

Environment, Planning and Sustainable Development Directorate, ACT

Molonglo Strategic Assessment Independent Audit

5 Year Independent Audit of the Molonglo Strategic Assessment for Matters of National Environmental Significance

Reference: 283512-00

| 30 May 2022



This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.










Job number 283512-00










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Issue Document Verification with Document

Front Page Image: Hoary Sunray with Box Woodland in the background.
 Kama Nature Reserve.
 Source Tim Cook 23 March 2022

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1. Introduction

Requirements for development in the Molonglo Valley are outlined in the *Molonglo Valley Plan for the Protection of Matters of National Environmental Significance: NES Plan September 2011* (the NES Plan).¹

The NES Plan:

- reflects the development activities proposed for the Molonglo Valley as set out in the Molonglo and North Weston Structure Plan (the Structure Plan), and
- establishes the Australian Capital Territory (ACT) Government's commitments to protect matters of national environmental significance (MNES) within the strategic assessment area.

The NES Plan was endorsed on 7 October 2011 under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The actions associated with the urban development in East Molonglo were approved on 20 December 2011.

The NES Plan commits the ACT Government to certain scheduling requirements. Commitments must either commence or be completed within a specified period of time after the strategic assessment endorsement date of 7 October 2011.

As a result of the approval, the NES Plan has streamlined the development process by removing the need for site-by-site assessment of the MNES within the strategic assessment area. Commitments in the NES Plan are required to be met as a function of approval by the Commonwealth.

Strategic assessments are long-term environmental protection initiatives which are designed to protect Matters of National Environmental Significance in keeping with the requirements of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. They operate to streamline development processes by removing the need for site-by-site assessment of Matters of Environmental Significance within the strategic assessment area.

The Molonglo Valley Strategic Assessment was developed in order to protect the MNES that occur in the area.

This independent audit ensures accountability and verifies that ACT Government is delivering to its commitments in the NES Plan to protect MNES.

1.1 The Matters of National Environmental Significance in Molonglo

The ACT Government has committed to 60 commitments to address Environment Protection and Biodiversity Conservation Act 1999 concerns about five Matters of National Environmental Significance across the areas subject to development pressures in the Molonglo Valley. These matters include the:

- Pink-tailed Worm-lizard;
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box-Gum Woodland);
- Natural Temperate Grassland;

¹ ACT Planning and Land Authority, 2011, *Molonglo Valley Plan for the Protection of Matters of National Environmental Significance: NES Plan September 2011*, https://www.environment.act.gov.au/_data/assets/pdf_file/0007/600964/NES_Plan.pdf, accessed 02 March 2022

- Superb Parrot; and
- Swift Parrot.

Due to the clear link between Box-Gum Woodland areas containing an over-storey and habitat values for the Superb and Swift Parrots, the conservation outcomes and actions for the ecological community are intended to provide positive outcomes for these bird species. As such, there are no specific commitments for the Superb and Swift Parrots. The most important of these conservation outcomes is the protection and ongoing management of Kama Nature Reserve which includes approximately 117 hectares of Box-Gum Woodland.² The intention of protection of the two parrots being achieved in the commitments regarding Box-Gum Woodland will be tested through monitoring.

1.2 The Molonglo Valley Strategic Assessment

Early in 2008 the ACT recognised that the proposed development in the Molonglo Valley would be complex and involve multiple stakeholders. As such, it was considered that a strategic assessment under Part 10 of the EPBC Act would be preferable to assessing projects on a case-by-case basis.

² ACT Planning and Land Authority, 2011, *Molonglo Valley Plan for the Protection of Matters of National Environmental Significance: NES Plan September 2011*, https://www.environment.act.gov.au/_data/assets/pdf_file/0007/600964/NES_Plan.pdf, accessed 02 March 2022

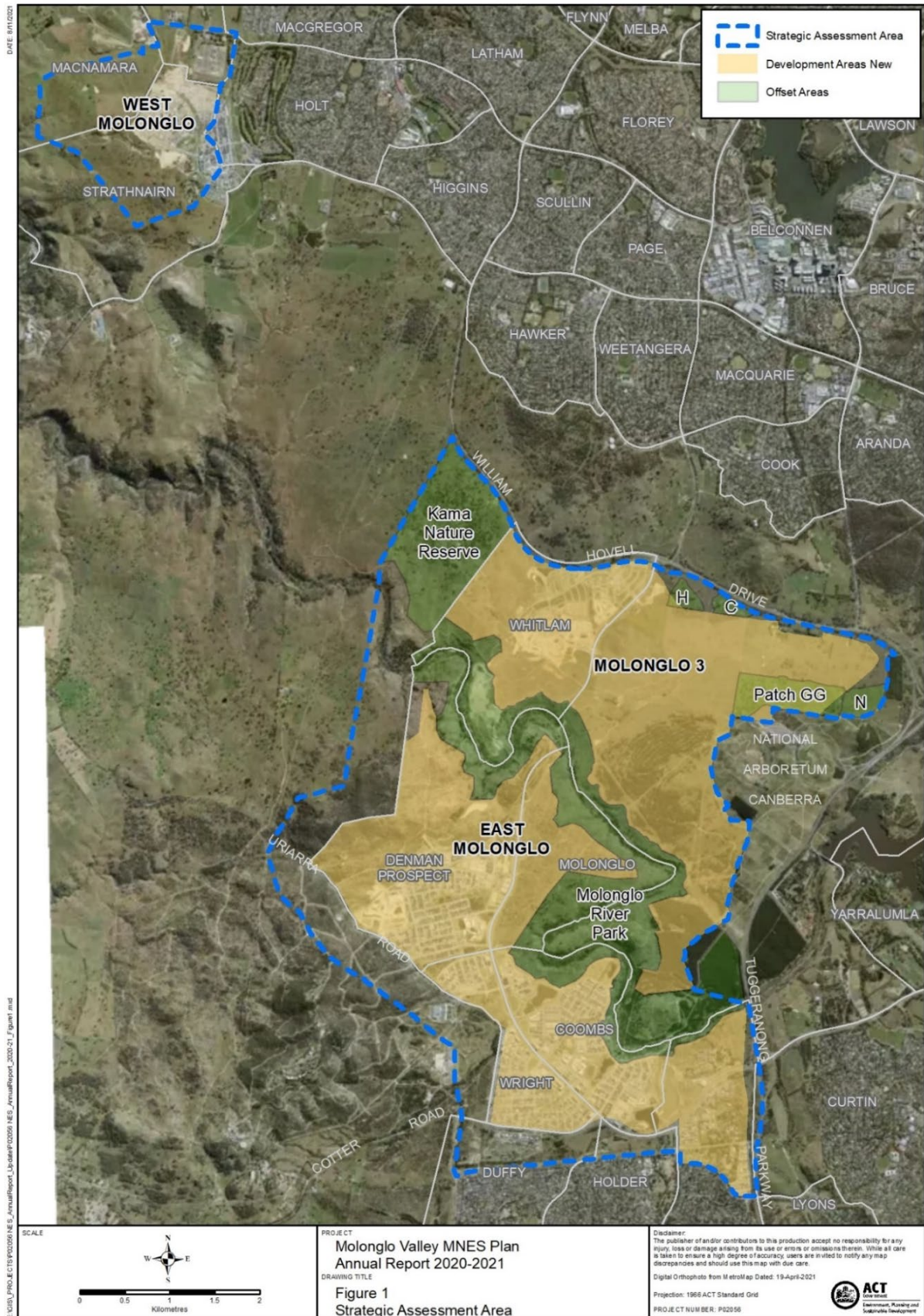


Figure 1: Strategic Assessment Area Source: EPD Molonglo Valley Strategic Assessment Annual Report 2020/21

The Molonglo Valley Strategic Assessment comprises three key documents:

1. The draft Strategic Assessment Report (prepared in March 2010) which was publicly exhibited and provided a detailed assessment of the implications of the draft NES Plan.
2. The Supplementary Assessment Report (prepared 17 July 2011) which addresses the issues raised in the public exhibition process and analyses the outcomes of the final NES Plan.
3. The final NES Plan was endorsed on 7 October 2011. This document identifies the commitments and undertakings of the ACT Government for the protection and management of MNES protected under the EPBC Act.

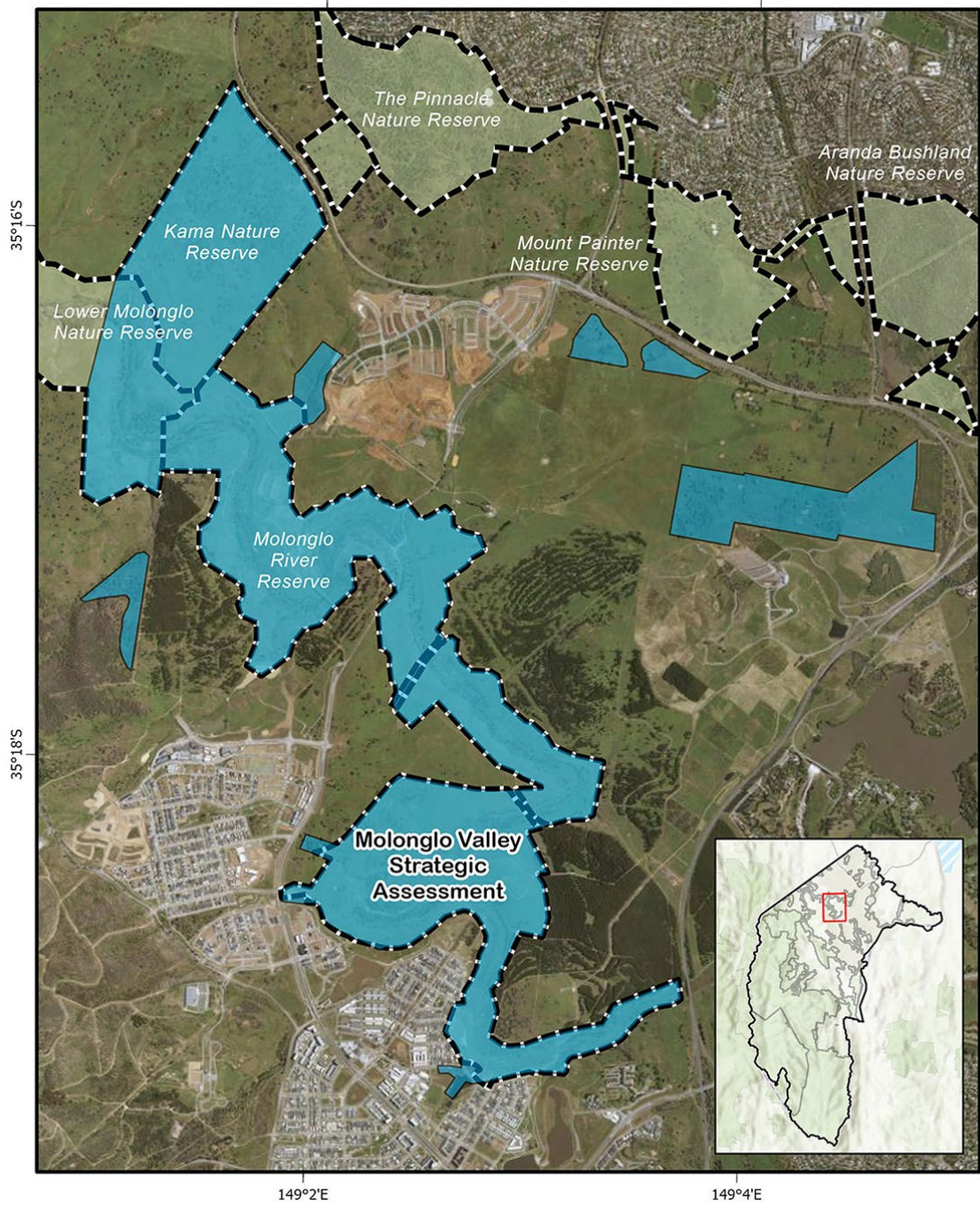
West Molonglo was included in the scope of the strategic assessment as it contained MNES and was part of the same overall process to establish the Structure Plan. However, annual reporting for the Molonglo NES Plan ceased to report on West Molonglo since 2019-2020, following approval of the West Belconnen Strategic Assessment on 1 September 2019. Riverview Projects (ACT) Pty Ltd has been reporting on West Molonglo as part of the West Belconnen Strategic Assessment, which is now referred to as Ginninderry.

The NES Plan reflects the agreement for the strategic assessment in the Molonglo Valley between the ACT and Commonwealth Governments. It provides for urban development within the Molonglo Valley and establishes the ACT Government's commitments to protect MNES. The conservation measures to protect MNES are formed around three processes:

1. Avoidance and mitigation of impacts on MNES, and
2. On-ground management to provide maintenance and improvement of MNES values in important areas.
3. Establishing offset areas to compensate for unavoidable impacts on MNES.

1.3 Offset Areas

The following offset areas have been agreed to under the Molonglo Valley Strategic Assessment – Kama Nature Reserve, the Molonglo River Reserve, Arboretum Woodland Conservation Area, William Hovell Woodland Conservation Area, Block 403 Woodland Conservation Area and Spring Valley Rural Lease. (see Figure 2)







<p>Molonglo Valley Strategic Assessment</p> <ul style="list-style-type: none">  ACT Border  Offset Area  Nature Reserve 	<p>480 240 0 480 m</p> <p>Coordinate System: GDA 1994 MGA Zone 55</p> <p>Prepared by: Environmental Offsets Team ACT Parks and Conservation Service Environmental Offsets PO Box 158 Canberra ACT 2601</p> <p>Printed: 03/03/2021</p>	<p></p> <p>© COPYRIGHT ACT Government 2021 All Rights Reserved</p> <p>Disclaimer: While all care is taken to ensure accuracy, the ACT Government does not warrant that the map is free from errors.</p> <p>Aerial Photography 2020</p>
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Figure 2: Molonglo Valley Strategic Assessment Offset Areas Source:
<https://www.environment.act.gov.au/ACT-parks-conservation/environmental-offsets/strategic-assessments/molonglo-valley-strategic-assessment>

East Molonglo is expected to support a population of 55,000-60,000 within a 30-year planning horizon. The total area of the development is 1356 hectares which is divided by the Molonglo River into two distinct sections.

The Molonglo River corridor between the northern and southern areas will be important for conservation and recreation.

The planning and development in East Molonglo are occurring in three stages (see Figure 3).³ Stage 1,2 and 3 are under construction. Stage 3 construction commenced in May, 2019.

³ Ibid

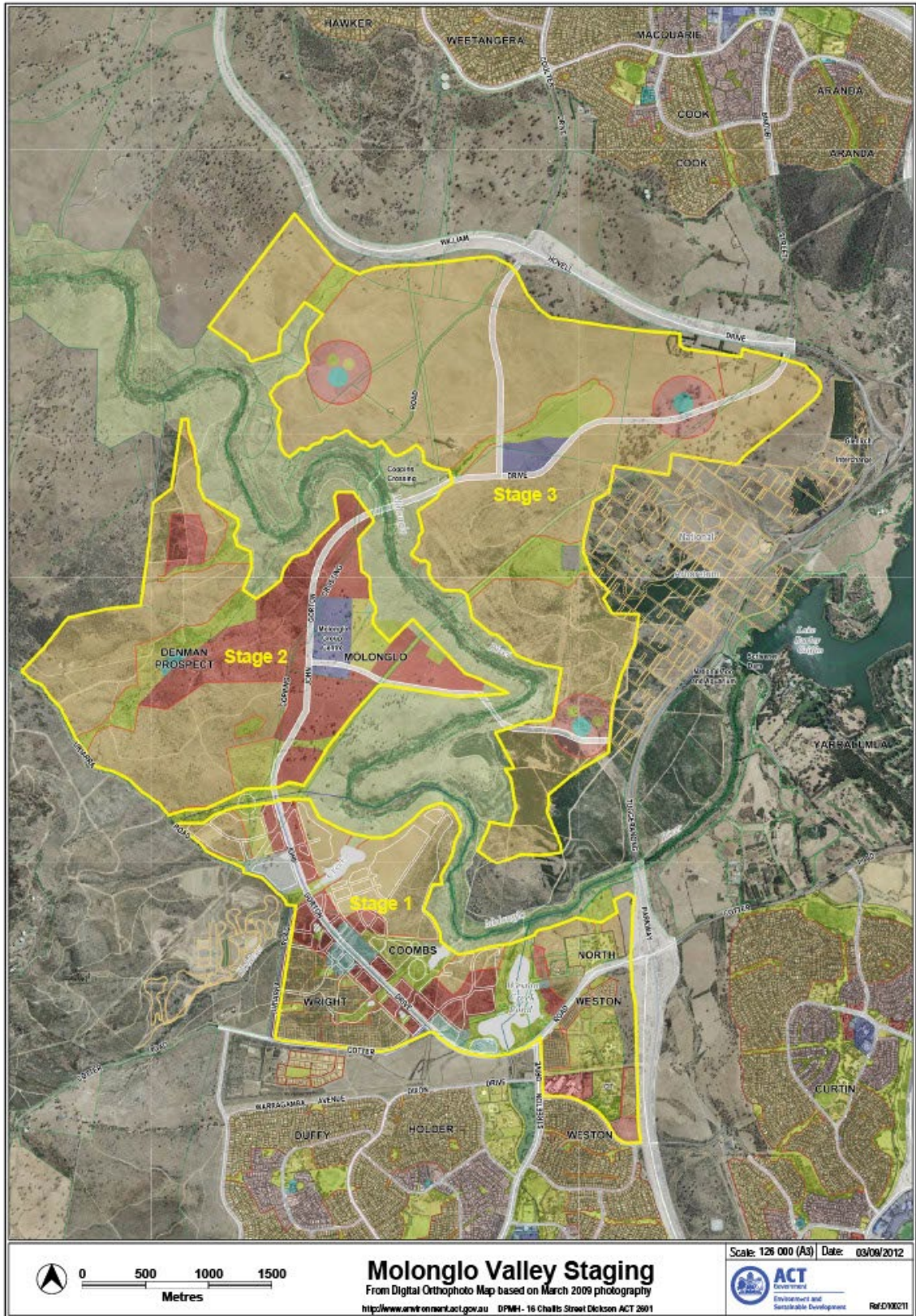


Figure 3: Molonglo Valley Staging: Source: ACT Government – Environment, Planning and Sustainable Development Directorate – Planning 2022.

1.4 The Adaptive Management Strategy

The *Molonglo Adaptive Management Strategy* (AMS) is a key commitment arising out of the NES Plan. It forms the foundation on which the MNES values in the Molonglo area are to be protected and enhanced through ongoing improvement in management practices.⁴

The AMS adopts a set of measures that are designed to achieve the conservation outcomes and performance targets for MNES in the Molonglo Valley Strategic Assessment area. It sets out how the MNES of the area will be assessed, monitored and adaptively managed.

The AMS deals with the human-induced pressures of urban development, as well as natural uncertainties such as climate change.

It provides a plan for:

- establishing the current ecological condition and value of MNES within the Molonglo Valley Strategic Assessment area,
- identifying performance targets and objectives,
- monitoring and evaluation of management actions,
- revising actions as required, and
- ensuring that the NES Plan's objectives for MNES continue to be met.⁵

1.4.1 Key Threats

The AMS outlines the key threats to the achievement of conservation outcomes and performance targets for MNES:

- weeds,
- pests,
- fire and fuel suppression,
- impacts from recreation,
- soil and water contamination,
- soil erosion,
- tree planting in Natural Temperate Grassland and tree planting or revegetation projects in the Pink-tailed Worm-lizard habitat, and
- increased resource competition from both native and exotic species.⁶

⁴ ACT Territory and Municipal Services, 2013, *Molonglo Adaptive Management Strategy*, <https://www.planning.act.gov.au/> access 02 March 2022

⁵ ACT Territory and Municipal Services, 2013, *Molonglo Adaptive Management Strategy*, <https://www.planning.act.gov.au/> access 02 March 2022

⁶ ACT Territory and Municipal Services, 2013, *Molonglo Adaptive Management Strategy*, <https://www.planning.act.gov.au/> access 02 March 2022

The adaptive management of these issues is addressed through the setting of objectives for each threat and through the monitoring of MNES to ascertain where any changes to management may be required. Ongoing monitoring of MNES is a key component of the AMS. Monitoring provides the opportunity to understand whether performance targets and management objectives are being achieved, and to determine if changes to ongoing management are required.

In terms of adaptive management, the operational plans are of most significance. These plans have no statutory prescriptions and so are best placed to respond to the evaluation results and recommendations arising from the monitoring program.

In order to evaluate and review the AMS, an expert panel of scientists and land managers with established expertise in Box-Gum Woodland, Natural Temperate Grassland, Pink-tailed Worm-lizard, and Superb and Swift Parrot ecology will be created. At a minimum, this panel will convene every five years and provide a report containing advice and recommendations for any amendments necessary to ensure the operational plans are achieving the conservation outcomes and performance targets for the MNES

1.4.2 Key Uncertainties

Key uncertainties for the management of MNES in the Molonglo Valley Strategic Assessment area:

- the best methods for restoration and rehabilitation of Box-Gum Woodland,
- how to monitor populations of the Pink-tailed Worm-lizard in a low impact way, and
- the best methods for restoration of Pink-tailed Worm-lizard habitat.

Figures 4 and 5 provide an overview of the areas of Box-Gum Woodland and Pink-tailed Worm-lizard habitat within the strategic assessment area that have been cleared to date.

Note that potential Superb and Swift Parrot habitat is predominantly associated with the areas of Box-Gum Woodland, and therefore is not mapped separately.

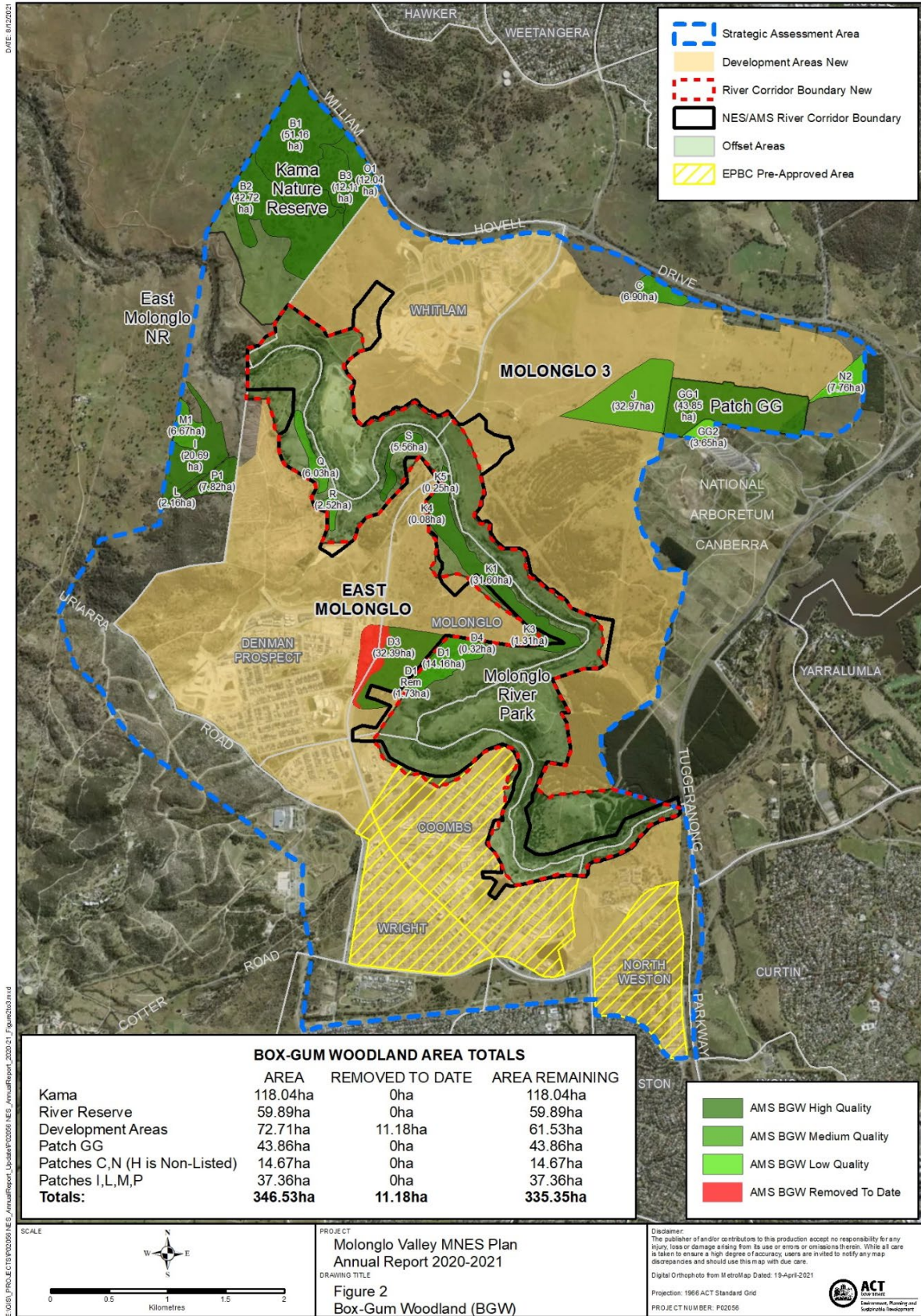


Figure 4: Box-Gum Woodland areas that have been cleared to date. Source: EPSDD Molonglo Valley Strategic Assessment Annual Report 2020/21

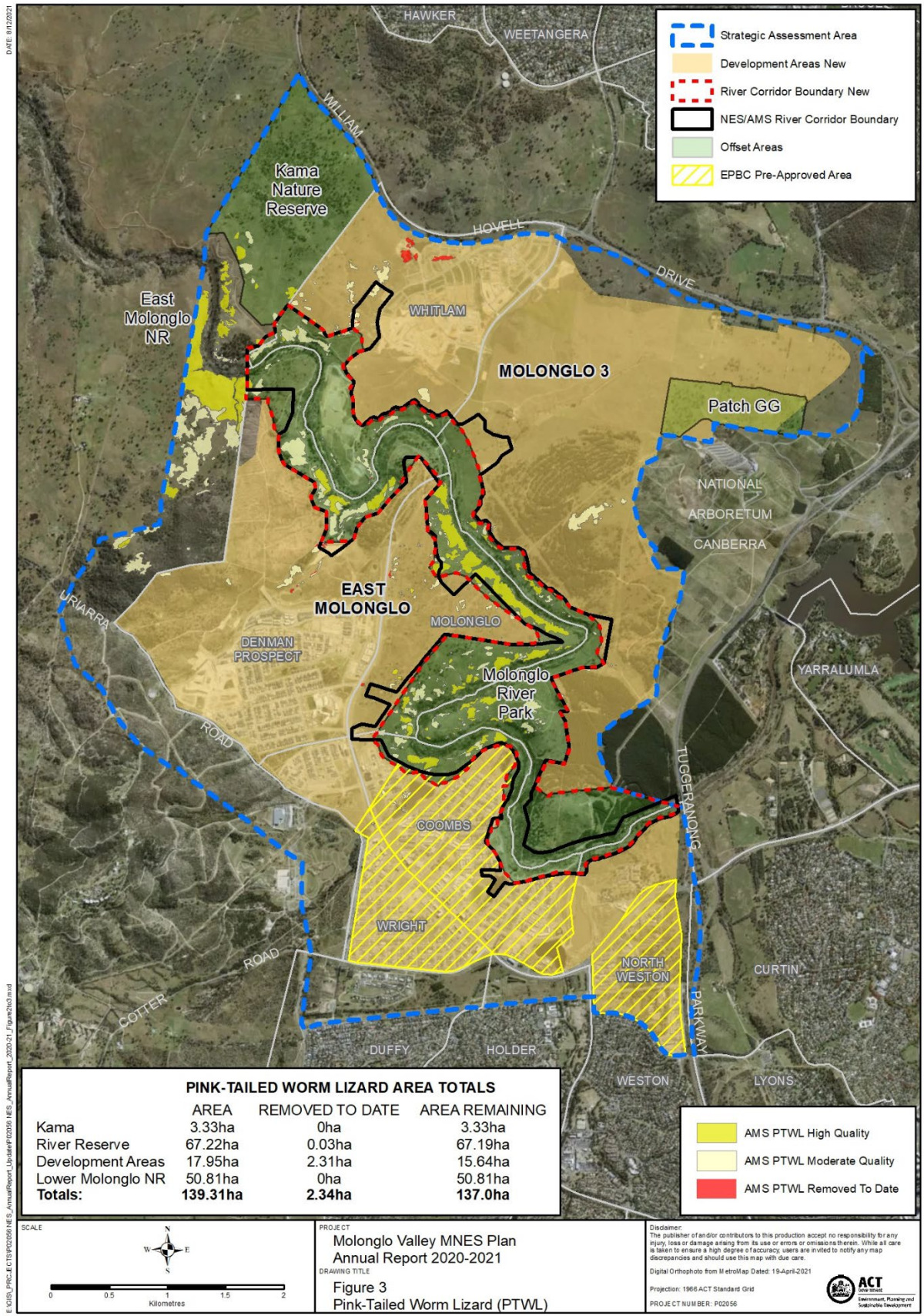


Figure 5: Pink-tailed Worm-lizard areas that have been cleared to date. Source: EPSDD Molonglo Valley Strategic Assessment Annual Report 2020/21

1.5 Reporting Requirements for the Molonglo Valley Strategic Assessment

The Molonglo Valley Strategic Assessment agreement operates for 30 years, until 2041.

Reporting requirements during this time are outlined in the NES Plan.

There are two main elements to the reporting framework:

1. a public annual report on implementation of the NES Plan, which is intended to highlight the conservation outcomes achieved in the previous year, and
2. an audit undertaken by an independent, third party expert every five years, across the 30 year period. A customised audit protocol is required to ensure that:
 - commitments made by the ACT Government in the NES Plan are being adhered to, and
 - conservation outcomes for the MNES are being achieved.

On 17 July 2017, the Commissioner for Sustainability and the Environment received a direction from the Minister for Climate Change and Sustainability, Shane Rattenbury MLA, to undertake this independent audit.

This Ministerial Direction was made pursuant to sections 12(1)(b) and 21(1)(a) of the *Commissioner for Sustainability and the Environment Act 1993*.

The Commissioner will provide the report to the Environment, Planning and Sustainable Development Directorate (EPSDD), which will then provide it to the Commonwealth Department of Environment and Energy.

The independent audit considered the compliance of the 44 actions outlined in the NES Plan. These are termed *Commitments* in the Audit Table.

The audit also considered the compliance of 16 additional actions as reported in the *Molonglo Valley Strategic Assessment Annual Report 2020/21*.⁷ These are termed *Items* in the Audit Table.

The Commissioner is specifically required not to audit the commitment in relation to the Treasury Directorate ensuring funding for the commitments (Item 17 of the *Molonglo Valley Strategic Assessment Annual Report 2020/21*). ACT Government has advised the Commissioner that they have agreement with the Commonwealth Government for this to be undertaken separately as part of the annual reporting process.

The total number of commitments audited in this independent audit was 60.

This audit of commitments is a compliance audit delivered in accordance with the *Independent Audit and Audit Report Guidelines, 2019*.⁸

This audit does not scrutinise or evaluate the deliberations which produced the Molonglo Valley Strategic Assessment and the NES Plan.

⁷ *Molonglo Valley Strategic Assessment Annual Report 2020/21*, https://www.planning.act.gov.au/_data/assets/pdf_file/0008/1917629/Final-Annual-Report-for-Molonglo-Valley-MNES-Plan-2020-2021-combined_final.pdf, accessed 02 March 2022

⁸ <http://www.environment.gov.au/epbc/publications/independent-audit-report-guidelines> accessed 02 March 2022

2. Approach to Audit and Methodology

2.1 Audit Team

The audit team was established in December 2021, comprising the following Arup staff members:

- Tim Cook . Lead Auditor (Arup)
- Christine Watson (Arup)

The following EPSDD staff assisted Arup with information requests and gathering data as well as providing access to onsite locations for site inspections:

- Dominic Riches (EPSDD)
- Helen Hai (EPSDD)

2.2 Methodology of the Audit

The Audit Criteria Methodology Template which has guided this audit is found at Appendix A of the *Independent Audit and Audit Report Guidelines for controlled actions which have been approved under Chapter 4 of the EPBC Act*.⁹

The ISO19011 and ISO14001 audit processes,¹⁰ the international standard that provides guidelines for management systems and environmental auditing, has also been referenced.

2.3 Audit Assessment Criteria

The objectives of this audit are guided by Ministerial Terms of Reference, which include:

1. assessment of all approval commitments as being *Compliant, Non-compliant* or *Undetermined*,
2. issuing corrective actions as appropriate, and
3. noting any observations.

Further assessment criteria were established by the audit team, namely:

- compliance was assessed against the commitments as phrased and approved,
- compliance was assessed in terms of the status in meeting the requirements of each commitment, against dates and timelines specified in the NES Plan,
- where a commitment output had been officially endorsed or accepted by the Commonwealth, the commitment has been deemed compliant, and

⁹Australian Government Department of the Environment, 2019, *Independent Audit and Audit Report Guidelines for controlled actions which have been approved under Chapter 4 of the EPBC Act 1999*, <https://www.ave.gov.au/sites/default/files/documents/independent-audit-report-guidelines-2019.pdf>, accessed 02 March 2022

¹⁰ <https://www.iso.org/standard/50675.html>, accessed 03 March 2022


- where required, the NES Plan was referenced to assist interpretation of the meaning of commitments in relation to the required deliverable.

2.4 Risk Assessment


A risk rating has been applied to all commitments.

The risk assessment methodology used is the ACT Insurance Authority Risk Matrix as outlined below. Risk rating is a function of the likelihood of the impact occurring and the consequence of the impact.

Where risks are rated as moderate or higher this is accompanied by an *Observation* or *Corrective Action Request*.



Australian Capital Territory Insurance Authority



ACT Government

Last Update: 1 Sept 2017

		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Assets	Loss or destruction of assets up to \$2,000	Loss or destruction of assets \$2,000 to \$10,000	Loss or destruction of assets \$10,000 to \$100,000	Loss or destruction of assets \$100,000 to \$5M	Loss or destruction of assets greater than \$5M	
Compliance/ regulation	Non-compliance with work policy and standard operating procedures which are not legislated or regulated	Numerous instances of non-compliance with work policy and standard operating procedures which are not legislated or regulated	Non-compliance with work policy and standard operating procedures which require self reporting to the appropriate regulator and immediate rectification.	Restriction of business operations by regulator due to non-compliance with relevant guidelines and / or significant non-compliance with policy and procedures which threaten business delivery.	Operations shut down by regulator for failing to comply with relevant guidelines and / or significant non-compliance with internal procedures could result in failure to provide business outcomes and service delivery.	
People	Injuries or ailments not requiring medical treatment.	Minor injury or First Aid Treatment Case.	Serious injury causing hospitalisation or multiple medical treatment cases.	Life threatening injury or multiple serious injuries causing hospitalisation.	Death or multiple life threatening injuries.	
Environment	Limited effect to something of low significance	Transient, minor effects	Moderate, short-term environmental harm	Significant, medium-term environmental harm	Long term environmental harm	
Financial	<1% of Budget or <\$5K	2.5% of Budget or <\$50K	> 5% of Budget or <\$500K	> 10% of Budget or >\$5M	>25% of Budget or >\$5M	
Products and Services	No disruption to services	Minor disruption to services for up to 1 month	Total cessation of service for up to 1 to 2 months	Total cessation of service for up to 2 to 3 months	Total cessation of service for more than 1 week and disruption over subsequent months involving a major facility	
Technology	Interruption to electronic records and data access less than 1/2 day.	Interruption to electronic records and data access 1/2 to 1 day	Significant interruption (but not permanent loss) to data and electronic records access, lasting 1 day to 1 week	Complete, permanent loss of some electronic records and/or data, or loss of access for more than one week	Complete, permanent loss of all electronic records and data	
Reputation & Image	Internal Review	Scrutiny required by internal committees or internal audit to prevent escalation.	Scrutiny required by external committees of ACT Auditor General's Office, or Inquest, etc.	Intense public, political and media scrutiny. E.g. front page headlines, TV, etc.	Assembly Inquiry or Commission of Inquiry or adverse national media.	
Cultural & Heritage	Low-level repairable damage to commonplace structures	Mostly repairable damage	Permanent damage to items of cultural significance	Significant damage to structures or items of cultural significance	Irreparable damage to highly valued items of cultural significance.	
Business Process & Systems	Minor errors in systems or processes requiring corrective action, or minor delay without impact on overall schedule.	Policy procedural rule occasionally not met or services do not fully meet needs.	One or more key accountability requirements not met. Inconvenient but not client welfare threatening.	Strategies not consistent with Government's agenda. Trends show service is degraded.	Critical system failure, bad policy advice or ongoing non-compliance. Business severely affected.	

Likelihood	Frequency		Matrix		1	2	3	4	5
	Almost Certain	Is expected to occur in most circumstances	Once in a quarter or more	>1 in 10	5	Medium	High	High	Extreme
Likely	Will probably occur	Once a year or more	1 in 10 - 100	4	Medium	Medium	High	High	Extreme
Possible	Might occur at some time in the future	Once every 1 - 5 years	1 in 100 - 1,000	3	Low	Medium	Medium	High	Extreme
Unlikely	Could occur but doubtful	Once every 5 - 20 years	1 in 1,000 - 10,000	2	Low	Medium	Medium	High	High *
Rare	May occur but only in exceptional circumstances	Once every 20 - 100 years	1 in 10,000 - 100,000	1	Low	Low	Medium	Medium	High *

Priority for Attention / Action		
Priority	Suggested Timing of Treatment	Authority for continued tolerance of risk
Extreme	Short term – normally within one month * Detailed action plan required	Director- General
High	Medium term – normally within three months Needs senior management attention	Senior Executive
Medium	Normally within 1 year Specify management responsibility	Managers
Low	Ongoing control as part of a management system Manage by routine procedures	All staff

Risk Control Effectiveness	
Control Effectiveness	Guide
Adequate	Nothing more to be done except review and monitor the existing controls. Controls are well designed for the risk, are largely preventative and address the root causes and Management believes that they are effective and reliable at all times. Reactive controls only support preventative controls.
Room for Improvement	Most controls are designed correctly and are in place and effective however there are some controls that are either not correctly designed or are not very effective. There may be an over-reliance on reactive controls. Some more work to be done to improve operating effectiveness or Management has doubts about operational effectiveness and reliability.
Inadequate	Significant control gaps or no credible control. Either controls do not treat root causes or they do not operate at all effectively. Controls, if they exist are just reactive. Management has no confidence that any degree of control is being achieved due to poor control design and/or very limited operational effectiveness.

Hint:
To help make an assessment of consequence and likelihood as yourself the following questions:
1. What is the consequence that the risk would take in the most normal form should it eventuate?
2. What is the likelihood of that consequence?

Note:
When identifying, analysing and rating risk consideration should be given, but not necessarily limited to, the attached categories of risk and the suggested examples of frequency and consequences.

***Priority for Attention / Action**
Every care should be taken to act as soon as possible to implement risk control measures wherever possible or to take action to fix the problem. Extreme and High risk especially where the risk relates to people and personal injury require us to act immediately to take steps to fix the problem.
The suggested timing of treatment does not mean that immediate action ought not be taken or that the timing can not be completed sooner than suggested.

2.5 Definitions of Audit Status

Categories of *Audit Status* used in the audit table below have been taken from the *EPBC Act Independent Audit and Audit Report Guidelines*¹¹ and have been altered slightly to reflect the requirements of the current audit.

¹¹ Australian Government Department of the Environment, 2019, Independent Audit and Audit Report Guidelines for controlled actions which have been approved under Chapter 4 of the EPBC Act 1999, <https://www.awe.gov.au/sites/default/files/documents/independent-audit-report-guidelines-2019.pdf>, accessed 02 March 2022

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All categories of *Audit Status* have been given a risk rating which reflects the auditors' analysis of the risks associated with achievement of each commitment. This process has resulted in the identification of key risks and allows EPSDD to prioritise ongoing management requirements in respect of implementation of the Molonglo Valley Strategic Assessment.

This strategic assessment has a further 19 years in which to deliver outcomes and it will be audited every 5 years until completion.

Compliant

The auditors have deemed a commitment '*Compliant*' where it has been found to comply with the specific requirements of the NES Plan.

Compliant with Observation

The auditors have used this assessment where the commitment is compliant at the time of the audit according to the NES Plan but where issues relevant to that commitment have been noted, to inform and assist with future management. In this assessment, the auditors have observed a deficiency in documentation or actions which has impacted, or has potential to impact, on the ability to meet a commitment.

Non-compliant

This audit categorisation relates to the non-fulfilment of a specified requirement of the NES Plan within the required timeframe.

Undetermined

When a commitment falls inside the scope of the audit but there is insufficient evidence to make a judgement on compliance or non-compliance at the time the audit was undertaken, the categorisation '*Undetermined*' has been used.

Not Applicable

Where a specific requirement of the NES Plan relevant to the site falls outside the scope of the audit, or has not been triggered, this categorisation has been used.

Corrective Action Request

Corrective Action Requests have been made by the Commissioner for Sustainability and the Environment where the relevant government agency should undertake action to either:

- eliminate the cause of a non-compliance,
- reduce risks associated with a non-compliance, or
- prevent the non-compliance re-occurring in relation to meeting the intent of the relevant commitment.

2.6 Sources of Information Reviewed

Evidence was sourced in a number of ways including:

- site visit focussed on Barrer Restoration sites, Namarag Special Purpose Reserve and Kama restoration sites. (23 March 2022) with five participants
 - Tim Cook (Arup)
 - Christine Watson (Arup)
 - Helen Hai (EPSDD)
 - Dominic Riches (EPSDD)
 - Dr Richard Milner (Parks and Conservation Service)

* It is noted that due to a positive Covid 19 result Nic Jario (Parks and Conservation Service) was unable to attend.

- research of publicly available information,
- direct emails to key stakeholders to seek information,
- discussions and meetings with key stakeholders such as the Impact Assessment Team in EPSDD, and staff from Parks and Conservation Services, and
- correspondence, reports, minutes and other documentation.

The EPSDD Impact Assessment Team coordinated two formal information requests, as well as responding to follow-up requests by providing further information on specific commitments.

The Impact Assessment Team also coordinated the response from ACT Government on the Preliminary Findings of the Audit and the draft report of the Independent Audit of the Molonglo Valley Strategic Assessment.

3. Audit of the Implementation of the Molonglo Valley Strategic Assessment

The results of the audit are found in table-form below.

The *Commitment* and *Timing* were taken directly from the NES Plan and as such, have not been edited.

The *Status update* from the EPSDD Molonglo Valley Strategic Assessment Annual Report 2020-21 was referenced for the most recent updates provided by EPSDD.

The *Auditor Comments* provide commentary on the reasoning behind the decisions made in the audit analysis and include any *Observations* or *Corrective Action Requests*.

The *Audit Status* represents the status of the commitment as determined by the auditors, according to the categories listed above. A *Risk Rating* has been assigned to each commitment, based on the *Audit Status* and the *Auditor Comments*.

Finally, the *Commitment Status* identifies whether the commitment has been completed or is ongoing. This will assist in determining the commitments to be audited in the next scheduled independent audit.

3.1 2018 Audit Review

The April 2018 Independent audit of the Molonglo Valley Strategic Assessment¹² identified the following 4 Corrective Action Requests. The majority of commitments rated as *Non-compliant and then developed into Corrective Action Requests* were due to the required timeframe not being met.

	Corrective Action Requests	Commitment	Due Date
CAR 1	Provide the final draft Molonglo River Reserve Management Plan to the Minister.	9 & 36	31 July 2018
CAR 2	Finalise the operational plan for Patch P to ensure appropriate management is occurring.	16	31 December 2018
CAR 3	Incorporate actions and monitoring requirements into relevant Land Management Agreements for the protection of the ecological condition of MNES within Patches I, L & M.	16	31 December 2018
CAR 4	Finalise the operational plan for the Pink-tailed Worm-lizard Conservation Area in the Molonglo River Reserve.	41	30 April 2018

It was conformed during this audit that all the Corrective Action Requests has been addressed and closed by the nominated due date.

3.2 Summary of Audit Table Results

¹² <https://envcomm.act.gov.au/wp-content/uploads/2020/08/Independent-Audit-of-the-Molonglo-Valley-Strategic-Assessment-5-June.pdf>

- Commitments rated as *Compliant with Observation* are mostly due to the independent review of the habitat and vegetation monitoring data not being due for completion until 2023 which decreased the rigor of this audit to assess for maintenance and enhancement of MNES based on independent assessment.
- The majority of commitments rated as *Non-compliant* are due to Operational Plans not being updated on the 3 yearly basis as stated in Management Plans.
- The audit concludes that three Corrective Action Requests have been issued for the collective commitments rated as *Non-compliant* that were determined to carry high risks.
- Separate commitments in the NES Plan were designated to each of the MNES (Box-Gum Woodland, Natural Temperate Grassland and Pink-tailed Worm-lizard). As such, commitments are overlapping, e.g. Commitments 6, 26 and 33 are all in relation to the implementation of an Operational Plan for the Kama Nature Reserve, however, each commitment covers one of the MNES.

A summary of the audit results is in **Table 1** below.

<i>Audit Status</i>	<i>Number of Commitments</i>
Closed	12
Compliant	28
Compliant with Observation	7
Non-compliant	12 (7 of these are due to Operational Plans not being updated)
Undetermined	0
Not applicable	1
Total number of commitments	60

4. Key Risks Identified in the Audit

This section precedes the compliance table to illustrate the key risks which require action and which are particularly important given the long-term nature of strategic assessments. It outlines the key risks identified during the independent audit period.

These risks relate to the current and future management of the Molonglo Valley Strategic Assessment (approved and endorsed on 7 October 2011) and the ability to meet the commitments in the NES Plan within the 30 year timeframe.

To date, the results of the on-ground implementation have been positive. Relevant authorities can build on this. The range of projects being undertaken (research, habitat restoration and threatened species translocation) is very diverse and will add to the knowledge of these MNES. This will be valuable for the Territory and, given these species are threatened across Australia, on a national scale as well.

A range of broad systemic risks (R) were identified, as well as commitment-specific risks with associated Corrective Action Requests (CARs). A summary of these is outlined below.

Broad Systemic Risks

	Identified Risk	Risk Ranking
R1	Resourcing and Funding: from establishment to implementation	M
R2	Technological advancement for implementation monitoring and condition enhancement	M
R3	Climate Change resilience	M
R4	Independent Review schedule of maintenance and enhancement of MNES.	H

Corrective Action Requests for Commitment-Specific Risks

	Corrective Action Requests	Commitment	Ranking	Due Date
CAR 1	Expired Operational Plans	6, 10, 13, 26, 33, 38 & 42	H	30 April 2023
CAR 2	Physical establishment of Buffer Zones	7, 27 & 34	H	31 March 2023
CAR 3	CEMP auditing, monitoring, and reporting compliance	4 & 31	M	30 November 2022

5. Broad Systemic Risks

R1 - Key Risk: Resourcing and Funding: from establishment to implementation.

Many of the commitments require establishment, maintenance and enhancement of ecological environments for the protection of the MNES. This includes commitments associated with corridors and connectivity as well as buffer zones for mitigation of ecological impacts and the management of fire and urban edge impacts.

Establishment funding has been in place for the two audit periods (first ten years). This has enabled the deployment of:

- monitoring and evaluation,
- restoration and research projects, and
- sites to establish the ecological settings for the river corridor, Box-Gum Woodland, Natural Temperate Grassland and the Pink-tailed Worm-lizard.

Establishment has been cognisant of the fire protection zones, buffer zones and connectivity zones.

Sufficient resourcing and funding is required to be committed over the next 20 years to realise the maintenance and enhancement requirements of the MNES commitments. Resourcing and funding is needed at reasonable and ongoing levels to meet the intent of the commitments, particularly as staged release of development continues from planning through to deployment and on-ground activities.

A specific focus for the allocation of funding for the early restoration works on buffer zones and its separation from development activities is considered important. The buffer zones are required to create ecological resilience and as such the habitat restoration works should be well matured before the negative impacts of the urban edge effects are experienced.

As urban development increases the role of established buffer zones to mitigate the impacts of urban heat island effect will be increasingly important.

The resourcing requirements are anticipated to require ongoing increases over time to enable to facilitate the protect, maintain and enhance requirements. As population density increases different ecological stress areas are anticipated to require additional focus.

Funding should also be established to enable resourcing and work activity flexibility to adapt to seasonal and short period climatic changes such as multi-year dry, drought or wet periods. Due to the extended rain periods experienced over the past 2 years, the resource (human and financial) pressure on natural based weed management

Implementation of management and operational plans is required by many commitments after the development of the plans. Implementation requires sufficient resourcing and funding to ensure compliance.

Recommendation

R1 - Ensure ongoing resourcing and funding for the maintenance and enhancement of the ecological condition of MNES within the Molonglo Valley Strategic Assessment area, with the ability to flex activities based upon wider seasonal variations and their impact across the site.

R2 - Key Risk: Technological advancement for implementation monitoring and condition enhancement.

Implementing plans for the protection of MNES is required by numerous commitments. Evidence is required to demonstrate effectiveness of on-ground activities to provide for the maintenance and enhancement of ecological condition. Baseline and ongoing monitoring and statistical and other evaluation methods are required to provide evidence as to effects of on-ground actions.

The Molonglo River Reserve Procedures Manual for Monitoring Vegetation and Habitat Condition (2014) documents the approaches and protocols defining monitoring and evaluation techniques to determine ecological condition. The manual identifies several techniques and includes:

- Remote sensed information may be used to measure gross changes to the landscape; and
- Low altitude oblique aerial photography be obtained every 5 years to review disturbances to vegetation, development of unofficial tracks, conditions of tracks and open space.

A significant vegetation condition monitoring program has been running in the Molonglo Valley Strategic Assessment area for the past ten years and results seem to demonstrate that the ecological condition of the site has been maintained and in areas enhanced.

Given the complexity of the data, it is critical to have clear and rapid documentation of analysis of the data to determine if ecological condition of MNES has been enhanced across the whole site.

The delay of the independent ecological assessment and now ongoing misalignment with the five-year audit schedule, will continue to provide a disjointed assessment of the MNES enhancement that is occurring across the whole site

Advances in technology and techniques now providing rapid digital methods for seasonal monitoring and evaluation techniques. The ability to provide adaptive monitoring and measuring tools using spatial data is well recognised within the scientific community. Widescale adoption of these technologies will enable rapid seasonal assessments, that can facilitate targeted adaptive management techniques, resulting in the enhanced ecological condition of the site.

The data from this audit period, with seasonal and climatic variations experienced, will continue to build on the baselines and inform future management. Evaluation of implementation actions will also allow adaptive management to be utilised, a critical component of a thirty-year project.

Recommendation

R2 - The Molonglo River Reserve Procedures Manual for Monitoring Vegetation and Habitat Condition (2014) and Operational Plans are reviewed and updated to represent the evolution in technology and assessment approaches that allow for rapid assessment and reporting of ecological health as well as enhanced adaptive management approaches.

R3 - Key Risk: Climate change resilience.

Climate change will impact the Molonglo Valley, the ACT and surrounding NSW area.

Responding to climate change is absolutely necessary during the 30-year term of the Molonglo Valley Strategic Assessment. Large scale climate variability has been experienced throughout the 10-year period, with longer term climatic trends evident on the site. On-ground activities conducted now, that consider and take account of climate change impacts into the future, are more likely to achieve future compliance with the commitments.

The 2018 audit report identified that ‘Plants are projected to be particularly badly hit, because they are often unable to adapt quickly enough to a changing climate – which in turn may have a knock-on effect on other species that depend on them.’¹³

There is currently evidence of considering climate change resilience through implementation approaches such as the use of seed stock location and diversity. Further action is critical, in order to ensure these environments are given assistance to adapt appropriately to respond to the difficult changes expected to occur in an evolving climate.

Flexibility in the rehabilitation program to fast-track (clear, seed, plant and weed) areas during cyclical periods of increased rainfall and strong vegetation growth, will facilitate increased species survival, build resilience and the natural seed bank for drought periods where vegetation communities and habitats may retreat.

To provide appropriate incorporation of these approaches into the future, the plans would benefit from identifying likely climate change impacts and planning for climate change resilience for on-ground activities.

The ACT Government, particularly Parks and Conservation Services note that they are committed to continually implementing adaptive management methods which will best anticipate and respond to the changing climate. The adaptive management aims to respond to changing climate by taking appropriate steps with evidence-based decision making to protect threatened species and endangered ecological communities in and near conservation areas.

EPSDD noted in response to the draft of this report that “Full investigations and reporting on the impact from climate change may be difficult to implement with available funding and structure.” The audit team acknowledge that there are likely difficulties in changing the structure of the available funding to achieve this requirement, however, it is believed to be in the best interest for the ecological outcomes of the area.

Recommendations

R3A - Ongoing documentation of the ongoing approach and adaptations for climate change resilience in the Molonglo River Reserve Management Plan and Operational Plans for each area, including research to evaluate potential impacts on MNES.

R3B - The independent ecological assessment report, conducted every 5 years, (or a separate report) be enhanced to review the impact of climate change including the current mitigation and management approaches and provide recommendations on the current level of resilience to climate change.

¹³ WWF 2018, Wildlife in a Warming World: The effects of climate change on biodiversity in WWF’s Priority Places, https://e402277.ssl.cf1.rackcdn.com/publications/1149/files/original/WWF_-_Wildlife_in_a_Warming_World_-_2018_FINAL.pdf?1520886759

R4 - Key Risk: Independent review schedule of maintenance and enhancement of MNES.

Throughout the audit, ample evidence was provided that the condition of the Box Gum Woodland and Pink Tail Worm Lizard habitat was being actively managed and enhanced, with monitoring being conducted annually.

The validation of the works that is being conducted however is through the independent and scientific review of the vegetation and habitat monitoring data. While originally occurring every 5 years, and before the commitment's compliance audit, the independent review was delayed and is not scheduled to be completed until 2023.

As a result of the delay, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES.

The next scheduled compliance audit in 2027 will rely on the independent assessment conducted in 2023.

Recommendations

R4A - That the independent review and these compliance audits are brought back into alignment to ensure that current, independent, expert opinion can be incorporated for a complete and rigorous process.

R4B - To facilitate this alignment, it is recommended that a supplementary compliance audit is conducted within 12 months of the 2023 independent report on maintenance and enhancement, or an additional independent and scientific review is conducted and reported prior to the scheduled 2027 compliance audit.

R4C - Following the supplementary compliance audit or independent review the 5-year period is reinstated with the compliance audit following the delivery of the independent assessment report.

6. Commitment Specific Risks and CARs

CAR 1: Expired Operational Plans

Commitments 6, 10, 13, 26, 33, 38 and 42

Many commitments require the implementation of Management Plans. The management plans refer to Operational Plans. The Operational Plan details enhancement activities to be undertaken such as weeding, restoration of habitats and restoration plantings. While Management Plans were current, the following Operational Plans had expired and not been renewed or replaced:

- Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014)
- Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)
- Molonglo River Reserve (PTWL Conservation Area) Operational Plan, 2018-2021 (2018)
- Arboretum Woodland Conservation Area Operational Plan, 2014-2017 (2014)
- Block 403 Woodland Conservation Area (NES Patches P1, P2 and P3) Operational Plan, 2018-2021 (2018)

These documents set the key principles and operating approaches for the protection of MNES and hence enable and empower meeting of commitments. Through these documents, all on-ground management and restorative activities occur including design and delivery of infrastructure, planting and ecological restoration and ongoing research.

The review and update of the documents provides an opportunity to formally incorporate alterations to the adaptive management approaches, technological advances, and wider resilience.

It is noted however that if the aspects addressed within the Operational Plans, are suitably addressed within other formal documentation, alternate systems, or procedures, then an approach may be taken, through the appropriate approval pathways to not duplicate documents. This would require the formal amendments of those specific commitments and updates to referenced documentation. For example, the Management Plans make reference to the Operational Plans.

The implementation of the Management and Operational Plans should be focussed on the site delivery, monitoring, and application. It is noted that the ongoing development of management and operation plans, while important, are labour intensive.

It is critical that the documented approach to management and operation can evolve, with the tools, technology and resources that are available to best deliver the outcomes required.

Corrective Action Request

CAR 1 - Review the currency, form and function of the management and operational plans, tools, technology and resources that are available to best deliver the outcomes required. If after the review amendments to the commitments regarding the implementation of Operational Plans are recommended, then undertake the formal process to seek change. If no amendments to the commitments are required, then the Operational Plans should be updated to ensure compliance with the commitments.

CAR1 1 Delivery – 30 April 2023

CAR 2 The Physical Establishment of Buffer Zones

Commitments 7, 27 and 34

The 2018 audit recommended the finalisation of the buffer for Kama Nature Reserve is a key component in providing protection for the fauna and flora in the reserve against urban edge effects.

While the documentation of the finalisation of the Kama Nature Reserve Buffer Zone was completed a key risk exists regarding the proactive and early implementation of the buffer zones across the whole site.

The Kama Interface Management Strategy lists a summary of recommended interface arrangements. The design characteristics of the buffer include:

1. A buffer width of 200m along the northern portion of the Kama interface, tapering to 70m along the southern portion.
2. Establishment of 4 Interface Management Zones (IMZs). 1 - Kama Nature Reserve, 2 - Interface Buffer - Woodland Regeneration, 3 - Interface Buffer - Inner Asset Protection Zone and 4 - Urban Development allowing for targeted management.

The Management Strategy lists the activities to occur during establishment and development of the buffer based on the identified threats and ongoing management and maintenance requirements are identified such as weed monitoring and management, control of domestic animals, community education and involvement and control and management of access to reduce human impacts.

The buffer zones and interface management zones are currently linked to the timing and delivery of the urban developments and Estate Development Plans, however one core feature of the buffer zones is to *'provide protection against urban edge effects.'*¹⁴

To provide protection against the urban edge effects it is the view of the auditor that the physical development and implementation activities should be initiated prior to the urban edge effects occurring. The establishment of habitat and associated works within the buffer zones therefore should be prioritised to occur before the civil urban development activities are undertaken.

Delays in the physical development and creation of the buffer zones has the potential to negatively impact on the primary habitat areas, and reduce the resilience of the MNES.

The buffer has not been established at the time of this audit as was required to be prior to development of Stage 3 commencing. Construction on Whitlam (Stage 3) has commenced, as was evidenced during the onsite visit. The previous audit observed that this was likely to be controversial in finalising and has proved to be such.

EPSDD have noted in response to the draft of this report that there may be difficulties in achieving the timeframe for this Corrective Action Request. In response the date was extended from 30 August 2022 to 31 March 2023. The audit team acknowledge there may be difficulties in detangling the available funding for the buffer, however, it is the belief of the audit team that it is in the best interest for the biodiversity and ecological outcomes of the area to do so.

¹⁴ Commitment 7 and 27 in the NES Plan, https://www.environment.act.gov.au/_data/assets/pdf_file/0007/600964/NES_Plan.pdf, accessed 10 April 2022

Corrective Action Requests

CAR 2 - The funding and resource provisions for the buffer zones be separated from the timing and delivery of the urban developments and Estate Development Plans to facilitate the physical site-based implementation and development of the buffer zones before urban edge effects are experienced.

CAR 2 Delivery – 31 March 2023

CAR 3 - CEMP auditing, monitoring, and reporting compliance

Commitment 4 and 31

Construction Environmental Management Plans (CEMPs) are required to be in place prior to any development occurring and independently monitored to manage and mitigate the impacts of development in the river corridor and the development area. Regular independent monitoring of the CEMPs aims to ensure that works are undertaken in accordance with the CEMPs.

According to the EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021) CEMPs have been prepared for all approved estate developments and a site surveillance officer has been engaged to monitor relevant projects. Twelve CEMPs were approved for construction work in the Molonglo Valley for 2020-2021 and to date, 53 CEMPs have been approved overall for construction work in the Molonglo Valley. The CEMPs for Whitlam Stage 2A, Denman Prospect 1B Stage Estate 2D1 and Lower Deep Creek Pond Geotechnical Works were provided.

During the onsite visit to the Molonglo Valley observations were made of an active construction site at Denman Prospect. It was noted that the height of the stockpiles, widescale clearing, steep slopes and lack of visible onsite controls raised concerns as to whether suitable erosion and sediment control measures were in place across the site. It was noted that PCS implement measures at the site boundary to restrict sediment movement, however it is the responsibility of the developers to ensure that all appropriate sediment and erosion control measures are within the site boundary. The visual assessment indicated that the approach did not appear to be compliant with the Blue Book or ACT requirements.

Limited evidence was provided for the independent monitoring of the sites. No site inspection records, with the exception for the 2020 environmental incident were provided to demonstrate proactive and effective monitoring of CEMPs.

Construction Environmental Management Plans, the controls required for the management of erosion and sediment controls and independent inspections are required to be dynamic as the construction activities and risk profile of areas changes, thus the approach is required to shift.

An adaptive approach for the implementation and independent monitoring of the CEMP's was not able to be demonstrated for this audit period.

EPSDD noted in response to the draft of this report that compliance checks are undertaken by EPA, Access Canberra and PCS. EPA and Access Canberra conduct compliance checks in response to a complaint and PCS conducts compliance checks either fortnightly or on an as-needed basis, although are typically focused on land adjacent to conservation areas.

Given that compliance checks are completed on an as-needed basis or in response to complaints, it is the view of the auditor that the auditing, monitoring and reporting of compliance with CEMPs be reviewed to be enable a proactive approach, rather than reactive.

Corrective Action Request (action within 6 months)

CAR 3 - The approach, frequency and effectiveness of auditing, monitoring, and reporting compliance with the CEMPs be independently reviewed.

CAR 3 Delivery – 30 November 2022

7. Conclusions and Recommendations

The ACT Government is just beyond the one third mark of a 30-year strategic assessment.

The recommendations below have been derived from the results of this independent audit and they are offered on the basis that the ACT Government has the opportunity to show leadership in the ongoing management of this strategic assessment.

The successful acquittal of the Molonglo Valley Strategic Assessment is critical to MNES being protected in accordance with the EPBC Act.

EPSDD provided comment on the draft of this Audit Report. The comments were considered in finalising the report and responses provided to EPSDD.

7.1 Recommendations

1. **It is recommended that the ACT Government** complete all the Corrective Action Requests identified in this report within the indicated timeframes.
2. **It is recommended that the ACT Government** implement the recommendations identified in this report and incorporates all the recommendations in this section into future management. If the recommendations are not accepted, detail how the aspects identified will be mitigated.
3. **It is recommended that the ACT Government** ensure ongoing resourcing and funding for the maintenance and enhancement of the ecological condition of MNES within the strategic assessment area.
4. **It is recommended that the ACT Government** adhere to timing requirements for all of the commitments.
5. **It is recommended that the ACT Government** review the currency, form and function of the management and operational plans, tools, technology and resources that are available to best deliver the outcomes required in compliance with the commitments.
6. **It is recommended that the ACT Government** ensure that the independent monitoring and enhancement review and the compliance audits are brought back into alignment to ensure that current, independent, expert scientific opinion can be incorporated for a complete and rigorous process.
7. **Subject to the implementation of Recommendation 4, It is recommended that the next Audit be carried out by May 2027** and that the ACT Government seeks agreement from the Commonwealth on this date by 30 August 2022.
8. **It is recommended that the ACT Government** have the approach, frequency and effectiveness of auditing, monitoring, and reporting compliance with the CEMPs be independently reviewed.
9. **It is recommended that the ACT Government** assess and document the status of climate change resilience activities in the strategic assessment area and the current risk and opportunities to the ecological value of the MNES.

10. **It is recommended that the ACT Government** give urgent consideration to the timing and financial provisions for the active regenerative and development of buffer zones before the residential developments occur. The buffer zone works is recommended to be separated from the timing of developer funds for maximum biodiversity and ecological benefit to reduce the impacts of the increasing urban edge effect and pressure that the increasing population will have on areas of new or early restoration.
11. **It is recommended that the ACT Government** review the methods and technologies used in the Molonglo River Reserve Procedures Manual for Monitoring Vegetation and Habitat Condition (2014) and Operational Plans to enable the evolution in technology and assessment approaches that facilitate rapid assessment and reporting of ecological health as well as enhanced adaptive management approaches.
12. **It is recommended that the ACT Government** ensures adaptive management principles are carefully scrutinised and considered for incorporation into implementation of the commitments for the NES Plan and any updated documentation.
13. **It is recommended that the ACT Government** continues to promote Indigenous values in the development, implementation and on-ground activities for MNES protection in the Molonglo Valley Strategic Assessment area.
14. **It is recommended that the ACT Government** ensures that all the research undertaken as a function of the Molonglo Valley Strategic Assessment and the NES Plan is made publicly available on the web, is accessible and easy to find, and includes historical research as well as the most recent scholarship and reports.

Appendix A

Audit Results

Action	Commitment	Audited / Referenced Docs	Summary of Auditor Comments	Audit Status (Compliant, Non-Compliant etc.)	Audit Status
1	Ensure that the combined impacts on Box-Gum Woodland from development within East Molonglo and construction of infrastructure within the river corridor do not exceed 110 ha.	<p>Molonglo Valley Stage 2 Planning Design Framework (2012)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2016-2017)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2017-2018)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2018-2019)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2019-2020)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p>	<p>The Molonglo Valley Planning and Design Framework Stage 2 and Stage 3 (finalised in 2019) both set the principles for achieving the protection of species and habitat as both the stages were and are developed.</p> <p>The area of impacted Box Gum Woodland has not changed since the 2017/2018 annual report. The total cleared at 2020/2021 is 11.18ha with 98.82ha remaining in the available balance.</p> <p>Figure 3 of the Molonglo Valley Strategic Assessment Annual Report 2020-2021 provides total area of BGW in each Patch, Reserve, Offset Area and Development Areas as well as the total amount of BGW removed to date.</p>	Compliant	Ongoing
2	Amend the East Molonglo river corridor boundary, in stages 2 and 3 respectively with a view to reducing the impacts to Box-Gum Woodland. This process will ensure that connectivity within the river corridor is maintained.	<p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Planning and Development (Plan Variation No 360) Approval (2020)</p> <p>Molonglo River Reserve Management Plan (2019)</p> <p>Molonglo River Park Concept Plan (2012)</p>	<p>The Molonglo Valley Planning and Design Framework Stage 3 was finalised in February, 2019 with revisions to the river corridor boundary of East Molonglo included. Additionally, in January, 2020 the river corridor boundary was again adjusted under the Planning and Development (Plan Variation No 360) Approval 2020 resulting from the approval of the Molonglo River Reserve Management Plan (2019). The Molonglo River Reserve was created and follows the Molonglo River from Scrivener Dam downstream to the intersection with the Murrumbidgee River Corridor Reserve. The Molonglo River Reserve includes the Kama Nature Reserve, Lower Molonglo River Corridor Nature Reserve, the Molonglo River Park in East Molonglo and the Molonglo River Special Purpose Reserve. All these areas have been brought together to create the Molonglo River Reserve. The Molonglo River Reserve is to be primarily nature reserve with 2 special purpose areas for recreational activities.</p> <p>Figure 1 of the Variation 360 shows the corridor boundaries have been revised. Overall the river corridor boundary has been increased from 489.66ha to 503.87ha with an increase of 1.01ha of Box Gum Woodland and 0.46ha of Pink Tailed Worm Lizard habitat within the reserve area.</p> <p>It is noted that the river corridor boundary may be revised through approved Estate Development Plans (EDPs), however they will be consistent with the intent of and assessed for compliance with the NES Plan.</p>	Compliant	Ongoing
3	Design the infrastructure that will occur in the river corridor to minimise impacts to Box-Gum Woodland.	<p>Molonglo River Reserve Management Plan (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo Group Centre and Surrounds Draft Concept Plan (2021)</p>	<p>The Molonglo River Reserve Management Plan (2019) details how the river corridor design process is focused on minimising impacts to MNES in the area including the Box-Gum Woodland. Section 9 of the Management Plan details the existing and anticipated infrastructure in the Molonglo River Reserve and how they will be located and designed in such a way that enhances the scenic value and protects the natural ecological values. Any infrastructure required for the region will be located outside the reserve where possible and only within the reserve where it is clearly demonstrated that there are no other feasible alternatives available and in such a case must be approved under ACT legislation.</p> <p>Work is continuing to progress in the Molonglo Valley with the Stage 3 PDF having been finalised in 2019 and ongoing infrastructure projects being progressed to support the urban development. The EPSDD Annual Report for 2020-2021 Tables 3 lists the Impacts on MNES by hectare to date (11.18ha for Box Gum Woodland with 98.82ha remaining in the allowance). Figure 3 shows the BGW areas that have been cleared to date broken down by Patch, Reserve and Development Areas. Additional notes received from EPSDD / PCS state in regard to BGW "if all BGWL was removed in patch J and the part of patch D within the Development Areas there would be 69.05ha of removal. There is a small amount of impact planned for the East West Arterial through Patch K and will be calculated at Detail Design stage." Indicating that the potential future impact to BGW would be within the 110ha allowance and any future proposed impact will need to be approved.</p>	Compliant	Ongoing

4	Develop, implement and independently monitor Construction Environmental Management Plans (CEMPs) to ensure that unforeseen direct or indirect impacts from construction activities within the development area and the river corridor are avoided. See Section 4.5 for information about the content of CEMPs.	<p>CEMP conservator guidelines DRAFT</p> <p>CEMP Whitlam Stage 2A (2020)</p> <p>CEMP Lower Deep Creek Pond (2021)</p> <p>CEMP Denman Prospect 1B Stage Estate 2D1 (2021)</p> <p>Chain of email communication regarding sediment and erosion control failure for Deep Creek (February 2020)</p> <p>Observations made of Denman Prospect construction activities during onsite visit 23rd March, 2022.</p>	<p>Construction Environmental Management Plans (CEMPs) are required to be in place prior to any development occurring and independently monitored to manage and mitigate the impacts of development in the river corridor and the development area. Regular independent monitoring of the CEMPs aims to ensure that works are undertaken in accordance with the CEMPs. According to the EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021) CEMPs have been prepared for all approved estate developments and a site surveillance officer has been engaged to monitor relevant projects. Twelve CEMPs were approved for construction work in the Molonglo Valley for 2020-2021 and to date, 53 CEMPs have been approved overall for construction work in the Molonglo Valley. The CEMPs for Whitlam Stage 2A, Denman Prospect 1B Stage Estate 2D1 and Lower Deep Creek Pond Geotechnical Works were provided.</p> <p>During the onsite visit to the Molonglo Valley observations were made of an active construction site at Denman Prospect. It was noted that the height of the stockpiles, widescale clearing, steep slopes and lack of visible onsite controls raised concerns as to whether suitable erosion and sediment control measures were in place across the site. It was noted that PCS implement measures at the site boundary to restrict sediment movement, however it is the responsibility of the developers to ensure that all appropriate sediment and erosion control measures are within the site boundary. The visual assessment indicated that the approach did not appear to be compliant with the Blue Book or ACT requirements.</p> <p>Limited evidence was provided for the independent monitoring of the sites. No site inspection records, with the exception for the 2020 environmental incident were provided to demonstrate proactive and effective monitoring.</p> <p>OBSERVATION: Construction Environmental Management Plans, the controls required for the management of erosion and sediment controls and independent inspections are required to be dynamic as the construction activities and risk profile of areas changes, thus the approach is required to shift. An adaptive approach for the implementation and independent monitoring of the CEMP was not able to be demonstrated for this audit period. It is recommended therefore that the approach and frequency of independent monitoring and reporting compliance with the CEMPs be reviewed.</p>	Non-Compliant Independent monitoring and reporting of CEMPs unable to be verified.	Ongoing
5	Develop a management plan for the Kama Nature Reserve to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within the reserve (approximately 117 ha). See Section 4.6 for information about the content of management plans.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>Kama is an offset site (NES patches a1, A2, B1, B2, B3 and O1). The area is incorporated into the Molonglo River Reserve which includes 2 existing reserves (Lower Molonglo River Nature Reserve and Kama Nature Reserve) and a section that includes the river corridor up to Scrivener Dam. Suburbs will be developed to the east of Kama, beyond a buffer as part of Stage 3 development. The Molonglo River Reserve Management Plan was finalised in 2019. The Management Plan covers the entire reserve area including Kama. The Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014) is the specific management plan for the Kama Nature Reserve and details the management activities that need to be undertaken in the area to ensure ecological condition of the BGW.</p>	Compliant	Ongoing

6	Implement the management plan for the Kama Nature Reserve to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within the reserve.	<p>Molonglo River Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Patch B forb enhancement Project Plan</p> <p>Translocation of the striped legless lizard to Kama nature reserve - proposal</p> <p>Invasive plant control 2018-2022</p> <p>Kama burn plan FB389 copy</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019. The plan defines the MNES that must be protected and the BGW areas that are to be maintained and enhanced in Kama. Molonglo River Reserve (Kama) Operational Plan, 2014-2017 details the management activities that need to be undertaken in the area to ensure the maintenance of the BGW. The Operational Plan also details enhancement activities to be undertaken such as weeding, restoration of habitats and restoration plantings.</p> <p>Evidence of both maintenance and enhancement of the ecological condition of the Box-Gum Woodland within the reserve were demonstrated during the site visit. Enhancement activities and projects are informed by ongoing research. Monitoring, evaluation and improvements are conducted by PCS ecologists and respond to seasonal variations. Independent review of the results of the monitoring and research programs must be completed every five years and reported on. The independent report provides advice and recommendations for necessary amendments to Operational Plans to ensure that they are continuing to achieve the conservation outcomes and performance targets for Molonglo NES. The last review was for the period 2013-2017 and report completed in 2018. The next review is not planned until 2023 and therefore the independent assessment of the ongoing monitoring was not able to be included as part of the audit.</p> <p>One example of enhancement activities observed from the site visit - A number of areas within Kama Nature Reserve have undergone a 'scraping' process. The top 10-15cm of soil was been removed and direct seeded with native grasses and wildflowers. The scrapings were completed approximately 6 years ago and are now well established and providing good quality ground cover as well as acting as a source of seed for nearby areas. Many examples of enhancement projects and activities were presented during onsite discussions and also through documentation provided following the onsite visit.</p> <p>OBSERVATION: The Molonglo River Reserve (Kama) Operational Plan, 2014-2017 has not been revised to cover the period 2018-2021 and beyond. There is no revised document although the Molonglo River Reserve Management Plan, 2019 Table 1.1 Section 7.1.2 states that 3 year operational plans will be developed for discrete areas that prioritise the on ground actions for each area. Additionally, the Kama Operational Plan page 1 states 'This Plan will be reviewed every 3 years and will be put into effect through works programs, which will be reviewed and updated annually.'</p> <p>While there is evidence from the site visit and associated documentation provided that activities and projects are occurring for the maintenance and enhancement of the ecological condition of the BGW, the mechanism to assess and review the success and failures of the Operational Plan is not present, which is the purpose of a 3 yearly review.</p> <p>Additionally, given that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	<p>Non Compliant.</p> <p>Operational Plan has not been revised for 2018 and beyond, although this is a requirement of the Management Plan</p>	Ongoing
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7	<p>Establish a buffer outside the Kama Nature Reserve between the reserve and the proposed development area, and allow for appropriate uses consistent with nature conservation uses of the reserve. The buffer will be developed to ensure that fire management is undertaken outside of the Kama Nature Reserve and will provide protection against urban edge effects.</p>	<p>Molonglo Valley Stage 3 Planning Design Framework (2019) (PDF)</p> <p>Kama Interface Management Strategy (Capital Ecology, 2016)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Whitlam Stage 1 and 2 Residential Estate Housing Development Guide (2020)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>Section 3.3 of the Molonglo River Reserve Management Plan details the requirement of the Kama Buffer. The urban edge buffer will be between the eastern edge of Kama and the urban development with the aim of protecting Kama's high conservation value from urban edge impacts. The buffer will occur outside of the Molonglo River Reserve (which includes Kama). Section 3.3 states that the details of the treatment and boundary of the buffer will be included as part of the planning for Molonglo Stage 3. It is also stated that the treatment and boundary of the buffer must be consistent with the recommendations in the Kama Interface Management Strategy (Capital Ecology). 3.3.2 of the Management Plan details fire management in the buffer which will be managed as an Asset Protection Zone, while Kama is managed as a Strategic Fire Fighting Advantage Zone.</p> <p>Section 6.17 of the Stage 3 Planning and Design Framework (2019) provides details of the buffer to Kama Nature Reserve. The PDF lists detailed considerations that must be followed in the design plan for the buffer. The design plan for the buffer is required to be endorsed by the Conservator of Flora and Fauna, The Parks and Conservation Service and the Authority. The PDF also states that an environmental restoration plan for the buffer, approved by the Conservator of Flora and Fauna, is required to be lodged with the estate development plan development application and on advice from the Conservator, the buffer to the Kama Nature reserve is to be incorporated into the Territory Plan at the earliest opportunity.</p> <p>The Kama Interface Management Strategy lists a summary of recommended interface arrangements. The design characteristics of the buffer include:</p> <ol style="list-style-type: none"> 1. A buffer width of 200m along the northern portion of the kama interface, tapering to 70m along the southern portion. 2. Establishment of 4 Interface Management Zones (IMZs). 1 - Kama Nature Reserve, 2 - Interface Buffer - Woodland Regeneration, 3 - Interface Buffer - Inne Asset Protection Zone and 4 - Urban Development allowing for targeted management. <p>The Management Strategy lists the activities to occur during establishment and development of the buffer based on the identified threats and ongoing management and maintenance requirements are identified such as weed monitoring and management, control of domestic animals, community education and involvement and control and management of access to reduce human impacts.</p> <p>The buffer has not been established at the time of this audit as was required to be prior to development of stage 3 commencing. Construction on Whitlam (Stage 3) has commenced, as was evidenced during the onsite visit. The previous audit observed that this was likely to be controversial in finalising and has proved to be such.</p> <p>OBSERVATION: There is no clear articulation of the actual buffer and it has not been physically established. Therefore, there is ambiguity regarding the buffer in the documents which will lead to potential impacts to the buffer zone and a decrease to the habitat value for the surrounding significant vegetation or MNES. If buffers aren't maintained, that has a potential impact to the status of the MNES areas.</p> <p>Some development of the Whitlam suburb has commenced as was observed during the site visit. There are ongoing discussions between the ACT Parks and Conservation Service (PCS) and the Suburban Land Agency (SLA) as to when the buffer will be established. PCS require the buffer to be established prior to construction whereas SLA are pushing for the buffer to be established once construction has begun. Due to the funding for the buffer being tied to construction in Stage 3, this commitment is not in compliance. It is recommended in order to bring this commitment back into compliance, that the mechanism for funding release not to be tied to construction activities so that the buffer can be established prior to construction.</p>	<p>Non-Compliant</p> <p>Timeframe for buffer establishment not met.</p>	<p>Ongoing</p>
8	<p>Develop a Park Concept Plan for the "Molonglo River Park" which will occur along the East Molonglo river corridor. This Plan will establish management zones within the Park, specifically identifying areas to be designated for conservation as well as identifying recreation areas and resolving public access. A key focus of this plan will be the protection of Box-Gum Woodland.</p>	<p>Molonglo River Park Concept Plan (2012)</p> <p>Molonglo Valley site visit, 23rd March, 2022</p> <p>Namarag Seed Supply Project Plan</p>	<p>Complete in the 2018 audit. The Molonglo River Park Concept Plan was prepared by EPSDD and endorsed in 2012. The concept plan details the zones for conservation, recreation and public access.</p> <p>An update on recreation areas and activities to resolve public access while maintaining and enhancing the conservation zones was provided and observed onsite. Of particular note was the Namarag Special Purpose Reserve. Namarag means 'wattle' in the Ngunnawal language and this special purpose reserve will serve as a strategically located recreational 'hub' and is situated between the residential areas of Denman Prospect (Stage 2) and Whitlam (Stage 3). The area was opened to the public in October 2021. As well as offering recreational activities to the public such as walking tracks, an events terrace, river access and an opportunity to learn about the Ngunnawal culture, it is also being actively restored back to native grassland and woodland habitat for the Pink-tailed Worm-lizard. The Namarag site was visited during the Molonglo Valley site visit on March 23rd, 2022.</p>	<p>Compliant</p>	<p>Complete</p>

9	Develop a management plan for the Molonglo River Park to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within the park (approximately 73 ha). See Section 4.6 for information about the content of management plans.	Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014) Molonglo River Reserve Reserve Management Plan (2019) FB735 Burn Plan Patch D and K2 forb enhancement Project Plan SPR, patch C, H, N BGW plantings Project Brief Erecting dead trees and utility poles to offset the loss of mature trees Design Collaboration and Exaptation in a Habitat Restoration Project	The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014) is the specific management plan for the Molonglo River Park and details the management activities that need to be undertaken in the area to ensure ecological condition of the BGW.	Compliant.	Ongoing
10	Implement the management plan for the Molonglo River Park to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within the park.	Molonglo River Reserve Reserve Management Plan (2019) Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014) Barrar Hill Restoration project information and education materials Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018) FB735 Burn Plan Patch D and K2 forb enhancement Project Plan SPR, patch C, H, N BGW plantings Project Brief Erecting dead trees and utility poles to offset the loss of mature trees Design Collaboration and Exaptation in a Habitat Restoration Project	The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 was completed in June 2014. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. This document is specific to the Molonglo River Park area of the Molonglo River Reserve. The Operational Plan details the management activities to be undertaken in the area to ensure the maintenance of the BGW. The Operational Plan also details enhancement activities to be undertaken such as weeding, restoration of habitats and restoration plantings. Maintenance and enhancement activities were viewed during the onsite visit with demonstrated evidence of weed control, restoration plantings of BGW and the ongoing forb enhancement program. Additionally, The Barrar Hill restoration site was visited and provided a great example of an ongoing restoration project undertaken for the enhancement of the ecological condition of the BGW. The site includes educational signage and is used as a community engagement source through webcams, guided visits / field trips and publically available studies. The site includes PYWL habitat restoration which is the focus of ongoing studies along with the Australian National University. Utility poles and remnant trees have been erected in the site to offset the absence of mature trees and provide various habitat options for different species. The Barrar Hill restoration site was visited during the site visit on March 23rd, 2022. OBSERVATION: The Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 has not been revised to cover the period 2018-2021 and beyond. There is no plan to revise this document although the Molonglo River Reserve Management Plan, 2019 Table 1.1 Section 7.1.2 states that 3 year operational plans will be developed for discrete areas that prioritise the on ground actions for each area. While there is evidence from the site visit and associated documentation provided that activities and projects are occurring for the maintenance and enhancement of the ecological condition of the BGW, the mechanism to assess and review the success and failures of the Operational Plan is not present, which is the purpose of a 3 yearly review. Additionally, given that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.	Non Compliant. Operational Plan has not been revised for 2018 and beyond, although this is a requirement of the Management Plan	Ongoing
11	Establish Patch GG as an offset site by incorporating the area into the National Arboretum.		Complete. On 22 January 2013 the ACT Government purchased 'Glenloch' from its former long-term lessees. In 2014 Patch GG was transferred for incorporation into the National Arboretum to enable management as an offset site.	Compliant	Closed
12	Develop a management plan for Patch GG to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within the park (approximately 44 ha). See Section 4.6 for information about the content of management plans.	Molonglo River Reserve Reserve Management Plan (2019) Arboretum Woodland Conservation Area Operational Plan, 2014-2017 (2014)	The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. Arboretum Woodland Conservation Area Operational Plan, 2014-2017 (2014) is the specific management plan for Patch GG and details the management activities that need to be undertaken in the area to ensure ecological condition of the BGW.	Compliant	Ongoing

13	Implement the management plan for Patch GG to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Arboretum Woodland Conservation Area Operational Plan, 2014-2017 (2014)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Patch GG BGW plantings</p> <p>Patch GG forb enhancement Project Brief</p> <p>SPR, patch C, H, N BGW plantings Project Brief</p> <p>Invasive plant control 2018-2022</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan.</p> <p>Arboretum Woodland Conservation Area Operational Plan (2014-2017) was completed in 2014. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. This document is specific to the Arboretum Woodland Conservation Area which includes Patch GG. The Operational Plan provides the specifics of maintenance and enhancement activities to be complete in the for BGW.</p> <p>Evidence was provided of ongoing maintenance and enhancement activities are taking place in Patch GG including removing exotic species through grazing and other control methods as well as continued enhancement of forbs in the woodland and restoration plantings. Enhancement activities and projects are informed by ongoing research. Monitoring, evaluation and improvements are conducted by PCS ecologists and respond to seasonal variations. Independent review of the results of the monitoring and research programs must be completed every five years and reported on. The independent report provides advice and recommendations for necessary amendments to Operational Plans to ensure that they are continuing to achieve the conservation outcomes and performance targets for Molonglo NES. The last review was for the period 2013-2017 and report completed in 2018. The next review is not planned until 2023 and therefore the independent assessment of the ongoing monitoring was not able to be included as part of the audit.</p> <p>OBSERVATION: The Arboretum Woodland Conservation Area Operational Plan (2014-2017) has not been revised to cover the period 2018-2021 and beyond</p> <p>The Molonglo River Reserve Management Plan, 2019 Table 1.1 Section 7.1.2 states that 3 year operational plans will be developed for discrete areas that prioritise the on ground actions for each area.</p> <p>While evidence has been provided that maintenance and enhancement of the ecological condition of the BGW is occurring, the mechanism to assess and review the success and failures of the Operational Plan is not present, which is the purpose of a 3 yearly review.</p> <p>Additionally, given that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	<p>Non-compliant</p> <p>Operational Plan has not been revised for 2018 and beyond.</p>	Ongoing
14	Develop management plans for Box-Gum Woodland patches C, H, and N (see Figure 3) to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within these areas. See Section 4.6 for information about the content of management plans.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>William Hovell Drive Conservation Area (NES Patches H, C1 and C2) Operational Plan, 2019-2022 (2019)</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan.</p> <p>William Hovell Drive Conservation Area (NES Patches H, C1 and C2) Operational Plan (2019-2022) was completed in 2018. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. This document is specific to Patches C and H (Patch N is included under the Arboretum Operational Plan). The Operational Plan provides the specifics of maintenance and enhancement activities to be complete for BGW.</p>	Compliant	Ongoing
15	Implement management plans for Box-Gum Woodland patches C, H, and N (see Figure 3) to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland within these areas.	<p>Molonglo River Reserve Management Plan (2019)</p> <p>William Hovell Drive Conservation Area (NES Patches H, C1 and C2) Operational Plan, 2019-2022 (2019)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>SPR, patch C, H, N BGW plantings Project Brief</p> <p>Invasive plant control 2018-2022</p> <p>Herbicide application causes declines in native species and increases in exotic species</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan.</p> <p>William Hovell Drive Conservation Area (NES Patches H, C1 and C2) Operational Plan (2019-2022) was completed in 2018. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. This document is specific to Patches C and H (Patch N is included under the Arboretum Operational Plan). The Operational Plan provides the specifics of maintenance and enhancement activities to be complete for BGW.</p> <p>Evidence was provided of ongoing maintenance and enhancement activities are taking place in Patches C and H including removing exotic species through grazing and other control methods and restoration plantings. Enhancement activities and projects are informed by ongoing research. Monitoring, evaluation and improvements are conducted by PCS ecologists and respond to seasonal variations. Independent review of the results of the monitoring and research programs must be completed every five years and reported on. The independent report provides advice and recommendations for necessary amendments to Operational Plans to ensure that they are continuing to achieve the conservation outcomes and performance targets for Molonglo NES. The last review was for the period 2013-2017 and report completed in 2018. The next review is not planned until 2023 and therefore the independent assessment of the ongoing monitoring was not able to be included as part of the audit.</p> <p>OBSERVATION: As with previous commitments; while evidence and data was provided that maintenance and enhancement activities are occurring, the fact that the Independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	<p>Compliant with Observation</p>	Ongoing

16	Develop management plans for Box-Gum Woodland patches I, L, M and P (see Figure 3 of the NES Plan) to provide for the maintenance of the ecological condition of Box-Gum Woodland within these areas.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Block 403 Woodland Conservation Area (NES Patches P1, P2 and P3) Operational Plan, 2018-2021 (2018)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan.</p> <p>Block 403 Woodland Conservation Area (NES Patches P1, P2 and P3) Operational Plan (2018-2021) was completed in 2018. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. This Operational Plan is specific to Patch P (Patches I, L, & M are managed under a Rural Lease with a Land Management Agreement). The Operational Plan provides the specifics of maintenance and enhancement activities to be complete for BGW.</p> <p>OBSERVATION: This commitment will not be compliant moving forward until such a time as the non-compliance is addressed for the out of date Operational Plans.</p>	Compliant with Observation	Ongoing
17	Undertake fuel hazard management in patches I, L, M and P (see Figure 3) with the management and protection of Box-Gum Woodland as a critical consideration (within the constraints of ensuring the safety of the urban population).	<p>Block 403 Woodland Conservation Area (NES Patches P1, P2 and P3) Operational Plan, 2018-2021 (2018)</p> <p>Bushfire Operations Plan 2021/22, Environment, Planning and Sustainable Development Directorate</p> <p>Bushfire Prone Areas map - ACTmapi</p> <p>Bushfire Operational Plan map - ACTmapi</p> <p>2021-22 Bushfire Operations Plan Map 6 & Map 8</p> <p>Strategic Bushfire Management Plan (2019-2024)</p> <p>Ecological Guidelines for Fire, Fuel and Access Management Operations (2019)</p>	<p>Block 403 Woodland Conservation Area (NES Patches P1, P2 and P3) Operational Plan (2018-2021) states the management objectives for fire for Patch P with the management and protection of BGW a critical consideration.</p> <p>The EPSDD Bushfire Operations Plan(BOP) is derived from the 5 year Strategic Bushfire Management Plan (SBMPs). The most recent version was revised in 2019. The BOP details the specific timing, type and location of fuel reduction, access and infrastructure activities to be undertaken. The BOP covers patches I, L, M and P and takes into critical consideration the management and protection of Box Gum Woodland. A prescribed ecological burn has been undertaken outside the development boundary of Denman Prospect in the Spring Valley area which includes Patches I, L, M & P. Hazard reduction burns have not been conducted in the area. All burns are approved through a strict process which is reviewed by land managers and ecologists.</p>	Compliant	Ongoing
18	Annually monitor the condition of the Box-Gum Woodland patches I, L, M, P (total area of 45.4 ha) on the western boundary of East Molonglo to ensure that fuel hazard management is not negatively impacting on the Box-Gum Woodland values.	<p>EPSDD Molonglo Valley Strategic Assessment Annual Report 2020-2021 Appendix A - Vegetation Condition Monitoring Summary Table</p> <p>Molonglo River Reserve Procedures Manual: Monitoring Vegetation and Habitat Condition (2014)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>See condition monitoring results Excel</p>	<p>The Molonglo River Reserve Procedures Manual: Monitoring Vegetation and Habitat Condition, 2014 and Vegetation Condition Monitoring Summary demonstrate that management and protection of Box Gum Woodland has been considered in the development of plans related to fuel hazard management and that annual monitoring of the condition of the Box Gum Woodland in Patches I, L, M and P is undertaken. Examples of vegetation condition monitoring survey results were provided in the form of Excel spreadsheets and a summary of the results provided.</p> <p>OBSERVATION: While evidence has been provided that the condition of BGW has been monitored annually to ensure that fuel hazard management is not negatively impacting on the Box Gum Woodland values the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023. As a result, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	Compliant with Observation	Ongoing

<p>19) Should the monitoring in Action 18 show that:</p> <ul style="list-style-type: none"> • for a period of two consecutive years; • more than 30% of the combined area of patches I, L, M, P (total area of 45.4 ha) no longer meets the EPBC Act listing criteria for Box-Gum Woodland; <p>then the ACT Government will establish an offset site within two years of those monitoring results that meets the following criteria:</p> <ul style="list-style-type: none"> • the offset will be in the Molonglo Valley; and • the offset will include a minimum of 90.8 ha of EPBC Act listed Box-Gum Woodland. 	<p>EPSDD Molonglo Valley Strategic Assessment Annual Report 2020-2021 Appendix A - Vegetation Condition Monitoring Summary Table</p> <p>Molonglo River Reserve Procedures Manual: Monitoring Vegetation and Habitat Condition (2014)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Veg condition monitoring results Excel</p>	<p>Documents reviewed demonstrate that management and protection of Box Gum Woodland has been taken into consideration in the development of plans related to fuel hazard management in Patches I, L, M and P. EPSDD Molonglo Valley Strategic Assessment Annual Report 2020-2021 Appendix A - Vegetation Condition Monitoring Summary Table shows the trends of the vegetation condition from summarised results. While there has been a slight decline against the baseline of Patch P2, likely due to a tree fall increasing leaf litter cover, overall the patches all continue to meet the listing criteria for BGW under the EPBC Act.</p> <p>OBSERVATION: While evidence has been provided that the condition of BGW has been monitored annually to ensure that fuel hazard management is not negatively impacting on the Box Gum Woodland values the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023. As a result, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	<p>Compliant with Observation</p>	<p>Ongoing</p>
<p>20) Should an offset site be required under Action 19, then the offsite site will be established as a Nature Reserve and managed consistently with the other offset sites (Kama Nature Reserve, Molonglo River Park, Patch GG).</p>		<p>An offset site is not required based on results in Commitment 19.</p>	<p>Compliant</p>	<p>Ongoing</p>
<p>21) Manage the Box-Gum Woodland that occurs in West Molonglo in accordance with the terms of a Land Management Agreement (LMA). LMAs are required by Part 9.7 of the Planning and Development Act 2007 for all non-urban leases. The LMA covering the BGW in West Molonglo contains a Land Action Plan which ensures that:</p> <ul style="list-style-type: none"> • the ecological functioning and integrity of BGW on the lease is retained and improved; • the extent and character of the BGW is preserved; and • there is an Action Plan which details the activities, timeframes and performance measures put in place to ensure the conservation outcomes are met. 		<p>No further action required. As determined in the previous audit the Box Gum Woodland set aside in West Molonglo are obsolete. The area had been set aside as nature reserve through Territory Plan Variation 351 approved in 2015 which commenced in July, 2016.</p>	<p>Compliant</p>	<p>Complete</p>
<p>22) West Molonglo is zoned broadacre and is not part of the ACT Government's current land release program. In the event that West Molonglo is developed in the future for broadacre uses or residential development then, subject to confirmatory ecological assessment of Box-Gum Woodland, the area of EPBC Act Box-Gum Woodland that occurs there will be set aside as a Nature Reserve.</p>		<p>No further action required. As determined in the previous audit the Box Gum Woodland set aside in West Molonglo are obsolete. The area had been set aside as nature reserve through Territory Plan Variation 351 approved in 2015 which commenced in July, 2016.</p>	<p>Compliant</p>	<p>Complete</p>

23	Establish and manage an off-site restoration project, as an indirect offset, for Box-Gum Woodland. See Section 4.7 for information about the off-site restoration project.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>https://www.environment.act.gov.au/ACT-parks-conservation/environmental-offsets/strategic-assessments/molonglo-valley-strategic-assessment/barrer-hill-restoration-project</p> <p>'Life Support' informational video</p> <p>Erecting dead trees and utility poles to offset the loss of mature trees</p> <p>Design Collaboration and Exaptation in a Habitat Restoration Project</p> <p>Barrer Hill restoration project site visit, March 23rd, 2022.</p>	<p>Barrer Hill Restoration project has been established and managed as an off-site restoration project as an indirect offset for Box Gum Woodland. The site was established in 2014 and is a 50ha area on the northern bank of the Molonglo River , across from the suburb of Coombs. The area used to be planted with non-native pines and used for livestock grazing. Barrer Hill has rocky grasslands home to the Pink Tailed Worm Lizard and forms part of the Molonglo River Reserve which is a recreational area for the suburbs being developed in Molonglo.</p> <p>The Barrer Hill Restoration project site was visited during the Molonglo Valley site visit on March 23rd, 2022 and evidence of the ongoing restoration of the site was observed first hand. Restoration activities have included removing pines and progressively replacing them with native shrubs and trees, including Bo Gum among others. Other activities have included returning habitat structures to the area such as rocks, logs and dead trees.</p> <p>Activities completed at the Barrer Hill Restoration site include:</p> <p>In 2014 a total of 15,607 plants, 1,505 trees and shrubs and 14,102 ground covers were planted.</p> <p>In 2016/17 Stage 3 commenced with 10 vertical habitat structures (5 utility poles and 5 mature trees) , 400 logs and 80 tonnes of surface rock were added to provide habitat.</p> <p>In 2017/18 a number of grassland restoration sites were also completed totalling 0.3ha.</p> <p>In 2019 the 'Life Support' habitat structure was constructed which involved relocating a 400 year old remnant yellow box tree to the area to then be used as habitat for native wildlife with hollows, perches and peeling bark. An additional 500 plants were added.</p>	Compliant	Complete
24	Protection of the Natural Temperate Grassland within the Kama Nature Reserve	<p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021) Table 3</p> <p>Vegetation Condition data 2013_2018. Excel Spreadsheet</p> <p>Vegetation condition 2019 onwards. Excel Spreadsheet.</p> <p>Vegetation condition_structure 2019 onwards. Excel Spreadsheet.</p> <p>Vegetation condition_weeds 2019 onwards. Excel Spreadsheet.</p> <p>Smith, A. L., Barrett, L. B., & Milner R. N. C. (2018). Annual mowing maintains plant diversity in threatened temperate grasslands. Applied Vegetation Science. International Association for Vegetation Science.</p> <p>Research paper submitted to scientific journal - Smith, A. L., Kanjithanda, R., Hayashi, T., French, J., & Milner, R. (2022). Herbicide application causes declines in native species and increases in exotic species in threatened temperate grasslands. Biological Conservation.</p>	<p>Table 3 of EPSDD Annual Report states that there have been no impacts to the Natural Temperate Grasslands. Detailed vegetation condition monitoring data was provided demonstrating the ongoing commitment to protection of the NTG. Records of native and exotic species was provided along with an assessment of the overall condition. Records date from 2013 to present.</p> <p>Ongoing research is being conducted and applied to the management of the Natural Temperate Grasslands to ensure that diversity is maintained and exotic species are optimally controlled. For example, the use of mowing (while practicing proper machinery hygiene) and ecological burns to maintain diversity rather than relying on herbicides which studies show leads to a decrease in native species along with the exotic species.</p> <p>The Field Guide to Plants of the Molonglo Valley was released in 2018 and is available for purchase. The purpose of the guide was to promote the ecological values of the reserve with the aim to help residents of the area to protect the reserve.</p>	Compliant	Ongoing

25	Develop a management plan for the Kama Nature Reserve to provide for the maintenance and enhancement of the ecological condition of Natural Temperate Grassland within the reserve. See Section 4.6 for information about the content of management plans.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>Kama is an offset site (NES patches a1, A2, B1, B2, B3 and O1). The area is incorporated into the Molonglo River Reserve which includes 2 existing reserves (Lower Molonglo River Nature Reserve and Kama Nature Reserve) and a section that includes the river corridor up to Scrivener Dam. Suburbs will be developed to the east of Kama, beyond a buffer as part of Stage 3 development.</p> <p>The Molonglo River Reserve Management Plan was finalised in 2019. The Management Plan covers the entire reserve area including Kama. The Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014) is the specific management plan for the Kama Nature Reserve and details the management activities that need to be undertaken in the area to ensure ecological condition of the NTG.</p>	Compliant.	Ongoing
26	Implement the management plan for the Kama Nature Reserve to provide for the maintenance and enhancement of the ecological condition of Natural Temperate Grassland within the reserve.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Patch B for enhancement Project Plan</p> <p>Threatened species translocation plan - Delma</p> <p>Translocation of the striped legless lizard to Kama nature reserve - proposal</p> <p>Invasive plant control 2018-2022</p> <p>Kama burn plan FB389 copy</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019. The plan defines the MNES that must be protected and the NTG areas that are to be maintained and enhanced in Kama. Molonglo River Reserve (Kama) Operational Plan, 2014-2017 details the management activities that need to be undertaken in the area to ensure the maintenance of the NTG. The Operational Plan also details enhancement activities to be undertaken such as weeding, restoration of habitats and restoration plantings.</p> <p>Evidence of both maintenance and enhancement were demonstrated during the site visit. Enhancement activities and projects are informed by ongoing research. Monitoring, evaluation and improvements are conducted by PCS ecologists and respond to seasonal variations. Independent review of the results of the monitoring and research programs must be completed every five years and a report produced from this review which then provides advice and recommendations for necessary amendments to Operational Plans to ensure that they are continuing to achieve the conservation outcomes and performance targets for Molonglo NES. The last review was of the period 2013-2017 and the report completed in 2018. The next review is not planned until 2023 and therefore the independent assessment of the ongoing monitoring was not able to be included as part of the audit.</p> <p>One example of enhancement activities observed from the site visit - A number of areas within Kama Nature Reserve have undergone a 'scraping' process. The top 10-15cm of soil was been removed and direct seeded with native grasses and wildflowers. The scrapings were completed approximately 6 years ago and are now well established and providing good quality ground cover as well as acting as a source of seed for nearby areas. Many examples of enhancement projects and activities were presented during onsite discussions and also through documentation provided following the onsite visit.</p> <p>OBSERVATION: The Molonglo River Reserve (Kama) Operational Plan, 2014-2017 has not been revised to cover the period 2018-2021 and beyond. The Molonglo River Reserve Management Plan, 2019 Table 1.1 Section 7.1.2 states that 3 year operational plans will be developed for discrete areas that prioritise the on ground actions for each area. Additionally, the Kama Operational Plan page 1 states 'This Plan will be reviewed every 3 years and will be put into effect through works programs, which will be reviewed and updated annually.'</p> <p>While there is evidence from the site visit and associated documentation provided that activities and projects are occurring for the maintenance and enhancement of the ecological condition of the NTG, the mechanism to assess and review the success and failures of the Operational Plan is not present, which is the purpose of a 3 yearly review.</p> <p>Additionally, given that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	<p>Non Compliant.</p> <p>Operational Plan has not been revised for 2018 and beyond.</p>	Ongoing

27	Establish a buffer outside the Kama Nature Reserve between the reserve and the proposed development area, and allow for appropriate uses consistent with nature conservation uses of the reserve. The buffer will be developed to ensure that fire management is undertaken outside of the Kama Nature Reserve and will provide protection against urban edge effects.	<p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Kama Interface Management Strategy (Capital Ecology, 2016)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Whitlam Stage 1 and 2 Residential Estate Housing Development Guide (2020)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>Section 3.3 of the Molonglo River Reserve Management Plan details the requirement of the Kama Buffer. The urban edge buffer will be between the eastern edge of Kama and the urban development with the aim of protecting Kama's high conservation value from urban edge impacts. The buffer will occur outside of the Molonglo River Reserve (which includes Kama). Section 3.3 states that the details of the treatment and boundary of the buffer will be included as part of the planning for Molonglo Stage 3. It is also stated that the treatment and boundary of the buffer must be consistent with the recommendations in the Kama Interface Management Strategy (Capital Ecology). 3.3.2 of the Management Plan details fire management in the buffer which will be managed as an Asset Protection Zone, while Kama is managed as a Strategic Fire Fighting Advantage Zone.</p> <p>Section 6.17 of the Stage 3 Planning and Design Framework (2019) provides details of the buffer to Kama Nature Reserve. The PDF lists detailed considerations that must be followed in the design plan for the buffer. The design plan for the buffer is required to be endorsed by the Conservator of Flora and Fauna, The Parks and Conservation Service and the Authority. The PDF also states that an environmental restoration plan for the buffer, approved by the Conservator of Flora and Fauna, is required to be lodged with the estate development plan development application and on advice from the Conservator, the buffer to the Kama Nature reserve is to be incorporated into the Territory Plan at the earliest opportunity.</p> <p>The Kama Interface Management Strategy lists a summary of recommended interface arrangements. The design characteristics of the buffer include:</p> <ol style="list-style-type: none"> 1. A buffer width of 200m along the northern portion of the kama interface, tapering to 70m along the southern portion. 2. Establishment of 4 Interface Management Zones (IMZs). 1 - Kama Nature Reserve, 2 - Interface Buffer - Woodland Regeneration, 3 - Interface Buffer - Inne Asset Protection Zone and 4 - Urban Development allowing for targeted management. <p>The Management Strategy lists the activities to occur during establishment and development of the buffer based on the identified threats and ongoing management and maintenance requirements are identified such as weed monitoring and management, control of domestic animals, community education and involvement and control and management of access to reduce human impacts.</p> <p>The buffer has not been established at the time of this audit as was required to be prior to development of stage 3 commencing. Construction on Whitlam (Stage 3) has commenced, as was evidenced during the onsite visit. The previous audit observed that this was likely to be controversial in finalising and has proved as such.</p> <p>OBSERVATION: There is no clear articulation of the actual buffer and it has not been physically established. Therefore, there is ambiguity regarding the buffer in the documents which will lead to potential impacts to the buffer zone and a decrease to the habitat value for the surrounding significant vegetation or MNES. If buffers aren't maintained, that has a potential impact to the status of the MNES areas.</p> <p>Some development of the Whitlam suburb has commenced as was observed during the site visit. There are ongoing discussions between the ACT Parks and Conservation Service (PCS) and the Suburban Land Agency (SLA) as to when the buffer will be established. PCS require the buffer to be established prior to construction whereas SLA are pushing for the buffer to be established once construction has begun. Due to the funding for the buffer being tied to construction in Stage 3, this commitment is not in compliance. It is recommended in order to bring this commitment back into compliance, that the mechanism for funding release not to be tied to construction activities so that the buffer can be established prior to construction.</p>	Non-Compliant Timeframe for buffer establishment not met.	Ongoing
28	Ensure that the combined impacts on high and moderate quality PTWL habitat from development within East Molonglo and construction of infrastructure within the river corridor do not exceed 27 ha.	<p>Molonglo Valley Stage 2 Planning Design Framework (2012)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo Group Centre and Surrounds Draft Concept Plan (2021)</p>	<p>The Molonglo Valley Planning and Design Framework Stage 2 and Stage 3 (finalised in 2019) both set the principles for achieving the protection of species and habitat as both the stages were and are developed.</p> <p>The Molonglo River Reserve Management Plan (2019) details how the river corridor design process is focussed on minimising impacts to MNES in the area including the PTWL habitat. Section 9 of the Management Plan details the existing and anticipated infrastructure in the Molonglo River Reserve and how they will be located and designed in such a way that enhances the scenic value and protects the natural ecological values. Any infrastructure required for the region will be located outside the reserve where possible and only within the reserve where it is clearly demonstrated that there are no other feasible alternatives available and in such a case must be approved under ACT legislation.</p> <p>Work is continuing to progress in the Molonglo Valley with the Stage 3 PDF having been finalised in 2019 and ongoing infrastructure projects being progressed to support the urban development. The EPSDD Annual Report for 2020-2021 Tables 3 lists the Impacts on MNES by hectare to date (2.34ha for PTWL habitat as at June 30, 2021 with 24.66ha remaining in the allowance). Figure 4 shows the PTWL habitat areas that have been cleared to date broken down by Patch, Reserve and Development Areas. Additional notes received from EPSDD / PCS state in regard to PTWL habitat "if all high and moderate habitat within the Development Areas were removed to facilitate the future urban development the max disturbance would be 17.95ha... There is a small amount of impact planned for the East West Arterial and will be calculated at Detail Design stage" indicating that the potential future impact to PTWL habitat would be within the 27ha allowance and any future proposed impact will need to be approved.</p>	Compliant	Ongoing

29	Amend the East Molonglo river corridor boundary in stages 2 and 3 respectively with a view to reducing impacts to high and moderate quality PTWL habitat. This process will ensure that connectivity within the river corridor is maintained.	<p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Molonglo Group Centre and Surrounds Draft Concept Plan (2021)</p> <p>Planning and Development (Plan Variation No 360) Approval (2020)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo Town Centre Environs Growth Servicing, Sewer, Water and Stormwater Servicing (2020)</p>	<p>The Molonglo Valley Planning and Design Framework Stage 3 was finalised in February, 2019 with revisions to the river corridor boundary of East Molonglo included. Additionally, in January, 2020 the river corridor boundary was again adjusted under the Planning and Development (Plan Variation No 360) Approval 2020 resulting from the approval of the Molonglo River Reserve Management Plan (2019). Overall the river corridor boundary has been increased from 489.66ha to 503.87ha with an increase of 1.01ha of Box Gum Woodland and 0.46ha of Pink Tailed Worm Lizard habitat within the reserve area. There has also been an increase in the area of PTWL habitat in the development areas from 18.18ha to 18.52ha.</p> <p>The Molonglo Group Centre and Surrounds Draft Concept Plan (2021) has informed changes to the Molonglo River Corridor boundary. Additional notes from EPSDD / PCS state "The most significant boundary change was to avoid large PTWL and BGWL habitat areas north of the Molonglo Group Centre., noting the increase to PTWL and BGWL along the north east boundary of the Group Centre. Also through the preparation of the Concept Plan Indesco was engaged to produce growth servicing plans to demonstrate how all of the servicing infrastructure could be built inside the Development area". These plans have been provided in the audit process. It is noted that the river corridor boundary may be revised through the Detail Design stages and approval of any Estate Development Plans which allow for minor refinements, although these must also be in line with the NES Plan.</p>	Compliant	Ongoing
30	Design the infrastructure that will occur in the river corridor to minimise impacts to high and moderate quality PTWL habitat.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo Group Centre and Surrounds Draft Concept Plan (2021)</p>	<p>The Molonglo River Reserve Management Plan (2019) details how the river corridor design process is focussed on minimising impacts to MNES in the area including the PTWL habitat. Section 9 of the Management Plan details the existing and anticipated infrastructure in the Molonglo River Reserve and how they will be located and designed in such a way that enhances the scenic value and protects the natural ecological values. Any infrastructure required for the region will be located outside the reserve where possible and only within the reserve where it is clearly demonstrated that there are no other feasible alternatives available and in such a case must be approved under ACT legislation.</p> <p>Work is continuing to progress in the Molonglo Valley with the Stage 3 PDF having been finalised in 2019 and ongoing infrastructure projects being progressed to support the urban development. The EPSDD Annual Report for 2020-2021 Tables 3 lists the impacts on MNES by hectare to date 7.34ha for PTWL habitat with 24.66 ha remaining in the allowance). Figure 4 shows the PTWL habitat areas that have been cleared to date broken down by Patch, Reserve and Development Areas. Additional notes received from EPSDD / PCS state in regard to PTWL habitat "if all high and moderate habitat within the Development Areas were removed to facilitate the future urban development the max disturbance would be 17.95ha... There is a small amount of impact planned for the East West Arterial and will be calculated at Detail Design stage" Indicating that the potential future impact to PTWL habitat would be within the 27ha allowance and any future proposed impact will be prior approved.</p>	Compliant	Ongoing
31	Develop, implement and independently monitor Construction Environmental Management Plans (CEMPs) to ensure that unforeseen direct or indirect impacts from construction activities within the development area and the river corridor are avoided. See Section 4.5 for information about the content of CEMPs.	<p>CEMP conservator guidelines DRAFT</p> <p>CEMP Whitlam Stage 2A (2020)</p> <p>CEMP Lower Deep Creek Pond (2021)</p> <p>Chain of email communication regarding sediment and erosion control failure for Deep Creek (February 2020)</p> <p>Observations made of Denman Prospect construction activities during onsite visit 23rd March, 2022.</p>	<p>Construction Environmental Management Plans are a requirement for geotechnical and civil construction works to occur. There is demonstrated evidence that the development, review and endorsement of CEMPs continues to occur. The development being undertaken by third parties. Correspondence provided from an environmental incident in 2020 indicated that while implementation was occurring, the controls and management practices implemented were not suitable to restrict sediment laden waters from entering the river corridor after the failure of a sediment pond. Photographic evidence provided in correspondence indicated a lack of compliance with the Environment Protection Guidelines for Construction and Land Development in the ACT (2011). It could not be verified if any regulatory action relating to Pollution of Waters under the Environment Protection Act 1997 occurred. The event in 2020 could not be classified as unforeseen.</p> <p>During the onsite visit to the Molonglo Valley observations were made of an active construction site at Denman Prospect. It was noted that the height of the stockpiles, widescale clearing, steep slopes and lack of visible onsite controls raised concerns as to whether suitable erosion and sediment control measures were in place across the site. It was noted that PCS implement measures at the site boundary to restrict sediment movement, however it is the responsibility of the developers to ensure that all appropriate sediment and erosion control measures are within the site boundary. The visual assessment indicated that the approach did not appear to be not compliant with the Blue Book or ACT requirements.</p> <p>Limited evidence was provided for the independent monitoring of the sites. No site inspection records, with the exception for the 2020 environmental incident were provided to demonstrate proactive and effective monitoring.</p> <p>OBSERVATION: Construction Environmental Management Plans, the controls required for the management of erosion and sediment controls and independent inspections are required to be dynamic as the construction activities and risk profile of areas changes, thus the approach is required to shift. An adaptive approach for the implementation and independent monitoring of the CEMP was not able to be demonstrated for this audit period. It is recommended therefore that the approach and frequency of independent monitoring and reporting compliance with the CEMPs be reviewed.</p>	Non Compliant. Independent monitoring and reporting of CEMPs unable to be verified.	Ongoing

32	Develop a management plan for the Kama Nature Reserve to provide for the maintenance and enhancement of the ecological condition of all PTWL habitat within the reserve (approximately 6 ha which includes 3.33 ha of high and moderate quality habitat). See Section 4.6 for information about the content of management plans.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>Kama is an offset site (NES patches a1, A2, B1, B2, B3 and O1). The area is incorporated into the Molonglo River Reserve which includes 2 existing reserves (Lower Molonglo River Nature Reserve and Kama Nature Reserve) and a section that includes the river corridor up to Scrivener Dam. Suburbs will be developed to the east of Kama, beyond a buffer as part of Stage 3 development.</p> <p>The Molonglo River Reserve Management Plan was finalised in 2019 which covers the entire reserve area including Kama. The Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014) is the specific management plan for the Kama Nature Reserve and details the management activities that need to be undertaken in the area to ensure ecological condition of the PTWL habitat.</p>	Compliant.	Ongoing
33	Implement the management plan for the Kama Nature Reserve to provide for the maintenance and enhancement of the ecological condition of all PTWL habitat within the reserve.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Project Plan Molonglo River Reserve (Patch K OAPZ) Pink-tailed Worm-lizard habitat restoration</p> <p>Project Plan - Pink-tailed Worm-lizard habitat restoration (NES Patch K) – Stage 3 (2015/16)</p> <p>Project Plan - Pink-tailed Worm-lizard habitat restoration (Coombs) – Stage 4 (2016/17)</p> <p>Manuscript - 'Stepping-stones' improve connectivity for threatened, rock dwelling Pink-tailed Worm-lizard</p> <p>Kama Nature Reserve site visit, 23rd March, 2022.</p>	<p>Molonglo River Reserve Management Plan finalised in 2019. The plan defines the MNES that must be protected and the PTWL habitat within Kama to be maintained and enhanced.</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 details the management activities that need to be undertaken in the area to ensure the maintenance of the PTWL habitat. The Operational Plan also details enhancement activities to be undertaken such as weeding, restoration of habitats and restoration plantings.</p> <p>Evidence of both maintenance and enhancement were demonstrated during the site visit. Several sites within the Kama Nature Reserve have undergone habitat restoration works for the Pink Tailed Worm Lizard with rock from nearby developments being brought in and placed for habitat restoration purposes. These rock habitat patches were observed during the site visit. According to Ecologist Dr Richard Milner from ACT Parks and Conservation Services, each year students from the Australian National University come to the site and conduct monitoring activities of the habitats and turn the rocks to search for the PTWL. Demonstrated evidence of ongoing research and activities was provided for the enhancement of the PTWL habitat.</p> <p>Additionally, ACT PCS conducts ongoing management activities which are all aimed at enhancing the ecological condition of the PTWL. These activities include weed control and enhancement of native forbs and grasslands. Enhancement activities and projects are informed by ongoing research. Monitoring, evaluation and improvements are conducted by PCS ecologists and respond to seasonal variations. Independent review of the results of the monitoring and research programs must be completed every five years and reported on. The independent report provides advice and recommendations for necessary amendments to Operational Plans to ensure that they are continuing to achieve the conservation outcomes and performance targets for Molonglo NES. The last review was for the period 2013-2017 and report completed in 2018. The next review is not planned until 2023 and therefore the independent assessment of the ongoing monitoring was not able to be included as part of the audit.</p> <p>OBSERVATION: The Molonglo River Reserve (Kama) Operational Plan, 2014-2017 has not been revised to cover the period 2018-2021 and beyond. There is no plan to revise this document although the Molonglo River Reserve Management Plan, 2019 Table 1.1 Section 7.1.2 states that 3 year operational plans will be developed for discrete areas that prioritise the on ground actions for each area. Additionally, the Kama Operational Plan page 1 states 'This Plan will be reviewed every 3 years and will be put into effect through works programs, which will be reviewed and updated annually.'</p> <p>While there is evidence from the site visit and associated documentation provided that activities and projects are occurring for the maintenance and enhancement of the ecological condition of the PTWL habitat, the mechanism to assess and review the success and failures of the Operational Plan is not present, which is the purpose of a 3 yearly review.</p> <p>Additionally, given that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	Non Compliant. Operational Plan has not been revised for 2018 and beyond.	Ongoing

34	Establish a buffer outside the Kama Nature Reserve between the reserve and the proposed development area, and allow for appropriate uses consistent with nature conservation uses of the reserve. The buffer will be developed to ensure that fire management is undertaken outside of the Kama Nature Reserve and will provide protection against urban edge effects.	<p>Molonglo River Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Kama) Operational Plan, 2014-2017 (2014)</p> <p>Kama Interface Management Strategy (Capital Ecology, 2016)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Planning and Development (Plan Variation No 360) Approval (2020)</p> <p>Discussions with Dr Richard Milner, Ecologist with ACT Parks and Conservation Service</p>	<p>Section 3.3 of the Molonglo River Reserve Management Plan details the requirement of the Kama Buffer. The urban edge buffer will be between the eastern edge of Kama and the urban development with the aim of protecting Kama's high conservation value from urban edge impacts. The buffer will occur outside of the Molonglo River Reserve (which includes Kama). Section 3.3 states that the details of the treatment and boundary of the buffer will be included as part of the planning for Molonglo Stage 3. It is also stated that the treatment and boundary of the buffer must be consistent with the recommendations in the Kama Interface Management Strategy (Capital Ecology). 3.3.2 of the Management Plan details fire management in the buffer which will be managed as an Asset Protection Zone, while Kama is managed as a Strategic Fire Fighting Advantage Zone.</p> <p>Section 6.17 of the Stage 3 Planning and Design Framework (2019) provides details of the buffer to Kama Nature Reserve. The PDF lists detailed considerations that must be followed in the design plan for the buffer. The design plan for the buffer is required to be endorsed by the Conservator of Flora and Fauna, The Parks and Conservation Service and the Authority. The PDF also states that an environmental restoration plan for the buffer, approved by the Conservator of Flora and Fauna, is required to be lodged with the estate development plan development application and on advice from the Conservator, the buffer to the Kama Nature reserve is to be incorporated into the Territory Plan at the earliest opportunity.</p> <p>The Kama Interface Management Strategy lists a summary of recommended interface arrangements. The design characteristics of the buffer include:</p> <ol style="list-style-type: none"> 1. A buffer width of 200m along the northern portion of the kama interface, tapering to 70m along the southern portion. 2. Establishment of 4 Interface Management Zones (IMZs). 1 - Kama Nature Reserve, 2 - Interface Buffer - Woodland Regeneration, 3 - Interface Buffer - Inne Asset Protection Zone and 4 - Urban Development allowing for targeted management. <p>The Management Strategy lists the activities to occur during establishment and development of the buffer based on the identified threats and ongoing management and maintenance requirements are identified such as weed monitoring and management, control of domestic animals, community education and involvement and control and management of access to reduce human impacts.</p> <p>The buffer has not been established at the time of this audit as was required to be prior to development of stage 3 commencing. Construction on Whitlam (Stage 3) has commenced, as was evidenced during the onsite visit. The previous audit observed that this was likely to be controversial in finalising and has proved to be such.</p> <p>OBSERVATION: There is no clear articulation of the actual buffer and it has not been physically established. Therefore, there is ambiguity regarding the buffer in the documents which will lead to potential impacts to the buffer zone and a decrease to the habitat value for the surrounding significant vegetation or MNES. If buffers aren't maintained, that has a potential impact to the status of the MNES areas.</p> <p>Some development of the Whitlam suburb has commenced as was observed during the site visit. There are ongoing discussions between the ACT Parks and Conservation Service (PCS) and the Suburban Land Agency (SLA) as to when the buffer will be established. PCS require the buffer to be established prior to construction whereas SLA are pushing for the buffer to be established once construction has begun. Due to the funding for the buffer being tied to construction in Stage 3, this commitment is not in compliance. It is recommended in order to bring this commitment back into compliance, that the mechanism for funding release not to be tied to construction activities so that the buffer can be established prior to construction.</p>	Non-Compliant Timeframe for buffer establishment not met.	Ongoing
35	Develop a Park Concept Plan for the "Molonglo River Park" which will occur along the East Molonglo river corridor. This Plan will establish management zones within the Park, specifically identifying areas to be designated for conservation as well as identifying recreation areas and resolving public access. A key focus of this will plan will be the protection of high and moderate quality PTWL habitat.	Molonglo River Park Concept Plan (2012)	Complete in previous audit	Compliant	Complete
36	Develop a management plan for the Molonglo River Park to provide for the maintenance and enhancement of the ecological condition of high and moderate quality PTWL habitat within the park (approximately 62 ha). See Section 4.6 for information about the content of management plans.	<p>Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p>	The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014) is the specific management plan for the Molonglo River Park and details the management activities that need to be undertaken in the area to ensure ecological condition of the PTWL habitat.	Compliant.	Ongoing

37	Establish a 20 m buffer around high and moderate quality Pink-tailed Worm Lizard habitat (other than, for example the areas to be impacted by the bridge crossings and strategically placed walking tracks) within the East Molonglo river corridor. Manage these areas to ensure the maintenance of their conservation value. Management measures (as outlined in Section 3) will be incorporated into the management plan for the river corridor.	<p>Molonglo River Park Concept Plan (2012)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Molonglo Valley site visit, 23rd March, 2022</p>	<p>The Molonglo River Park Concept Plan (2012) page 36 addresses the requirement of a 20m buffer zone around the PTWL habitat. Figure 8: Opportunities and Constraints: Environment identifies the buffers around the high and moderate quality PTWL habitat.</p> <p>The Molonglo River Reserve Management Plan (2019) also states the requirements for the PTWL 20m buffer. Section 8.4.1 states that where there are areas of high intensity use, those areas will be lightly fenced to indicate their presence and interpretation provided. Any pedestrian trails in the vicinity of medium and high quality PTWL habitat will be outside the 20m buffer and only within subject to consideration by a qualified ecologist. Where it is not possible to avoid the habitat, raised walkways will be used to minimise impact. Fire management is in alignment with the Molonglo River Reserve Management Plan and ecological burns are conducted when the timing is optimal. Buffers (fencing) around the PTWL habitat were observed during the site visit and discussed with Ecologist Dr Richard Milner while observing the habitat restoration areas.</p>	Compliant	Ongoing
38	Implement the management plan for the Molonglo River Park to provide for the maintenance and enhancement of the ecological condition of high and moderate quality PTWL habitat within the park.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 (2014)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Restoration rocks: integrating abiotic and biotic habitat</p> <p>PTWL habitat extension research manuscript DRAFT</p> <p>Project_Plan 2014_15 PTWL restoration works NES Patch K</p> <p>Project_Plan 2015_16 PTWL restoration works NES Patch K</p> <p>Project_Plan 2016_17 PTWL restoration works Coombs</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 was completed in June 2014. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. This document is specific to the Molonglo River Park area of the Molonglo River Reserve. The Operational Plan details the management and enhancement activities to be undertaken in the area to ensure the maintenance of the PTWL habitat. Enhancement activities detailed include weeding, restoration of habitats and restoration plantings. Evidence was provided of ongoing maintenance and enhancement activities are taking place in The Molonglo River Park including restoration of rock habitats and native plants re-establishment. Enhancement activities and projects are informed by ongoing research. Monitoring, evaluation and improvements are conducted by PCS ecologists and respond to seasonal variations. Independent review of the results of the monitoring and research programs must be completed every five years and reported on. The independent report provides advice and recommendations for necessary amendments to Operational Plans to ensure that they are continuing to achieve the conservation outcomes and performance targets for Molonglo NES. The last review was for the period 2013-2017 and report completed in 2018. The next review is not planned until 2023 and therefore the independent assessment of the ongoing monitoring was not able to be included as part of the audit.</p> <p>OBSERVATION: Molonglo River Reserve (Urban Section - 'the PARK') Operational Plan, 2014-2017 has not been revised to cover the period 2018-2021 and beyond. The Molonglo River Reserve Management Plan, 2019 Table 1.1 Section 7.1.2 states that 3 year operational plans will be developed for discrete areas that prioritise the on ground actions for each area.</p> <p>While there is evidence from the site visit and associated documentation provided that activities and projects are occurring for the maintenance and enhancement of the ecological condition of the PTWL habitat within the park, the mechanism to assess and review the success and failures of the Operational Plan is not present, which is the purpose of a 3 yearly review.</p> <p>Additionally, given that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	<p>Non Compliant.</p> <p>Operational Plan has not been revised for 2018 and beyond.</p>	Ongoing
39	Register a disallowable instrument under the Domestic Animals Act 2000 to effect a cat containment policy for the Molonglo area.	<p>Domestic Animals (Cat Containment) Declaration 2019 (No 1), Disallowable Instrument DI2019-33</p> <p>Molonglo Valley Stage 3 Planning and Design Framework (2019)</p>	<p>The most recent Disallowable Instrument was signed in 2019 and includes the suburb of Whitlam, Coombs, Denman Prospect, Molonglo and Wright which are all included in the Molonglo Valley area.</p> <p>The suburbs included in the Molonglo Valley Stage 3 PDF are Whitlam, Suburb 2 and Suburb 3. Assume that Suburb 2 and 3 will be included once planning and development begins and a revision made to this Disallowable Instrument.</p>	Compliant	Complete

40	Continued implementation of the Plan of Management for the Lower Molonglo Nature Reserve to provide for the maintenance of the ecological condition of the high and moderate quality PTWL habitat that occurs there (approximately 28.1 ha).	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>PTWL habitat extension research manuscript DRAFT</p>	<p>Molonglo River Reserve Management Plan finalised in 2019 and revokes the previous Lower Molonglo River Corridor Plan of Management. Vegetation condition monitoring is ongoing and results show that the ecological condition of PTWL habitat has been maintained. According to EPSDD the following management actions for enhancement of PTWL habitats have been undertaken in the Molonglo River Reserve:</p> <ul style="list-style-type: none"> - ongoing strategic ecological cattle grazing to reduce exotic grass biomass and reduce fire risk from surrounding fuel loads; - targeted Blackberry (<i>Rubus fruticosus</i>) control; - ongoing monitoring of pest species; and - ongoing strategic grazing and weed control requirements on properties with PTWL habitat that are managed under the Land Management Agreement process. <p>OBSERVATION: While evidence has been provided that the condition of PTWL habitat has been monitored annually, the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023. As a result, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	Compliant with Observation	Ongoing
41	Develop management plans for the other areas of high and moderate quality PTWL habitat that occurs within the strategic assessment area and outside of the development and offset areas (approximately 23.3 ha) to provide for the maintenance and enhancement of the ecological condition of the PTWL habitat within these areas. See Section 4.6 for information about the content of management plans.	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (PTWL Conservation Area) Operational Plan, 2018-2021 (2018)</p>	<p>The Molonglo River Reserve Management Plan was finalised in 2019 and includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan.</p> <p>Molonglo River Reserve (PTWL Conservation Area) Operational Plan (2018-2021) was completed in 2018. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. The Operational Plan provides the specifics of maintenance and enhancement activities to be complete for PTWL habitat.</p> <p>OBSERVATION: This commitment will not be compliant moving forward until such a time as the non-compliance is addressed for the out of date Operational Plans.</p>	Compliant with Observation	Ongoing
42	Implement management plans for the other areas of high and moderate quality PTWL habitat that occurs within the strategic assessment area and outside of the development and offset areas (approximately 23.3 ha) to provide for the maintenance and enhancement of the ecological condition of the PTWL habitat within these areas.	<p>Molonglo River Reserve Adaptive Management Strategy (2013)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve (PTWL Conservation Area) Operational Plan, 2018-2021 (2018)</p> <p>Molonglo Valley Vegetation Condition Monitoring Report, 2013-2017 (2018)</p> <p>Restoration rocks: integrating abiotic and biotic habitat</p> <p>PTWL habitat extension research manuscript DRAFT</p> <p>Project_Plan PTWL restoration works NES Patch K</p> <p>Project_Plan 2015_16 PTWL restoration works NES Patch K</p> <p>Project_Plan 2016_17 PTWL restoration works Coombs</p> <p>PTWL habitat extension research manuscript DRAFT</p> <p>Invasive plant control 2018-2022</p>	<p>Molonglo River Reserve (PTWL Conservation Area) Operational Plan (2018-2021) was completed in 2018. It includes all the necessary components of a management plan as outlined in section 4.6, p.37-38 of the NES Plan. The Operational Plan provides the specifics of maintenance and enhancement activities to be complete for PTWL habitat.</p> <p>Evidence of maintenance and enhancement of the ecological condition of the PTWL habitat within these areas was provided through a vast array of documented research, project plans and restorations works as well as progress reports and monitoring data.</p> <p>OBSERVATION: This commitment will not be compliant until such time as the non-compliance is addressed for the Operational Plans. As with previous commitments; while evidence and data was provided that maintenance and enhancement activities are occurring, the fact that the independent review of the vegetation and habitat monitoring data is not due to be completed until 2023, the rigor of this audit has been decreased due to the lack of independently verified results of the ecological surveys to assess for maintenance and enhancement of the MNES. It is recommended that the independent review and these independent audits are brought back in to alignment to ensure that independent, expert opinion can be incorporated into the NES Independent Audit for a more rigorous process.</p>	Non Compliant Operational Plan has not been revised.	Ongoing

43	Undertake a research project examining the effects on PTWL of disturbance and proximity to urban areas. See Section 4.8 for information about the PTWL research project.	Restoration rocks: integrating abiotic and biotic habitat Rock Supplementation as an Ecological Restoration Strategy Paper PTWL habitat extension research manuscript DRAFT Threatened species translocation plan_Aprasia PTWL low impact monitoring Methods and Results section PTWL low impact monitoring research project 2013 PTWL Action Plan - Implementation Progress Report Molonglo Valley Site visit, 23rd March 2022	Documented evidence of research projects examining the effects on PTWL of disturbance and proximity to urban areas was provided in the form of Project plans, Strategy Papers, research manuscripts and progress reports. Evidence of the implementation of some of these research papers and projects was observed during the onsite visit.	Compliant	Ongoing
44	Amend the development boundary, adjacent to high and moderate quality PTWL habitat on the western edge to avoid: • direct impact from bushfire management – the Outer Asset Protection Zone (OAPZ) and Inner Asset Protection Zones (IAPZ) will be between the PTWL habitat and the development boundary; and • indirect impacts from urban development.		Complete during previous audit	Compliant	Complete
Item 1	To ensure conservation outcomes and protect MNES adjacent to the development area in the lower Molonglo Valley, the ACT Government will make necessary amendments to the Structure Plan. (Also Items 4, 30 and 62 refer)	Molonglo Valley Stage 2 Planning Design Framework (2012) Molonglo Valley Stage 3 Planning Design Framework (2019) Planning and Development (Plan Variation No 360) Approval (2020) Territory Plan (2008) Technical Amendment to the Territory Plan Variation (2012-24)	The Territory Plan (not specifically the Structure Plan) is the document that is varied in accordance with the Planning and Development Act 2007 as development in Molonglo progresses. In 2012 the Technical Amendment to the Territory Plan No. 2012-24 came into effect in accordance with the Planning and Design Framework (PDF) for Molonglo Valley Stage 2. In 2013-14 EPSDD and the Suburban Land Agency (SLA) commenced background planning investigations and assessments for Molonglo Valley Stage 3 in 2013-14. These investigations informed the Molonglo Valley Stage 3 Planning Design Framework which was finalised in February 2019. November 2019, EPSDD released the Draft Variation to the Territory Plan 360 (Molonglo River Reserve: changes to public land reserve overlay boundaries and minor zone adjustment) for public consultation. In February 2020, Variation to the Territory Plan No 360 was approved and commenced. Areas of high conservation value within the river corridor are protected in accordance with the NES Plan under the Territory Plan.	Compliant	Ongoing
Item 2	Following endorsement of the NES Plan under the EPBC Act, actions (or classes of actions) that will occur to implement the endorsed NES Plan may be approved by the Minister.	Molonglo Valley Plan for the Protection of Matters of National Environmental Significance NES Plan, September 2011	The Commonwealth Minister approved the NES Plan in 2011. The approval has effect until 2041.	Compliant	Complete

Item 3	<p>Infrastructure within the river corridor comprises the following activities and will be staged to be most cost effectively developed (in the following order):</p> <ul style="list-style-type: none"> • John Gorton Drive which includes the construction of dual bridges crossing the Molonglo River • East-West Arterial Road bridge crossing of the Molonglo River • Water quality control ponds; water mains; sewer mains and sewer pump stations; and • A combined sewer / pedestrian / cycle bridge. 	<p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Planning and Development (Plan Variation No 360) Approval (2020).</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo Group Centre and Surrounds Draft Concept Plan (2021)</p>	<p>The Commonwealth Government was advised to change the order of infrastructure to effectively manage the sequencing of land release. The following was provided by EPSDD and details the infrastructure that has been completed within the river corridor:</p> <ul style="list-style-type: none"> - Sewer Pedestrian Bridge (Butters Bridge) over the Molonglo River, and associated sewer main approaches; and - Cravens Creek Pond. <p>The East West Arterial has been constructed west of John Gorton Drive for approximately 1.1 km. Two sections of John Gorton Drive construction have been recently completed in Molonglo 3. The first section (JGD3A) is south from William Hovel Drive and has been constructed for a distance of approximately 900m. The next 500m of John Gorton Drive (JGD3B) is also complete and opened mid-2020. The final section of John Gorton Drive includes a dual carriageway bridge crossing of the Molonglo River and another 1.7km of dual carriageway road approaches. The early design stage for this is complete and a development application Notice of Decision was conditionally approved in January 2021. Funding for the project has been approved and an expression of interest for the 'Detail Design and Construction' package for this final stage was tendered in September 2021. Physical works aren't expected to commence until mid-2023.</p> <p>In 2018-19 EPSDD completed construction of minor recreation facilities in the River Reserve at Barrer Hill, opposite to Coombs including a pedestrian trail, signage and low impact lookouts. These facilities were constructed using low environmental impact methods and will help to control pedestrian movement through the reserve and away from areas of high conservation value.</p> <p>In 2018-19 EPSDD progressed design of the first of two special purpose reserves, Namarag, that will manage access to the Molonglo River Reserve and provide focused areas for recreation and river access. The project will also restore critically endangered Box-Gum Woodland and threatened Pink-tailed Worm-lizard habitat.</p> <p>The Suburban Land Agency took responsibility for the design and construction of four Odour Control Units attached to the Molonglo Valley Interceptor Sewer. These units are located both adjacent to and within the river corridor and have been staged to coincide with the occupation of Whitlam and Denman Prospect 2. The project is in the final stages of development approval before construction is expected to commence in early 2022. As was stated in the previous audit, the Terms of Reference for this audit did not include an assessment of cost effectiveness.</p>	Compliant	Ongoing
Item 4	<p>Variations to the East Molonglo development boundary to minimise the impact on MNES values. A particular focus of this is the reduction of impacts on moderate and high quality Pink-tailed Worm-lizard habitat. (Also Items 1 and 62 refers)</p>	<p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Planning and Development (Plan Variation No 360) Approval (2020)</p> <p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Park Concept Plan (2012)</p>	<p>The Molonglo Valley Planning and Design Framework Stage 3 was finalised in February, 2019 with revisions to the river corridor boundary of East Molonglo included. Additionally, in January, 2020 the river corridor boundary was again adjusted under the Planning and Development (Plan Variation No 360) Approval 2020 resulting from the approval of the Molonglo River Reserve Management Plan (2019). Figure 1 of the Plan Variation No 360 shows the corridor boundaries have been revised. Overall, the river corridor boundary has been increased from 489.66ha to 503.87ha with an increase of 1.01ha of Box Gum Woodland and 0.46ha of Pink Tailed Worm Lizard habitat within the reserve area.</p> <p>It is noted that the river corridor boundary may be revised through the approval of any Estate Development Plans (EDPs) which allow for minor refinements, although these must also be in line with the NES Plan and are assessed by EPSDD for compliance.</p>	Compliant	Ongoing
Item 5	<p>Designing infrastructure that will occur in the river corridor to avoid or minimise impacts to MNES. This process includes:</p> <ul style="list-style-type: none"> • re-aligning the location of the major bridges (as compared to the original location proposed in the Molonglo Structure Plan) to minimise impacts on moderate and high quality Pink-tailed Worm Lizard habitat; and • aligning other infrastructure to avoid moderate and high quality Pink-tailed Worm Lizard habitat and Box-Gum Woodland where this can be achieved. (Also Items 6, 31 and 63 refer) 	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>Molonglo Group Centre and Surrounds Draft Concept Plan (2021)</p>	<p>The Molonglo River Reserve Management Plan (2019) details how the river corridor design process is focussed on minimising impacts to MNES in the area including the Box-Gum Woodland. Section 9 of the Management Plan details the existing and anticipated infrastructure in the Molonglo River Reserve and how they will be located and designed in such a way that enhances the scenic value and protects the natural ecological values. Any infrastructure required for the region will be located outside the reserve where possible and only within the reserve where it is clearly demonstrated that there are no other feasible alternatives available and in such a case must be approved under ACT legislation.</p> <p>Work is continuing to progress in the Molonglo Valley with the Stage 3 PDF having been finalised in 2019 and ongoing infrastructure projects being progressed to support the urban development. The EPSDD Annual Report for 2020-2021 Tables 3 lists the Impacts on MNES by hectare to date (11.18ha for Box Gum Woodland with 98.82ha remaining in the allowance & 2.34ha for PTWL habitat with 24.66 ha remaining in the allowance). Figure 3 & 4 show the BGW & PTWL habitat areas that have been cleared to date broken down by Patch, Reserve and Development Areas.</p>		Ongoing

Item 6	A design principle to maintain ecological values within the East Molonglo development area where possible. (Also Items 5, 31 and 63 refer)	<p>Molonglo River Reserve Reserve Management Plan (2019)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p> <p>Molonglo River Reserve & Offset Areas - Ecological Management Guidelines (2015)</p> <p>Planning and Development (Plan Variation No 360) Approval (2020)</p> <p>Project Plan Molonglo River Reserve (Patch K OAPZ) Pink-tailed Worm-lizard habitat restoration</p> <p>Project Plan - Pink-tailed Worm-lizard habitat restoration (NES Patch K) – Stage 3 (2015/16)</p> <p>Project Plan - Pink-tailed Worm-lizard habitat restoration (Coombs) – Stage 4 (2016/17)</p> <p>Manuscript - 'Stepping-stones' improve connectivity for threatened, rock dwelling Pink-tailed Worm-lizard</p> <p>Molonglo River Park Concept Plan (2012)</p>	<p>The Molonglo River Reserve & Offset Areas – Ecological Management Guidelines (2015) is a principle document in defining the matters that reflect design and other elements (such as weed control and management aspects) to protect Box Gum Woodland. It works in conjunction with both the Stage 2 and Stage 3 Planning Design Frameworks.</p> <p>Site visit evidence (through observations and discussions) demonstrated that design principles have been and are implemented to maintain ecological values</p> <p>Example 1: In the Kama Nature Reserve the grassland and woodland restoration works were observed and have been designed in a way to best enhance the growth of these different types of vegetation. Research has shown that both the grasslands and woodlands grow best when planted separately, rather than having the species planted together. Once established they can then naturally spread to be in the same areas.</p> <p>Example 2: Similar to the grassland and woodland plantings, the Pink-tailed Worm-lizard habitat restoration projects have been designed such that there are distinct patches which create habitat hotspots which then allows for genetic diversity to occur between then different patches.</p>	Compliant	Ongoing
Item 7	A commitment to avoid impacts on MNES within West Molonglo.		This Item is no longer applicable.	Not Applicable	Complete
Item 8	The ACT Government will ensure that all construction activities (whether in the urban area or in the river corridor) will be subject to construction environmental management plans (CEMPs). These CEMPs will help to ensure that unnecessary impacts from construction (e.g. through the uncontrolled movement of machinery) are avoided. A detailed description of the content of CEMPs is provided in Section 4. (Also Items 32 and 64 refer)	<p>CEMP conservator guidelines DRAFT</p> <p>CEMP Whitlam Stage 2A (2020)</p> <p>CEMP Lower Deep Creek Pond (2021)</p> <p>Chain of email communication regarding sediment and erosion control failure for Deep Creek (February 2020)</p> <p>Observations made of Denman Prospect construction activities during onsite visit 23rd March, 2022.</p>	<p>According to the EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021) CEMPs have been prepared for all approved estate developments and a site surveillance officer has been engaged to monitor relevant projects. Twelve CEMPs were approved for construction work in the Molonglo Valley for 2020-2021 and to date, 53 CEMPs have been approved overall for construction work in the Molonglo Valley. The CEMPs for Whitlam Stage 2A and Lower Deep Creek Pond Geotechnical Works were provided.</p> <p>Correspondence provided from an environmental incident in 2020 indicated that while CEMP implementation was occurring, the controls and management practices implemented were not suitable to restrict sediment laden waters from entering the river corridor after the failure of a sediment pond. Photographic evidence provided in correspondence indicated a lack of compliance with the Environment Protection Guidelines for Construction and Land Development in the ACT (2011). It could not be verified if any regulatory action relating to Pollution of Waters under the Environment Protection Act 1997 occurred. The event in 2020 could not be classified as unforeseen.</p> <p>OBSERVATION: Note the non compliance on Condition 31 regarding the ongoing and independent assessment of compliance with the implementation of the CEMPs.</p>	Compliant with Observation	Ongoing

Item 9	<p>Within the strategic assessment area fire management will be aimed at the protection of both built assets and MNES values. This will be achieved through the identification of appropriate asset protection zones and the application of hazard reduction techniques that will both:</p> <ul style="list-style-type: none"> ensure that the standards for fuel loads in the SBMP are met; and protect MNES values through the use of sympathetic management techniques. 	<p>EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)</p> <p>ACT Strategic Bushfire Management Plan (2019-2024)</p> <p>Bushfire Risk Strategy Molonglo Stage 3, Denman Prospect & The Molonglo River Corridor Australian Capital Territory Prepared for the Land Development Agency (2016)</p> <p>2021/22 Bushfire Operations Plan, Environment, Planning and Sustainable Development Directorate</p> <p>Ecological Guidelines For Fire, Fuel and Access Management Operations, Part 1 Background Explanatory Section (2019)</p> <p>Kama burn plan FB389</p> <p>FB886 Molonglo Offsets Burn Plan</p> <p>FB735 Burn Plan (A19117164)</p>	<p>The ESA Strategic Bushfire Management Plan, 2019-2024 (SBMP) directs all levels of bushfire planning in the ACT. The SLA's Bushfire Risk Strategy (2016) identifies the asset protection zones. Management requirements are set out in the Bushfire Risk Strategy for both within the future urban development boundary and immediately outside of it.</p> <p>As required by the SBMP, Bushfire Operations Plans are prepared by EPSDD each year which details the works and activities that PCS aims to achieve each financial year in response to managing bushfire risks. The Operations Plan is guided by the Ecological Guidelines for fire, fuel and access management operations which is a set of actions to guide the conservation of ecological assets including the MNES in the Molonglo Valley. The Ecological Guidelines are supported by spatial data sets which list the ecological assets, their conservation status and their potential sensitivity to fire related activities. The spatial data sets are dynamic and still in development.</p> <p>Examples of Burn Plans were provided for the Kama Nature Reserve, Molonglo Woodland - Molonglo River Reserve and Molonglo Offsets.</p>	Compliant	Ongoing
Item 10	<p>It is also important to note that under Division 3.3 of the Nature Conservation Act 1980, Pink-tailed Worm Lizard has been declared a vulnerable species and Natural Temperate Grassland and Box Gum Woodland are declared endangered communities. The effect of these statutory declarations is that these species and communities need to be managed in accordance with a prescribed Action Plan, prepared by the Conservator for Flora and Fauna.</p>	<p>Action Plan Pink Tailed Worm Lizard <i>Aprasia parapulchella</i> Threatened Species (2017)</p>	<p>The Nature Conservation Act was revised in 2017 and an Action Plan for the Pink Tailed Worm Lizard was completed in 2017.</p>	Compliant	Complete
Item 11	<p>Construction in the Molonglo Valley stage 2 and stage 3 will not commence before completion of the respective Planning and Design Frameworks for both stages 2 and 3. The final Planning and Design Frameworks will incorporate NES actions and commitments.</p>	<p>Molonglo Valley Stage 2 Planning Design Framework (2012)</p> <p>Molonglo Valley Stage 3 Planning Design Framework (2019)</p>	<p>The Molonglo Valley Stage 2 Planning Design Framework was approved in 2012 and the Molonglo Valley Stage 3 Planning Design Framework was approved in February 2019 and construction began in May, 2019. Both PDFs incorporated NES actions and commitments.</p>	Compliant	Complete

Item 12	The ACT Government, as the proponent, will ensure that all development concerning MNES in the Strategic Assessment area is incorporated into any future development application and associated documentation to ensure any Commonwealth requirements are reflected in the decision by EPD.	Molonglo Group Centre and Surrounds Draft Concept Plan (2021) EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)	EPSDD continues to assess development applications which are referred to the Impact Assessment team and the Conservator for comment. Most recently, the Molonglo Group Centre and Surrounds Draft Concept Plan (2021) has informed changes to the Molonglo River Corridor boundary and details the proposed plans and requirements for Molonglo and part of Denman Prospect. The Draft Plan provides a planning design framework for development of the Molonglo Group Centre and surrounds and considers MNES in future development. The Draft Plan will (along with other relevant documents) will: <ul style="list-style-type: none"> • guide the design and assessment of estate development plans (EDP), which are subdivision proposals • inform the allocation of final zones on a parcel of land when that parcel ceases to be part of the future urban area following subdivision • guide the development of individual blocks and the public realm. The Draft Plan will be updated once the structure plan, vision and planning design principles are established.	Compliant	Ongoing
Item 13	The ACT Government will monitor and report annually to the public on the implementation of the NES Plan. An annual report highlighting the conservation outcomes achieved in the previous year will be published by the ACT Government and provided to DOE. The Report will include the monitoring results on the condition of the MNES, conservation outcomes (as listed in Section 4) and the outcomes of enhancement projects.	EPSDD Molonglo Valley Strategic Assessment Annual Report (2016-2017) EPSDD Molonglo Valley Strategic Assessment Annual Report (2017-2018) EPSDD Molonglo Valley Strategic Assessment Annual Report (2018-2019) EPSDD Molonglo Valley Strategic Assessment Annual Report (2019-2020) EPSDD Molonglo Valley Strategic Assessment Annual Report (2020-2021)	EPSDD have prepared Annual Reports each year since the previous audit. The annual reports include sections supported by diagrams and tables to demonstrate outcomes achieved and monitoring results. The components of the annual reports have been consistent across the years. The 2020-21 Annual Report was dated December, 2021 and therefore 1 month over due. However, it is noted that usual working conditions were interrupted throughout 2020 and 2021 due to the global Covid-19 pandemic and so flexibility on timeframes is necessary. While the report was a month late, it was delivered.	Compliant	Ongoing
Item 14	Develop an Adaptive Management Strategy to set out the framework for achieving the NES Plan's commitments through monitoring, evaluation, experimental design, reporting, auditing and continuous improvement processes. The Strategy will inform the content and timing of specific management plans and actions to ensure a consistent, integrated and efficient application of adaptive management principles and practices to achieve long term conservation outcomes for MNES. The approved Adaptive Management Strategy will be submitted for approval by the Minister (Commonwealth) or delegate.	Molonglo River Reserve Adaptive Management Strategy (2013)	The Molonglo River Reserve Adaptive Management Strategy was finalised in 2013 and includes all the required components.	Compliant	Complete
Item 15	The NES Plan and its associated actions will be audited by an independent, third party expert every five years, for a 30 year period. The audit reports are to be provided to DOE for their consideration.		The second independent audit is the subject of this assessment.	Compliant	Ongoing

Item 16	Appoint an independent, third party auditor and develop a customised audit protocol to ensure that: <ul style="list-style-type: none"> • commitments made by the ACT Government in the NES Plan are being adhered to; and • conservation outcomes for the MNES are being achieved. 		The second independent audit is the subject of this assessment and is due by May 2022.	Compliant	Ongoing
Item 17	The Treasury Directorate will ensure that commitments and actions in the NES Plan are funded.		EPSDD indicated that this item was not subject to the scope of this audit and is being undertaken separately.	NA	Ongoing

Appendix B

Site Photos

Molonglo Valley MNES Strategic Assessment – Independent Audit Site Visit Photos

Date: 23rd March, 2022 10:30am – 2pm

Location: Molonglo Valley, ACT

Attendees: Tim Cook, Christine Watson (Arup); Helen Hai, Dominic Riches (EPSDD); Richard Milner (ACT Parks and Conservation).



Figure 1. Molonglo River with Denman Prospect in the Background



Figure 2. Molonglo River with a demonstration of the diversity of habitats and areas of successful regeneration. Public access to the Molonglo River visible in the green mown areas, with restored habitat areas on either side. The monoculture of the pine plantations visible in the background.



Figure 3. Molonglo River, with new plantings visible via the pink protection units. The new development of Whitlam in the background.



Figure 4. Molonglo River Reserve sign for education and wayfinding. Note the fences behind the sign to gently manage the different recreational and ecological objectives of the area. Large spoil stockpiles are visible in the background from civil works associated with the surrounding development.

Barrer Hill



Figure 5. Barrer Hill Restoration site. Remnant tree with life support structures including hollows, bark, branches.



Figure 6. Barrer Hill Restoration site. Utility pole used for life support and wildlife habitat with hollows, bark and 'branches'. The maturing trees providing a diversity of habitat.



Figure 7. Barrer Hill 'Life Support' project. Vertical structures providing habitat in the absence of mature trees.



Figure 8. Barrer Hill Restoration site. Relocated dead tree structure used for life support and wildlife habitat with hollows and branches. The maturing trees providing a diversity of habitat. Solar powered tracking system in place to monitor the frequency of use and diversity of species.



Figure 9. Barrer Hill Life Support Structure, with development visible in the background. Noting the solar powered monitoring devices used on the structure used to assist in recording species diversity and use.



Figures 10 & 11. Barrer Hill restoration plantings and rock habitat for the pink-tailed worm lizard. The rock sourced from development areas.



Figure 12. Barrer Hill remnant trees from surrounding areas brought in as habitat structures. The growth of the early planted trees visible in the background. The native flowers visible in the foreground. Above average rainfall over the past few seasons has facilitated increased growth and planting success but also led to an increase in weeds and non-native grasses which has required an increase in resources and variety of approaches to manage.



Figure 13. Barrer Hill fallen trees and vertical structures introduces for habitat. The diversity of habitats visible, through the native grasses and larger tree species. The planting design considerate of the light requirements and shading impacts of the selected species.



Figure 14. Barrer Hill. Evidence of collection for reuse of plant protection, as original plantings have matured to no longer require protection.



Figure 15. Barrer Hill educational signage for ‘Weeds to Wildflowers’



Figure 16. Barrer Hill wildflower



Figure 17. Stockpiled rock, collected from nearby developments, for use in broad habitat restoration projects focussed on the pink-tailed worm lizard. The rock is being used to build new habitat areas while creating geographic resilience and genetic diversity across previously isolated communities of the pink-tailed worm lizard.

NAMARAG Special Purpose Reserve



Figure 18. Namarag Special Purpose Reserve



Figure 19. Namarag Special Purpose Reserve. Pedestrian bridge in background



Figure 20. Namarag. Civil construction works and stockpiling activities visible in the background



Figure 21. Namarag



Figure 22. Namarag events terrace



Figure 23. Namarag Events terrace public information



Figure 24. Namarag events terrace



Figures 25& 26. Namarag recreational and interactive play area



Figure 27. Namarag. Pink-tailed worm lizard secondary habitat restoration works



Figures 28 & 29. Namarag. Newly created pink-tailed worm lizard primary habitat and ongoing land restoration works. The land was recontoured and seeded. Repurposed rock from development activities spread extensively across the area. Public information, viewing and access areas established to facilitate engagement but reduce impact.

Kama Nature Reserve



Figure 30. Kama Nature Reserve. Re-establishing Box Gum Woodland and Natural Temperate Grassland. The area had previously been scrapped and seeded. Trees growing where soil scrapings were placed, increasing the habitat diversity.



Figures 31 & 32. Kama Nature Reserve. Re-establishing Natural Temperate Grasslands through scraping and seeding. Note the inter-tussock spacing which is important for the species health



Figure 33. Kama Nature Reserve Hoary Sunray.

STAGE 3 Development: Whitlam



Figure 34. Whitlam Stage 3 development sign



Figure 35. Whitlam Development. Erosion and sediment controls evident, as well as grasses, of variable coverage success, to restrict the transportation of sediment and velocity of water movement.



Figure 36. Whitlam Development

Appendix C

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Appendix D

Auditor's Declaration of Independence

I, Tim Cook ___ of Arup, __ (151 Clarence St, Sydney NSW 2000 Australia)

declare that to the best of my knowledge and belief I and my organisation do not have any conflicting or competing interests with:

The Auditee __ Environment, Planning and Sustainable Development Directorate _____, the Auditee's staff or representatives or other persons associated with the Auditee, including any personal, financial, business or employment relationship, except to the extent detailed below.

The project to be audited __ Molonglo Strategic Assessment for Matters of National Environmental Significance. _____.

I shall notify the Department of the Environment within seven days of any change in these circumstances or any other change that may affect my independent status.

I shall at all times observe any professional code of conduct and/or ethics applicable to undertaking audits (i.e. – as prescribed by the agency with which I hold accreditation/membership). I take full responsibility for any factual inaccuracy or mistake made in giving this declaration, particularly to the extent that others rely upon the truth of this declaration. I acknowledge that the Department of the Environment may request further information to verify my independence at any time.

Details of any personal, financial, business or employment relationship with the Auditee, the Auditee's staff, representatives or associated persons - Nil

Details of any personal, financial, business or employment relationship with the project to be audited - Nil

Details of audit qualifications and professional accreditations/memberships. (Include copies of current audit qualifications and current professional accreditations/memberships)

In making this declaration, I am aware that section 491 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the regulations. The offence is punishable on conviction by imprisonment for not more than 1 year, a fine not more than 60 penalty units, or both.

Signed:



Full name: Timothy Cook

Organisation: Arup

Date: 26/05/2022

Footnote:

- Where an organisation or a team of auditors is nominated to undertake the audit, each individual that is nominated is to complete a separate declaration.
- The curriculum vitae of all audit team members are to be submitted with the declaration outlining their relevant experience and qualifications.

D.1 CV's

Tim Cook



Profession

Environmental Auditor

Current Position

Associate Principal
Environmental Due Diligence and
Compliance Lead NSW/ACT

Joined Arup

2016

Years of Experience

20+

Nationality

Australian

Countries worked in

Australia

Philippines

Thailand

Japan

Singapore

South Korea

Qatar

UAE

Qualifications

BSc, Geology, University of
Wollongong, 1997

Lead Environmental Auditor
(Exemplar Global - 113135)



Professional Associations

EIANZ

Over the last 20+ years, Tim has worked primarily in the fields of site environmental management (planning, design, construction and operations) and environmental due diligence. Tim is an internationally qualified Lead Environmental Auditor (Exemplar Global 113135), been an independent environmental representative for NSW infrastructure projects.

Tim has been the environment, social and governance (ESG) lead in over 50 transaction asset due diligence assessments and risk-based evaluations for a range of assets in Australian and internationally.

He has diverse understanding of, and a practical application to environmental responsibilities, liabilities and opportunities, sustainability objectives, community concerns, design processes and regulatory requirements.

Tim partook in the first audit conducted for the Office of the Commissioner for Sustainability and the Environment of the Molonglo Valley Plan for the Protection of Matters of National Environmental Significance.

Tim was the Environment Design lead for the concept design for Parramatta Light Rail and Sydney Metro (Western Sydney Airport) and design tender submission for the Snowy Hydro 2.0 pumped hydro renewable energy project, as well as for Sydney Gateway and M6 Stage 2.

Through specializing in large projects, transactions and infrastructure Tim has demonstrated experience in advising for ports, renewable energy, infrastructure roads, rail (freight and passenger), water and electricity, airports, stadiums, precincts, educational institutions, mines and industrial operations.

Tim leads the Environmental Due Diligence and Compliance service in NSW/ACT and brings over 20+ years of continuous environmental experience to projects in Australia and Internationally.

Audits

Molonglo Valley Plan for the Protection of Matters of National Environmental Significance - Office of the Commissioner for Sustainability and the Environment (2017 & 2022)

Audit for the first audit conducted for the Office of the Commissioner for Sustainability and the Environment of the Molonglo Valley Plan.

TfNSW RMCC Regional Council Audit and Endorsement.

Throughout 2020 and 2021, undertook multi-stage audits and endorsement of several regional council management systems and

processes as part of their certification into TfNSW Road Maintenance Council Contracts.

NSW Environment Protection Authority – Independent Audits

Tim has undertaken independent specialist audits for the NSW EPA to provide guidance on compliance of licence applications against relevant NSW legislation or government policy requirements. Predominantly this has been associated with compliance against the NSW Energy from Waste Policy Statement.

Environmental Audit - South Coast Concrete Crushing and Recycling - Nowra (2015 & 2019)

Department of Planning and Environment Approved Independent Environmental Auditor for SCCCR's South Nowra quarry operations.

Environmental Management System Review – Toyota Australia

Assessment of the transitioning Environmental Management System (EMS0 for Toyota (Australia) and compliance to ISO14001:2015 for multiple assets and operations.

NSW EPA & Tasmanian EPA – Independent Audits–

Tim has undertaken independent specialist audits for the NSW EPA and Tasmanian EPA to provide guidance on compliance of licence applications against relevant State and Federal legislation or government policy requirements.

NSW Road and Maritime Services Environmental Audits

Environmental Lead for the completion of numerous multi-discipline construction compliance audits on infrastructure projects. Tim has also been technical reviewer for over 15 audit reports from other auditors on RMS projects.

Sydney Water Corporation

Independent environmental audit of Sydney Water Corporation (SWC) Replacement Flows Project, specifically in relation to Government Conditions of Consent and SWC Statement of Commitments. Lead Auditor in 2010, 2011 & 2012.

Bemax Minerals

Independent Environmental Audits on behalf of the Department of Planning and Environment for three (3) Mineral Sand Mining Operations throughout Western NSW.

NSW Road and Transport Authority Environmental Management System Development

Part of the team for the review and development of the Environmental Management System, for all functions of the Roads Authority.

Environmental Management System Development, Department of Defence for Holsworthy Cantonment, Holsworthy Training Area, and Orchard Hills

Development of an Environmental Management System for the complex Defence functions associated with Holsworthy and Orchard Hills.

Blue Circle / Boral, Environmental Management System

Review and update of the corporate Environmental Management System for suitability to site mining and cement production operations at Berrima, NSW.

RailCorp – Broadmeadow & Sydenham Waste Audits

Site audits and interviews for compliance against the Railcorp's waste management compliance requirements for the maintenance and cleaning facility.

Environmental Management Representative

Environmental Management Representative (EMR) for ARTC Southern Sydney Freight Line

NSW Department of Planning approved independent EMR for the 36km freight line throughout south western Sydney. Tim conducted independent weekly site compliance audits, compliance reporting, review and endorsement of all environmental compliance documentation. Liaison with lead contractors and government regulators was a key requirement of the role as was attendance and at times facilitation of community consultation meetings at each of the four geographical regions.

Environmental Management Representative (EMR) for the Liverpool Turnback project for Transport for NSW

The project involved the extension of a commuter rail line and an upgrade to station facilities. The role involved weekly site compliance audits, review and endorsement of all environmental management plans, and reports, as well as liaison and communication with government and construction contractor.

Environmental Management Representative (EMR) for the Commuter Carparks Project for Transport for NSW

EMR for the Commuter Car parks Program Stage 2 projects for TfNSW. The role involved review and endorsement of all environmental management plans for demolition and construction, weekly site compliance audits and reports, PECOMS and monthly reporting as well as liaison and communication with TfNSW and the contractor.

Alternate Environmental Management Representative (EMR) for the Botany Bay Cable, Ausgrid.

The project involved assessing environmental compliance for the placement of 6 cables under the shipping channel from la Perouse to Kurnell, including construction impacts on seagrass, water quality and the security requirements of both the airport and marine port operations.

Concept and Tender Design

NSW Transport Infrastructure – Sydney Metro – St Marys to Western Sydney Airport - Technical Advisor

Tim was the Environment and Sustainability technical review and challenger in Arup's Technical Advisor team for TfNSW (Sydney

Mtree) on a future critical piece of infrastructure that will create a vital public transport link for Western Sydney.

Parramatta Light Rail Stage 1 Enabling Works

Tim has been involved in the development and review of compliance obligations and documents under the project Conditions of Approval for the light rail project.

Parramatta Light Rail – Route Selection -Technical Advisor – Sustainability, Transport for NSW

Working with the integrated TfNSW and Arup Team, implementing and driving sustainability through the early selection and design phases of this project.

WaterNSW Environmental Planning & Approvals Manager

Tim spent the first half of 2020 seconded into WaterNSW as the Environmental Planning and Approvals Manager for the delivery of a fast-tracked Critical State Significant Infrastructure Dam project that will improve water security, quality and flood management for regional towns and communities.

M6 Stage 1 - Tender Design- Engineering Environment, Compliance & Sustainability Lead

Tim led the environment design, planning compliance and sustainability teams for the tender design as part of an international team bidding for the rights to complete detailed design and construction of this highly complex infrastructure project.

Sydney Gateway - Tender Design- Engineering Environment, Compliance & Sustainability Lead.

Tim led the environment design, planning compliance and sustainability teams for the tender design as part of an international team bidding for the rights to complete detailed design and construction of this highly complex infrastructure project.

Snowy Hydro 2.0 Concept Design Tender

Tim was the environment design and modifications lead for the tender design as part of the international team bidding for the rights to complete detailed design and construction of this once in a generation complex renewable energy project in a highly sensitive environment. Project design and impact assessments had considerable EPBC focus both for the main sites and ancillary facilities throughout the region

Circular Quay Renewal Precinct SBC - Technical Advisor Strategic Business Case

Tim has been the Environment and Sustainability Lead in Arup's Technical Advisor team for TfNSW, where we investigated and prepared feasibility designs for wharf and precinct renewal options in support of a Strategic Business Case. Specifically, Tim led Arup's environment and sustainability teams in the multi-disciplined delivery of the Preliminary Environmental Assessment (PEA) and advised in the Sustainable Design Review Panel sessions and multi criteria assessments. The projects impact on the World Heritage Sydney Opera

House curtilage and buffer as well as protected view corridors was critical during the project evolution.

Glebe Island Urban Transformation Project – Integration Feasibility Assessment - Environmental and Sustainability Lead - Infrastructure NSW

Environmental and Sustainability lead for the independent assessment of the integration of port operations with a mixed-use development on Glebe Island.

Harwood Bridge – Detailed Design

Environment Manager for the detailed design of the 1.5km long road bridge over the Clarence River at Harwood in northern New South Wales

Transaction Technical Due Diligence

Transaction Advice, Technical & Environmental Due Diligence – Multiple Portfolios, Australia and International

Tim has been the Environmental Lead for over 50 due diligence assessments and risk-based capital cost and lifecycle evaluations for renewable energy, water, port, airport, waste, electricity, commercial assets, data centres, fuel and chemical operations and other portfolios or single site assessments. Scope can include assessments against Equator Principles, World Bank International Finance Corporation (IFC) guidelines and Environment, Health and Safety and Social frameworks as well as local, state and national requirements for the location of each asset.

Environmental Lead for Port Assets Arbitration – Confidential Client

Tim was the environmental lead for Arup’s work for a port asset arbitration case. This project involved asset management future proofing, strategic planning, and technical servicing expertise

Qatar Port Facilities

Tim was the Project Director for the multi-year environmental assessment, planning and monitoring of new port facilities in and around Doha, Qatar. The Port was developed through pristine mangrove, coral and seagrass communities, as well as RAMSAR wetlands that required active management, relocation and assessment.

Qatar National Master Plan Strategic Environmental Assessment

Tim was the Project Director for the multi-year Qatar National Master Plan Strategic Environmental Assessment for the Ministry of Municipality and Urban Planning which included the Qatar National Development Framework, 7 Municipal Special Distribution Plans and 10 Area Action Plans.

Hamad International Airport, Doha, Qatar

Tim worked with Hamad International Airport assisting them develop and initiate their Environmental compliance and environmental

monitoring program for the Hamad International Airport and the Waste Water Treatment Plant.

Existing Doha Port – Baseline Assessment

Project Director for the Marine Baseline Assessment for the existing Doha Port. Assessing the environmental and ecological impact of proposed changes to the operational port prior to redevelopment.

New Port Project (Hamad Port)

Constructed to create one of the world's largest greenfield port developments the USD 7.4 Billion megaproject, south of Doha, includes a new port with three container terminals, a new Naval Forces base and the Qatar Economic Zone 3, spanning a 26.5km² area.

NDPP/0009 China Harbour Engineering Company Ltd. -

Construction works for the Port Basin and Inner Breakwaters, including the completion of the Port's 8.5km Quay Wall. Tim was the Project Director and environmental advisor for the environmental compliance monitoring, environmental approvals and reporting.

NPP/0013 Middle East Dredging Company (Q.S.C) -dredging of the Access Channel and the Naval Base reclamation works. Tim was the Project Director and environmental advisor for the dredging and discharge permit and ongoing bird habitat monitoring and reporting.

Qatar Emiri Naval Forces Base

NPP/0037 China Harbour Engineering Company Ltd. - construction works for the Quay Wall and Basin Revetments Tim was the Project Director and environmental advisor for the CEMP, discharge permit and ongoing environmental compliance reporting

Qatar Economic Zone 3 Canal

NPP/0035: QEZ3 Hyundai Engineering and Construction Company/Boskalis Westminster Middle East Consortium on the 2.5km² access channel involving extensive excavation, dredging and the installation of Quay walls.

Tim was the Project Director and advisor for the baseline shoreline and marine environment assessment (Mangroves, Seagrass and Coral), CEMP, discharge permit, construction mangrove and marine environment assessments, contamination assessment and ongoing construction environmental compliance reporting.



Christine Watson

Christine has an eye for detail, passion for quality and strong writing capability and takes pride in ensuring client deliverables are prepared to a high standard.

Christine is an experienced Environmental Scientist in the Environment and Resource group. She has a breadth of experience particularly in auditing environmental and quality management systems and 3rd party certification assessments of environmental claims. Christine has conducted audits across Australia, the United States, Asia and Europe.

Profession

Environmental Scientist

Current position

Environmental Scientist

Joined Arup

August 2021

Years of experience

10+

Nationality

Australian

Qualifications

Bachelor of Science –
Environmental Science,
University Of Wollongong

Bachelor of Science –
Environmental Science (Ecology)
Honours Class I, The Australian
University

Project experience

Molonglo Valley Strategic Assessment Independent Audit (2022)

Arup assisted the Office of the Commissioner for Sustainability and the Environment in developing the scope and methodology for the independent audit of Molonglo Valley Strategic Assessment NES Plan and produce the audit plan in 2018. The Plan requires an independent audit to be conducted of the commitments and items every 5 years. Christine is responsible for delivering the 2022 independent audit and is working closely with the EPSDD in this process which involves a detailed desktop audit, onsite field verification and a final audit report.

Australian Packaging Covenant Organisation (APCO) Annual Reporting Verification & Australasian Recycling Label (ARL) Audits (2021)

A random selection of Members is chosen each year for audit, to verify that the claims made in the Annual Report by each Member can be verified and supported with evidence, and that the Member is actively maintaining their obligations under the Covenant. Members were also audited for their use of the ARL on their packaging. Christine worked as part of an audit team to conduct the assessments. Individual audit reports were provided to each Member with the purpose of verifying compliance with the claims made within their annual report and on their packaging, as well as providing recommendations for improvement. Christine was also responsible for completing a final report to APCO which summarised signatory performance and highlighted key themes found during the audits with the aim of assisting APCO in their educational materials to signatories.

Chain of Custody 3rd Party Certification Assessments (2011-2015)

Conducted onsite and desktop audits for clients in NSW, Victoria and Queensland against voluntary environmental standards including the Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), and Marine Stewardship Council (MSC) Chain of Custody standards.

- The audit process included detailed desktop reviews of clients' environmental management systems, Workplace Health and Safety procedures and warehouse data management systems followed by an onsite audit of the clients' manufacturing facility. Onsite visits were conducted to verify the desktop audit findings and included interviews with staff at all levels. Detailed audit reports were completed and provided to each client including recommendations for improvement.

3rd party certification assessments (2008-2011)

SCS Global Services, California, USA

Conducted onsite and desktop audits for clients in the United States, Europe, India, Japan and China for assessment to voluntary standards for environmental claims. These included the Furniture Sustainability LEVEL® standards, Indoor Air Quality certification for VOC emissions of furniture and building products, and FloorScore® indoor air quality certification for flooring products.

All assessments included analysis of lab reports for VOC emissions profiles of products, an onsite manufacturing facility audit of quality control procedures and a final audit report with recommendations for the client.

Water Use in the Australian Economy Research (2006-2008)

As part of the Centre for Environment and Energy Statistics team at the Australian Bureau of Statistics, Christine assisted with the research, collection of statistics and compilation of information regarding the use of water in the Australian economy during the 2004-2005 financial year. The project resulted in the publication of the 'Water Account, Australia, 2004-2005'.

Soil and Ground Water Contamination Monitoring (2005-2006)

Christine was involved in contamination monitoring events at various terminals and retail sites across New South Wales to determine the contamination potential within groundwater and the migration of chemicals of concern throughout the soil profile. This included sampling, analysing, conducting quality assurance procedures and developing technical reports for the client. Christine was also involved in conducting site audits of terminals and retail sites of their waste disposal, water flow systems and OH&S procedures and implementation.

Appendix E

Auditor's Certification

Auditor's name, position, company and contact details:

Tim Cook, Lead Environmental Auditor, Arup
151 Clarence St, Sydney NSW 2000 Australia

Auditor's qualifications and/or experience:

Lead Environmental Auditor (Exemplar Global #113135)



Auditor's declaration:

I, Tim Cook,

For environmental audits that are required by a condition of an Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) approval I certify that, to the best of my knowledge, all information provided in the audit report attached to this audit certification statement is true, correct and complete.

I am aware that section 491 of the EPBC Act makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the regulations. The offence is punishable on conviction by imprisonment for not more than 1 year, a fine not more than 60 penalty units, or both.

I am aware that section 461(4) of the EPBC Act makes it an offence in certain circumstances for an environmental auditor to include a statement in an audit report that is false or misleading in a material particular. The offence is punishable on conviction by imprisonment for not more than 6 months.

Signature: 

Date: 26/05/2022