaged ISCA for initial planning support services for the delivery of the IS ratings, which informed the requirements, conditions and approaches for these ratings, stipulated in this Sustainability Plan.

WSA sought feedback from GBCA and DPIE (NABERS) on eligibility of building types for Green Star and NABERS.

A letter acknowledging receipt of the review comments and how the comments (if applicable) were addressed was prepared and issued from WSA to EPA, DPIE (NABERS), and GBCA.

Consultation also occurred with WSA staff that will be responsible for delivering the targets within this Plan.

A summary of the stakeholder and government authority consultation completed to date which has informed the preparation of the Sustainability Plan is presented in Table 1.



Table 1 Sustainability Plan consultation summary

Government authority / stakeholder	Date	Summary
EPA	Jan 2019	<ul style="list-style-type: none"> • Nil response
GBCA	August 2018	<ul style="list-style-type: none"> • Agreed eligible buildings as described in Section 5.4 of this Plan
ISCA	August 2018	<ul style="list-style-type: none"> • Agreed eligible buildings as described in Section 5.4 of this Plan
DPIE	August 2018 Jan 2018	<ul style="list-style-type: none"> • NABERS agreed eligible buildings as described in Section 5.4 of this Plan • DPIE recommends that buildings achieve signed NABERS commitment agreements to ensure buildings are designed and built to achieve the required rating • DPIE notes that Australian Building Codes Board has introduced a NABERS verification method requiring a minimum NABERS Energy Base Building rating of 5.5 Stars for office buildings from May 2020 • DPIE suggests that WSA consider a minimum target of 5.5 star for commercial buildings (base building and interior) • DPIE suggests that WSA consider a minimum target of 5 star for Hotels and Shopping Centres • DPIE suggests that all additional specific

		<p>targets for energy, water, waste, carbon emissions and materials (section 5.7) could be higher, and a net zero carbon airport would be preferable.</p>
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3.4.1 Actions arising from Consultation

Noting that the Commonwealth requirements regarding NABERS ratings are minimum requirements, WSA will address DPIE comments by including the requirement for signed NABERS commitment agreements. Options to achieve higher ratings and net zero carbon will be investigated in business case analyses as design progresses.

To target increased sustainability ratings may require additional funding and a business case to be approved by the Board.

3.5 Interface with Other Documents

The Sustainability Plan will be issued to all Contractors and Consultants so that all relevant parties are informed of the Conditions for the Airport development.

The Sustainability Plan is interconnected with a suite of other documents that assist with the implementation of sustainable outcomes.

The Sustainability Plan should be read in conjunction with the following documents:

- Compliance documents:
 - EIS for Western Sydney Airport;
 - Airport Plan;
 - Airport Site Layout.
- WSA sustainability documents:
 - WSA Corporate Plan;
 - Australian Industry Participation Plan;
 - implementation Plans (scorecards) and weighting assessments for program-wide IS rating;
 - Equal Opportunity, Diversity and Inclusion Policy;
 - Airport construction environmental management plans (CEMP) and Construction Plan;
 - standard operating procedures, including operational environmental management plans (OEMP) to be developed prior to ORAT.
- Package-specific documentation:
 - contract documentation;
 - design documentation and site plans;
 - sustainability management plans;

- implementation Plans (scorecards) and weighting assessments for package specific IS, Green Star and NABERS ratings;
- construction environmental management plans (CEMP);
- construction management plan.
- Stakeholder strategies and consultation:
 - airline engagement;
 - business park strategy / business development and tenancy;
 - community and stakeholder engagement plan.

Table 2 Relationship of Project Management Plans to Sustainability Plan provides an outline of other plans that are required by the EIS and/or Airport Plan and shows how they align to sustainability themes. The plans will contribute to sustainable outcomes for Western Sydney Airport, as well as being important pieces of evidence for the achievement of sustainability ratings.

The interface of plans shown in Table 2 Relationship of Project Management Plans to Sustainability Plan, will be managed by the WSA Executive Manager Sustainability - Aviation (WSA EMS). Whilst the OEMP documents are referenced in Table 2 for completeness, they are not required to be drafted until just prior to airport operation commences.

Table 2 Relationship of Project Management Plans to Sustainability Plan

Document	Sustainability Theme									
	Management & Governance	Using Resources	Indoor Environment Quality	Transport	Emissions, Pollution & Waste	Biodiversity	People & Place	Innovation	Workforce	Economic
Aboriginal Cultural Heritage CEMP							X			
Air Quality CEMP & OEMP					X					
Air Traffic Management Plan										X
Asbestos Management Plan					X					
Biodiversity Offset Delivery Plan						X				
Biodiversity, Land and Safety OEMP						X				
Bushfire Management Plan					X	X				
Community and Stakeholder Engagement Plan(s)							X		X	
Construction Plan	X	X			X	X	X		X	
Equal Opportunity Policy									X	X
European and Other Heritage CEMP							X			

Ground Transport OEMP				X						
Innovation and Technology Plan								X		
Land Use Plan in the Airport Plan	X	X		X	X	X				
Noise and Vibration CEMP					X					
Noise Management OEMP			X		X					
Noise Management Plan (ground based noise)			X		X		X			
Procurement Policy	X									X
Remediation Action Plan					X					
Soil and Water CEMP & OEMP		X			X					
Traffic and Access CEMP				X			X			
Visual and Landscape CEMP							X			
Waste and Resources CEMP and OEMP		X			X					

3.5.1 Guidelines and Standards

There is no statutory basis for the sustainability requirements for the Western Sydney Airport. The benchmark for sustainable outcomes is Green Star, IS and NABERS rating schemes. These rating schemes are internationally respected, require documented evidence, and independent verification to achieve the ratings.

The Sustainability Plan includes targets to support the regulatory requirements for environmental, social, procurement and workforce aspects.

3.5.2 Sustainability Rating Manuals and Guidelines

Western Sydney Airport is required to achieve a number of sustainability ratings, as described in Section 5 Sustainability Metrics & Application. The governing body for each sustainability rating provides technical manuals or guidelines which break down the components of each credit and assist in compiling the necessary information to verify sustainability performance, as follows:

- ISCA, for the IS rating scheme:
 - IS Technical Manual – Design & As Built v1.2
 - IS Technical Manual – Operations v1.2
 - Supporting guidance including the IS Ecological Assessment and IS Materials Calculator
- GBCA, for the Green Star rating scheme:
 - Green Star – Design & As Built Submission Guidelines
 - Green Star – Interiors Submission Guidelines
 - Supporting guidance including calculation guides and best practice guidelines
- NSW DPIE, for the NABERS assessment:

- NABERS Energy and Water Rules for relevant building types (offices, data centres, shopping centres, hotels)
- Supporting guidance including handbooks, case studies and reports.

3.5.3 Applicable Standards

A number of Australian and international standards are either recommended or mandated to be used by Green Star and IS rating schemes. These must be strictly adhered to for credit compliance. Adoption of Australian or international standards will promote consistency with other infrastructure projects and accepted performance benchmarks.

3.6 Document Review

The Plan is required to be submitted for approval by the Approver within six months of the grant of the airport lease, then updated and revised prior to the commencement of airport operations.

The Sustainability Plan can only be varied with the approval of the Approver.

The Sustainability Plan is a live document requiring regular review and adjustment to effectively identify opportunities, mitigate risks, and promote monitoring and evaluation of sustainability performance. WSA will review the Plan annually at a minimum and update as required, throughout planning, design, construction to reflect changes in design, construction or project scope (including temporary and permanent works, future Stages and increasing aspirational targets).

After commencement of airport operations the Plan will be reviewed and updated every 5 years (as a minimum).

3.7 Non-Conformance and Feedback Process

Non-conformances with the ratings and specific targets identified in the Sustainability Plan will trigger a review by the Sustainability Steering Committee. This committee will undertake investigations to determine the root cause of the non-conformance, and propose revised process/procedures or an alternative compliance to resolve the non-conformance.

Once approved by the committee the revised process/procedure or alternative solution will be implemented and communicated to all involved parties.

Internal (WSA, consultants and contractors) and external (other stakeholders) feedback will be discussed at each steering committee meeting to inform and improve the approach to sustainability.

Amendments to targets, process or procedure will be decided on by the Sustainability Steering Committee.

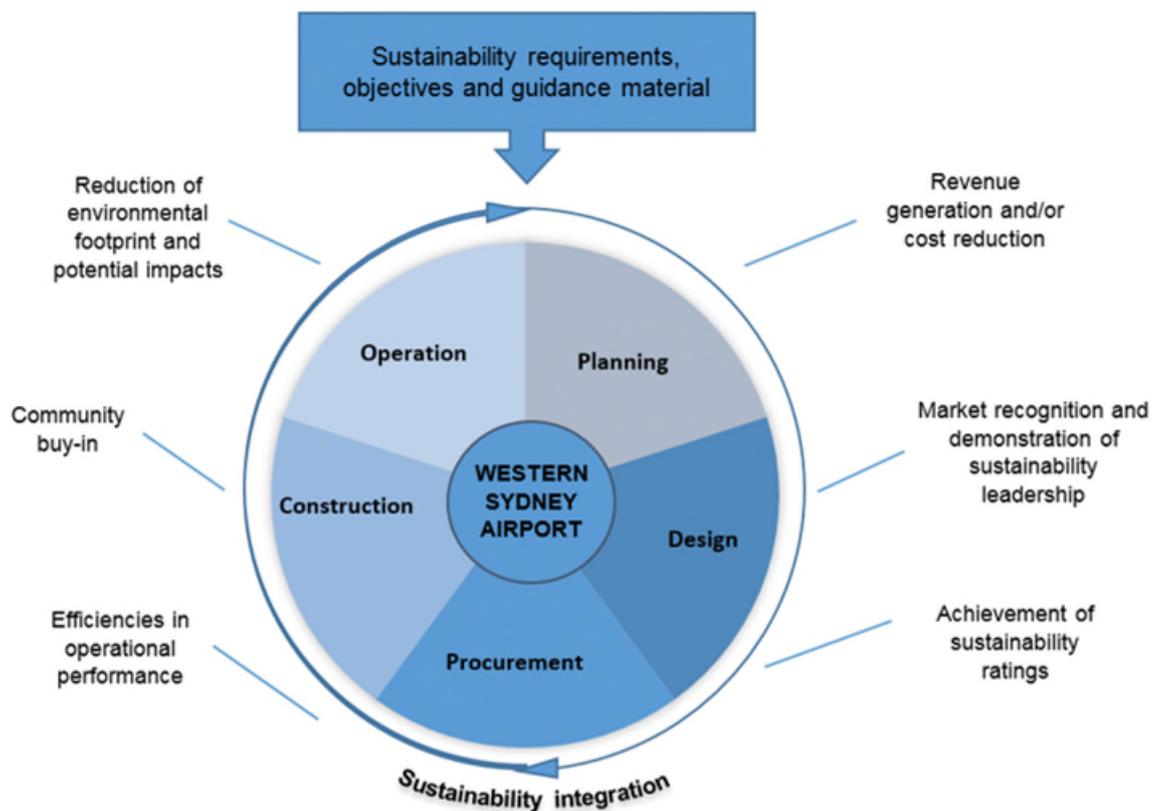
Non-conformances and corrective actions taken will be included in the reporting described in this Sustainability Plan.

4. Integrated Sustainability

WSA aims to design, construct and operate Western Sydney Airport in accordance with leading practice principles of sustainability. A consistent approach to sustainability, across packages of work and throughout various phases of the project, will be necessary for project-wide success.

The adoption of an integrated approach that considers risks and opportunities, invites input from diverse disciplines and backgrounds, and embeds sustainability into practices will realise multiple positive outcomes, as shown in Figure 1.

Figure 1 Integrated sustainability approach



4.1 Developing Sustainable Ideas and Initiatives

WSA is establishing processes for capturing future ideas to further improve sustainability, grouping them into categories of related ideas, and assessing them against a consistent set of value indicators. The set of value indicators, or principles, will be agreed through a workshop process with the design team, and will include consideration of the project purpose, vision, stakeholder expectations, cost and program.

Successful ideas will become “initiatives”, which are proposed to be incorporated into the design of the Airport. This feasibility assessment will demonstrate all ideas that are considered for the Airport, how they are assessed, whether they are progressed or not, and why they were not progressed (if that is the case). A trial for this process is underway, assessing ideas that may influence the bulk earthworks package. Examples of the criteria for assessment include (but are not limited to):

- resource efficiency;
- carbon footprint;
- future fit (resilient, adaptable, flexible);
- revenue stream/investment value;
- cost;
- maturity of technology.

Ideas that are successfully assessed to be feasible, viable, cost effective and beneficial will become “Initiatives”. Initiatives will be further developed through option analysis and refining during concept and detailed design. The design requirements will be integrated and embedded into the Airport during definition phase to optimise cost effectiveness and sustainable outcomes.

During the delivery phase, sustainable design and construction will be specified and incentivised by including appropriate requirements in contract documentation.

WSA will engage with industry to promote pioneering thinking, innovation and collaborative problem solving. Processes will be set up to create equitable opportunity for learning and research institutions to work with WSA on innovation. Examples of sustainability issues that we will seek to collaborate on are: waste recycling, low carbon building materials, energy efficient technology, social benefit measurement and so on.

WSA aims to establish a Higher Education Forum during design phase. Scoping of the Higher Education Forum has commenced with the purpose to understand how WSA can provide opportunities through the development of programs and activities including Intern programs to support project based research and innovation. It is envisaged that the scope will provide the basis that supports the development and subsequent implementation of programs developed in 2021.

4.2 Sustainability Framework

Western Sydney Airport is a complex and market leading project that must consider sustainability throughout design, procurement, construction and operation.

A sustainability framework for the Western Sydney Airport will provide clear guidance on the management and implementation of sustainability measures, ranging from high level policy objectives to standard operating procedures. This will enable consistency and compliance with requirements across all levels of documentation and phases of the Airport's development.

The sustainability framework for Western Sydney Airport is demonstrated in Figure 2 below.

Figure 2 Sustainability Framework



4.2.1 Sustainability Policy

The Sustainability Policy sets out WSA's commitment to create a safe, healthy, thriving and sustainable Airport for Western Sydney.

WSA is a purpose-led business and sustainability is an enabling mindset to guide the Airport to make a positive impact over its lifetime.

The sustainability policy governs corporate behavior, as well as the design, construction and operation of Airport facilities, associated precincts and third party developments within the Airport site.

The policy is a high-level document that works in conjunction with the Sustainability Plan. The Sustainability Plan identifies commitments, objectives and targets, relating to the policy.

Our sustainability vision is to design, build and operate a thriving, safe, sustainable, leading Airport. The Airport will provide net positive benefits to society, the environment and the economy.

The Airport will conserve natural resources, make a positive difference in the community and enhance the health and wellbeing of employees and visitors.

The drivers of Sustainability include:

Improvements for Future Generations

The Airport will bring employment, services, facilities and socio-economic benefit to Western Sydney. It will use resources wisely, so that future generations have the same or better access to those environmental resources.

Cost Reduction

The Airport will minimise its use of water, electricity and other materials/consumables to be resource efficient. Doing more with less saves money.

WSA is responsible for designing, building and operating the Airport, so resource-efficient design is the lowest cost way to minimise ongoing operational costs.

Improved Asset Value

Sustainability can be a proxy for quality, which increases the value of the asset.

The Airport will consider and minimise climate change risks, use innovative technology and flexible design to be future-ready, and respond to sustainability rating systems/benchmarks to demonstrate leadership.

These actions will result in improved asset value, and will make the Airport an attractive proposition for potential investors.

Planning for the Future

The Airport is an asset that will provide value for a very long time. A sustainable Airport will be able to adapt to changes in the climate, market, technology and customer expectations. Sustainability will help the Airport to be flexible and resilient.

Meeting Stakeholder Expectations

Our stakeholders expect WSA to design, build and operate a sustainable airport. Stakeholders range from the Commonwealth Government to future users and local residents.

These are the actions that WSA will take to integrate social, environmental and economic sustainability throughout everything we do:

- Design and build sustainable airport facilities and buildings that **demonstrates leadership** in sustainability and provide **net positive benefits** for society, environment and the economy.
- Measure, monitor and report on environmental and sustainability performance, **mitigate negative impacts** and continually aim to achieve more **challenging targets**.
- Include **sustainable principles** in the **procurement** process, by including social, human rights, environmental and economic requirements in procurement documentation.
- Assess products/materials for sustainability benefits, and avoid products/materials that are toxic to the environment and humans.
- Preference will be given to use suppliers and businesses that share WSA's **values**, especially on **diversity, human rights, sustainability and leadership**.
- Support and promote the social, physical and psychological **health and wellbeing** of our people, visitors and community.
- Provide systems for feedback, ideas, or issues resolution on sustainability, and training to support the **sustainability mindset**.
- **Collaborate**, share our experience and knowledge with others.
- **Contribute** to sustainability objectives at local, state, national and global levels.
- Allocate adequate **resources** to implement, review and update this Policy.

5. Sustainability Metrics & Application

As outlined in Section 3.2, the principal documents which mandate sustainability requirements for the Airport are the Airport Plan and EIS.

This section provides an overview of WSA's high-level sustainability commitments, constituting "sustainability" as an overarching discipline and the sustainability ratings which will be attained for the Western Sydney Airport.

In addition to sustainability ratings, other environmental, economic and social targets relating to sustainability must be achieved. These are described in Section 5.7.

5.1 Timing of Rating Achievement

WSA is required to achieve Green Star, ISCA and NABERS ratings subsequent to Operational Readiness of the Airport.

Green Star ratings will be achieved within 12 months of Operational Readiness.

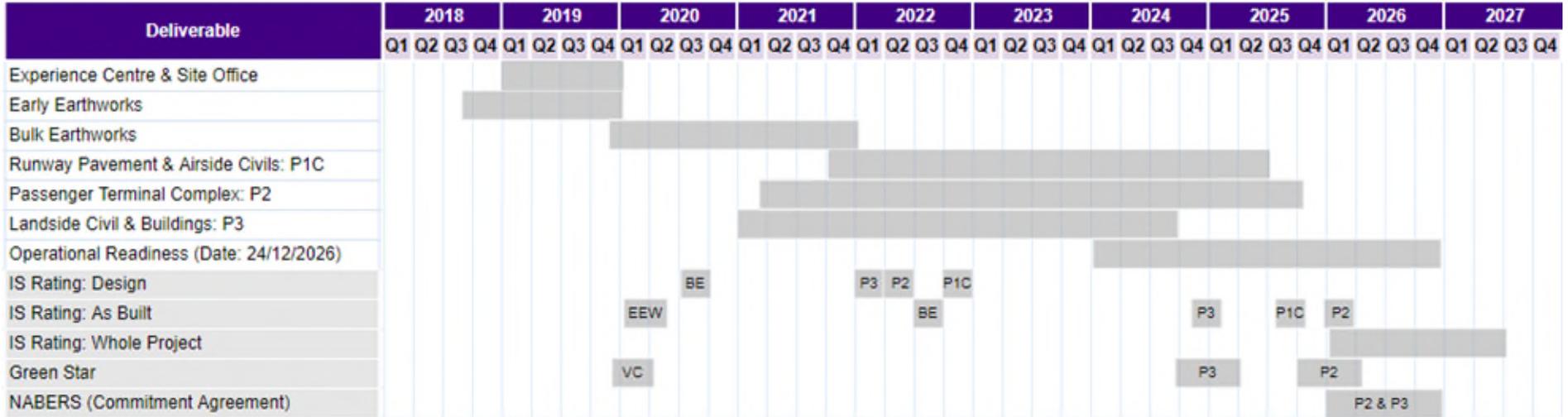
NABERS ratings will be achieved within 18 months of Operational Readiness.

ISCA program-wide As Built rating will be achieved within 6 months of project completion and Operation rating will be achieved within 24 months of Operational Readiness.

Package specific ratings will be required to be achieved and handed over to WSA prior to completion of the contract.

Refer to Figure 3 for an indicative timeline for submission and achievement of the abovementioned ratings.

Figure 3 Indicative timing of packages and sustainability rating submissions





5.2 Infrastructure Sustainability Rating

The Infrastructure Sustainability (IS) Rating Scheme is Australia's only comprehensive rating system for evaluating sustainability across the planning, design, construction and operational phases of infrastructure programs, projects, networks and assets. IS evaluates the sustainability performance of the quadruple bottom line (Governance, Economic, Environmental and Social) of infrastructure development.

There are three rating levels of IS ratings; Commended (25 to <50 points), Excellent (50 to <75 points) and Leading (75+ points). The Project is required to achieve an 'Excellent' IS As Built Rating, obtaining at least 65 points overall.

Points are awarded for achieving the requirements described within each credit. In order to gain the best value outcomes for the Airport, we will allow the Contractors of each package to determine the best pathway to achieving a minimum 65 points, however the pathway must include the mandatory IS Rating credits listed in Table 3 Mandatory IS Credit Requirements below. The below credits will be included in the contract for each package of works and will be achieved by the end of each package. These credits are mandatory because of their alignment with WSA values and objectives, or due to the value they will add to the Airport.

Western Sydney Airport must also achieve an 'Excellent' IS Operation Rating within 24 months after the Date of Operational Readiness, to demonstrate that the Airport is being operated in accordance with the sustainable design and construction.

Table 3 Mandatory IS Credit Requirements

IS credit	Name	Mandatory level
Overall	Infrastructure Sustainability As Built rating	≥ 65 points (Excellent)
MAN-1	Sustainability leadership and commitment	3
PRO-1	Commitment to sustainable procurement	3
CLI-1	Climate change risk assessment	2
CLI-2	Adaptation options	2
ENE-1	Energy and carbon monitoring and reduction	1
WAT-1	Water use monitoring and reduction	1
WAT-2	Replace potable water	1
MAT-1	Materials footprint measurement and reduction	1
WAS-2	Diversion from landfill	2
HEA-1	Community health and well-being	1
URB-1	Urban design	2



IS credit	Name	Mandatory level
URB-2	Implementation	2
INN-1	Innovation	3

5.2.1 IS Rating V2 credits

While deed requirements stipulate the Project uses IS Rating V1.2, opportunities to achieve selected V2 credits will be pursued. V2 credits will be selected in collaboration with Delivery Partner and Contractors and will depend on package works and benefits of each V2 credit compared to equivalent V1.2 credit.

5.2.2 IS Rating Process

The IS Rating process has several stages and protocols within. This process will be undertaken by each package of works and the project as a whole. Table 1Table 4 below describes the four (4) stages and protocols within.

Table 4 IS Rating Process

Stage	Protocol	Details
1. Registration	Register	<ul style="list-style-type: none"> Registration of interest Rating agreement Project detail form
2. Assessment	Kick-off	<ul style="list-style-type: none"> IS Management Plan Kick-off workshop Verifier appointment
	Weightings Assessment	<ul style="list-style-type: none"> Preparation Assesment/Workshop review Verification of weightings assessment document
	Base Case Proposal	<ul style="list-style-type: none"> Base case development Base case submission Verification of base case document
	Self-assessment	<ul style="list-style-type: none"> Technical Clarifications Credit Interpretation Requests ISCA Support
	Submit Assessment	<ul style="list-style-type: none"> Assessment check Arrange verification



Stage	Protocol	Details
3. Verification	Round 1 Verification	<ul style="list-style-type: none"> Review assessment Verification meeting Feedback
	Revise Assessment	<ul style="list-style-type: none"> Assessment check Arrange verification
	Round 2 Verification	<ul style="list-style-type: none"> Review assessment Verification meeting Feedback and recommendations
OPTIONAL	Dispute	<ul style="list-style-type: none"> Convene disput panel Review
4. Certification	Board Review	<ul style="list-style-type: none"> Paper
	Certification	<ul style="list-style-type: none"> Formalisation of final rating score Notification to project
	Promotion	<ul style="list-style-type: none"> Events Marketing Case studies / lessons learnt

5.3 Green Star and NABERS

Green Star assesses the sustainable design, construction and operation of buildings, fitouts and communities. Green Star can help save money, create healthy places for people and minimise environmental footprint. It is Australia's own holistic sustainable rating system, created to suit our property market.

NABERS (National Australian Built Environment Rating System) can be used to measure a building's operational energy efficiency, carbon emissions, water consumption and waste produced, and compare these to similar buildings. NABERS can help save money, set efficiency targets, benchmark performance and strive for improvement. It is also an Australian system, designed for the Australian market.

NABERS and Green Star are applied to buildings which are deemed 'eligible'. For the purposes of both Green Star and NABERS ratings, an 'Eligible Building' is "a building, or part of a building, on the Airport Site which is not being constructed by a Commonwealth Body and is of a type of class of building to which the rating scheme described in that section may apply".

Green Star includes the potential for credits to be 'scoped out' where not applicable, therefore ratings are assigned based on a percentage of points achieved out of the total points available. These ratings are assigned on a scale from Zero Star to Six Star.

Minimum targeted Green Star ratings are outlined in Table 5 Targeted Green Star Requirements.

Table 5 Targeted Green Star Requirements

Green Star component	Applicable area	Minimum Targeted rating
Design Review and As Built Rating	Eligible Buildings only;	4 Star (Australian Best Practice)
Interiors	Eligible Buildings only, where fitout or interior work is substantial enough to be assessed and certified;	4 Star (Australian Best Practice)

NABERS ratings vary from 0 stars (Very poor performance) through to 6 stars (market leading performance). Minimum targeted NABERS ratings are shown in Table 6 Targeted NABERS Requirements.

Table 6 Targeted NABERS Requirements

NABERS rating component	Applicable area	Minimum Targeted rating
Energy Rating	Base building of each eligible building under an appropriate NABERS Energy scheme;	4.5 Star (Good)
Water Rating	Base building of each eligible building under an appropriate NABERS Water scheme;	4 Star (Good)



5.4 Rating Application to Airport Buildings

Rating systems will be applied in the following way across Airport buildings. Eligibility of building types has been discussed and confirmed with ISCA, Green Star and NSW DPIE. The table below illustrates an example of the types of eligible buildings that each of the rating systems are able to certify (if these building types are developed on the Airport).

Table 7 Rating Scheme Application to Airport Buildings

Airport Area	ISCA Design, As Built, Operations	NABERS Energy and Water	Green Star Interiors	Green Star Design and As Built
Whole Airport Site	•			
Terminal Building	•		•	•
Airside Buildings	•	•	•	•
Business Park – Infrastructure	•			
Business Park – Commercial		•	•	•
Business Park – Industrial			•	•
Business Park – Hotel		•	•	•
Business Park – Shopping Centre		•	•	•
Business Park – Data Centre		•	•	•

5.5 Rating Submission Documentation

During Package mobilisation WSA and DP will provide Contractors with the following required Sustainability documentation:

- Verified IS Rating Base Case Assumptions Framework & Weightings
- Project-wide Initial Climate Change Assessment Report
- Relevant Flooding Design documentation
- Biodiversity Offset Management Plan
- WSA Sustainability Guidelines
- Other Sustainability TSP documentation if required

Post verification of rating submissions Contractors shall supply rating submission credit forms, verifier comments, documentation or evidence to DP and WSA via a WSA specified online document sharing platform. Any commercially sensitive sections or

documents may be redacted prior. This must be completed within one month of verification.

5.6 Interface Between Sustainability Ratings

Sustainability must be managed with an awareness of the intersection of all ratings and objectives which are being targeted across the project. The integrated approach to managing sustainability also refers to how sustainability aspects are managed with respect to ratings; it is important to understand which credits overlap across the various rating systems.

WSA will work with DPIE, GBCA and ISCA to maximise efficiencies across the rating tools.

For example, an energy-efficient asset may be created to achieve IS requirements, which vary slightly from those in Green Star. NABERS is then used to verify energy efficient performance. An integrated approach will gain all target ratings in the lowest cost and most effective way.

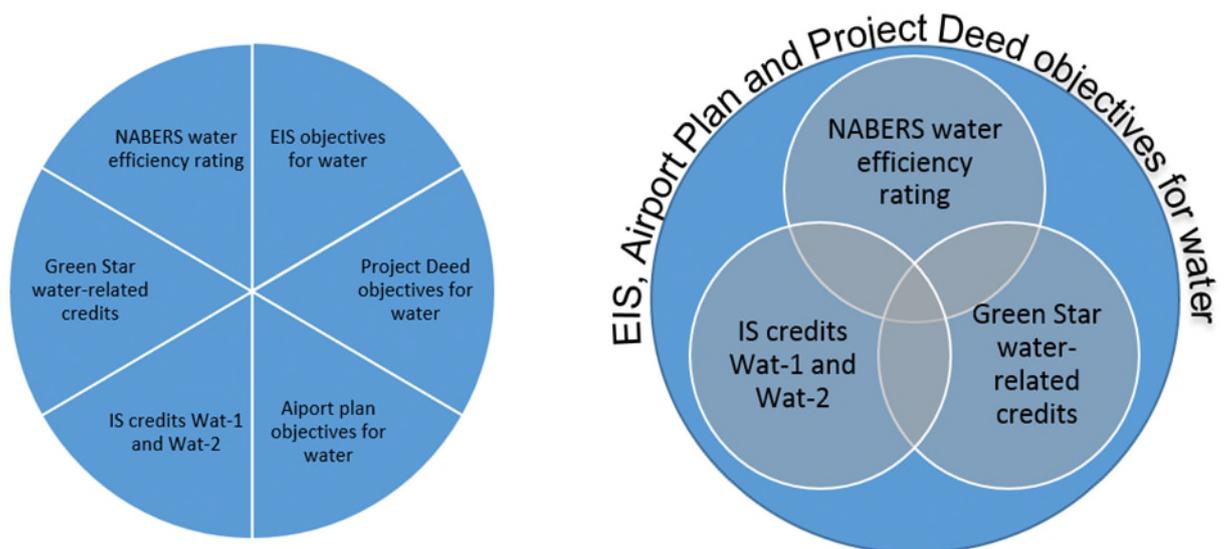


Figure 4 Example of Water Management Independently (left figure) and Integrated (right figure)

5.7 Additional Specific Targets

The following targets have been set for key aspects of sustainability in the Airport design and construction, as required by EIS Table 28-38. These must be achieved by the end of Operational Readiness And Testing (ORAT). They will be achieved at the program

(Airport project) level, which will be determined by aggregating the results from each package of works.

Operational targets will be set prior to ORAT.

Some targets provide a pathway to the mandatory scores for the IS rating (minimum 65 points), and these must follow compliance requirements including base case development in accordance with IS Rating protocol. Additionally, the EIS Table 28-38 requirement of including a target for 'Embodied energy and water use in building and construction materials' has been addressed through targets set on percentage reduction or improvement on rating scheme credits and protocols, or by mandatory IS Rating credits found within Table 3. This will make the requirement easier to understand and meet during design and construction. Reduction in embodied carbon and water footprint will be an outcome of the following:

- Reduced Emissions target using IS Rating protocol throughout construction (Ene-1 Energy and carbon monitoring and reduction);
- Recycled Content in Construction Materials using Green Star Life Cycle Impact credits (19B.1, 19B.2, 19B.3 and 19B.4) which considers both embodied carbon and water
- Mandatory IS Rating credits in Table 3 (Mat-1 Materials lifecycle impact measurement and reduction & Ene-1 Energy and carbon monitoring and reduction)

WSA aspires to achieve sustainability performance beyond the minimum targeted requirements, which will require the following targets to be met or exceeded. WSA has also considered and aligned the additional specific targets with the United Nations's Sustainable Development Goals's (UN's SDG's). As a GBE, WSA would like to contribute towards the federal government meeting the United Nation's blueprint for peace and prosperity for people and the planet, now and into the future.

The additional specific targets tabled below will be incorporated into the project by including these into the relevant package specific documentation and implementation plans. Compliance will be audited, monitored and reported on in the same way as described for other sustainability requirements in this Plan. Achievement of these targets will be determined at the program (Airport project) level by aggregating the results from each package of works.

Table 8 Additional Specific Targets for Stage 1 Development

Relevant Target (From EIS 28-38)	SDG	Objective	Minimum Target
Climate Change Adaptation		100% of extreme and high rated climate change risks are identified, assessed and appropriate measures implemented, with no extreme residual risks after treatment	100%



		Adaptation options to treat a percentage of all medium priority climate change risks are identified, assessed and appropriate measures implemented	25-50%
Reduced Electricity Use		Design and construct for reduction in electricity use compared to a base case ² (IS Rating protocol)	15%
Reduced Fuel Non-Aviation Fuel Use		Reduce non-aviation fuel use by designing for electric air-side vehicles and incorporating recharging infrastructure	The minimum target is currently being considered in design phase.
Reduced Water Consumption		Reduction in total water use compared to a base case footprint ² (IS Rating protocol)	5%
		Water use from non-potable sources, from reclaimed or recycled waste water or harvested water	33%
Environmental Labelling		Material or products have an ISCA approved environmental label	At least 1 product/material
Recycled Content in Construction Materials		Mandatory optimisation of recycled content in concrete, steel and asphalt construction products, including as a minimum, compliance with Green Star Life Cycle Impact credits (19B.1, 19B.2, 19B.3 and 19B.4)	The optimised targets are currently being considered in design phase ³
Reduced Emissions		Reduction in greenhouse gas emissions compared to a base case footprint ² (IS Rating protocol) including scope 1, scope 2 and land clearing emissions	10%
Quantity of Waste to be Recycled	  	Percentage of spoil waste diverted from landfill for recycling or reuse	80%
		Percentage of surplus VENM or ENM spoil to be reused on or off site	100%
		Percentage of inert or non-hazardous waste diverted from landfill for recycling or reuse	80%
		Percentage of office waste diverted from landfill for recycling or reuse	70%
Biodiversity & Landscaping		Plantings to be Australian Natives	70%
		Plantings to be indigenous native plants to preserve Cumberland Plains identity in the Western Sydney region	50%
Workforce Diversity		Representation of workforce through learning workers by 2025 (including trainees, apprenticeships and	20%



		workers training to upgrade their qualifications and skills)	
		Percentage of the workforce locally employed during construction	30%
		Percentage of overall workforce diversity. Broken down into: <ul style="list-style-type: none"> - Indigenous workforce (during construction) - Women in non-traditional roles, socially and economically disadvantaged people and people with a disability 	10%
			2.4%
			7.6%
		Percentage of contracts awarded to indigenous businesses	3%
People	 	Number of priority community health and wellbeing issues to be identified and measures implemented to positively contribute to these issues	Minimum of 1
Innovation		Sustainability innovations implemented	Minimum of 3

2. For more information on IS Rating protocols and base case development please refer to section 5.2.2.

3. For more information on recycled content in construction materials please refer to Appendix B Materials Roadmap.

Updates on the Projects progress on the above additional specific targets is provided in WSA's Airport Plan Annual Report This report is a publicly available document on the WSA website.

5.8 Carbon Neutral Pathway

5.8.1 Context

Australia is committed to taking strong domestic and international action on climate change. The Government is implementing national policies to reduce emissions and adapt to the impacts of climate change in the context of coordinated global action.

An historic global climate agreement was agreed under the United Nations Framework Convention on Climate Change (UNFCCC) at the 21st Conference of the Parties (COP21) in Paris (30 November to 12 December 2015).

NSW Climate Change Policy Framework sets in place a commitment to be carbon neutral by 2050. COAG Energy Council have published a Trajectory for Low Energy Buildings, which indicates future changes to the National Construction Code (minimum construction regulations) which will require all new buildings to be Net Zero Energy and Carbon Ready from 2028.

5.8.2 Airport Benchmarking

Most major city Australian airports are on the pathway to Carbon Neutral, using the industry accreditation, Airport Carbon Accreditation Scheme. Adelaide, Brisbane, Parafield and Sydney Airport are all at Level 3 Optimisation. Melbourne, Hobart, Perth, Gold Coast, Townsville, Longreach and Mt Isa are all at Level 2 Reduction.

Internationally, the following airports at at Level 3 Optimisation: Changi, Hong Kong, Incheon, Abu Dhabi, Dubai, Los Angeles, Narita. Carbon Neutral international airports include: Rome, Athens, Copenhagen, Finavia and Gatwick.

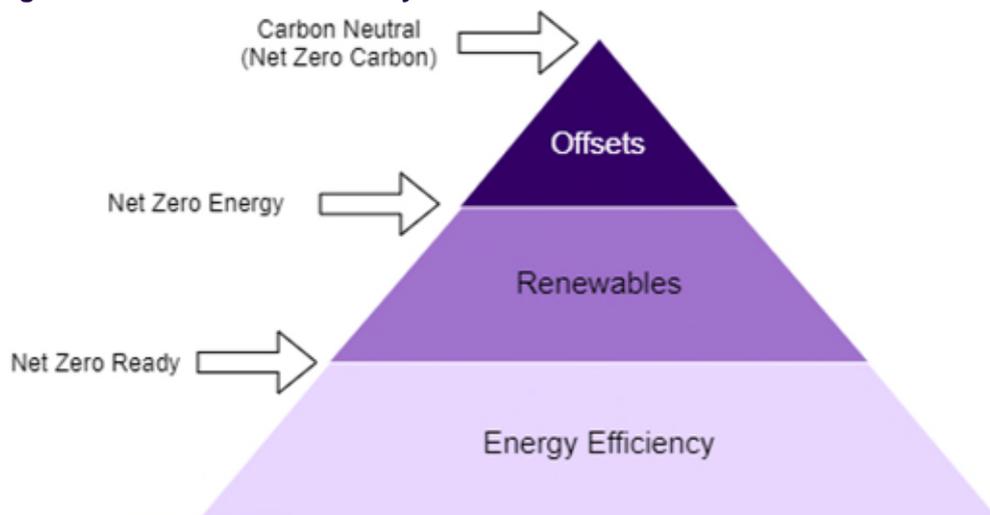
Currently this scheme awards Level 3+ Carbon Neutral when an airport can demonstrate that it has offset Scope 1 and 2 emissions. In the future it is anticipated that the scheme will require Scope 1, 2 and 3 emissions to be offset to achieve Carbon Neutrality.

5.8.3 WSA Approach

WSA aims to deliver an airport that is future ready for Carbon Neutral. Intelligent design and energy optimisation will be the cornerstones of this approach and WSA is exploring other potential avenues, Carbon Neutral Pathway Figure 5 indicates the hierarchy for achieving carbon neutrality, with the lowest cost/highest business value initiatives at the bottom of the pyramid, and the highest cost/lowest business value initiatives at the top of the pyramid.

During design phase (2020-2021) for the Airport the focus will be strongly on optimising energy efficiency and investigating renewable energy supply, to create the biggest impact and the best value for money. During construction and ORAT phases (2022-2026) the focus will be investigating off-site renewable energy supply and carbon offsets.

Figure 5 Carbon Neutral Pathway



6. Governance

6.1 WSA as the Airport Lessee Company

WSA is the Airport Lessee Company (ALC) for Western Sydney Airport and as such is responsible for responsibilities and obligations designated to the ALC in the EIS or Airport Plan.

The Board of Directors of WSA has established a Design & Construction Committee as a committee of the Board to oversee the core design, construction and delivery projects associated with the development of Western Sydney Airport (the Project).

Regular reports about implementation, compliance and performance for sustainability issues covered by the Sustainability Plan will be provided to the D&C Committee.

The Sustainability Plan will be reviewed by the Design & Construction Committee annually.

6.2 Service Delivery Partners

6.2.1 Design and Construction

WSA will work with service delivery partners to design and construct the Stage 1 Development of Western Sydney Airport. Each partner has a scope within design and construction delivery, described in Table 9 Description of Service Delivery Partners, which informs their areas of input into the sustainability framework. Figure 6 describes the relationship of these partners to WSA.

Table 9 Description of Service Delivery Partners

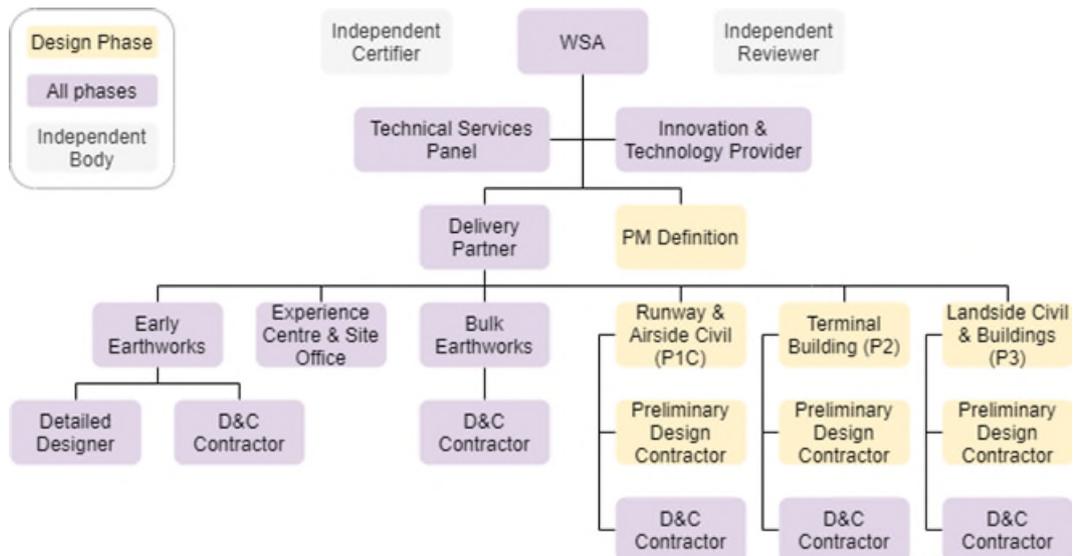
Service delivery partner	Scope within design and construction
Technical Services Panel	Provide consulting advice through definition and construction phases including baggage handling, airport planning, quantity surveying, engineering, etc
Delivery Partner	Project Management of the delivery of the project.
Project Manager Definition	Project Management of the Definition Phase of the project.
Design and construction contractors	Design and construction of the works.

The Project Manager Definition for Western Sydney Airport will lead the preliminary design of Package 2 and Package 3. Documents for tender will be handed over to the Delivery Partner.

The Delivery Partner is responsible for managing the delivery of all packages, including Early Earth Works through to package 3. The Delivery Partner's Sustainability Management Plan is approved by WSA Executive Manager Sustainability. It details

further specifics on Contractor and package of work management throughout the construction phase.

Figure 6 Western Sydney Airport Service Delivery Structure (Design and Construction)



6.2.2 Operation

This section of the Sustainability Plan will be developed prior to ORAT.

6.3 Roles and Responsibilities

To promote an effective and integrated approach to sustainability, roles across each representative organisation will contribute to sustainability management. Table 10 divides key responsibilities for implementing and monitoring the Sustainability Plan according to a RACI matrix which identifies:

- Responsible (R) – those who complete the tasks.
- Accountable (A) – those who must take ownership and sign off/approve the task being complete.
- Consulted (C) – those who are asked to provide input and opinion regarding key decisions while the task is being completed.

Informed (I) – those who are updated on decisions and actions (typically one-way communication).



6.3.1 Table 10 RACI Matrix for Sustainability Plan

Role	Responsible	Accountable*	Consulted	Informed
WSA Executive Manager Sustainability	X	X		
General Manager Airport Planning		X	X	
Executive General Manager Infrastructure		X	X	
Other members of WSA Executive (Chief Financial Officer, Chief People & Culture Officer, General Counsel & Co. Sec, Chief Information Office, GM Capability, Equity, Diversity & Inclusion)			X^	
WSA CEO		X		
WSA Board Design and Construction Committee			X	X
WSA Board		X		X
WSA Design Manager	X			
WSA Construction Manager			X	
WSA Environment Manager			X	
WSA Procurement Manager			X	
WSA GM Stakeholder and Community Engagement			X	
Delivery Partner Sustainability	X			
PM Definition Sustainability	X			
Design contractors – Sustainability Lead	X			
Construction contractors – Sustainability Lead	X			
Technical Services Panel	X		X^	
Innovation and Technology Provider			X^	
Independent Reviewer				X
Independent Certifier				X
Third Parties	X			

* Each role is accountable to a different level in the organisation. The WSA EMS is accountable to the General Manager Airport Planning, who is accountable to the CEO. The CEO is accountable to the Board and external stakeholders.

^Consultation with members of the Executive, the Technical Services Panel and Innovation and Technology Provider would be on an ad hoc basis and dependent on the subject matter requiring consultation.

Table 11 outlines the roles and responsibilities of those addressing or having input to the sustainability performance of Western Sydney Airport. Responsibilities will be documented in position descriptions, including any responsibilities stemming from direct or derived contractual sustainability requirements.

Table 11 Sustainability Roles and Responsibilities

Role	Responsibility
WSA Executive Manager Sustainability - Aviation	<ul style="list-style-type: none"> • Provide sustainability advice and leadership to the project team. • Advocate a strong sustainability culture throughout WSA during all phases of the project. • Oversee implementation of the WSA Sustainability Plan and associated systems across the project and packages of work, ensuring conformance to the Plan. • Update the Sustainability Plan and other WSA sustainability documentation within the sustainability framework as required. • Promote and drive solutions for WSA's project-wide objectives, including carbon targets, innovation, revenue and cost management and customer experience. • Undertake option analysis and develop business cases as required for specific sustainability initiatives. • Work with authorities (including ratings agencies) and regulatory agencies to ensure compliance of regulatory requirements and obtain required Authority approvals. • Oversee the implementation of the IS Rating Scheme framework across the entire project, including coordination with relevant stakeholders in charge of preparing various package submissions. • Oversee the implementation of the Green Star Rating Scheme and NABERS assessment across all relevant Eligible Buildings where the ratings apply, including coordination with stakeholders in charge of preparing submissions including those responsible for third party developments. • Review design progressively to ensure all regulatory and ratings requirements are being met, including contribution to Safety in Design assessment. • Ensure regular monitoring, reviewing and reporting against sustainability targets is conducted as described in the Sustainability Plan, holding package leads to account on their package-specific sustainability targets. • Implement project-wide audits and takes corrective action when required. • Report on the performance of the project against the sustainability requirements to senior management and external stakeholders, including assisting the General Manager Airport Planning with preparation of Board papers.



Role	Responsibility
	<ul style="list-style-type: none"> • Liaise with the Stakeholder and Community Manager and provide all information required to be made publicly available in advance of significant developments, where public consultation is required. • Manage WSA sustainability team members. • Liaise with other WSA and project parties responsible for interfacing plans and procedures to ensure consistency in sustainability approach and promotion of knowledge sharing. • Liaise with external parties about sustainability opportunities and challenges, where required and coinciding with contractual or regulatory requirements.
General Manager Airport Planning	<ul style="list-style-type: none"> • Provide support, leadership and adequate resources to drive a culture of sustainability for the project. • Ensure WSA sustainability requirements and objectives are achieved. • Keep WSA Leadership and Board informed on sustainability progress and performance. • Identify sustainability ideas and innovation • Establish cross function teams of internal and external resources to identify initiatives and develop the design required to achieve sustainability requirements and objectives
Executive General Manager Infrastructure	<ul style="list-style-type: none"> • Provide support, leadership and adequate resources to drive a culture of sustainability for the project. • Embed sustainability into the project's strategic planning process.
WSA Board Design & Construction Committee	<ul style="list-style-type: none"> • Makes recommendations to the Board with respect to design and construction strategy (see Charter) • Receives regular reports on implementation and compliance. • Embed sustainability into the project's strategic planning process.
WSA CEO & Board	<ul style="list-style-type: none"> • Accountable for project-wide implementation of sustainability to external regulatory bodies. • Ensure sustainability is placed on the agenda and prioritised, just as any other important governance risk or opportunity. • Embed sustainability into the project's strategic planning process. • Place sustainability performance metrics evenly in the incentive compensation schemes.
WSA sustainability team members	<ul style="list-style-type: none"> • Assist the WSA EMS with the implementation of the IS Rating Scheme and Green Star Rating Scheme across relevant aspects of the project and with relevant project team members, through technical advice and provision of key deliverables. • Assist in the collation of documentation of sustainability initiatives relevant for the EEW As Built IS Rating submission. • Assist the WSA EMS to guide and support project team members in their efforts to manage sustainability performance in accordance with relevant rating schemes, including sharing of documents, ideas, challenges, and lessons learned, as appropriate and relevant.



Role	Responsibility
	<ul style="list-style-type: none"> Team members will include at least one IS Accredited Professional (ISAP) and one Green Star Accredited Professional (GSAP).
<p>Consulted roles within WSA (Design, Construction, Environment, Procurement, Commercial, Capability, Equity, Diversity & Inclusion and Stakeholder & Community Engagement)</p>	<ul style="list-style-type: none"> Provide necessary documentation to the WSA EMS and other sustainability leads for specific packages to contribute to rating scheme submissions. Promote consistent approaches in the management of the respective discipline/area (design, construction, environment, and so on) across all relevant project phases. Act as a conduit of information and guidance between the respective discipline/area and sustainability to raise awareness of sustainability principles within their discipline/ area and embed these principles into relevant initiatives and actions. Develop and implement management plans and processes which reflect the intentions of relevant applicable sustainability ratings. Monitor and report on the performance and implementation of discipline/area processes and adherence to regulatory and/or contractual requirements. Manage and maintain relationships with regulatory authorities, government agencies and customers and other stakeholders to ensure that WSA's management of the discipline/area is sensitive to industry trends, stakeholder, community and regulatory expectations and legislative requirements.
<p>WSA GM Stakeholder and Community Engagement</p>	<p>In addition to the above:</p> <ul style="list-style-type: none"> Ensure information provided by the WSA EMS required to be made publically available is shared on the WSA website in an appropriate and timely manner. Develop a comprehensive stakeholder engagement strategy incorporating independent review or stakeholder input. Ensure stakeholders are informed about non-negotiable, sustainability related issues. Work directly with the public including deliberative polling or workshops to involve stakeholders in negotiable issues, and directly reflect stakeholder concerns and aspirations in the alternatives developed. Ensure that timely, meaningful and relevant information is provided to the community.
<p>Delivery Partner Sustainability</p>	<ul style="list-style-type: none"> Work with WSA EMS to integrate sustainability requirements including rating system targets into all packages of work. Adopt the principles, objectives and requirements of the WSA Sustainability Plan and monitor, review and report the sustainability performance of relevant project stakeholders against those requirements to the WSA EMS. Develop and maintain a Sustainability Management Plan approved by WSA Executive Manager Sustainability specific to Contractor or package of works management throughout construction. Monitor compliance with sustainability requirements for design and construction contractors of each Package and appropriately manage performance.



Role	Responsibility
	<ul style="list-style-type: none"> • Maintain ongoing contact with ISCA, GBCA and other authorities as required to manage the application of sustainability ratings for each package • Report on performance of sustainability to the WSA EMS on a monthly basis. • Identify ideas and innovations and drive sustainability within teams.
PM Definition Sustainability	<ul style="list-style-type: none"> • Adopt the principles, objectives and requirements of the WSA Sustainability Plan and monitor, review and report the sustainability performance of relevant project stakeholders against those requirements to the WSA EMS. • Monitor compliance with sustainability requirements for design contractors and appropriately manage performance. • Report on performance of sustainability to the WSA EMS on a monthly basis. • Identify ideas and innovations and drive sustainability within teams.
Design contractors – Sustainability Lead	<ul style="list-style-type: none"> • Adopt the principles, objectives and requirements of the WSA Sustainability Plan to develop package specific sustainability plans that are consistent with this Plan. • Implement sustainability per the requirements identified in the WSA Sustainability Plan and package-specific sustainability plans, focusing on driving optimal sustainability outcomes. • Monitor design compliance with sustainability requirements and appropriately manage performance. • Report on sustainability performance to the PM Definition on a monthly basis. • Identify ideas and innovations and drive sustainability within teams. • When relevant, take accountability for package specific IS and Green Star ratings.
Construction contractors – Sustainability Lead	<ul style="list-style-type: none"> • Adopt the principles, objectives and requirements of the WSA Sustainability Plan to develop package specific sustainability plans that are consistent with this Plan. • Develop and implement site-specific environmental procedures and work method statements in accordance with the requirements of this Plan. • Implement sustainability per the requirements identified in the WSA Sustainability Plan and package-specific sustainability plans, focusing on driving optimal sustainability outcomes. • Monitor construction compliance with sustainability requirements and appropriately manage performance. • Report on sustainability performance to the Delivery Partner on a monthly basis. • Identify ideas and innovations and drive sustainability within teams. • When relevant, take accountability for package specific IS and Green Star ratings. • Comply with further specifics outlined in the Delivery Partner Sustainability Management Plan.

Role	Responsibility
Third parties (developers and/or tenants)	<ul style="list-style-type: none"> • To adhere to the contractual obligations set with WSA which may include sustainability requirements, monitoring/and or reporting on sustainability performance. • Accountability for achieving sustainability ratings e.g. Green Star and/or NABERS, subject to contractual arrangements made with WSA.

6.4 Decision Making Framework

The process of internal decision making takes place according to WSA's organisational structure and escalating authority levels. All issues and decision-making processes will adhere to WSA policies and procedures.

- General Manager – Issues will be first raised to the responsible General Manager (GM), who will take action according to their prescribed responsibilities and authority levels. If the issue affects areas of the WSA Business outside of the GM's prescribed responsibility, the issue will be escalated.
- Steering Group - Internal steering groups comprise senior and executive level WSA team members who represent interested business units, and which are formed to deliberate and advise executive-level decision makers on issues within a defined focus area. Issues escalated by a General Manager will be reviewed by an appropriate steering group to provide an endorsement or appropriate alternative advice to the responsible Executive General Manager to assist in decision making.
- Executive General Manager – The Executive General Manager (EGM) will take action on the issue in question in accordance with their prescribed responsibilities and authority levels. The EGM will determine the need to raise the issue with the broader Executive Leadership Team or the Chief Executive for further deliberation and action.
- Board of Directors - Executive level managers will determine the need to raise issues to WSA Board (or Board Committee) level. Issues raised to the WSA Board will follow the prescribed submission process.

Figure 7 Decision Making Governance Framework



6.5 Ratings Agencies

WSA and its service delivery partners will have ongoing contact with representatives of ratings agencies in charge of administering and certifying sustainability ratings, as described in Section 1.6.1. Frequency and timing of interaction with the ratings agencies will be confirmed with each agency when the project is registered as part of the rating application process. This process is further described in Section 5.

6.5.1 Contact with GBCA

The WSA EMS is accountable for ensuring that the Green Star ratings (Design and As Built, Interiors) are achieved. The Delivery Partner and PM Definition may also be required to assist with this process.

A Green Star Accredited Professional (GSAP) will interface between the GBCA and the rating registrant, and will be nominated as the 'Project Contact' to meet Green Star requirements.

6.5.2 Contact with ISCA

ISCA is engaged to provide planning support services for the IS Rating and recommend how to achieve the rating across the packages of work. Deliverables and decisions made during this planning support phase will be communicated to service delivery partners as required.

The WSA EMS will maintain ongoing contact with ISCA to oversee the application of the IS Rating across the packages of work. Concurrently, the Delivery Partner will maintain ongoing contact with ISCA to manage the application of the IS rating for each package.

The Delivery Partner will meet with the ISCA Case Manager on behalf of Western Sydney Airport project as needed. Outcomes and decisions from discussions and meetings with ISCA will be communicated to relevant package D&C Contractors. The Delivery Partner will manage this communication.

6.5.3 Contact with DPIE

The WSA EMS will oversee the gathering of operational performance data for Eligible Buildings for NABERS Energy and Water ratings.

Where applicable, the WSA EMS may rely on third parties such as developers and tenants to provide operational data, or may set requirements on those third parties to engage with DPIE and undertake the NABERS rating independently of WSA for specific Eligible Buildings managed by those third parties.

The WSA EMS will meet with DPIE as required.

7. Sustainability Management

Sustainability items will be included in the project-wide requirements register, DOORS, to capture all contractual and regulatory requirements.

The DOORS requirements register will be the master document for identifying and measuring internal sustainability performance, and will assign accountability to each requirement, at project and package level. This was discussed in Section 6 of this Sustainability Plan. The following sections describe the high-level approach to managing sustainability.

7.1 Management Objectives

The key management objectives include:

1. Enhance the effectiveness of environmental management and sustainable design measures during construction and in operation of the Stage 1 Development and assist in avoiding, reducing or mitigating environmental impacts
2. Maximise social and economic benefits of the Stage 1 Development
3. Contribute to the productivity and liveability of communities in Western Sydney
4. Reduce the airport's exposure to long term risks such as climate change

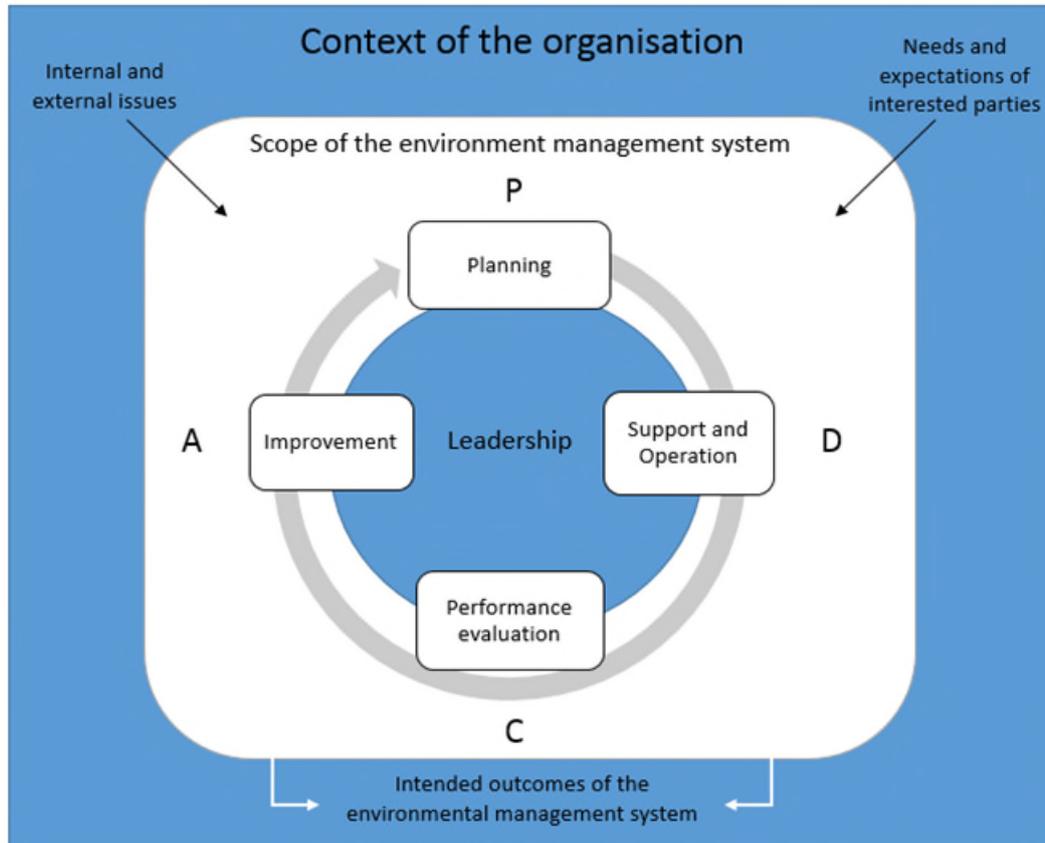
7.2 Management System Principles

In order for the sustainability framework to successfully function for Western Sydney Airport, certain management principles should be followed to recognise and plan for risks, assign responsibility, manage and monitor processes and foster appropriate liaison between relevant parties.

There is currently no Australian standard for sustainability management systems, but system principles can be adopted from other standards guiding environmental, safety or quality management. The cycle of planning, implementation, monitoring and review, known as the Plan-Do-Check-Act (PDCA) concept (Figure 8), allows iterative performance improvement from lessons learned and adoption of new innovations.

This management method ensures that frequent monitoring and review is undertaken to identify and address potential issues before significant complications arise. This aligns with the Airport Plan requirements to regularly review and update the Sustainability Plan and adopt new sustainability innovations as they are developed, at subsequent iterations of the performance evaluation and improvement stages.

Figure 8 Relationship between PDCA and the ISO 14001:2015 Standard framework (adopted from Figure 1 ISO 14001)



Adopting the PDCA concept within the sustainability framework will provide consistency across the project and maximise sustainability performance. The WSA EMS will ensure the framework's alignment to this concept.

The following elements will be developed and implemented through the framework documentation:

- definition of the system scope and context;
- identification of material sustainability aspects for the project/development;
- definition of policy commitments and sustainability targets;
- assignment of roles and responsibilities to operate the system;
- implementation of support functions for communication, documentation and competence;
- measurement of progress;
- implementation of audits and reviews to evaluate performance;
- engagement with stakeholders through transparent reporting and dialogue;
- opportunity for continual improvement and implementation of corrective actions.

The IS and Green Star guidelines reward best practice governance and the integration of a robust management system.

7.3 Communication

Communication is integral to maximising sustainability performance and establishing a culture of continual improvement. There will be various audiences to communicate with both internally within WSA and externally.

Table 12 provides a high level summary of the proposed communication methods across the project phases that WSA is responsible for coordinating. These communication methods will be agreed between the WSA EMS and relevant parties and an outline of confirmed meetings and discussions will be included in the sustainability plans as appropriate to each package of works.

Table 12 Project Communication Methods Relevant to Sustainability

Communication method	Audience	Purpose	Project phase	Frequency
Sustainability steering committee meeting	WSA EMS and committee members (refer Section 3.4)	To review sustainability performance, translate requirements into tangible outcomes and promote knowledge sharing	Design and construction	Monthly
Design Coordination Meetings	Design Team	To review progress, identify problems, and set action plans for resolution	Design	Fortnightly
Sustainability workshops	WSA and its service providers	To engage relevant parties in discussion of a particular sustainability aspect, and satisfy the requirements of certain credits within the mandated sustainability ratings	Design, construction and operation	In line with appropriate milestones of each project phase
Sustainability internal forums	WSA, developers and tenants, airport operators	To review sustainability performance, discuss new developments and innovations and promote knowledge sharing	Operation	Quarterly
Performance reporting	Department of Infrastructure, Transport, Regional Development	To provide a report of ongoing sustainability performance, notably through the delivery of this Sustainability Plan and reporting	Design, construction and operation	Monthly



Communication method	Audience	Purpose	Project phase	Frequency
	and Communications	against sustainability targets		
Performance reporting	WSA Board Design & Construction Committee	To provide a report of ongoing sustainability performance, notably through the delivery of this Sustainability Plan and reporting against sustainability targets	Design, construction and operation	Quarterly Reporting
Compliance reporting	WSA Board Design & Construction Committee	To report compliance with Table 28-38 of the EIS and the Sustainability Plan over each 12 month construction period as required by the Airport Plan condition 39.	Construction	Quarterly Reporting
Compliance reporting	Public (published on website)	To report compliance with Table 28-38 of the EIS and the Sustainability Plan over each 12 month construction period as required by the Airport Plan condition 39.	Construction	Annually, available online for 12 months within 3 months of the end of the reporting period
Sustainability external outreach	External stakeholders and community groups	To provide an avenue for discussion of community priority issues, including negotiable issues, and to receive feedback	Design, construction and operation	In line with appropriate milestones of each project phase, and at least once during design and annually during construction
Complaints and enquiries	External stakeholders and community groups	To provide an avenue for receiving complaints and enquiries, in accordance with the Community and Stakeholder Engagement Plan	Construction and operation	Available throughout the relevant project phase(s)
Publicly available information	Public	To communicate information about the Western Sydney Airport and WSA that may be interesting or pertinent for public knowledge, as well	All project phases	Available throughout all project phases

Communication method	Audience	Purpose	Project phase	Frequency
		as to satisfy the requirements of certain credits within the mandated sustainability ratings		

7.4 Knowledge Sharing

Knowledge sharing is a process through which individuals responsible for delivery of sustainability outcomes learn from one another in order to increase their own capacity to meet or exceed the project sustainability requirements.

This process aligns with one of the credits of the IS Rating (Man-6 Knowledge sharing) and will capture lessons learned to share internally and beyond the project. It is also aligned with a Green Star credit 7.2.2 (Knowledge of Sustainable Practices), which requires the project to provide training to site workers on project specific sustainable practices and initiatives.

Knowledge sharing will occur during all phases of the project. It will include achievements, good news stories, and examples of any identified practices that had negative consequences.

Knowledge sharing will be achieved through:

- formal and informal internal discussions sharing knowledge between packages of work;
- knowledge transfer beyond the Western Sydney Airport to other projects;
- acquiring knowledge from other airport and infrastructure projects for use in the Western Sydney Airport;
- knowledge transfer to the public realm, for example through forums, papers or presentations.

7.5 Competence and Awareness

Different levels of sustainability competence will be required, depending on project role.

Sustainability content will be included as part of WSA staff on-boarding. Additionally, staff will participate in regular training on broad sustainability topics that are relevant to the WSA business. This will include social, environmental, and commercial aspects, as well as governance. This training will be managed by WSA Executive Manager Sustainability in consultation with the WSA P&C Team.

A “training needs” analysis will be developed by Contractors as part of sustainable workforce planning. This will outline minimum sustainability competency requirements, and highlight opportunities for capability improvement.

The “training needs” analysis will consider sustainability competency requirements across all phases of the project and will be updated when the Airport enters a new phase of development, or where there are significant changes.

“Suitably Qualified Experts” may be required to perform specific sustainability tasks such as implementation, monitoring and reporting. The WSA EMS and will ensure that Suitably Qualified Experts are engaged as required to sustainability requirements.

7.5.1 Accredited Professionals (IS, Green Star, NABERS)

In addition to specific competencies required within WSA, accredited professionals will be engaged to help deliver the IS, Green Star and NABERS ratings. Western Sydney Airport will engage the services of the following accredited professionals during relevant phases of the project:

- IS - engaged for duration of project to assist in delivery of the IS Design, As-Built and Operation ratings;
- GS - engaged during design and construction to assist in delivery of the Green Star Design & As Built and Interiors ratings for specific Eligible Buildings;
- NABERS - engaged during operation to assess the base building performance of Eligible Buildings against the Energy and Water schemes for the relevant rating types.

Records of suitable education, training and/or experience will be obtained and verification of competencies will be conducted in line with project requirements. This process will be managed by WSA Executive Manager Sustainability during the procurement phase of packages.

7.5.2 Sustainability Onboarding

Sustainability will form part of workforce onboarding to promote an awareness of project-wide sustainability requirements and each individual's contribution to sustainable performance.

The induction process will require all project employees, contractors and suppliers to participate in orientation training, which will be tailored to the specific work they will be undertaking. WSA is responsible for training of WSA employees, each package head contractor will be responsible for training of their own employees, contractors and suppliers. Sustainability topics to be included in onboarding will include:

- an overview of sustainability requirements, including how they pertain to this Sustainability Plan;
- identifying significant sustainability issues and how these might relate to workforce activities;
- implications of non-compliance with sustainability requirements;
- introduction to external sustainability resources.

WSA P&C Team will deliver training for all WSA employees as part of the onboarding process with sustainability content supplied by the WSA Sustainability Team.

7.6 Records

Accurate records will be maintained to demonstrate compliance with Sustainability Plan, specific resource consumption targets, IS, Green Star and NABERS ratings.

7.7 Monitoring

Sustainability performance will be monitored throughout all project phases.

WSA EMS will ensure monitoring is undertaken by Suitably Qualified Experts, in accordance with industry best practice, base sustainability requirements, ISCA and Green Star rating tools. Results of monitoring will be recorded.

Aspects to be monitored during design, construction and operation may include;

- implementation and evidence gathering for relevant sustainability ratings;
- site sustainability inspections;
- resource consumption including electricity, fuels, water, materials, and emissions;
- waste and recycling;
- stakeholder engagement and community feedback;
- workforce management;
- biodiversity and heritage management;
- emerging issues.

For example, the IS Rating specific credits that require monitoring include: receiving water quality, noise, vibration, air quality, light pollution, conservation of onsite resources,

waste management, community health and well-being, community and user safety, organisation structure, roles and responsibilities, water use, water saving opportunities and replacing potable water.

7.8 Reporting

Progress of sustainability performance will be reported by WSA and DP on a regular basis throughout all phases of the project, in compliance with base sustainability requirements and to satisfy the Green Star and IS ratings.

Internal sustainability reports will be produced quarterly, while communication with the public will occur via an annual sustainability report that will be published on WSA's website.

Internal quarterly reports will include the following information:

- sustainability performance against targets;
- progress towards sustainability ratings relevant to the phase of the project;
- resource consumption figures, including electricity, non-aviation fuel, water, waste and materials;
- emerging sustainability issues;
- progress on workforce sustainability including performance against Commonwealth targets;
- summary of consultation efforts achieved in the reporting period, both with regulatory agencies and community stakeholders;
- identification of risk areas to avoid non-conformances and manage actions to ensure base requirements are achieved;
- progress on improvement actions identified and/or closed out from previous inspections and audits.

The annual Sustainability Report will be made available on the WSA website and the WSA EMS will be responsible for ensuring any queries on this report are addressed.

The annual report will also be provided to the Secretary of the Department of Infrastructure, Transport, Regional Development and Communications, in accordance with the base sustainability requirements, containing information about monitoring results and details of performance, including progress against sustainability targets and achievement of sustainability ratings.

Information in the annual Sustainability Report may be assured externally.

7.8.1 Delivery Partner & Contractor Reporting

Contractors will be required to provide DP monthly, quarterly, annual and Package Practical Completion reporting. DP will use the Contractors monthly reporting to produce the Sustainability Monthly Progress Report for WSA. DP is responsible for collecting and collating data of Contractors and packages currently on site into the one report. The Sustainability Monthly Progress Report will be issued by DP formally to WSA within the

overall DP Monthly Progress Report by Document Control. To produce this document, Contractors will be required to report monthly to DP on an agreed date to ensure the WSA Monthly Reporting Deadline is met.

The Contractor monthly report must include the following details:

- A general sustainability update for the month (4 points minimum)
- Auditing schedule
- Audit outcomes and non-conformance close out
- Tracking against sustainability ratings and targets
- Monthly totals for water usage (potable & non-potable), fuel usage, electricity usage, waste (recycled/reuse & landfill) and materials (environmentally labelled or recycled)
- Information or explanations for data (explain if there is any irregularities or noticable change in data from previous month's report)

Reporting on some sustainability targets may fall into other functional departments responsibility, such as workforce targets and community items, where DP and Contractor need to ensure these items are reported appropriately by the responsible team.

To ensure all items are reported on each month, it is acceptable for Contractors to lag report (i.e. report previous months data) on sustainability target metrics and monthly totals. This is to help ensure full months data is available.

Note: Effluent data is to be reported separately from office waste. Effluent does not count towards WSA meeting their additional specific targets outline in Table 6 of this plan, however may count towards the package meeting sustainability rating credits.

Contractor quarterly reporting should also follow reporting layout described above in Section 7.8. Contractor quarterly report is to be provided to DP within one month after end of quarter. Contractor annual reporting is to be provided to DP each year on 31st of July, or nearest business day. Layout is to follow the previous year's (DP to provide template) plus any required or requested additional information.

Two months prior to the Date for Practical Completion of the last Portion for each package the Contractor shall submit to DP documentation of the materials and waste performance achieved through design and construction in line with documentation requirements for relevant 'materials' and 'waste' category IS credits (including, but not necessarily limited to Mat-1 and Was-2).

7.9 Auditing and Review

Auditing is an essential component of the PDCA management principle as it produces tangible data to inform the review or 'check' component. Audits and reviews apply to all phases of the project and will be performed by head contractors for each package.

The project will include internal and external audits of sustainability management practices and reporting as required. Audits will include compliance with sustainability requirements including ISCA, Green Star and NABERS rating credits/documentation,

inspection commitments and outcomes, non-conformances and corrective actions, lessons learned and communicated.

Audits of the sustainability management system and record of performance will be conducted internally, as well as engaging an independent reviewer. Results will be shared internally via quarterly sustainability reports.

Audits will be tracked on the project audit register.

Several IS rating credits require auditing to be performed, and compliance will be in accordance with these credits for each package of works. Each package of works or Contractor must provide audit reports and ensure close out is completed within one month of the audit being conducted.

The Sustainability Plan will be reviewed annually at a minimum and updated as required.

8. Sustainability Implementation

Sustainability must be considered within each of the phases of the Stage 1 Development, as well as transferring knowledge and information between the phases of work.

Workshops will be held at appropriate milestones for the Stage 1 Development to promote knowledge transfer. The proposed workshops are described within Section 5 of this Sustainability Plan, though ultimately will be determined in conjunction with relevant stakeholders, including those responsible for specific packages of work.

8.1 Planning

During the planning phase, sustainability has been considered and implemented through the following actions:

- definition of roles and assignment of responsibilities pertaining to sustainability for all phases of the Stage 1 Development;
- development of this Sustainability Plan including sustainability framework and management system principles;
- setting of sustainability objectives and commitments;
- allocation of high level sustainability requirements across the project and to specific packages of work;
- engagement of ISCA for planning support services for IS Rating across the project;
- preliminary discussions with the GBCA regarding Green Star Rating application to project;
- preliminary discussions with DPIE regarding NABERS rating application to project

8.2 Design

As design and construction is developed for packages of work, the timeframe for implementing sustainability will be staged (refer Section 5.5). The following actions will be implemented during the design phase of each relevant package of work, or as a project-wide response, as appropriate:

- investigate and document sustainability opportunities and risks, including options studies;
- develop sustainability requirements register for all project phases, and monitor progress for design-based requirements;
- document design alignment to sustainability objectives, project-wide and in each package of work;
- referral to D&C Committee;
- regular engagement to monitor progress, provide opportunities for feedback and share learning across packages;
- monitor and report on sustainability performance, including emerging issues and aspects measured by Green Star and IS Design ratings;
- identify community priority issues across the project;
- review and update sustainability risks and opportunities.

8.3 Procurement

Sustainability will be embedded into the procurement process, for major contractors, sub-contractors, material suppliers and the workforce. Actions that will be undertaken include:

- include sustainable procurement objectives during design and construction and align with ISO 20400:2017 Sustainable Procurement in operation;
- identify roles and responsibilities, including sub-contractor and workforce procurement and management.
- include sustainability aspects within procurement selection criteria;
- monitor progress of procurement requirements;
- document procurement alignment to sustainability objectives;
- specify subcontractor's obligations to provide information and records regarding sustainability, including for materials supplied;
- review and update sustainability risks and opportunities;
- build awareness of sustainable procurement practices within the industry;

8.3.1 Contracts & Facilities Management

Sustainability requirements must be included in all Operational and Facilities Management contracts. Facilities Management Service providers play a key role in achieving sustainability rating requirements. Items to be included into contracts shall include, but not be limited to:



- NABERS water and energy rating achievement and ongoing monitoring, tracking and strategic recommendations
- Waste and resource management, targets achievement and data reporting

8.3.2 Material Selection Guideline

The purpose of the Material Selection Guideline is to highlight the top categories of materials and products WSA would like to prevent entering Project site, and subsequently prevent releasing into the environment and surrounding community. WSA would like to ensure these items are not designed for or used on project from design, construction and through to operations. This guideline applies to WSA, Delivery Partner, Project Manager Definition, TSP's and Contractors.

Table 13 Material Selection Avoidance List

Item	Example	Reason
Petrochemically derived products that specify methodology of use through uncontained releases to the environment	Soil binding polymers (polystyrene and polyacrylate)	<ul style="list-style-type: none"> • Potential carcinogen • Endocrine disrupting • Potential to bioaccumulate
Glyphosate-based and Neonicotinoid pesticides	Roundup, Acetamiprid, Sumitomo, Enviromax and many others.	<ul style="list-style-type: none"> • Both are harmful to European Honeybee and Native Australian Bees • Neonicotinoids are banned in Europe by EU • Glyphosate-based products are a potential carcinogen
PFAS / PFOS and related chemicals (Per- and poly-fluoroalkyl substances)	Firefighting foam, flame retardants, carpet or rug stain protector, architectural resins and some food packaging	<ul style="list-style-type: none"> • Persistent and mobile chemical • Bioaccumulates • Toxic • High oxygen demand (depleted oxygen in waterways) • Adverse effects demonstrated in animal studies • In 2009 the United Nations Stockholm Convention for Persistent Organic Pollutants (POPs) was amended to include PFAS / PFOS after the Australian Government submitted their National Implementation Plan in 2006. The NIP was never amended post 2009 to include PFAS / PFOS.

In addition to above, WSA expects all TSP's and Contractors to be:

- Conducting Life Cycle Assessments throughout the project using the ISCA Materials calculator or other comprehensive methods and programs
- Prioritising independently certified sustainable, environmental or renewable products and materials

- Ensuring transparent supply chains and preferencing local and indigenous suppliers

8.4 Construction

The following actions will be implemented during construction within each relevant package of work, or as a project-wide response, as appropriate:

- Integrate sustainability management principles in construction methodology for each package of work;
- Monitor progress of construction sustainability related requirements;
- Document construction alignment to sustainability objectives, project-wide and in each package of work;
- Regularly engage to monitor progress, provide opportunities for feedback and mutually share learning across packages;
- Monitor and report on sustainability performance, including emerging issues and aspects measured by Green Star and IS As Built ratings.
- Evaluate effectiveness of controls;
- Interface with external stakeholders to address priority issues, measure satisfaction and manage complaints;
- Review and update sustainability risks and opportunities.

8.5 Operation

During operations, WSA will monitor ongoing performance and take account of developments and innovations in the area of sustainability. Actions associated with sustainability during operations include:

- Review the Sustainability Plan and the sustainability framework, including processes, roles and responsibilities and performance criteria applicable during operation;
- Incorporate sustainability principles into operations and maintenance plans;
- Monitor progress of operational sustainability requirements;
- Monitor and report on sustainability performance, including aspects measured by NABERS and IS Operations ratings;
- Evaluate effectiveness of controls;
- Referral to D&C Committee;
- Interface with external stakeholders to address priority issues, measure satisfaction and manage complaints;
- Adopt continual improvement through regular interaction between airport operation teams, providing opportunities for mutual learning and feedback;
- Investigate sustainability opportunities and innovations for Western Sydney Airport;



- Review and update sustainability risks and opportunities
- Identify environment issues for operations and ensure they are mitigated via sustainability in design

8.5.1 Green Office Guideline

All WSA project office spaces throughout construction and into operational phase must operate in accordance with the Green Office Guideline. The Green Office Guideline focuses on five key principals:

- Conserve energy and natural resources
- Create awareness of good waste management and follow the waste hierarchy; refuse, reduce, reuse, recycle and rot
- No procurement of single-use plastics (unless approved by the Sustainability Team)
- Ensure sustainable accredited materials are procured where possible
- Continue to review and minimise the impacts of all our activities

8.6 Performance Criteria

Performance criteria are established as part of the EIS. The timing and parties responsible for each criterion are outlined in Table 12 below.

Table 14 EIS Performance Criteria

EIS performance criteria	Party accountable for this criterion	Parties required to comply with this criterion	Timing
Compliance with the approved Sustainability Plan	WSA EMS	WSA and all its service delivery partners, including subcontractors, workforce and suppliers	All phases of the project
Establishment and demonstrated achievement of sustainability targets as outlined in the EIS Table 28-38	WSA EMS, PM Definition & Delivery Partner	Design & Construction Contractors – all packages WSA	Design Construction After Operational Readiness
Achievement of the relevant sustainability ratings outlined in the EIS Table 28-38.	WSA EMS (project-wide) & Delivery Partner (package-specific)	WSA and all its service delivery partners, including subcontractors, workforce and suppliers WSA	End of Detailed Design and Construction practical completion After Operational Readiness

8.7 Sustainability Required Tasks & Initiatives

Set out below, WSA has outlined the Airport Plan, EIS and Deed required tasks and value-adding initiatives for implementation in various phases of the project. The value-adding initiatives will demonstrate leadership in sustainability by the project.

8.7.1 Climate Change

An Initial Climate Risk and Adaptation Report was developed prior to Project commencement by GHD in line with AS 5334:2013 Climate change adaptation for settlements and infrastructure – A risk-based approach and AS 31000:2009 Risk Management – Principles and guidelines. The Initial Climate Risk and Adaptation Report identified 59 potential climate change impacts and made the following recommendations for WSA to ensure climate change adaptation is successfully integrated into design, construction and operation:

- Consider and estimate costs for proposed adaptation measures;
- Include targeted climate change requirements in all design and construction contracts;
- Ensure at commencement of each package an updated Climate Change Risk and Mitigation Review is conducted;
- Set appropriate design parameters to ensure a consistent approach throughout Project;
- Ensure all design documentation from TSP's and Contractors address relevant climate change risks;

At each package commencement TSP's and Contractors will be required to undertake a Climate Change Risk and Mitigation Review to further optimise the design process. To ensure a consistent approach is taken by each Contractor, the following context parameters must be followed, or agreed upon, with WSA prior to undertaking package specific reviews:

- a) Greenhouse gas emissions scenario to be used: RCP4.5 and RCP8.5
- b) Future time slices to be used: Short Term (2030), Medium Term (2050) and Long Term (2090 or 2100)
- c) Define the climate variables
- d) Selection of climate data
- e) Determine other associated impact studies required

Table 15 Climate Change required tasks & initiatives

Initiative	Phase of Project			
	Plan	Design	Const	Ops
Complete a site wide climate change risk assessment work in line with AS 5334:2013	X			
Complete package specific Climate Change Risk and Mitigation Review that is prepared in accordance with AS 5334:2013		X	X	
Consider and estimate costs for proposed adaptation measures		X		
Include targeted climate change requirements in all design and construction contracts	X			
Set appropriate climate change context parameters to ensure a consistent approach throughout Project	X	X		
Ensure all design documentation from TSP's and Contractors address relevant climate change risks		X		

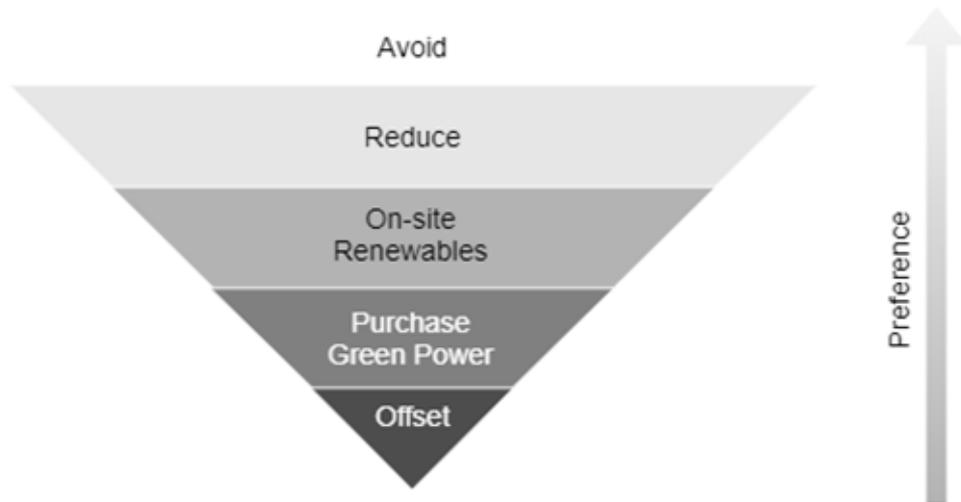
8.7.2 Resource Management & Emissions

Design for the Airport will be based on the foundational principles of circular economy and passive sustainable design. These principles are based on designing out waste and optimising the in-built efficiency of the building's structure, materials and services. These design principles will guide the approach to greenhouse gas emissions and resource management for the Airport design.

Energy, Water & Emissions

Additional Specific Targets outlined in Table 8 already target reductions in electricity consumption, potable water usage and GHG emissions. WSA also encourages TSP's and Contractors to investigate any possible sustainable energy and water initiatives. This could range from onsite renewables during construction through to redesign or designed reductions. WSA aims to follow the carbon emission reduction hierarchy as per below in Figure 9.

Figure 9 Carbon Emission Reduction Hierarchy



Materials & Waste

WSA endeavours for the project to design and construct considering waste a resource. Australia will stop exporting all waste types overseas from 2020 which provides a great opportunity for WSA to be a leader in circular economy thinking and creating closed loop systems between waste management and material procurement.

Table 16 Resource Management & Emissions required tasks & initiatives

Initiative	Phase of Project			
	Plan	Design	Const	Ops
Energy, Water & Emissions				
Ensure sustainable energy sources (electricity and fuel) are considered throughout project	X	X	X	X
Implement optimised construction methodologies to save energy and fuel	X	X	X	
Slip form construction method for runway/taxiways to reduce potable water consumption.		X	X	
Optimise on site solar power for use throughout operations		X		X
Investigate feasibility of embedded networks	X	X		
Materials & Waste				
Ensure circular economy thinking is at the forefront of material decisions	X	X	X	X
Specify during procurement for suppliers to avoid unnecessary packaging when providing manufactured products to project		X	X	



Identify opportunities to use low carbon concrete	X	X	X	X
Identify opportunities to use and optimise asphalt with recycled content (plastics, glass and rubber tyre)	X	X	X	X
Identify opportunities and programs to recycle specific streams of project waste and, if possible, incorporate end product into design	X	X	X	X
Material selection guideline to be adhered to	X	X	X	X
Biodegradable soil binders to be used for compaction and dust control to reduce potable water consumption and prevent uncontrolled releases of petrochemically derived polymers as per Material Selection Guidelines	X		X	
Find opportunities to take surrounding projects waste and utilise on site		X	X	

8.7.3 Workforce Management

WSA is committed to developing the current and future skills of the workforce. Our workforce skills development approach will increase the capability and capacity needed to meet future infrastructure, construction and operational requirements associated with the airport. Our strategy will support training, competency and transferable skill development for individuals and industry. WSA Higher Education Strategy will aim to improve project performance, leadership, workplace health and safety, individual competency and transferable skills in specified occupational areas. WSA will work in partnership with our contractors, state and federal government agencies and education providers to deliver a suite of workplace initiatives targeting skills and employment in Western Sydney.

Table 17 Workforce Management required tasks & initiatives

Initiative	Phase of Project			
	Plan	Design	Const	Ops
Establish and maintain a Skills Taskforce to inform, advise and support the delivery of the Western Sydney Airport Workforce Initiatives	X	X	X	X
Working with Industry and Education providers, scope and develop programs that aid in pre-employment initiatives designed to target diverse and disadvantaged workers	X	X	X	X
Establishment of a Higher Education Forum to provide opportunities through programs and activities that will support project based research and innovation.		X	X	X



Collaboration with indigenous partners to establish skills pathways to employment at WSA	X	X	X	X
Workforce have access to health and wellbeing programs, including counselling	X	X	X	X
Drug and alcohol testing performed on site and in offices		X	X	X

8.7.4 Heritage Management

WSA have engaged with indigenous consultancies and local groups from early planning and throughout design to assist in the identification and assessment of heritage items and/or areas within the project boundary. Ongoing support and collaboration will be required to ensure best practice outcomes addressing Her-1 and Her-2 IS Rating credits.

WSA have also established the Aboriginal Stakeholder Forum (ASF) which includes representatives who have indicated a connection to the land upon which the Airport is to be built. The forum includes provision for stakeholders to be involved in issues including site survey, salvage, archaeological investigations, artefact storage, commemorative activities and smoking ceremonies in accordance with the Aboriginal Cultural Heritage Management CEMP. The initial survey and salvage plan and associated sub plans were developed in consultation with stakeholders at forums.

The Aboriginal Cultural Heritage Management CEMP should be referred to for further detail on heritage management at WSA.

Table 18 Heritage Management required tasks & initiatives

Initiative	Phase of Project			
	Plan	Design	Const	Ops
Incorporate interpretive use of artefacts for education and celebration of indigenous heritage within the Airport and/or Experience Centre	X	X	X	X
Development and implementation of Indigenous Design Principles	X	X	X	X
Heritage management and indigenous design principals alignment with surrounding projects	X	X		
Collaborative approach with surrounding projects to ensure WSA minimises consultation fatigue with local indigenous groups and stakeholders	X	X		
Package specific indigenous / heritage initiative investigation and implementation if determined to be feasible	X	X	X	

Incorporate indigenous land management practises into the management of the Environmental Conservation Zone		X		X
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8.7.5 Community Health, Wellbeing & Engagement

WSA has an internal Community and Stakeholder Team that provides the following community and stakeholder support:

- 24 hour information line along with email and written contact options
- An Experience Centre that provides in person point of contact, education and awareness about the airport and sustainability
- Stakeholder Planning Forum (SPF) which provides regular and strategic engagement between WSA, the Australian and NSW governments, local governments and utility providers that will be directly affected by or have a role in the airports development
- Community surveys and feedback opportunities at local events

Further sustainability education opportunities will be pursued in the surrounding community by organising education and awareness activities. WSA also intends on developing initiatives with the surrounding communities health and wellbeing in mind. The WSA Community & Stakeholder Team will use survey and feedback data to determine the best initiatives to persue. These initiatives may range from social through to environmental.

Table 19 Community Health, Wellbeing & Engagement required tasks & initiatives

Initiative	Phase of Project			
	Plan	Design	Const	Ops
Community health and wellbeing issues identified	X	X		
Community initiatives for health, wellbeing, safety & engagement are developed by WSA Community Engagement Team for implementation throughout project		X	X	
Community initiatives for health, wellbeing, safety & engagement are workshopped for each package		X	X	
Healthy building design implemented for all buildings	X	X		
Design an accessible airport keeping in mind customers with limited mobility		X		

8.7.6 Biodiversity, Urban Design & Landscaping

Western Sydney Airport is a greenfield project where 141 hectares of Cumberland Plain Woodland is required to be removed for construction works. To mitigate this impact a 117.1 hectare Environmental Conservation Zone (ECZ) has been designated along

Badgery's Creek (Southern side) and Oaky Creek (North-Western side). 56.8 hectares of the environmental conservation zone is native vegetation which will maintain riparian corridors and will assist in maintaining vegetated fauna movement corridors and habitat stepping stones around the airport. The 60.3 hectares of land that does not currently contain native vegetation will be revegetated with Cumberland Plain Woodland natives to improve its function as a corridor. The Biodiversity Offset Delivery Plan, developed, implemented and managed by The Department of Infrastructure, Transport, Regional Development and Communications, outlines details of the restoration and management of the EZC and an additional 900 hectares of native vegetation, including Cumberland Plain Woodland, at offset sites. As per Table 8 Additional Specific Targets, WSA must ensure plantings and landscaping use Australina Natives and specifically species found within Cumberland Plain Woodland. Furthermore, WSA hopes to maximise greenspace and contribute positively to the surrounding communities biodiversity values.

For further information on biodiversity management at WSA please refer to the WSA Biodiversity CEMP.

During operation, WSA will continue to maintain and protect the environmental conservation zone.

Landscaping for Native Bees

WSA endeavours to preserve native bees in the Western Sydney region. To facilitate this approach, all landscaping designs and planning should consider including:

- Suitable plant species native to Cumberland Plain Woodland (refer to Appendix C for Cumberland Plain Woodland species list)
- Natural habitat features, such as bare mounds and patches without mulch
Additional habitat features such as bee hotels or nesting blocks

Table 20 Biodiversity, Urban Design & Landscaping required tasks & initiatives

Initiative	Phase of Project			
	Plan	Design	Const	Ops
Biodiversity & Urban Design				
Engage with stakeholder organisations to develop a consistent approach in maintaining Western Sydney's green spaces and biodiversity.	X	X		
Maintain Western Sydney's unique ecological community and biodiversity values		X	X	X
Improve water quality of Badgery's Creek		X	X	X
Integrate Water Sensitive Urban Design (WSUD) principles into design for Airport precinct		X		
Landscaping				



Investigate how project can incorporate plantings, seeds or propagations removed from site, or from within the ECZ, into final design		X	X	
Investigate landscaping opportunities to enhance habitat for Native Bee and European Honeybee populations, whilst balancing Wildlife Hazard risks		X	X	X

Appendix A Sustainability Compliance Matrix; Airport Plan and EIS

Source	Topic	Requirement	Addressed In
The Airport Plan			
Airport Plan Part 3	2.1.3	The Airport will be designed to meet the sustainability requirements as outlined in the EIS. As the Airport develops beyond Stage 1, it will maintain similar or better levels of sustainability and is also expected to take account of developments and innovations in the area of sustainability.	Throughout the Plan
Airport Plan Part 3	2.1.3	In addition, under the Act, the ALC will be required to produce a master plan every five years, which will include a detailed environment strategy.	N/A
Airport Plan Part 3	Condition 29 (1)	The ALC must not design, carry out or operate any development described in Part 3 of the Airport Plan inconsistently with: (a) Table 28–38 in Chapter 28 of the EIS; or (b) a Sustainability Plan prepared and approved in accordance with this condition.	Addressed through the development of this Sustainability Plan. For the Early Earthworks Package of works, addressed through design documentation (where this Package was designed prior to the formation of this Plan).
Airport Plan Part 3	(2)	Within six months of the grant of an Airport Lease, the ALC must: (a) prepare; and (b) submit to an Approver for approval; a Sustainability Plan in relation to the design, carrying out and operation of the developments described in Part 3 of the Airport Plan.	
Airport Plan Part 3	(3)	The criteria for approval of the Sustainability Plan are that an Approver is satisfied that: (a) in preparing the Sustainability Plan, the ALC has taken into account Table 28–37 in Chapter 28 of the EIS; and (b) the Sustainability Plan complies with Table 28–38 in Chapter 28 of the EIS, and is otherwise appropriate.	
Airport Plan Part 3	(4)	This condition ceases to have effect once there is a master plan for the Airport.	

Airport Plan Part 3	Condition 35	Consultation on the Plans	Section 3.4
Airport Plan Part 3	Condition 37-42	<p>Informing others</p> <p>Maintaining records</p> <p>Reporting</p> <p>Audits</p> <p>Variation of approved plan</p> <p>Publication of approved plan</p>	<p>Section 3.5, 8, 7.3</p> <p>Section 7.6</p> <p>Section 7.8</p> <p>Section 7.9</p> <p>Section 3.6</p> <p>Section 7.8</p>
Airport Plan Part 3	Condition 39 (1)	<p>Unless otherwise agreed in writing by an Approver, the Site Occupier must prepare a report addressing its compliance with each condition set out in section 3.10.2 and condition 29 (Sustainability), including implementation of any Approved Plan, in respect of:</p> <p>(a) the 12-month period commencing with the commencement of Main Construction Works; and</p> <p>(b) each subsequent 12-month period until the end of the Construction Period; and</p> <p>(c) any period between the commencement of Main Construction Works and the end of the Construction Period that is not covered by paragraph (a) or (b).</p>	<p>Section 7.3</p> <p>Section 7.47</p>
Airport Plan Part 3	(2)	<p>Unless otherwise agreed in writing by an Approver, the Site Occupier must publish each report prepared under subcondition (1) on its website within three months of the end of the period in respect of which the report was prepared. Documentary evidence providing proof of the date of publication must be provided to the Infrastructure Department at the same time as each report is published (with a copy to be provided to the Environment Department). Each report must remain on the Site Occupier's website for a minimum of 12 months (beginning on the date of publication).</p>	<p>Section 7.3</p> <p>Section 7.4</p>
EIS Table 28-37			
EIS Volume 2b Part E Chapter 28 Table 28-37	Management Objectives	<p>Key management objectives in relation to sustainability include:</p> <ul style="list-style-type: none"> Enhance the effectiveness of environmental management measures during construction and operation of the Stage 1 development and assist in avoiding, reducing or mitigating environmental impacts 	Section 7.1 Management Objectives

		<ul style="list-style-type: none"> • Maximise social and economic benefits of the Stage 1 development • Contribute to the productivity and liveability of communities in Western Sydney; and • Reduce the proposed airport's exposure to long-term risks such as climate change 	
	Statutory basis	Not applicable, The IS, Green Star and NABERS systems are industry driven, with the intention of encouraging excellence	Section 3.5.1 Guidelines and standards
	Relevant guidelines	<p>Relevant guidelines and sustainability rating tools produced by:</p> <ul style="list-style-type: none"> • The Infrastructure Sustainability Council of Australia (ISCA), for the IS Rating system; • The Green Building Council of Australia, for the Green Star rating system; and • The NSW Office of Environment and Heritage for NABERS. 	Section 3.5.1 Guidelines and standards
	Performance criteria	<p>Performance criteria include:</p> <ul style="list-style-type: none"> • Compliance with the approved Sustainability Plan; • Establishment and demonstrated achievement of sustainability targets outlined in Table 28–38; and • Achievement of the relevant sustainability ratings outlined in Table 28–38. 	Section 8.6 Performance criteria
	Implementation framework	<p>A Sustainability Plan will be submitted for approval by the Infrastructure Minister within six months of the grant of the airport lease. The Sustainability Plan will be updated and revised prior to the commencement of airport operations.</p> <p>The Sustainability Plan will collate measures to be implemented during construction and operation of the Stage 1 development to address sustainability, including cross-references to other environmental management plans where they are relevant.</p> <p>The Sustainability Plan will as a minimum:</p> <ul style="list-style-type: none"> • detail how sustainability considerations will be integrated into the design, construction, and operation of the Stage 1 development; • specify sustainability targets and detail how those targets would be achieved; 	<p>Section 4.2 Sustainability framework</p> <p>Section 5 Sustainability Metrics & Application</p> <p>Section 6.3 Roles and responsibilities</p> <p>Section 7.2 Management system principles</p> <p>Section 8 Implementation of sustainability in phases of the Stage 1 Development</p>

	<ul style="list-style-type: none"> describe how the required sustainability ratings for the Stage 1 development would be achieved; describe the management and mitigation measures to be implemented, including those outlined in this section; detail the process for managing complaints, stakeholder engagement, and emerging environmental management issues as they arise; specify the process for monitoring implementation, reporting, and auditing; and identify the party responsible for implementing the Sustainability Plan. <p>Further detail on what the sustainability plan will provide is set out in Table 28-37.</p>	<p>Section 7.3 Communication</p> <p>Section 7.4 Knowledge sharing</p> <p>Section 7.5 Competence and awareness</p> <p>Section 7.7 Monitoring</p>
Monitoring	<p>Monitoring requirements will include:</p> <ul style="list-style-type: none"> monitoring will take place under the direction of an appropriately qualified person; monitoring will be consistent with industry best-practice and the requirements of the specified sustainability rating schemes; and the results of the monitoring must be kept in a written record. 	<p>Section 7.7 Monitoring</p> <p>Section 7.9 Auditing and review</p>
Reporting	<p>Reporting measures that will be implemented include providing the Secretary of the Department of Infrastructure, Transport, Regional Development and Communications with an annual report containing information about monitoring results and details of performance in achieving the sustainability targets and sustainability ratings set out in the Sustainability Plan.</p>	<p>Section 7.8 Reporting</p>
Responsibility	<p>Responsibilities include:</p> <ul style="list-style-type: none"> the Sustainability Plan will be developed in consultation with relevant authorities such as the NSW Environment Protection Authority; within six months of the grant of the airport lease, the Sustainability Plan will be submitted for approval to the Infrastructure Minister or an SES Officer in the Department of Infrastructure, Transport, Regional Development and Communications; the D&C contractor and/or the ALC will be responsible for implementing site specific environmental procedures and work method statements in accordance with the requirements of the Sustainability Plan; and 	<p>Section 3.4 Consultation to Develop the Sustainability Plan</p> <p>Section 6 Governance</p> <p>Section 6.3 Roles and responsibilities</p>

		<ul style="list-style-type: none"> the Sustainability Plan will be updated and revised and submitted for approval to the Infrastructure Minister or an SES Officer of the Department of Infrastructure, Transport, Regional Development and Communications prior to operations commencing as either a standalone plan or as part of the airport environment strategy contained within the initial airport master plan. 	
EIS Table 28-38			
EIS Volume 2b Part E Chapter 28 Table 28-38	Sustainability Plan – overall content	The sustainability management team structure, including key personnel, authority and roles of key personnel, lines of responsibility and communication, minimum skill levels for each role, and interfaces with the overall project organisation structure	Section 6 Governance
		A sustainability policy statement and strategies outlining the overall approach for adaptation to climate change, mitigation of greenhouse gas emissions, resource management, workforce development, community engagement and biodiversity and heritage management	Section 4.2.1 Sustainability Policy Section 5.7 Additional Specific Targets Section 8.7 Sustainability Required Tasks & Initiatives
		Sustainability initiatives to be undertaken during construction and operation of the proposed airport, including milestones for the achievement of those initiatives	Section 5.1 Timing of Rating Achievement Section 5.7 Additional Specific Targets Section 8 Sustainability Implementation Section 8.7 Sustainability Required Tasks & Initiatives
		Processes and methodologies for embedding sustainability into the design, procurement, construction and operation of the proposed airport	Section 7.2 Management System Principles Section 8 Sustainability Implementation

	<p>What the required As Built and Operation ratings from ISCA are and how they will be achieved, including the processes and methodologies to be used</p>	Section 5 Sustainability Metrics & Application
	<p>Details of consultation activities with stakeholders and the local community</p>	Section 3.4 Consultation to Develop the Sustainability Plan
	<p>The Sustainability Plan will be submitted to the Infrastructure Minister for approval within six months of the grant of the airport lease and will be updated and revised prior to the commencement of airport operations</p>	Section 3.6 Document Review
Sustainability targets	<p>Sustainability targets will be identified and established for the construction and operation of the Stage 1 development. These targets will be included in the sustainability plan, will be specific and measurable (expressed in standard units of measurement and percentages, where applicable) and will include targets for:</p> <ul style="list-style-type: none"> • Reduced electricity use; • Reduced fuel non-aviation fuel use; • Quantity of waste to be recycled; • Quantity of waste to be reused; • Reduced potable water consumption; • Reduced non-potable water consumption; • Waste water recycled or reclaimed; • Water harvested for reuse; • Embodied energy and water use in building and construction materials; • Recycled content in building and construction materials; • Biodiversity enhancement; and • The workforce, including: <ul style="list-style-type: none"> ○ Number of apprentices and trainees ○ Proportion of workforce from Western Sydney; and 	<p>Section 5.7 Additional Specific Targets</p> <p>Table 3 Mandatory IS Credit Requirements</p>

		<ul style="list-style-type: none"> ○ Workforce diversity. 	
	Sustainability ratings	<p>The proposed airport will be required to achieve:</p> <ul style="list-style-type: none"> • Infrastructure Sustainability (IS) ratings, to be obtained from the Infrastructure Sustainability Council of Australia (ISCA) covering Certified IS AS Built and IS Operation ratings and; <p>Ratings under the following schemes for eligible buildings constructed as part of the Stage 1 development:</p> <ul style="list-style-type: none"> • Green Star Design, As Built and Interiors ratings and • NABERS Energy and Water scheme ratings for base buildings. 	Section 5 Sustainability Metrics & Application
	Local employment	<p>To maximise local employment and business opportunities throughout construction and operation, the following measures will be implemented:</p> <ul style="list-style-type: none"> • An Australian Industry Participation Plan will be developed and will include consideration of local industry participation; and • An equal opportunity policy, including training and suitable employment opportunities for Indigenous people and people with disadvantages. 	<p>Section 3.5 Interface with Other Documents</p> <p>Section 5.7 Additional Specific Targets</p>



**Western
Sydney
Airport**

Appendix B Materials Roadmap

Post Consumer Recycled Materials in Construction: Target Setting

January 2020

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1 Introduction

- 1.1 Background
- 1.1 Current Requirements
- 1.2 Business As Usual

2 Opportunities

- 2.1 Touchpoints with Industry and Research/Innovation Organisations
- 2.2 Potential Costs and Risks

3 Process

1 Introduction

1.1 Background

WSA seeks to optimise the use of post-consumer recycled waste products during construction of the Airport, to meet and exceed the requirements of the Sustainability Plan, where feasible and when value for money can be achieved.

This brief describes the intended process and timeframes for investigating the opportunities and risks, and subsequently setting targets for the use of recycled waste streams in construction materials.

Western Sydney Airport (WSA) complies with legal and other requirements as described in [WSA's Waste and Resources CEMP](#).

1.1 Current Requirements

The WSA Sustainability Plan is based on the minimum requirements set out within the Airport Plan and Environmental Impact Statement (EIS).

Sustainability plan requirements relating to construction materials and waste are as follows:

- Using recycled glass in asphalt to reduce raw material consumption and carbon footprint.
- Slip form construction method for runway/taxiways to reduce potable water consumption.
- Biodegradable polymer binders for compaction and dust control to reduce potable water consumption.
- Using tunnel waste as high quality capping material, reducing reliance on virgin aggregate and reducing carbon footprint.

Infrastructure Sustainability rating (IS rating) credits:

- Materials footprint measurement and reduction (Mat-1) = 1 point
- Diversion from landfill (WAS-2) = 2 points

Targets from EIS 28-38

- Environmental labelling - at least 1 product/material, Infrastructure Sustainability Council Australia (ISCA) approved environmental label.
- Mandatory optimisation of recycled content in concrete and steel construction products.
- % of inert or non-hazardous waste diverted from landfill for recycling or reuse = 80%.
- % of office waste diverted from landfill for recycling or reuse = 70%.

Examples of how the project has complied so far:

- 15% recycled asphalt product in pavement (Site Office and Experience Centre)
- Environmental labelling/certification for site office consumables, PVC piping and furniture (Early Earth Works)



- 100% diversion of spoil waste from landfill (Early Earth Works)
- 100% of surplus Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) diversion from landfill (Early Earth Works)
- Collaboration with Sydney Metro to reuse sandstone from tunnelling projects at Airport (Early Earth Works)
- 97.87% diversion of inert non-hazardous waste from landfill (Early Earth Works)
- 98.47% diversion of office waste from landfill (Early Earth Works)

1.2 Business As Usual

It is considered business as usual for some recycled waste products to be used in the manufacture of bitumen/asphalt, concrete and steel:

- Bitumen - recycled glass, plastic and rubber
- Concrete - fly ash, slag, other SCMs
- Steel reinforcement - rubber tyres

2 Opportunities

The following is a list of opportunities to investigate the risks and benefits of increasing the amount of post-consumer glass, plastics, rubber tyres and paper/cardboard used in construction materials for Western Sydney Airport.

1. Investigate an increased % recycled glass and/or plastic and rubber tyres in bitumen/asphalt.
2. Investigate an increased % recycled glass and/or plastic in concrete for low risk areas (eg footpaths)
3. Investigate the potential to specify outdoor furniture, bollards, composite outdoor decking, composite timber battens, fencing, and point of interest signage that are manufactured using recycled plastics.
4. Investigate the potential to specify architectural finishes that use post-consumer glass, plastic, rubber tyres or paper/cardboard in manufacture; eg floor/wall finishes (vinyl), composite timber battens, furniture.
5. Investigate the potential to specify that Tenderers run a pilot project or demonstrate innovation to improve recycled glass content in concrete, trial geopolymers or other innovative concrete test case for an identified low risk use at the Airport, and collaborate with universities or others to do this.
6. Others as identified by WSA's Technical Services Providers

Each works package has a different focus on the materials which represent the greatest opportunity to include recycled waste product in manufacture:

	Terminal Package	Civil Package
Concrete	Yes	Yes
Steel Reinforcement	Yes	Yes
Bitumen/Asphalt	No	Yes
Finishes, fences, furniture	Yes	No

2.1 Touchpoints with Industry and Research/Innovation Organisations

In November 2019, WSA engaged with Cement Concrete and Aggregates Association Australia, and University of New South Wales (UNSW) Professor Stephen Foster to learn more about sustainable concrete options.

WSA has met with three of the largest concrete manufacturers to discuss market factors, supply chain, and risks associated with the potential of increasing the specification of post-consumer recycled products in concrete.

WSA has met with three of the largest bitumen/asphalt manufacturers to discuss the same issues.

WSA has engaged with Veolia and Suez to learn more about the waste recycling industry, and understand how more circular solutions might be achieved. Veolia and Suez have generously invited WSA to tour some of their facilities.

WSA attends the annual Inter-Airport Environmental Forum annually to share knowledge and experiences with other airports. Regular engagement occurs to discuss specific issues relating to design and operation. WSA will engage with Brisbane Airport on recycled content of pavements for the new runway.

WSA may investigate the potential to do a low carbon concrete or other innovative concrete trial on the Airport site. WSA will also continue to share knowledge and benefit from lessons learnt from Sydney Metro.

2.2 Potential Costs and Risks

- There is an indication that high performance bitumen (35% recycled content) may attract a cost premium of approximately 3%. It is too early to quantify total costs, this will be confirmed by mid-2020.
- Innovations such as geopolymers or increased recycled glass/plastic concrete and foamed bitumen may not be able to demonstrate adequate testing or verification of durability, safety and holistic environmental benefit. WSA must ensure a safe, durable, cost effective solution for the Airport, within the project program, without any delay to delivery of an operational Airport by Dec 2026.
- The project timeframes are critical to the delivery of the Airport, this means that performance specifications to increase the use of recycled waste streams in construction materials for the Airport must be finalised by mid 2020. This is a short time-frame to ensure due diligence.
- For some recycled materials, inconsistency of product can cause manufacturing issues or reduced assurance of the performance characteristics of the final product.
- Depending on manufacturing methods and final product use, the inclusion of some recycled plastics in construction materials can bring a risk of introducing microplastics into the environment. This is not a good environmental outcome, and WSA would need to be sure that there is very low risk of this to proceed with any recycled plastic products.
- Safety and human health will not be compromised, so any products specified would need to comply with Occupational Health & Safety (OH&S) requirements, regulations, WSA review and approval.
- Supply volumes, availability and location of recycled waste products must be confirmed to ensure that inadequate availability or transportation logistics do not create additional cost, or create environmental or community consequences that outweigh the benefit of using the recycled waste stream.

3 Process

The process that is proposed for setting targets and including these in Tender documentation is as follows:

1. WSA will engage with industry peak bodies for concrete, bitumen and vinyl to understand the current state of play, expected cost impact and potential risks and opportunities for increasing the amount of recycled waste products used in manufacture. WSA will then engage with the three largest manufacturers for each of these materials to discuss market factors, supply chain, and risks associated with the potential of increasing the specification of post-consumer recycled products. WSA will continue to share knowledge with Sydney Metro on this issue, and leverage any work already done by Sydney Metro.
2. WSA will develop a report based on the knowledge gained during industry engagement to communicate WSA requirements to the Master Engineering and Architectural consultants for the terminal building and civil design.
3. Engineering consultants will determine appropriate specifications for increasing the use of recycled glass, plastic, rubber tyres and paper/cardboard in concrete, steel reinforcement, bitumen/asphalt, and identify materials that may incur additional cost above the budgeted allowance. Cost estimates will be developed. Specifications may be in the form of % targets, or they may be performance based. The specifications will be developed to ensure that construction outcomes are safe, durable, reliable, consistent, proven, and cost effective.
4. Architectural consultant will determine appropriate specifications for increasing the use of glass, plastic, rubber tyres and paper/cardboard in finishes, fences and furniture, and identify materials that may incur additional cost above the budgeted allowance. Cost estimates will be developed. Specifications may be in the form of % targets, nominated manufacturer/suppliers or nominated products. They will be developed to ensure that selected products are safe, durable, consistent, proven and cost effective.
5. If Engineering and Architectural consultants determine that increased use of recycled waste in construction materials can be specified at no additional cost, this will be included in the Requirements. If it is determined that additional cost is incurred, then WSA will notify Department of Infrastructure, Transport, Regional Development and Communications that there is an opportunity that would require additional funding.
6. *DIRDC to provide additional information regarding the process for seeking additional funding. WSA to provide additional detail about the process and timing of approvals for additional funding, budget reallocation and instructing engineering and architectural consultants to proceed with including in the Requirements.*
7. Requirements which are either within the existing budget or have had additional funding provided will be incorporated into Request For Tender documentation for terminal building and civil works packages. If uncertainty exists about the additional cost of increased recycled content, WSA may include these requirements as a priced option in the Tender package. In this case, the

additional cost will be assessed during Tender Evaluation and included in the Contract if budget allows, or if additional funding is available.

8. Requirements agreed during Tender Evaluation will be incorporated into the Contract and managed as per the Sustainability Plan to ensure construction is delivered in compliance with the Contract.
9. The broad timeline for progressing the targets and specifications for recycled waste in construction materials will be as follows:



Appendix C WSA Bee Initiative Information

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1. Introduction

In 1877 Cumberland Plain Woodlands covered 107,000 hectares, or approximately 30%, of the Sydney Basin. Today less than 6% remains in small fragments scattered across the western suburbs of Sydney, totalling only 6400 hectares. Cumberland Plain Woodland is now listed as a Critically Endangered Ecological Community under the NSW Threatened Species Conservation Act and the Commonwealth Environmental Protection and Biodiversity Conservation Act. Western Sydney Airport is a greenfield project where 141 hectares of Cumberland Plain Woodland is required to be removed for construction works. As this remnant ecological community declines in size, so too does functional habitat for [insect species](#) such as Australian Native Bees and European honeybees. European Honeybees are responsible for pollinating one third of the world's agricultural crops. Western Sydney is also known as the food bowl for Greater Sydney, where majority of local produce is grown and farmed. Western Sydney Airport can help preserve both the Cumberland Plain Woodland and bees through landscaping.

2. Bees & Airports?

Many airports around the world have European Honeybee (*Apis mellifera*) apiaries onsite. These airports include, but are not limited to:

- [Canberra](#)
- [Brisbane](#)
- Hamburg
- [Dusseldorf](#)
- Frankfurt
- Dresden
- Hannover
- Leipzig/Halle
- Nuremberg
- Munich
- [Malmo \(Sweden\)](#)
- Copenhagen
- Chicago O'Hare
- Seattle-Tacoma
- Lambert-St Louis International
- Qantas HQ Mascot (close proximity to Sydney Airport)

The uses of honeybees at airports range from biosecurity and biosensing (bioenvironmental) monitoring to the usual bee keeping and honey collecting activities.



LAX has actively preserved the endangered El Segundo Blue Butterfly through a conservation initiative on the airport site and surrounding nature preserve by planting the butterfly's food of choice, buckwheat shrubs, around site. There are currently no known airport sites in Australia that have focused on preserving Australian Native Bees.

3. WSA Bee Initiative

WSA must balance Wildlife Hazard Reduction requirements and environmental and sustainability requirements to improve biodiversity.

The landscape design is required to meet Sustainability Plan targets: 70% native plantings and 50% species endemic to the Cumberland Plain.

WSA would like to investigate if bee friendly habitat can be created within the landscaping design, for Australian Native Bee and/or European Honeybees without increasing Wildlife Hazard Risk.

3.1 Australian Native Bees

Experts from the National Bee Pest Surveillance Program recommended Sugarbag Bee (*Tetragonula carbonaria*) as being a key Australian Native Bee species that could be kept in apiaries on the airport site. This is a social species of native stingless bee that naturally occurs within Western Sydney and the Cumberland Plain Woodland. Like most insects, native bees are eaten by lizards, small birds, spiders, and other insects. They are no more prone to predation than honey bees and therefore do not pose a higher risk than having European Honeybee apiaries at airports.

Airports and sea ports throughout Australia use the European Honeybee as a biosecurity measure, in a similar way to how canaries were used in coal mines. If diseases or pests are introduced into Australia via the Airport and escape, the European Honeybee population kept in apiaries close to the airport will be affected. Native bees have no known pests or diseases, neither can they transfer from the European Honeybee, and therefore cannot operate as a biosecurity measure.

It is not known if Sugarbag Bees or other Australian native bees can be used for biosensing (bioenvironmental) monitoring, so Sugarbag Bee apiaries would be considered a conservation initiative.

There is an opportunity for the landscape design to encourage Australian Native Bees by providing them with habitat. To facilitate this approach, all landscaping designs and planning should consider the balance between providing habitat and reducing Wildlife Hazard by:

- Determining suitable plant species native to Cumberland Plain Woodland (refer to Appendix A for potentially suitable Cumberland Plain Woodland species list)
- Providing natural native bee habitat features, such as bare mounds and patches without mulch
- Additional habitat structures, such as apiaries, bee hotels or nesting blocks

3.2 European Honeybee

The National Bee Pest Surveillance Program is administered by Plant Health Australia, the national plant biosecurity coordinator, and is an early warning system to detect new incursions of exotic bee pests and pest bees. The program involves a range of surveillance methods conducted at sea and air ports throughout Australia considered to be the most likely entry points for bee pests and pest bees, including Canberra Airport.

The National Bee Pest Surveillance Program has two major objectives:

- To facilitate the export of queen bees and packaged bees to countries sensitive to a range of bee pests and pest bees.
- To act as an early warning system to detect new incursions of exotic bee pests and pest bees. This greatly increases the possibility of eradicating an incursion and limits the scale and cost of an eradication program.

CSIRO determine the biohazard locations for Plant Health Australia to set up the surveillance program to operate. They review these locations every few years, with the next review occurring in 12 months' time (end of 2020 or early 2021).

If WSA is determined as a high biohazard location, WSA will be required to host the program.

Brisbane Airport has implemented an Urban Pollination Project where they currently have 30 active beehives in the airports surrounding Biodiversity Zone. The initiative was implemented over a year ago as an environmental initiative response for the airport to maintain the bee population in their section of the Northern Brisbane pollination pathway. The apiaries are managed by Bee One Third, where founder Jack Stones says beehives are perfect for airports, as they are a managed ecosystem. Through this initiative the hives pollinate local flora and produce pure Brisbane Airport Wetlands Honey which is sold and used at the airport.

Qantas HQ at Mascot, close proximity to Sydney Airport, also keep European Honeybee apiaries on site to pollinate local flora and produce honey which is used within Qantas lounges and in-flight service.

4. Risks & mitigation

4.1 Wildlife hazard

The National Bee Pest Surveillance Program has successfully run the program at airports whilst mitigating wildlife hazards.

The main predator of bees are typically small, low-flying passerines -- this guild of bird is rarely implicated in wildlife hazard concerns. Birds that are commonly implicated in airstrikes are usually associated with open ground (e.g. raptors, grassland bird species, shorebirds) and are not preying on insects. Bird species that stick to vegetation either by gleaning insects off branches or "hawking" (flying out and returning to a branch) don't do much flying away from the cover that supports those bees and rarely fly over airport landscapes to cause a concern.

Landscape Designers should undertake a Wildlife Hazard risk assessment that includes consideration of providing habitat for Native Bees, and potential mitigation measures for identified wildlife risks. Additionally, it is recommended that WSA can

undertake surveying for the species that commonly cross the runway and may cause impacts prior to operations.

4.2 Other

In January 2020 a fire that grounded flights at Canberra Airport was started by beekeeping operations near the airport conducted by the National Bee Pest Surveillance Program.

5. Operation and Maintenance

5.1 Native Hives

Sugarbag Bees can't actively cool their hive; therefore, the hives are prone to melting when temperatures reach 38 degrees. Additionally, below 18 degrees is too cold for them to go outside to forage. Therefore, honey will not be able to be harvested as they will need to use their stores in winter for food. To try and mitigate this the hive can be moved between a summer location and winter location. Sugarbag bees have a 500m foraging range so the two locations would either need to be greater than 1 km, so they don't get lost or move between the two locations transitionally in small 1m incremental movements, so they adjust to the new location.

5.2 European Honeybee Hives

European Honeybee hives produce honey year-round for harvesting and don't have the same temperature sensitive requirements the Native Sugarbag Bee does. European Honeybee-keeping is a well-known practice, where several companies in Western Sydney would be able to facilitate the operation and maintenance.



Appendix A Landscaping for Native Insects – Cumberland Plain Woodland Species List

This list has been determined by narrowing down to potentially suitable growth habits. This species on this list should be considered while undertaking a wildlife hazard risk assessment.

Scientific Name	Common Name
Growth Habit: Small Trees	
<i>Acacia decurrens</i>	Black Wattle
<i>Acacia parramattensis</i>	Parramatta Wattle
<i>Acacia implexa</i>	Hickory Wattle
<i>Exocarpos cupressiformis</i>	Native Cherry
Growth Habit: Shrubs	
<i>Bursaria spinosa</i>	Blackthorn
<i>Daviesia ulicifolia</i>	Gorse Bitter Pea
<i>Dillwynia sieberi</i>	
<i>Dodonaea viscosa subsp. Cuneata</i>	
<i>Indigofera australis</i>	Native Indigo
Growth Habit: Ground Cover - Grasses	
<i>Aristida ramosa</i>	Purple Wiregrass
<i>Aristida vagans</i>	Threawn Speargrass
<i>Cymbopogon refractus</i>	Barbed Wire Grass
<i>Dichelachne micrantha</i>	Plumegrass
<i>Echinopogon caespitosus</i>	Forest Hedgehog Grass
<i>Eragrostis leptostachya</i>	Paddock Lovegrass
<i>Microlaena stipoides</i>	Weeping Grass
<i>Paspalidium distans</i>	
<i>Themeda australis</i>	Kangaroo Grass
Growth Habit: Ground Cover - Graminoids	
<i>Carex inversa</i>	Knob Sedge
<i>Cyperus gracilis</i>	
<i>Lomandra filiformis subsp. filiformis</i>	Wattle Mat-rush
<i>Lomandra multiflorus subsp. multiflorus</i>	Many-flowered Mat-rush



Scientific Name	Common Name
Growth Habit: Ground Cover - Forbs	
<i>Asperula conferta</i>	Common Woodruff
<i>Brunoniella australis</i>	Blue Trumpet
<i>Desmodium varians</i>	Slender Tick Trefoil
<i>Dianella longifolia</i>	Blue Flax Lily
<i>Dichondra repens</i>	Kidney Weed
<i>Opercularia diphylla</i>	
<i>Oxalis perennans</i>	
<i>Wahlenbergia gracilis</i>	Australian Bluebell
Growth Habit: Scramblers	
<i>Glycine spp.</i>	
<i>Hardenbergia violacea</i>	Native Sarsaparilla
Growth Habit: Ferns	
<i>Cheilanthes sieberi</i>	Poison Rock Fern

Cumberland Plain Woodland Threatened Species		
Scientific Name	Common Name	Status
<i>Acacia pubescens</i>	Downy Wattle	Vulnerable
<i>Grevillea juniperina subsp. juniperina</i>	Juniper- leaved Grevillea	Vulnerable
<i>Marsdenia viridiflora subsp. viridiflora</i>	Native Pear	Endangered Population
<i>Persoonia nutans</i>	Narrow-leaved Geebung	Endangered
<i>Pimelea spicata</i>	Spiked Riceflower	Endangered
<i>Pultenaea pedunculata</i>	Matted Bush-pea	Endangered
<i>Pterostylis saxicola</i>	Sydney Plains Greenhood	Endangered