

Molonglo Valley Plan for the Protection of
Matters of National Environmental Significance

NES PLAN

SEPTEMBER 2011



ACT Planning &
Land Authority

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1. INTRODUCTION

1.1 The Molonglo Valley Plan for the Protection of Matters of National Environmental Significance (the NES Plan)

Early in 2008 the Australian Capital Territory (ACT) recognised that the nature and scale of proposed development in the Molonglo Valley would be complex and involve multiple stakeholders. It was also apparent that environmental protection in the Molonglo Valley would be best served through higher level planning. It was therefore considered that, within this context, a strategic assessment under Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) would be preferable to projects which would otherwise be assessed on a case by case basis.

On 16 September 2008, the Australian Capital Territory (ACT) and Commonwealth Governments entered into an Agreement to conduct a strategic assessment under the EPBC Act.

Initially the Agreement was to give effect to, and assess, the Molonglo Valley Structure Plan. The Agreement was then amended and signed by delegates on 16 March 2010, to provide for the assessment of impacts under the *Molonglo Valley Plan for the Protection of Matters of National Environmental Significance* (the NES Plan), regarding urban development, associated infrastructure and broadacre land use at East and West Molonglo and North Weston in the ACT.

See Figure 1 for a map of the regional location of the area.

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 ACT Government's commitments to protect matters of national environmental significance (MNES) within the strategic assessment area.

See Figure 2 for a map of the strategic assessment area.

The Molonglo and North Weston Structure Plan is part of the ACT statutory Territory Plan. The Structure Plan guides urban development and associated infrastructure in the Molonglo Valley through the establishment and implementation of the following principles:

- walkable neighbourhoods and centres;
- a clear and easily understood urban structure;
- special places at key locations including centres;
- strong connections to the surroundings;
- a response to the strong topographic character of the Valley;
- protection of hills, ridges and views;
- retention of significant trees and tree stands;
- protection of significant natural corridors and habitats;

- strong recreational links along the Valley to Mt. Stromlo, Black Mountain, the National Arboretum and Lake Burley Griffin; and
- continuation of the country/city feel of Canberra.

The Structure Plan will be implemented over approximately the next 30 years.

The Structure Plan map is included at Appendix 1. While guiding the placement of infrastructure the map may be subject to technical amendment.

In order 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. These amendments, how they will be implemented, and further information about MNES protection will be available on the website of the Directorate of Environment and Sustainable Development at www.environment.act.gov.au.

1.2 The EPBC Act and strategic assessments

The EPBC Act is the Commonwealth Government's key piece of environmental legislation. It protects matters of national environmental significance (MNES) which include:

- World heritage sites;
- National heritage places;
- Wetlands of international importance;
- Nationally threatened species and ecological communities;
- Migratory species;
- Commonwealth marine areas;
- Nuclear actions; and
- The Great Barrier Reef Marine Park.

Strategic assessments are conducted under Part 10 of the EPBC Act. They provide a mechanism to move away from project-by-project impact assessment and examine proposed developments at a broader landscape scale in relation to the requirements of the EPBC Act.

The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) administers the strategic assessment provisions of the EPBC Act and provides advice to the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities (the Minister) throughout the process.

1.3 Scope of this assessment

This strategic assessment includes all of East Molonglo with the exception of the suburbs of North Weston, Wright and a portion of Coombs. These three suburbs have prior approval under the EPBC Act (Reference numbers: 2009/5041, 2009/4752 and 2009/5050) and are therefore not included in the analysis or outcomes of this process. See Figure 2.

West Molonglo is included within the scope of the strategic assessment as it includes MNES and was part of the same overall process to establish the Structure Plan.

1.4 Purpose and structure of the NES Plan

The strategic assessment comprises three key documents:

1. The draft Strategic Assessment Report which was publicly exhibited and which provided a detailed assessment of the implications of the draft NES Plan.
2. The Supplementary Assessment Report which addresses the issues raised in the public exhibition process and analyses the outcomes of the final NES Plan.
3. The final NES Plan (this document) which identifies the commitments and undertakings of the ACT Government for the protection and management of matters of national environmental significance protected under the EPBC Act.

Under the strategic assessment process, the NES Plan is the document that is intended to satisfy the Minister that the Commonwealth Government's Endorsement Criteria, outlined in the Strategic Assessment Agreement as amended between the ACT and the Commonwealth under s146(1) of the EPBC Act, has been met.

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.

The NES Plan is structured as follows:

- Section 1 provides an introduction to the NES Plan.
- Section 2 provides a description of the activities that will take place under NES Plan.
- Section 3 outlines how the NES Plan will be implemented.
- Section 4 provides the ACT Government commitments to conservation outcomes for the relevant MNES.
- Section 5 provides a description of the monitoring, evaluation and reporting mechanisms to ensure that actions committed to in the NES Plan are being met and publicly reported.
- Section 6 provides reasonable assurance in relation to implementation of the NES Plan.

1.5 Key Matters of National Environmental Significance

As outlined in the Molonglo Draft Strategic Assessment Report and Supplementary Assessment Report, the key MNES that require commitments through the NES Plan are:

- *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box-Gum Woodland).*
- *Natural Temperate Grassland of the Southern Tablelands of NSW and the ACT (Natural Temperate Grassland).*
- *Aprasia parapulchella (Pink-tailed Worm Lizard).*

- *Polytelis swainsonii* (Superb Parrot).
- *Lathamus discolor* (Swift Parrot).

See Figure 3 and Figure 4 for maps of Box-Gum Woodland, Natural Temperate Grassland and Pink-tailed Worm Lizard habitat in the strategic assessment area.

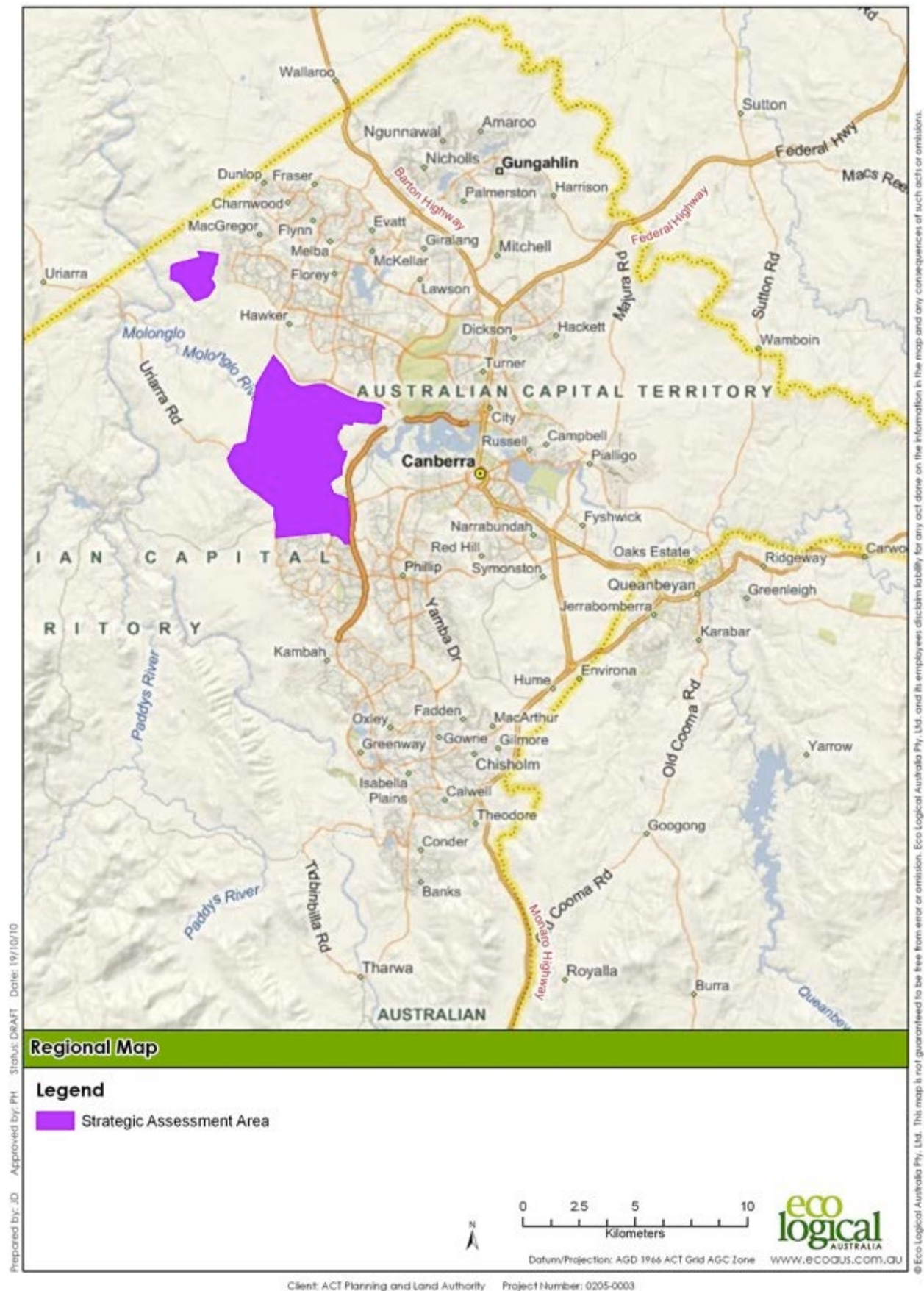


Figure 1:Regional setting for the Molonglo Valley strategic assessment area

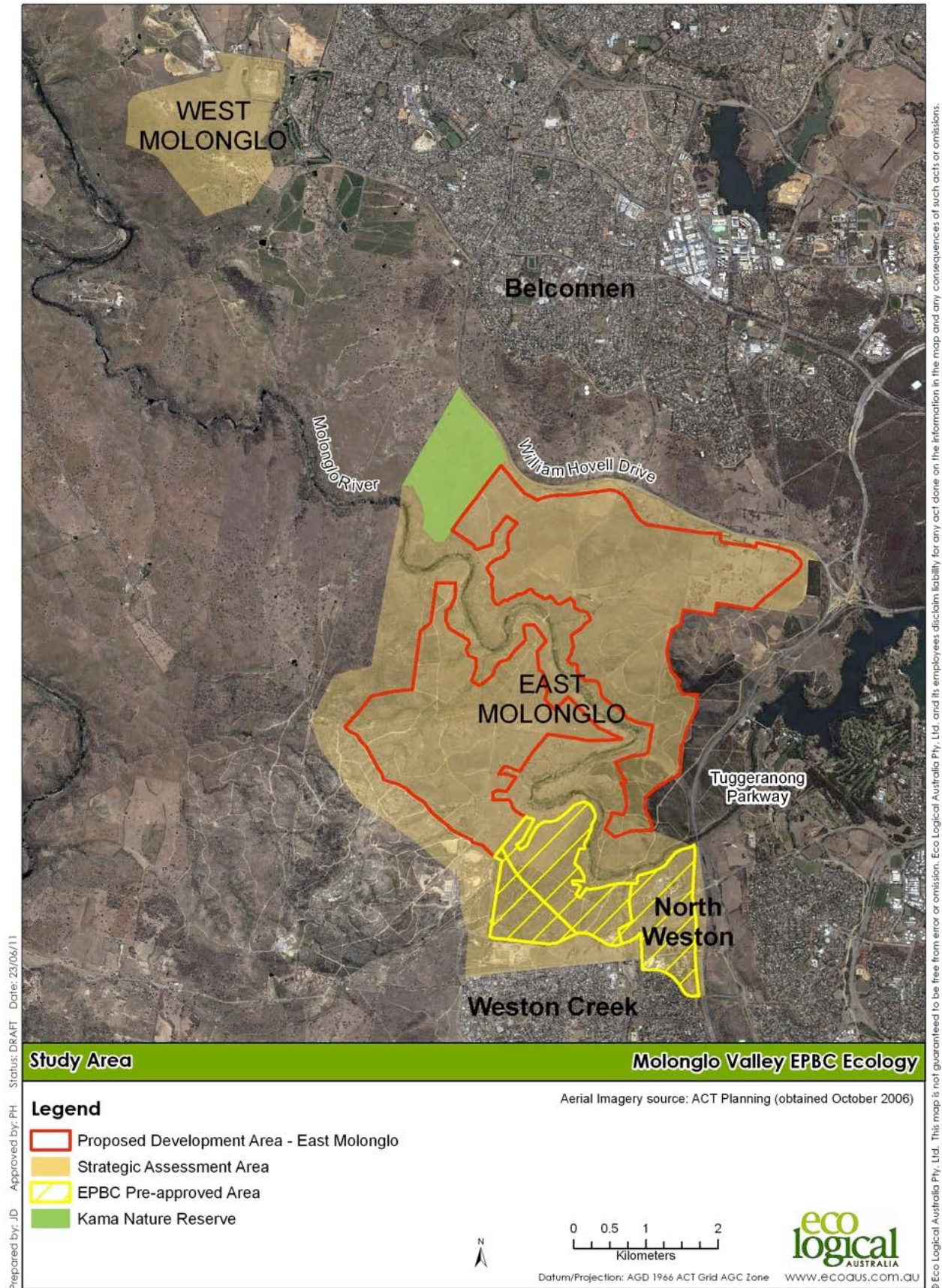


Figure 2: Molonglo Valley strategic assessment area

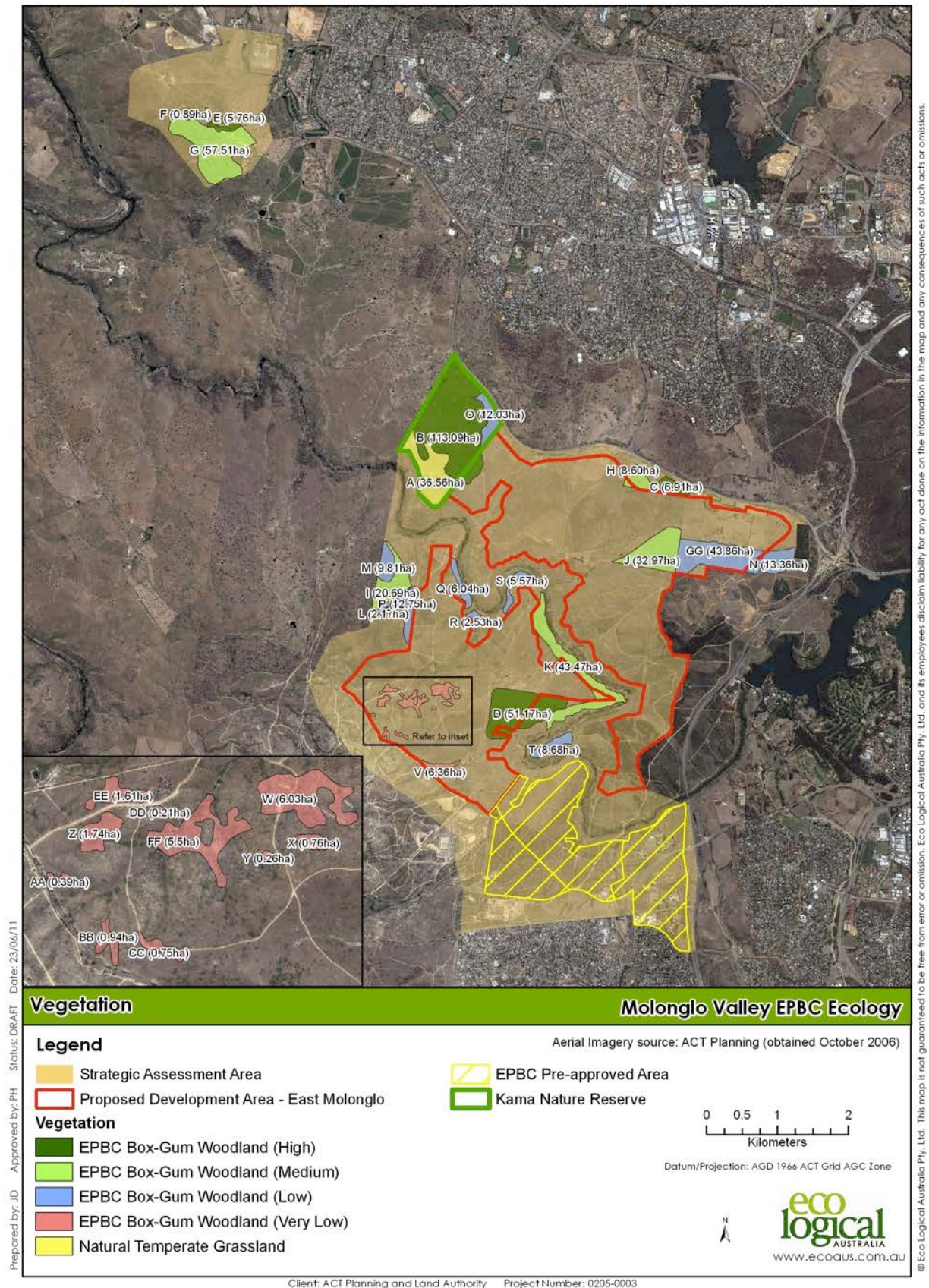


Figure 3: Box-Gum Woodland¹ and Natural Temperate Grassland

¹ Box-Gum Woodland patch quality definitions are described in the Supplementary Report.

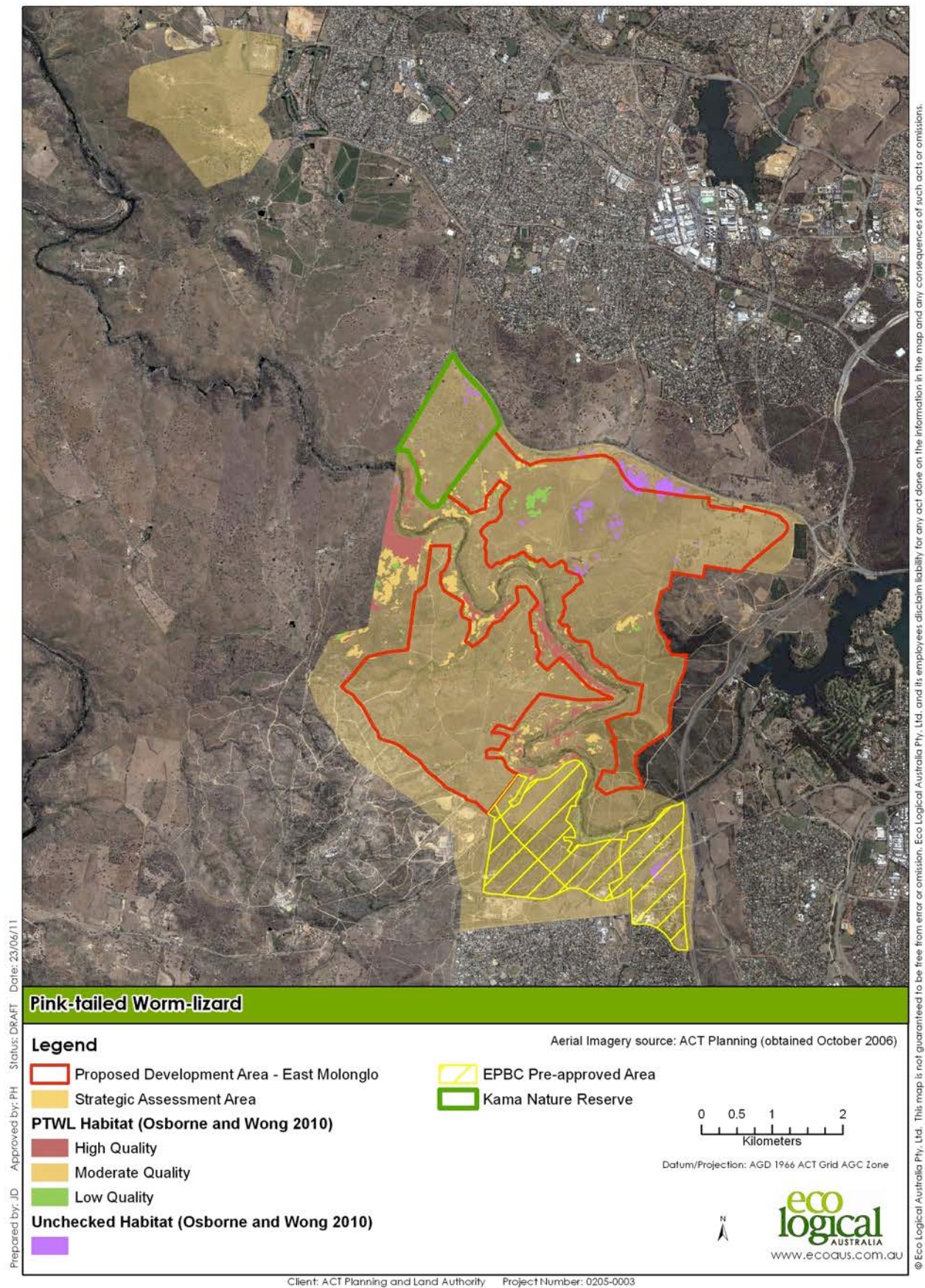


Figure 4: Pink-tailed Worm Lizard Habitat

2. DESCRIPTION OF ACTIVITIES UNDER THE NES PLAN

The NES Plan provides for urban development within the Molonglo Valley and establishes the ACT Government's commitments to protect MNES. This section of the NES Plan provides a high level description of the:

- development activities;
- conservation activities; and
- bushfire management framework.

2.1 Development activities

East Molonglo

East Molonglo will support an expected population of about 55,000 within a thirty year planning horizon. The Structure Plan map (Appendix 1) broadly outlines the elements which will make up East Molonglo. They include residential areas, open space and areas promoting ecological connectivity, major roads, neighbourhood areas, a major group centre in the south, a minor group centre in the north, and a range of neighbourhood activity nodes.

The area is divided by the Molonglo River into two distinct sections and there are two major roads which will connect these northern and southern areas. There will be a north-south arterial road and an east-west arterial road linking to the Tuggeranong Parkway. The area of development within East Molonglo (excluding the pre-approved area) is 1,356 ha (547 ha to the south of the Molonglo River and 809 ha to the north).

The Molonglo river corridor between the northern and southern areas will be an important area for both conservation and recreation. Development activities that will occur within the river corridor to support a population within East Molonglo include infrastructure to support development and a range of recreational facilities such as walking and cycling paths and community areas.

Infrastructure within the river corridor comprises the following activities and will be staged to be most cost effectively developed (in the following order):

- 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.

Planning and development in East Molonglo is anticipated to occur in a three staged approach:

- **Stage 1** (planning complete and construction underway at the time of finalising the NES Plan) includes the suburbs of Coombs, Wright and North Weston;

- **Stage 2** is part of the ACT Government's accelerated land release program and will include residential suburbs to house up to 18,000 people and a principal commercial centre for the valley; and
- **Stage 3** which is anticipated for development to commence on or after 2021.

See Figure 5 for a map of the Development Stages.

West Molonglo

Under the Territory Plan West Molonglo is currently zoned broadacre. The land use specifications in this area are peri-urban rather than residential. Broadacre development codes permit the establishment and operation of agricultural and educational establishments, animal care facilities, tourist facilities and similar.

2.2 Conservation activities

The NES Plan also establishes a set of conservation activities to protect MNES. These are broadly based around two processes:

1. avoidance and mitigation of impacts on MNES; and
2. on-ground management and offsetting to provide maintenance and improvement of MNES values in important areas.

A summary of these processes is provided below and the detailed commitments that will give effect to these conservation activities are provided in Section 4.

Avoidance and mitigation

As a result of the EPBC Act strategic assessment process, the ACT Government has implemented and will continue to implement measures to avoid impacts on MNES. This will be achieved through:

- 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.
- Designing infrastructure that will occur in the river corridor to avoid or minimise impacts to MNES. This process includes:
 - o 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
 - o aligning other infrastructure to avoid moderate and high quality Pink-tailed Worm Lizard habitat and Box-Gum Woodland where this can be achieved.
- A design principle to maintain ecological values within the East Molonglo development area where possible.
- A commitment to avoid impacts on MNES within West Molonglo.

It is important to note that at the time of finalising the NES Plan, these processes had yet to be finalised.

In relation to mitigation measures, 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.

Management and offsetting

In addition to the processes to avoid and mitigate impacts, the ACT Government will adaptively manage and offset important areas within the strategic assessment area. These measures include:

- Establishment and management of the “Molonglo River Park” as an offset site along the East Molonglo River Corridor (see Figure 6). This process will occur in two stages.
 1. Stage One entails the development of a Park Concept Plan. 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. The Plan will also be complementary to the management approaches developed for the area of the river corridor adjacent to Coombs as required in relation to EPBC referral 2009/5050.
 2. Stage Two involves the development and implementation of a management plan for the river corridor with a focus on providing long-term outcomes for Box-Gum Woodland and the Pink-tailed Worm Lizard. This management plan will then inform a statutory Plan of Management for the East Molonglo River Corridor (as described in Section 5).
- Recognition of the Kama Nature Reserve as an offset site and ongoing management of the area with a focus on its MNES values (see Figure 6). This process will include the development and implementation of management plan for the Kama Nature Reserve that will provide for adaptive management and condition improvement of the reserve. This management plan will then inform a statutory Plan of Management for Kama Nature Reserve (as described in Section 5).
- The establishment of a buffer outside of the Kama Nature Reserve on its eastern side to protect the ecological values of the reserve.
- Establishment and management of Patch GG as an offset site by incorporating the area into the National Arboretum which is directly to the east (see Figure 6).
- Management of Box-Gum Woodland patches C, H and N to maintain and enhance their ecological values.
- Management of Box-Gum Woodland patches I, L, M and P to maintain their ecological values.
- Implementation of a number of research projects to improve the knowledge relating to conservation of Pink-tailed Worm Lizard and Box-Gum Woodland.
- Management of moderate and high quality Pink-tailed Worm Lizard habitat on the western boundary of East Molonglo to maintain and enhance their ecological values.

These measures are described in detail in Section 4.

2.3 Bushfire management framework

The Strategic Bushfire Management Plan (SBMP) for the ACT identifies the necessary strategies and actions which the ACT Government and the community of the ACT will implement to enhance the ACT's ability to suppress bushfires and reduce their consequences. The SBMP is available on the ACT Emergency Services website at <http://www.esa.act.gov.au>.

The SBMP considers a range of assets which may be impacted by bushfires including built, environmental (ecological, hydrological and physical), agricultural and cultural assets.

The SBMP is prepared in accordance with the requirements of the *Emergencies Act 2004* and assists with elements of land use planning in the ACT, particularly those areas susceptible to bushfires including areas proposed for new subdivisions. Consistent with the provisions of the *Planning and Development Act 2007* and the Territory Plan, there is a hierarchical approach to planning in the ACT from the broad district level (that is a Structure Plan), to the suburb level (that is a concept plan and precinct code) and then to site specific development applications (subdivision and development).

The SBMP provides for the application of bushfire management zones. These zones provide the cornerstone for prevention activities and inform the development of Regional Fire Management Plans detailing what and where specific actions will be undertaken.

Bushfire management zoning:

- provides an ACT-wide approach to bushfire risk mitigation, and is developed in a tenure neutral manner;
- strategically allocates areas of land to zones and where appropriate, with measurable treatment standards;
- locates and aligns the risk of bushfires starting, spreading and causing damage; and
- considers the principal purpose for land use, including ecological or production requirements, proximity to natural or built assets and appropriate strategies for bushfire control operations.

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:

- ensure that the standards for fuel loads in the SBMP are met; and
- protect MNES values through the use of sympathetic management techniques.

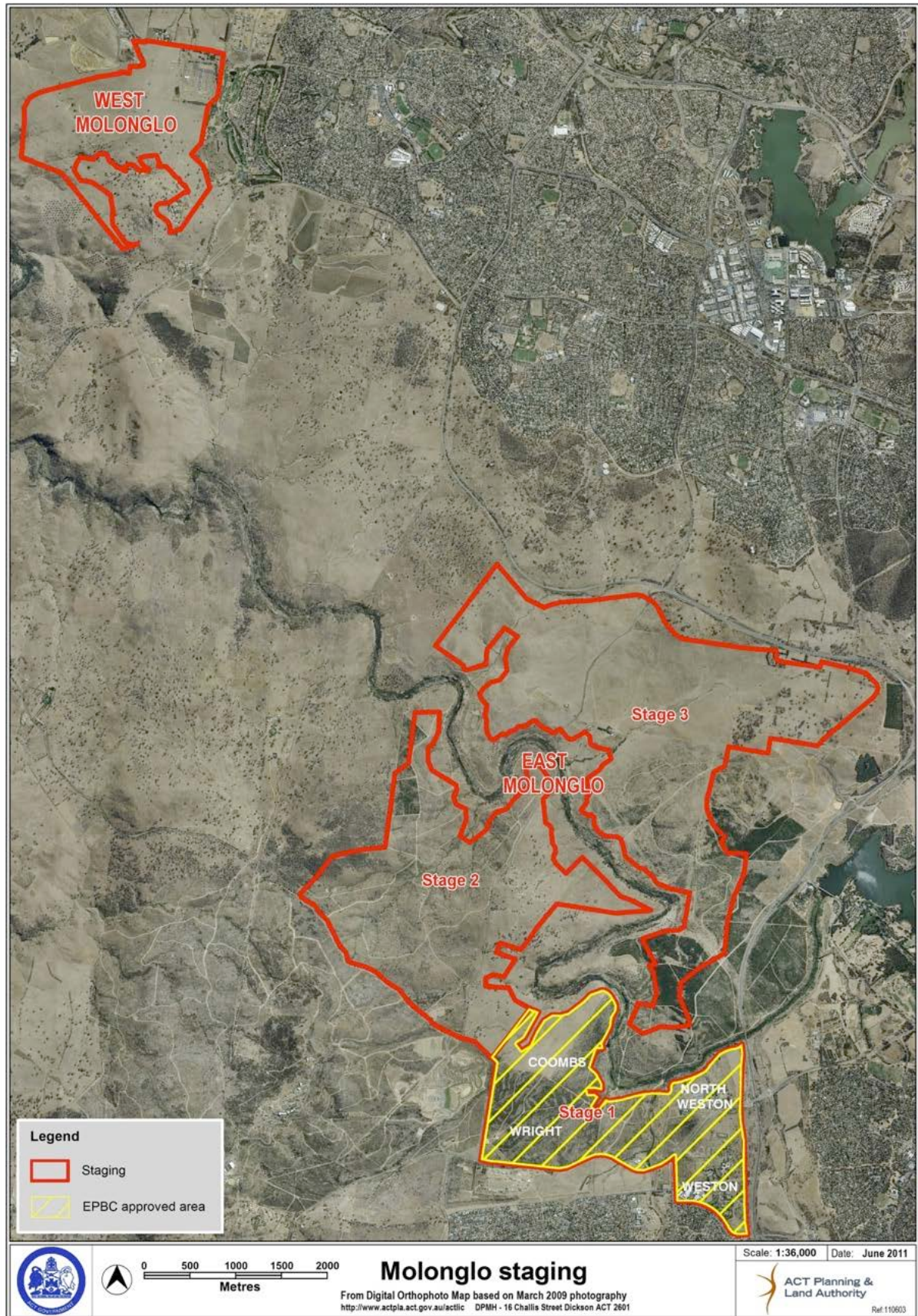


Figure 5: Staging of development

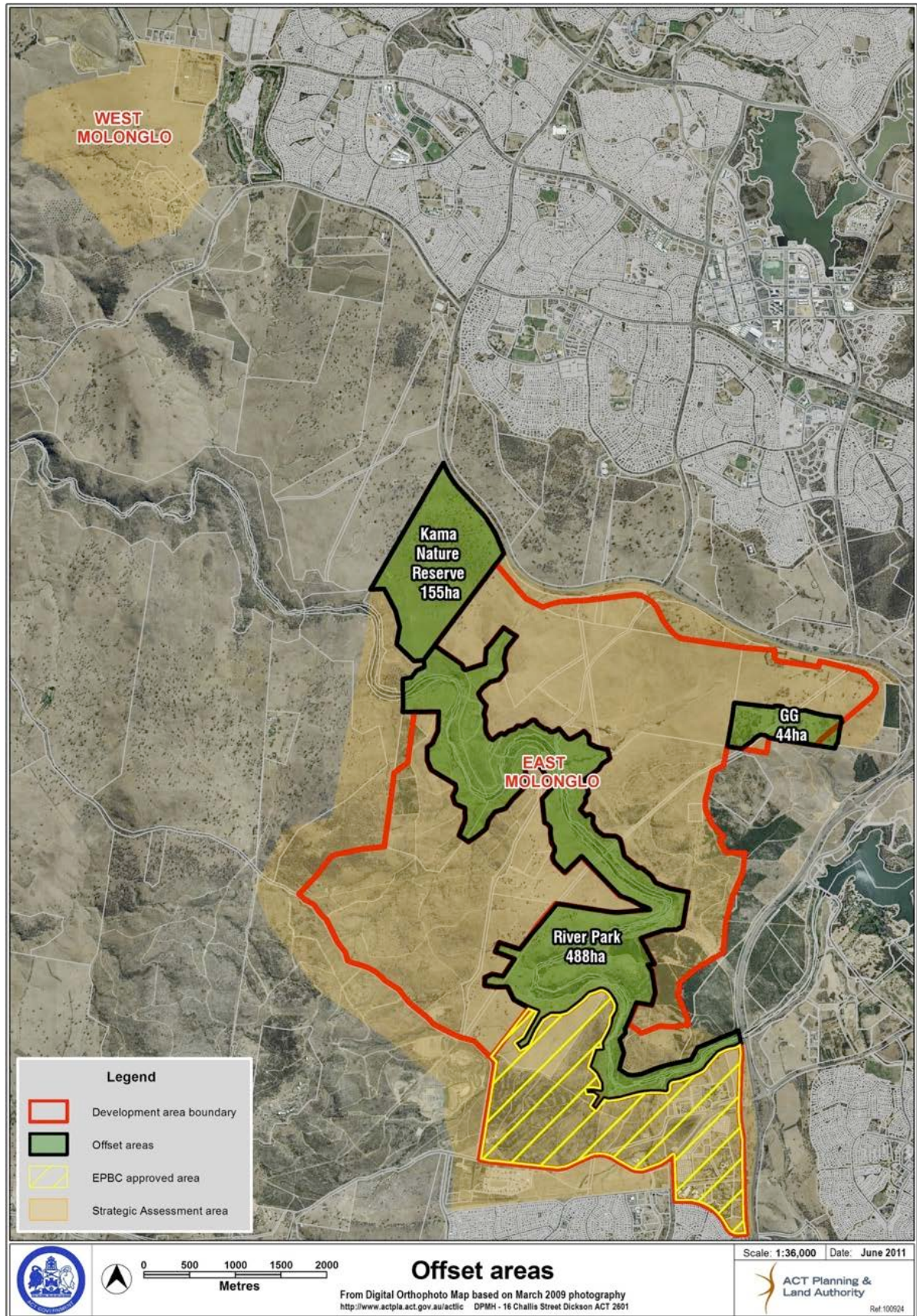


Figure 6: Offset areas

3. IMPLEMENTATION OF THE NES PLAN

The legislative framework for implementation of the NES Plan is described in this section.

3.1 Legislative framework

The introduction of self-government for the ACT in 1988 created a situation where the Commonwealth government and the ACT government share responsibility for the future development of Canberra and the territory.

All land in the territory belongs to the Commonwealth. However, pursuant to the *Australian Capital Territory (Planning and Land Management) Act 1988* (Cth) (Planning and Land Management Act), land within the territory is divided into two categories:

- national land which is declared by the Commonwealth Minister to be national land under s.27 of the *Planning and Land Management Act* and is managed by the National Capital Authority (NCA) and other Commonwealth Departments; and
- territory land which is the remainder of the land that has not been declared national land and is managed by the Environment and Sustainable Development Directorate.

The Commonwealth's Planning Responsibility

The Commonwealth's planning responsibility relates to Canberra as a national capital. It is established through the National Capital Plan (NCP), which describes the broad pattern of land uses that can be adopted in the development of the ACT. This ensures that Canberra broadly retains the characteristics with which it was originally planned.

National Capital Plan

The object of the NCP is to ensure that Canberra and the territory are planned and developed in accordance with their national significance (s.9 Planning and Land Management Act). In essence, the NCP is a blueprint for the future development of Canberra. It provides a framework of land uses within which the Territory Plan (TP) sits, as well as managing those aspects of Canberra and the territory that are special to the national capital role.

The NCP sets out planning policies, including a range of permitted uses. The land use policies contained in the Territory Plan are then chosen from this range of permitted uses.

The Territory's Planning Responsibility

The Australian Capital Territory's planning responsibility relates to Canberra as a city. It is established through the TP, managed by the Environment and Sustainable Development Directorate, under the *Planning and Development Act 2007* (Planning Act).

Like all territory legislation the Planning Act has no effect to the extent that it is inconsistent with the NCP, or in fact with the EPBC Act, but under s.11 of the Commonwealth *Planning and Land Management Act*, it is taken to be consistent with the NCP to the extent that it can operate concurrently with it.

Sustainable development within the territory

Throughout the Planning Act and the TP there is a strong emphasis on sustainable development. The object of the Planning Act (s.6) is to provide a planning and land system that contributes to the orderly and sustainable development of the ACT, consistent with the social, environmental and economic aspirations of the people of the ACT; and in accordance with sound financial principles. Sustainable development in this Act means (s.9) the effective integration of social, economic and environmental considerations in decision-making processes, achievable through implementation of the following principles:

- the precautionary principle— if there is a threat of serious or irreversible environmental damage, a lack of full scientific certainty should not be a reason to postpone preventative measures;
- the inter-generational equity principle—ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
- conservation of biological diversity and ecological integrity; and
- appropriate valuation and pricing of environmental resources.

Under s.12, the Environment and Sustainable Development Directorate is required to exercise its functions in a way that, as far as practicable, gives effect to sustainable development. In addition there are several clauses within Part 5 of the Planning Act which require 'sustainability principles' and 'principles for sustainable development'.

The Territory Plan (TP)

The TP, like the NCP, is established under the Commonwealth Planning and Land Management Act (s.25). The object of the TP is to ensure that planning and development provides the people of the ACT with an attractive, safe and efficient environment in which to live, work and have their recreation (s.48 of the Planning Act). Section 50 of the Planning Act states that nobody can do or approve an act that is inconsistent with the TP.

The Planning Act also requires that the TP contain a statement of strategic directions (s.51) which may contain planning principles covering areas of national, regional and territory interest, including principles for sustainable development (s.52). Chapter 5 of the Planning Act sets out the framework for the TP, which must include the following:

- a statement of strategic directions;
- objectives for each zone;
- development tables;
- codes; and
- a map (the TP map).

The TP may identify Future Urban Areas and include the structure plans that apply to those areas; identify areas of public land reserved in the plan (for example national parks and nature reserves) and make provision in relation to affordable residential housing.

The Molonglo Valley was identified as a Future Urban Area as part of this process. As required by the TP the corresponding Structure Plan set out the principles and policies for development of the area.

Chapter 5 of the Planning and Development Act 2007 allows technical amendments to be made to the Structure Plan for Molonglo. These amendments must be consistent with the “policy purpose and policy framework” contained in the Structure Plan.

Canberra Spatial Plan

The Canberra Spatial Plan is intended to guide the Territory in its allocation of resources, such as the use of land and the construction of capital works as well as to inform changes to both the National Capital Plan and the Territory Plan. The Spatial Plan does not replace the Territory Plan – it is a strategic document to guide more detailed planning. It sets the framework for spatially based decision making in the future and outlines the actions needed to achieve the strategic direction for Canberra over the next 30 years.

ACT legislation and MNES in the strategic assessment area

The ACT has an environmental legal framework which provides for the protection, management and regulation of flora, fauna and aquatic and terrestrial environments in the ACT.

Compliance with the ACT’s key environmental statutes is prescribed in the Planning Act. 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 Woodland² 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.

Action Plans are designed to:

- ensure, as far as is practicable, the identification, protection and survival of the species, or the ecological community; and
- minimise the effect of any process which threatens any species or ecological community.

3.2 Planning and design framework

A Planning and Design Framework is a guide for the development of a suburb or suburbs. It explains the location and layout of:

- future land uses such as housing, shops, schools and community facilities;
- infrastructure such as water and sewerage reticulation;
- road and open space networks; and
- services, such as electricity.

² The ACT Box Gum Woodland, Yellow Box – Red Gum Grassy Woodland, listed under the *Nature Conservation Act 1980*, is a component of the EPBC Act listed White Box - Yellow Box - Blakely’s Red Gum Grassy Woodland and Derived Native Grassland ecological community.

A Planning and Design Framework is, in effect, a long term masterplan for a Future Urban Area and is based on background studies and analysis. Community involvement about the planning issues, challenges and possible options for the Molonglo Valley is a critical component of the Planning and Design Framework process.

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.

3.3 MNES protection in the Strategic Assessment area and ACT planning

All actions in the Strategic Assessment area, which would otherwise be controlled actions under Part 7 of the EPBC Act, are prescribed as assessable developments under Part 7 of the Planning Act. This means that the developer, in this case the ACT Government, must submit a development application to the Environment and Sustainable Development Directorate.

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 the Environment and Sustainable Development Directorate.

4. COMMITMENTS TO MNES

The ACT Government is committed to protecting MNES as part of development within the Molonglo valley. This section describes:

- The conservation outcomes that the ACT Government will deliver to protect MNES; and
- the actions that will be undertaken to achieve those outcomes.

As outlined previously, the key MNES within the strategic assessment area which are the focus of commitments in the NES Plan are:

- *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box-Gum Woodland).*
- *Natural Temperate Grassland of the Southern Tablelands of NSW and the ACT (Natural Temperate Grassland).*
- *Aprasia parapulchella* (Pink-tailed Worm Lizard).
- *Polytelis swainsonii* (Superb Parrot).
- *Lathamus discolor* (Swift Parrot).

See Figure 3 and Figure 4 for maps of Box-Gum Woodland, Natural Temperate Grassland and Pink-tailed Worm Lizard habitat in the strategic assessment area.

For detailed information about these MNES, reference should be made to:

1. the draft Strategic Assessment Report which was publicly exhibited and which provided a detailed assessment of the implications of the draft NES Plan; and
2. the Supplementary Assessment Report which addresses the issues raised in the public exhibition process and analyses the outcomes of the final NES Plan.

4.1 Box-Gum Woodland

Approximately 482 ha of EPBC Act listed Box-Gum Woodland (*White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland*) occurs in a number of fragmented patches of varying size and quality within the strategic assessment area (see Figure 3).

Conservation outcomes

The ACT Government will deliver the following conservation outcomes for Box-Gum Woodland:

- a) Impacts to Box-Gum Woodland will be limited to a maximum of 110 ha and a range of measures will be implemented to minimise this area of impact.
- b) Three offset sites will be established within the strategic assessment area (Kama Nature Reserve, Molonglo River Park, Patch GG) that will provide for the long term protection of 234 ha of Box-Gum Woodland (see Figure 6). The three offset sites will be adaptively managed to maintain and enhance the ecological condition* of the Box-Gum Woodland that occurs there.
- c) Adaptively manage 28 ha of Box-Gum Woodland within the strategic assessment area to maintain and enhance its ecological condition*. This will be made up of patches C, H and N (see Figure 3).
- d) Adaptively manage 45.4 ha of Box-Gum Woodland within the strategic assessment area to maintain its ecological condition*. This will be made up of patches I, L, M and P (see Figure 3).
- e) Maintenance and enhancement of the Box-Gum Woodland that occurs within the West Molonglo component of the strategic assessment area (see Figure 3).
- f) Improving and applying the knowledge about the management of Box-Gum Woodland.

* "Ecological condition" for Box-Gum Woodland will be measured using a peer reviewed, repeatable and scientifically robust methodology for examining and comparing the condition of woodland and derived grassland patches over time.

Actions to achieve the conservation outcomes

Conservation outcome (a)		
Impacts to Box-Gum Woodland will be limited to a maximum of 110 ha and a range of measures will be implemented to minimise this area of impact.		
Action	Responsibility	Timing
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.	Environment and Sustainable Development Directorate	Throughout and on completion of the final Planning and Design Framework for both stages 2 and 3
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.	Environment and Sustainable Development Directorate	On completion of the final Planning and Design Framework for stages 2 and 3, respectively
3. Design the infrastructure that will occur in the river corridor to minimise impacts to Box-Gum Woodland.	Environment and Sustainable Development Directorate	Prior to the construction of infrastructure
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.	Environment and Sustainable Development Directorate	Development of the CEMPs prior to construction Implementation of the CEMPs during construction

Conservation outcome (b)

Three offset sites will be established within the strategic assessment area (Kama Nature Reserve, Molonglo River Park, Patch GG) that will provide for the long term protection of 234 ha of Box-Gum Woodland (see Figure 6). The three offset sites will be adaptively managed to maintain and enhance the ecological condition of the Box-Gum Woodland that occurs there.

Action	Responsibility	Timing
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.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development prior to the commencement of the construction of Sewer 3 East ³ or within 2 years and 6 months of endorsement of the NES Plan; whichever occurs first.
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.	Territory and Municipal Services Directorate	Commencement on completion of Action 5 Implementation ongoing
7. 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.	Environment and Sustainable Development Directorate	As part of the final Planning and Design Framework for stage 3

³ Sewer 3 East

1. Sewer 3 East will be contained partially within the development boundary of Molonglo Stage 2 and partially within the river corridor (Section 2.1). It is proposed to start from south west of Coppins Crossing and traverse in a south easterly direction for approximately 1.5 km;
2. Construction will consist of the excavation of a trench, installation of pipe (150 mm to 375 mm diameter) and its backfill, and the construction of manholes;
3. Development in the northern half of Molonglo Stage 2 east of John Gorton Drive including a significant proportion of the Group Centre, cannot be provided with sewerage services without the completion of this sewer.

8. 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.	Environment and Sustainable Development Directorate	Development prior to the commencement of construction of John Gorton Drive Stage 2A ⁴ or within 1 year of endorsement of the NES Plan; whichever occurs first.
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.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development prior to the commencement of the construction of the Sewer 3 East or within 2 years and 6 months of endorsement of the NES Plan; whichever occurs first.
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.	Territory and Municipal Services Directorate	Commencement on completion of Action 9 Implementation ongoing
11. Establish Patch GG as an offset site by incorporating the area into the National Arboretum.	Environment and Sustainable Development Directorate	Established within 6 months of endorsement of the NES Plan
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.	Territory and Municipal Services Directorate	Development prior to the commencement of the construction of the Sewer 3 East or within 2 years and 6 months of endorsement of the NES Plan; whichever occurs first.
13. Implement the management plan for Patch GG to provide for the maintenance and enhancement of the ecological condition of Box-Gum Woodland.	Territory and Municipal Services Directorate	Commencement on completion of Action 12 Implementation ongoing

⁴ John Gorton Drive Stage 2A

1. John Gorton Drive Stage 2A will be a 2 lane, on each carriageway, arterial road. This section of the road will be a continuation of John Gorton Drive from the boundary between Molonglo Stages 1 and 2. It will continue in a northerly direction for approximately 1.6 km to link back(in the short term) to the existing Coppins Crossing Road near the site of the future Group Centre;
2. The road reservation width will be approximately 45 m with 2 carriageways (10 m each) separated by a median 12 m wide sufficient to accommodate an inter-town public transport (IPT) route including light rail if necessary;
3. This section of road is required to provide access into central Molonglo Stage 2. The road will also contain services required for the release of this land (water, electricity, gas, telecommunications).

Conservation outcome (c) Adaptively manage 28 ha of Box-Gum Woodland within the strategic assessment area to maintain and enhance its ecological condition*. This will be made up of patches C, H and N (see Figure 3).		
Action	Responsibility	Timing
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.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development prior to the completion of the final Planning and Design Framework for stage 3
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.	Territory and Municipal Services Directorate	Commence on completion of Action 14 Implementation ongoing

Conservation outcome (d) Adaptively manage 45.4 ha of Box-Gum Woodland within the strategic assessment area to maintain its ecological condition*. This will be made up of patches I, L, M and P (see Figure 3).		
Action	Responsibility	Timing
16. Develop management plans for Box-Gum Woodland patches I, L, M and P (see Figure 3) to provide for the maintenance of the ecological condition of Box-Gum Woodland within these areas. See Section 4.6 for information about the content of management plans.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development after completion of the adaptive management strategy (see Section 7) and within 2 years and 6 months of endorsement of the NES Plan
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).	Territory and Municipal Services Directorate	On completion of Action 16
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.	Territory and Municipal Services Directorate	On completion of Action 16
19. Should the monitoring in Action 18 show that: - 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; then the ACT Government will establish an offset site within two years of those monitoring results that meets the following criteria: - 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.	Chief Minister and Cabinet Directorate	If required
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).	Territory and Municipal Services Directorate and Environment and Sustainable Development Directorate	If required

Conservation outcome (e) Maintenance and enhancement of the Box-Gum Woodland that occurs within the West Molonglo component of the strategic assessment area (see Figure 3).		
Action	Responsibility	Timing
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 <i>Planning and Development Act 2007</i> for all non-urban leases. The LMA covering the BGW in West Molonglo contains a Land Action Plan which ensures that: - 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.	Territory and Municipal Services Directorate	Ongoing
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.	Environment and Sustainable Development Directorate	If required the Nature Reserve will be established prior to construction in West Molonglo commencing

Conservation outcome (f) Improving and applying the knowledge about the management of Box-Gum Woodland.		
Action	Responsibility	Timing
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.	Territory and Municipal Services Directorate	Before development commences in Stage 2

4.2 Natural Temperate Grassland

Approximately 36 ha of Natural Temperate Grassland (*Natural Temperate Grassland of the Southern Tablelands of NSW and the ACT*) occurs within the Kama Nature Reserve (see Figure 3).

Conservation outcomes

The ACT Government will deliver the following conservation outcomes for Natural Temperate Grassland:

- a) No direct or indirect impacts to Natural Temperate Grassland.
- b) Adaptive management of the Natural Temperate Grassland that occurs within the Kama Nature Reserve to maintain and enhance its ecological condition*.

* “Ecological condition” for Natural Temperate Grassland will be measured using a peer reviewed, repeatable and scientifically robust methodology for examining and comparing the condition of grassland patches over time.

Actions to achieve the conservation outcomes

Conservation outcome (a)		
No direct or indirect impacts to Natural Temperate Grassland.		
Action	Responsibility	Timing
24. Protection of the Natural Temperate Grassland within the Kama Nature Reserve.	Territory and Municipal Services Directorate	Ongoing

Conservation outcome (b) Adaptive management of the Natural Temperate Grassland that occurs within the Kama Nature Reserve to maintain and enhance its ecological condition.		
Action	Responsibility	Timing
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.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development prior to the commencement of the construction of the Sewer 3 East or within 2 years and 6 months of endorsement of the NES Plan; whichever occurs first.
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.	Territory and Municipal Services Directorate	Commencement on completion of Action 25 Implementation 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.	Environment and Sustainable Development Directorate	As part of the final Planning and Design Framework for stage 3

4.3 Pink-tailed Worm Lizard

The Molonglo river corridor supports an important population of the Pink-tailed Worm Lizard (see Figure 4).

Conservation outcomes

The ACT Government will deliver the following conservation outcomes for Pink-tailed Worm Lizard (PTWL):

- a) Impacts to high and moderate quality PTWL habitat will be limited to a maximum of 27 ha and a range of measures will be implemented to minimise this area of impact.
- b) Two offset sites will be established within the strategic assessment area (Kama Nature Reserve and the Molonglo River Park) that will provide for the long term protection of 66 ha of high and moderate quality PTWL habitat (see Figure 6). These areas will be adaptively managed to maintain and enhance the ecological condition* of the PTWL habitat that occurs there.
- c) Continued protection of 28.1 ha of high and moderate quality PTWL habitat within the Lower Molonglo Nature Reserve (see Figure 4). These areas will be adaptively managed to maintain the ecological condition* of the PTWL habitat that occurs there.
- d) Protection of an additional 23.3 ha of high and moderate quality PTWL habitat within the strategic assessment area outside of the development and offset areas (see Figure 4). These areas will be adaptively managed to maintain and enhance the ecological condition* of the PTWL habitat that occurs there.
- e) Improving and applying the knowledge about the management of PTWL.

* "Ecological condition" of PTWL habitat will be measured using the criteria described in "Osborne, W., and Wong, D. (2010) *Extent of potential pink-tailed worm-lizard (Aprasia parapulchella) habitat in the Stage 2 Investigation Area – East Molonglo downstream of Coppins Crossing*. Report commissioned by ACTPLA".

Actions to achieve the conservation outcomes

Conservation outcome (a) Impacts to high and moderate quality PTWL habitat will be limited to a maximum of 27 ha and a range of measures will be implemented to minimise this area of impact.		
Action	Responsibility	Timing
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.	Environment and Sustainable Development Directorate	On completion of the final Planning and Design Framework stages 2 and 3 respectively
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.	Environment and Sustainable Development Directorate	On completion of the final Planning and Design Framework stages 2 and 3 respectively
30. Design the infrastructure that will occur in the river corridor to minimise impacts to high and moderate quality PTWL habitat.	Environment and Sustainable Development Directorate	Prior to the construction of infrastructure
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.	Environment and Sustainable Development Directorate	Development of the CEMPs prior to construction Implementation of the CEMPs during construction

Conservation outcome (b) Two offset sites will be established within the strategic assessment area (Kama Nature Reserve and the Molonglo River Park) that will provide for the long term protection of 66 ha of high and moderate quality PTWL habitat (see Figure 6). These areas will be adaptively managed to maintain and enhance the ecological condition* of the PTWL habitat that occurs there.		
Action	Responsibility	Timing
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.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development prior to the commencement of the construction of the Sewer 3 East or within 2 years and 6 months of endorsement of the NES Plan; whichever occurs first.
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.	Territory and Municipal Services Directorate	Commencement on completion of Action 32 Implementation 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.	Environment and Sustainable Development Directorate	As part of the final Planning and Design Framework for stage 3
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.	Environment and Sustainable Development Directorate	Development prior to the commencement of construction of John Gorton Drive Stage 2A or within 1 year of endorsement of the NES Plan; whichever occurs first.
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.	Environment and Sustainable Development Directorate and Territory and Municipal Services Directorate	Development prior to the commencement of the construction of the Sewer 3 East or within 2 years and 6 months of endorsement of the NES Plan; whichever occurs first.

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.	Environment and Sustainable Development Directorate	On completion of the final Planning and Design Framework for stage 2 and completion of the Park Concept Plan.
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.	Territory and Municipal Services Directorate	Commencement on completion of Action 36 Implementation ongoing
39. Register a disallowable instrument under the <i>Domestic Animals Act 2000</i> to effect a cat containment policy for the Molonglo area.	Territory and Municipal Services Directorate	30 June 2012

Conservation outcome (c)

Continued protection of 28.1 ha of high and moderate quality PTWL habitat within the Lower Molonglo Nature Reserve (see Figure 4). These areas will be adaptively managed to maintain the ecological condition* of the PTWL habitat that occurs there.

Action	Responsibility	Timing
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).	Territory and Municipal Services Directorate	Ongoing

Conservation outcome (d) Protection of an additional 23.3 ha of high and moderate quality PTWL habitat within the strategic assessment area outside of the development and offset areas (see Figure 4). These areas will be adaptively managed to maintain and enhance the ecological condition* of the PTWL habitat that occurs there.		
Action	Responsibility	Timing
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. <i>See Section 4.6 for information about the content of management plans.</i>	Environment and Sustainable Development Directorate	Development after completion of the adaptive management strategy (see Section 7) and within 2 years and 6 months of endorsement of the NES Plan
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.	Territory and Municipal Services Directorate	Commencement on completion of Action 41 Implementation ongoing
Conservation outcome (e) Improving and applying the knowledge about the management of PTWL.		
Action	Responsibility	Timing
43. Undertake a research project examining the effects on PTWL of disturbance and proximity to urban areas. <i>See Section 4.8 for information about the PTWL research project.</i>	Environment and Sustainable Development Directorate	Commencement within 6 months of endorsement and incorporated into the Planning and Design Frameworks for both stages 2 and 3
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.	Environment and Sustainable Development Directorate	Boundary amendment will be incorporated immediately into the draft Planning and Design Framework for stage 2. The boundary amendment will be prescribed by a Territory Plan amendment, post completion of the Estate Development Plan (EDP) for stage 2

4.4 Superb Parrot and Swift Parrot

Remnant patches of Box-Gum Woodland, particularly to the west of East Molonglo, provide suitable and potential habitat for the Superb and Swift Parrots.

Conservation outcomes and actions

The implementation of the NES Plan will result in the direct loss of approximately 40 ha of Box-Gum Woodland that supports mature overstorey species. However, approximately 313 ha of the Box-Gum Woodland that will be retained in the strategic assessment area supports important overstorey species that may provide foraging habitat for Superb and Swift Parrots. Given the clear link between Box-Gum Woodland areas containing an overstorey and habitat values for these two species, many of the conservation outcomes and actions for Box-Gum Woodland (see Section 4.1) will also provide positive outcomes for the Superb and Swift Parrots.

The most important conservation outcome for these species is the protection and ongoing management of the Kama Nature Reserve which includes approximately 117 ha of Box-Gum Woodland. Most of the Box-Gum Woodland in the reserve includes a healthy and diverse overstorey which provides potential habitat for the Superb and Swift Parrots.

Additionally, conservation outcomes detailed in Section 4.1 for Patches C, D, H, I, L, M, P, T, West Molonglo and Patch GG will benefit Superb and Swift Parrots.

4.5 Construction Environmental Management Plans (CEMPs)

This section is relevant to Actions 4 and 31.

In order to manage the potential indirect impacts from construction activities within the development area and the river corridor, construction environmental management plans (CEMPs) for the various construction phases and activities will be developed and implemented.

These plans will be required as part of the Development Approval process under the *Planning and Development Act 2007* and will be developed by qualified environmental professionals with a focus on protecting adjacent areas.

The CEMPs will include (at a minimum):

- Safeguards for controlling heavy machinery movement to avoid adjacent habitat areas (e.g. temporary fencing).
- Erosion prevention and mitigation measures. For example, the use of mesh sediment fences to prevent construction materials from entering adjacent habitat areas.
- Weed and disease control measures.
- Measures to relocate animals that are found within construction areas.
- Appropriate monitoring and reporting.

Where impacts to Pink-tailed Worm Lizard occur as part of the development, the CEMPs will also include a habitat rehabilitation component. They will be developed by an expert in Pink-tailed Worm Lizard management and guided by information in the Draft Recovery Plan for the Pink-tailed Worm Lizard (Brown, G. 2010. *National Recovery Plan for the Pink-tailed Worm-Lizard Aprasia parapulchella*. Draft for Comment 2010)⁵. They will include (at a minimum):

- For areas that will be impacted directly, habitat features (e.g. rocks and topsoil) will be stockpiled for use in rehabilitation.
- Rehabilitation activities will be focused on areas that will improve the connectivity and size of existing high and moderate quality habitat within the river corridor.
- Efforts to promote the movement of the species throughout the river corridor, including under the bridges (e.g. through placement of suitable rocks under the bridges).
- Weed control and fencing of habitat areas to promote their resilience.
- Appropriate monitoring and reporting of outcomes.

4.6 Management plans

This section is relevant to actions 5, 9, 12, 14, 16, 25, 32, 36 and 41.

Management plans will provide the conservation management framework and specify the actions that the ACT Government will carry out to maintain and enhance the MNES values within the strategic assessment area. This section outlines the process by which management plans will be developed and implemented.

Conservation management experience

The ACT Government has significant experience in conservation management. For example, the ACT Government has substantial expertise and experience with managing woodland and grassland ecosystems through its Nature Reserve system (e.g. Mulanggari, Gungaderra, Crace, Mulligans Flat, Mount Ainslie and Mount Majura).

There are a number of resources that provide useful guidance about the management requirements for MNES values within the strategic assessment area. The best practice management approaches from these resources will be adopted. They include:

- ACT Government (2004) *Woodlands for Wildlife: ACT Lowland Woodland Conservation Strategy*. Action Plan No. 27.
- ACT Government (2005) *A Vision Splendid of the Grassy Plains Extended: ACT Lowland Native Grassland Conservation Strategy*. Action Plan No. 28.
- ACT Government (2007) *Ribbons of Life: ACT Aquatic Species and Riparian Zone Conservation Strategy*. Action Plan No. 29.
- Osborne, W. (2008a) *Environmental planning principles for the protection of the Pink-tailed Worm Lizard Aprasia parapulchella in the Lower Molonglo Valley, ACT*.

⁵ And subsequent final release of the recovery plan

- Osborne, W. (2008b) *Assessment of Pink-tailed Worm Lizard (Aprasia parapulchella) habitat along the proposed Molonglo Trunk Sewer. Implications of the EPBC Act.*
- ACT Government (2002) *Lower Molonglo River Corridor Plan of Management.*
- Brown, G (2010) *National Recovery Plan for the Pink-tailed Worm-Lizard Aprasia parapulchella.* Draft for Comment 2010⁶.
- Department of Environment, Climate Change and Water NSW. 2010. *Draft National Recovery Plan for White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland.* Department of Environment, Climate Change and Water NSW, Sydney⁷.

In addition to drawing on these resources, the management plans will:

- incorporate the research findings from the projects required as a result of EPBC referral 2009/5156; and
- be complementary to the management approaches developed for the area of the river corridor adjacent to Coombs as required in relation to EPBC referral 2009/5050.

Adaptive management

Adaptive management is a key principle for the management of MNES values within the strategic assessment area. It is a systematic process for continually improving management practices through monitoring and evaluation. Figure 7 below shows the general adaptive management process.

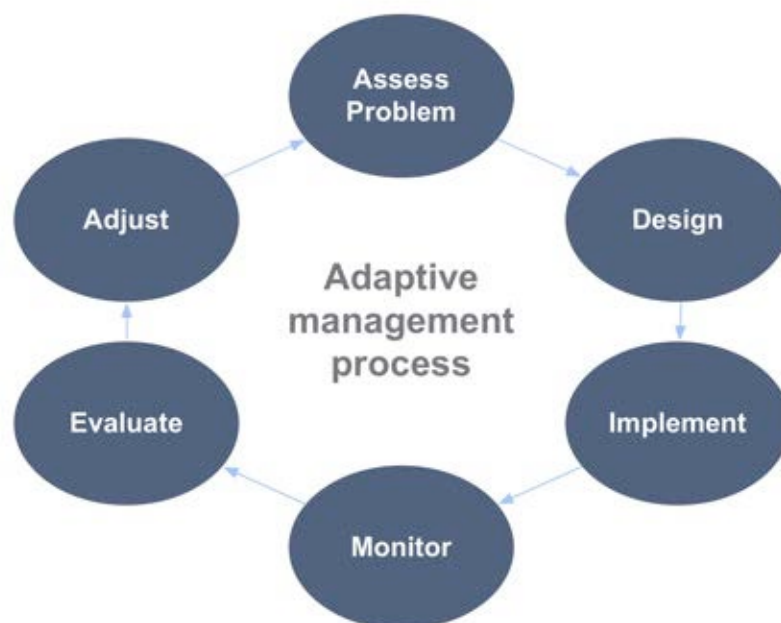


Figure 7: Adaptive management process

⁶ And subsequent final release of the recovery plan

⁷ And subsequent final release of the recovery plan

This adaptive management approach will be built into the Adaptive Management Strategy (Section 7) and individual management plans.

Content of the management plans

Each of the management plans will be developed by experts in species and conservation management within the ACT Government and be based on:

- a set of overarching principles; and
- more detailed considerations that are relevant to the MNES values of each area.

The overarching principles that will inform the Adaptive Management Strategy (Section 7) and each of the management plans are:

- Management will be based on an adaptive management process.
- Management will be focused on the ecological condition of MNES values. Ecological condition is defined differently depending on the specific MNES (see Sections 4.1 to 4.3). Baseline monitoring will be conducted to determine the starting point for ecological condition in the strategic assessment area.
- Objectives, performance targets and measurable performance indicators for each management area will be set. These will include management, performance and MNES condition milestones to be achieved over time. For example, in the three offset areas the objective of management will be to maintain and enhance the ecological condition of the MNES values, and so these targets will set a trajectory for their attainment within an active adaptive management framework.
- Conservation strategies, processes and timeframes will be defined to achieve targets and implement the plans, including allocation of responsibilities and identification of the necessary resources.
- Mechanisms will be established to monitor, evaluate, and annually report on progress to achieve objectives for management, including how management actions will be adjusted to account for new information. This new information will include new, peer reviewed scientific literature. Annual reports will be made publicly available.

In terms of more detailed considerations for management, the following issues will be incorporated into the management plans:

- Protection of MNES values. Box-Gum Woodland, Natural Temperate Grassland and high and moderate quality Pink-tailed Worm Lizard habitat will be protected.
- For high and moderate quality Pink-tailed Worm Lizard habitat, 20 m buffers will be provided (other than areas to be impacted by infrastructure construction). The buffer areas will be managed specifically for conservation. Facilities such as major paths or roads will be built outside this zone. However, facilities that contribute to the long term conservation outcomes for the habitat may be provided within habitat or buffer areas (as long as the maximum area of habitat to be impacted is not exceeded). For example, access points to the river will be provided at strategic points in order to provide controlled movement of people in the area. These may cross habitat at appropriate points in order to minimise uncontrolled movement of people. Planning for

these potential facilities will be incorporated into the management planning framework for the river corridor.

- Appropriate fire management. The application of fire and other fuel mitigation measures will take into account ecological fire thresholds for Box-Gum Woodland, Natural Temperate Grassland and Pink-tailed Worm Lizard habitat.
- Appropriate biomass control to achieve/maintain environmental condition targets.
- Control of access to achieve/maintain environmental condition targets.
- Weed management, with priority given to reducing weed species that have the greatest adverse ecological impact.
- Feral animal management to avoid native animal predation and rabbit grazing.
- Management of hydrological processes.
- Restoration of the ecological attributes lost within the lower Molonglo Valley landscape.
- Appropriate condition monitoring. The monitoring regime will take into account and track the ecological condition of Box-Gum Woodland, Natural Temperate Grassland and the Pink-tailed Worm Lizard habitat against the objectives for management.

4.7 Box-Gum Woodland off-site restoration project

This section is relevant to action 23.

The indirect offset project for Box-Gum Woodland is designed to provide long term conservation outcomes. It addresses one of the key challenges in relation to woodland restoration and rehabilitation, that of limited information. It also addresses the need for the highest level of certainty possible in relation to the design of indirect offset projects.

The ACT Government will deliver an off-site restoration project in collaboration with local partners with expertise in the field of land restoration. The program will involve seed collection from within the strategic assessment area with a view to using that resource for Box-Gum Woodland restoration within Patch GG. Seed will also be stored for potential use in future restoration projects.

The program will be delivered through six key restoration stages. The activities are tabled below and will include engaging with local stakeholder groups and project partners, and referencing current plans and strategies and applying best practice. An adaptive management process will be used so that restoration interventions can be tailored based on system responses and changing circumstances.

Core Activity	Activity Description
1. Site assessment & recommendations	Field visits to Box-Gum Woodland sites to be lost to development and sites to be kept and enhanced: 1. Identify presence and frequency of plant species - native and exotic 2. Recommend species to introduce, reintroduce or increase underrepresented populations 3. Investigate the merits and processes of translocating Box-Gum Woodland species from areas to be lost into patch GG (especially key understorey species) 4. Develop a seed supply and propagation works plan referencing items 1 & 2 above and drawing on the availability of collecting plant material from nearby sites of higher quality
2. Rehabilitation Scoping Study	Scope a woodland revegetation and restoration plan that will factor development stages, weed management & incorporate local knowledge about species availability and successful reestablishment approaches
3. Seed supply & plant rescue future use at Patch GG	1. Identify current provenance stock in regional seed banks that would be suitable for use in high-conservation box gum woodland restoration 2. Collect, process and store needed seed in accordance to the national code of practice, "FloraBank" 3. Rescue plants or collect plant material from species of significance that will be destroyed – this may involve establishing temporary or permanent seed production areas in consultation with the ACT Government
4. Plant production	Seasonally propagate plants in accordance to the rehabilitation plan e.g. quantities and species
5. On-ground rehabilitation works	Deliver staged works in accordance to the rehabilitation plan. This will be seasonally influenced by the weather e.g. best time for planting is autumn & spring
6. Monitoring and evaluation	Establish benchmark data & monitor rehabilitation success using scientifically credited performance measurements already adopted by regional leaders in rehabilitation assurance Throughout the duration of the 30 year plan results will be used to review on-ground ecological performance and where relevant implement best practice change or modification

4.8 Pink-tailed Worm Lizard research project

This section is relevant to action 43.

Scientific data, especially in relation to the management and conservation of the Pink-tailed Worm Lizard in, and adjacent to, areas of urban development, is incomplete.

The potential indirect effects of urban development include weed spread, increased feral animal predation, direct disturbance by people traversing habitat, construction of urban infrastructure such as roads, and inappropriate management of asset protection buffers.

It is an objective of the ACT Government to ensure that the potential for residential impacts on the Pink-tailed Worm Lizard be avoided or mitigated. To better understand how to achieve this objective the ACT Government will implement an indirect offset in the form of a research project examining the long term survival of Pink-tailed Worm Lizard in an urbanised landscape.

The research project will adopt a tri-staged approach:

1. Mt. Taylor, a reserve unit within Canberra Nature Park, is surrounded by an urban matrix (housing, roads, facilities, easements etc). The focus of this first stage of the study will be:
 - a. habitat disturbance, including fragmentation, and the effect of habitat proximity to urban areas.
 - b. In accordance with the draft National Recovery Plan for Pink-tailed Worm Lizards (Brown 2010), develop low-impact survey and monitoring techniques for the species.

The outcomes of this research will be applied to management within the East Molonglo strategic assessment area.

2. The results of the Mt Taylor study will be incorporated into the second stage of the project. The second stage will involve the following sub-projects:
 - c. extensive survey work to determine population densities in areas of low, moderate and high quality Pink-tailed Worm Lizard habitat in the Strategic Assessment area;
 - d. field trials, to be conducted in areas of low quality habitat only, involving different methods of translocation; and
 - e. research and field trials involving methods for reducing habitat fragmentation and increasing connectivity.
3. The NES Plan actions (see Section 4) include the monitoring of Pink-tailed Worm Lizard in the Strategic Assessment area. This monitoring is vital to ensure the long term survival and enhancement of the lizard population. Monitoring also provides a warning system should the population and/or habitat begin to show any signs of decline.

This third stage of the project provides a link between the stage 2 research and the monitoring of Pink-tailed Worm Lizard in the Strategic Assessment area. Where population and habitat monitoring show any change to base-line data (established prior to Stage 2 development) the results of the stage 2 research will be applied to establish possible causes and to mitigate adverse impacts.

5. STATUTORY PLANS OF MANAGEMENT

Plans of Management are a statutory requirement under the *Planning and Development Act 2007* and provide a policy framework for ongoing management. The Conservator of Flora and Fauna (established under the *Nature Conservation Act 1980*) can determine management objectives to be incorporated into Plans of Management.

Statutory Plans of Management will be developed for both the Kama Nature Reserve and the Molonglo River Park. These Plans will formalise the management plans that will already have been developed and implemented for these areas (see Section 4).

The Plans of Management will be developed within 3 years of endorsement of the NES Plan or prior to commencement of the Molonglo Group Centre Infrastructure Stage 1⁸; whichever occurs first.

6. ANNUAL REPORTING

The ACT Government will monitor and report annually to the public on the implementation of the NES Plan. The primary purpose of monitoring and reporting is to ensure that the conservation outcomes described in the NES Plan are achieved.

An annual report highlighting the conservation outcomes achieved in the previous year will be published by the ACT Government and be provided to SEWPaC. 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. The report will be completed within five months of the end of each financial year and will be made publicly available.

7. ADAPTIVE MANAGEMENT STRATEGY

The Adaptive Management Strategy will 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

⁸ Molonglo Group Centre

1. The Group Centre will be located generally at the centre of Molonglo Stage 2.
2. Infrastructure associated with the Group Centre will consist of roads, sewers, water mains and, other services such as gas, electricity and communications. The roads will define the development blocks;
3. Development of the Group Centre and the sale of blocks cannot proceed without this infrastructure.

and practices to achieve long term conservation outcomes for MNES. The Strategy will set out:

- How the process and principles outlined in Section 4.6 will be applied.
- How the baseline ecological condition of MNES will be established, measured and monitored in accordance with commitments in Sections 4.1 to 4.3, including:
 - o monitoring methods, tools, standards, timing and frequency, and
 - o accountabilities for monitoring, evaluation and reporting tasks.
- A map of managed lands within the strategic assessment area.
- How the Strategy will be applied to protect and/or enhance (a) moderate and high quality Pink-tailed Worm Lizard habitat, (b) Natural Temperate Grassland and (c) Box Gum Woodlands protected and/or enhanced under the NES Plan.
- The MNES objectives and performance targets for the strategic assessment area.
- The process for determining the conservation objectives, performance targets, measurable performance indicators and milestones (in terms of outputs and condition outcome) for each parcel of managed land within the strategic assessment area.
- Contingency planning to respond to desired maintenance and/or enhancement objectives not being met, and to unforeseen impacts and/or effects, including identifying thresholds and triggers.
- How management plans will be updated and will respond to findings from:
 - o the monitoring, evaluation and reporting programs for MNES objectives and performance targets;
 - o relevant learnings from lands outside of the strategic assessment area and how they will be applied⁹ within the continuous improvement framework;
 - o research conducted to address key uncertainties¹⁰; and
 - o new peer reviewed scientific literature and how it will be applied within a continuous improvement framework.
- A framework for reporting MNES condition outcomes against the NES Plan commitments.

The timing for the completion and approval of the Adaptive Management Strategy will be prior to the commencement of construction of the Sewer 3 West¹¹ or within 18 months of endorsement of the NES Plan, whichever occurs first.

⁹ E.g. outcomes from Mulligan's Flat Nature Reserve, Goorooyaroo Nature Reserve and other

¹⁰ E.g. including outcomes from the Pink-tailed Worm Lizard research discussed in Section 4.8

¹¹ Sewer 3 West

1. Sewer 3 West will be contained wholly within the development boundary of Molonglo Stage 2. It is proposed to start at the site of Cravens Creek water quality control pond on Cravens Creek and traverse in a north westerly direction for approximately 1.3 km;
2. Construction will consist of the excavation of a trench, installation of pipe (300 mm to 375 mm diameter) and its backfill, and the construction of manholes;
3. Development in the majority of the area west of Coppins Creek cannot be provided with sewerage services without the completion of this sewer.

The Adaptive Management Strategy will be submitted for approval by the Minister or delegate.

The approved Adaptive Management Strategy will be implemented by the ACT Government.

8. COMPLIANCE AND ENFORCEMENT

The Annual Report will be the primary mechanism for identifying:

- achievement of the MNES conservation outcomes identified in Section 4;
- progress in completing the actions listed in Section 4; and
- any deviation or non-compliance with the actions outlined in Section 4.

The EPBC Act precludes the taking of any action that is likely to have a significant impact on MNES without a valid approval.

Where a development activity that is undertaken in a way that is not in accordance with the requirements or commitments documented in the NES Plan (thereby potentially contravening any approval) the following procedure will be used:

1. Annual Report identifies deviation from or non-compliance with a MNES conservation outcome or action to achieve an outcome.
2. Commonwealth Government analyses the deviation / non-compliance and considers the importance in terms of impacts on MNES.
3. Commonwealth Government advises that either:
 - o deviation / non-compliance is minor or trivial and no further action is required; or
 - o deviation / non-compliance requires corrective action.
4. In the event that corrective action is required the Director General, ACT Chief Minister's Directorate will be provided with an opportunity to correct the non-compliance. For example, in the case of non-compliance with a conservation outcome, the ACT Government must submit a remedial plan for addressing non-compliance for approval by the commonwealth Government. The Commonwealth government may approve the remedial plan and actions must be taken to the Commonwealth Minister's satisfaction.

9. AUDITING

The NES Plan and its associated actions will be audited by an independent, third party expert every five years, for a 30 year period.

A customised audit protocol will be developed with the auditor 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.

The audit reports will be provided to SEWPaC for their consideration.

10. REASONABLE ASSURANCE

The ACT Government is committed to ensuring the conservation outcomes for the MNES. The legislative, administrative and financial resources to effect this assurance are committed by the ACT government through:

- the NES Plan;
- statutory requirements under the ACT's legislative framework; and
- the establishment of evaluation, reporting and monitoring mechanisms.

The Treasury Directorate will ensure that the commitments and actions in the NES Plan are funded.

Commensurate with the structure of the ACT Government, the Director General, ACT Chief Minister's Directorate, has primary responsibility for this assurance.

APPENDIX 1: STRUCTURE PLAN

The Structure Plan may be subject to technical amendments as more detailed planning progresses. It is shown here for indicative purposes only.

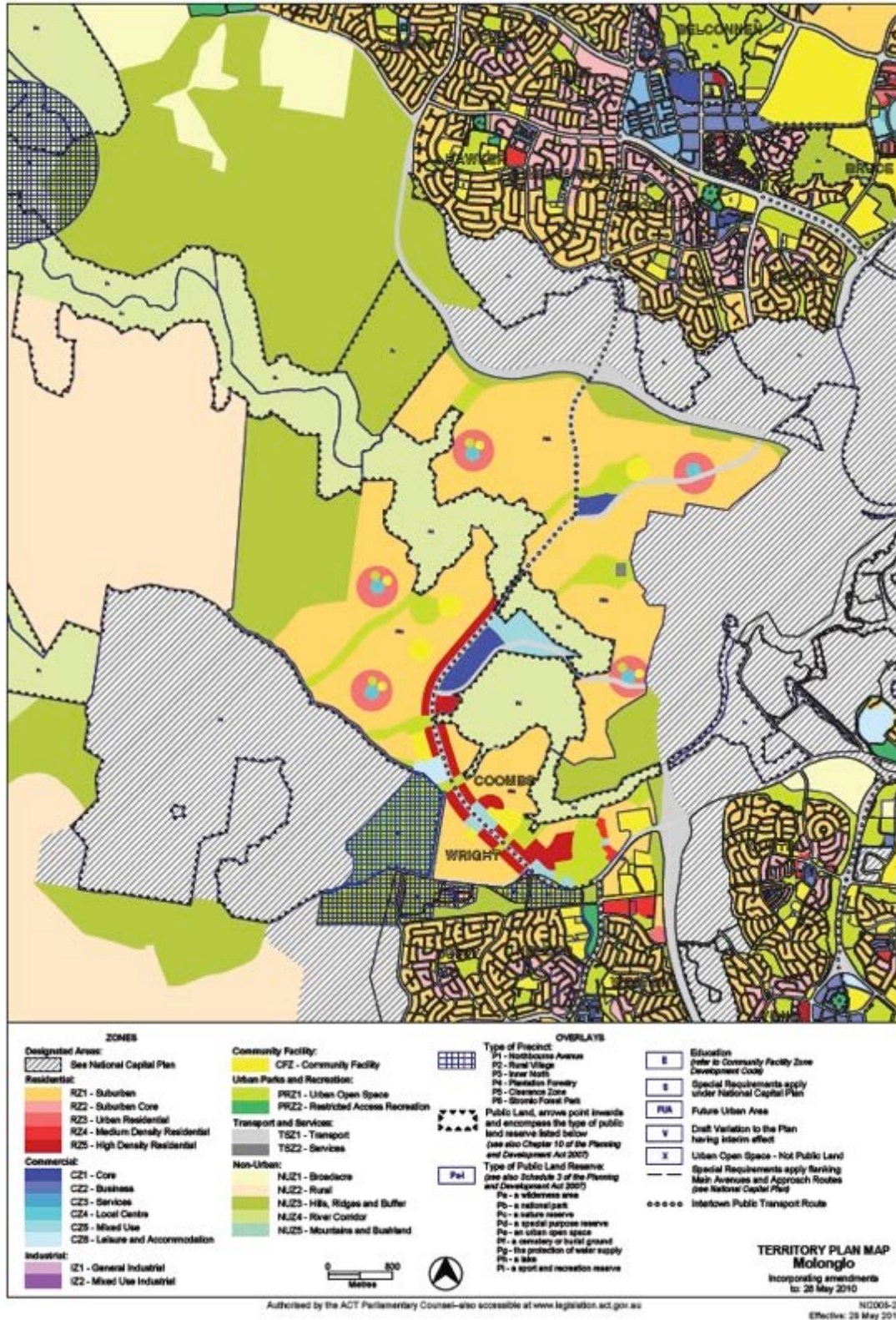


Figure 8: Molonglo and North Weston Structure Plan