

5.2.3 River crossings

Clos and Southwells Crossings will continue to be the main formalized locations for crossing the river. An engineering assessment should be performed to determine requirements for maintenance and improvement to existing infrastructure, including requirements for emergency vehicles. High priority should also be given to improving amenity in the vicinity of these crossings, possibly including the creation of open space picnic areas on the southern side of the river.

There are a number of locations where informal crossings exist, including rocky and braided sections of the river channel. Examples are shown in **Figure 13**.

5.2.4 Open space recreation areas

Eventually there will be some 55,000 people living in the adjoining suburbs. The urban area will include parks and sporting fields. However, the river corridor will offer a more 'natural' setting for picnics and open space recreation. While it is envisaged that the majority of the river corridor will be rehabilitated with native vegetation communities, it is recommended that small areas within the corridor be cleared and landscaped for open space recreation.

Suitable locations and staged development of these areas needs to be integrated with other rehabilitation activities outlined in **Section 5.1**. Detailed plans of these areas will need to consider seating, signage, views, proximity to water, access and landscaping. It is recommended that the initial focus should be on the areas adjacent Clos and Southwells Crossings because these are likely to be more frequently used by new and prospective residents, and visitors to the area.

5.2.5 Signage and communication

A signage and communications plan needs to be developed and implemented to:

- Increase visitor awareness and understanding of the values under management
- Increase visitor enjoyment
- Inform the community about the purpose of the riparian corridor
- Increase community support for management programs
- Minimize impacts from visitors and neighbours

Directional, regulatory and interpretive signage will be an essential part of the communications strategy. Reference should be made to Australian Standard 2156 and the TAMS guidelines, for the erection of symbols and signs on all tracks.

The style and materials used in the sign should be consistent through the study area (refer to TAMS design standards). Consideration should be given to the position of the sign, including its height, so that it is easily visible to the target audience. Standard symbols should be used where possible.

Directional signs need to have a brief clear message and be located wherever a visitor needs to make a decision quickly. The distance or walking time, degree of difficulty (e.g. steep grades) and user restrictions should be indicated. There may be a hierarchy of signs e.g. major entrance points/main tracks and features/minor tracks.

Interpretive signage can be used effectively to 'tell a story' e.g. land use history and conservation/recovery of threatened species. The signs will require regular maintenance, especially if vandalism occurs.

Other or alternative forms of communication that could be used initially as part of the marketing strategy for the urban release, and then later for residents and visitors to the area include brochures, media articles (e.g. regular feature in the local newspaper) and web profiles. Eventually, there may be opportunities for guided walks by rangers or community volunteers.

5.3 COMMUNITY PARTICIPATION

5.3.1 Benefits

Opportunities for community involvement in management of the study area are currently limited but will increase with an influx of residents and visitors to the area. Community participation in environmental management has many benefits, including:

- Local stewardship
- Improving social networks
- Improving the environment and amenity for minimal cost

5.3.2 Opportunities for involvement

There are a number of ways in which the community could become involved in managing the riparian corridor:

- Education to prevent environmental degradation e.g. garden escapees, stormwater pollution. There is a body of educational material available from catchment groups and other agencies/organizations for the community regarding environmental matters
- On-ground work to maintain and improve environmental conditions. Initial community involvement should focus on the downstream reach (Zone 1 in the Biodiversity Strategic Action Plan - **Figure 11**) because it has easy, safer access and would require less work than upstream (Zones 2 and 3)
- An interpretive trail linking key ecological features, viewpoints, recreational areas and regeneration areas could enhance community interest and meet education objectives

The community involvement plan should coordinate with related groups and programs, such as those outlined below. The plan should utilize available educational material and tailor it to the specific issues in the area e.g. Pink-tailed Worm Lizard habitat.

5.3.3 Molonglo Catchment Group

The Molonglo Catchment Group is one of three community-based catchment groups in the ACT, although its catchment is largely in NSW. It formed in 2003 and acts as an umbrella group for all the Landcare and other natural resource management groups within the catchment. The mission of the Molonglo Catchment Group is to:

Encourage and assist the community of the Molonglo Catchment to furthering understanding, skills, motivation and capacity in achieving sustainable use and management of our natural and cultural resources

5.3.4 Programs

There are a number of excellent community programs available. Many of these are coordinated through the Molonglo Catchment Group. Examples of some of these programs are outlined below.

Land Keepers

The ACT Land Keepers Program has four components:

- VegLink: on-ground activities in native vegetation protection and enhancement
- Biodiversity Incentives: on-ground conservation work on rural and non-urban land
- Greening Industry: on-ground conservation work with agricultural and horticultural enterprises
- ACT River Rescue: implementing riparian habitat recovery along priority streams in the ACT to address biodiversity and water quality

Activities that the community can become involved in include:

- Fencing off creeks to allow:
 - erosion control in major gullies and other soil conservation works
 - protection of remnant vegetation
 - control of grazing stock
- Revegetation projects that supplement remnant native vegetation and help restore ecological connectivity across the landscape
- Weed control, particularly of willows and other weeds of national significance

ACT Waterwatch

Waterwatch involves local community catchment groups, Landcare, as well as residents, schools, utilities and landowners to regularly monitor the water quality of local creeks, wetlands, lake, rivers and stormwater drains. Waterwatch provides all the training and equipment to do physical and chemical analysis, macro-invertebrate surveys, riparian assessments, and frog censuses.

Frogwatch

Frogwatch is a community frog monitoring program that collects important information about frog species and therefore catchment health and water quality. Frogs are well known for their sensitivity to pollution and habitat degradation, which makes them ideal indicators of the health of our catchments and waterways. The Frogwatch Census involves a simple assessment of our waterways by assuming that healthy habitats provide suitable conditions for diverse and abundant frog populations.

Bush on the Boundary

The 'Bush on the Boundary' Reference Group brings together representatives from a number of organisations spanning the government, community and business sectors. The group provides a forum for the exchange of information on biodiversity conservation and management of natural areas and nearby suburban areas. It also provides coordinated support for participants' new and existing projects and initiatives that assist the advancement of biodiversity conservation and land management, including research, monitoring, community engagement, education and on-ground projects.

5.4 CONCURRENT WORKS IN ADJACENT AREAS

Work in the riparian corridor will be most effective if adjacent areas are also managed well. This includes the riparian corridor upstream to Scrivener Dam, the burnt pine forest to the north (between the study area and the Arboretum) and the future urban areas of Coombs, North Weston and Wright. The

River Park Concept Plan is expected to provide a broader context to managing the riparian corridor adjacent future suburbs of the Molonglo Valley.

5.4.1 Upstream to Scrivener Dam

The upstream catchment will continue to be a source of weeds, sediment and pollutants unless management practices change between Tuggeranong Parkway and Scrivener Dam. The *ACT Aquatic Species and Riparian Zone Conservation Strategy* has the following objectives:

- Upstream river sections also need to be rehabilitated. (Willows are being removed upstream of the study area in accordance with the *Lake Burley Griffin Willow Management Plan* by Greening Australia Capital Region 2006.)
- River flows should be protected at a level and regime that sustains all in-stream biota and ecological processes. Calculations and management of environmental flows for Lake Burley Griffin are being reviewed by the National Capital Authority

Treatment of upstream areas would also be consistent with the approach outlined in the *Draft Molonglo River Rescue Plan* (Molonglo Catchment Group and ACT NRM Council 2010). The Rescue Plan defines Reach 8 as Scrivener Dam to the Lower Molonglo River Corridor Nature Reserve, thus including the current study area. Areas within Reach 8 were considered to have similar issues and require similar actions.

5.4.2 Northern area

The area to the north of the riparian corridor is a burnt pine forest infested with Blackberries and pine regrowth. In the long term, part of this area will be developed for residential purposes. However, some of this area may be suitable for extension of the Arboretum and could be investigated further. Hill tops would offer excellent views across the Molonglo Valley and could be accessed via the existing track network (once upgraded).

5.4.3 Coombs, North Weston and Wright

Further changes will occur as part of the urban development. These will include stormwater detention ponds (proposed locations shown in **Figure 5**) and an associated stormwater pipe network. Water sensitive urban design features will be incorporated in the urban development in accordance with *Waterways – Water Sensitive Urban Design General Code* (ACT Planning and Land Authority 2009).

Actions within this Strategy will be further developed and implemented concurrent with significant activity in adjacent urban development areas. To prepare the site for development, heavy machinery will be used to remove the vegetation (mainly Pines and Blackberries). Appropriate follow-up will be needed in accordance with guidelines for Weeds of National Significance to ensure that future urban areas are not weed infested and do not continue to be a source of weeds for the riparian corridor.

5.5 CLIMATE CHANGE

Predicted climate change is expected to impact the Molonglo riparian corridor. Key climate change predictions for the ACT are (ACT Government 2007 and CSIRO⁸):

⁸ <http://www.csiro.au/resources/psrs.html>

- Higher air temperatures, including more hot days over 35 °C (up to three times as many by 2070) and a reduction in the number of frost days
- Increase winds in summer
- Drier average seasonal conditions (wetter in summer and autumn, drier in winter and spring)
- An increase in frequency and duration of extreme events such as storms and droughts
- An increase in frequency and duration of bushfires

Human activities and natural systems will need to adapt to these changes. The ACT Government's *Climate Change Strategy 2007-25* outlines the principles, targets and objectives to mitigate and adapt to climate change in the ACT. The first Action Plan⁹ of the Climate Change Strategy sets out 43 separate action items, to be delivered by 2011. Actions likely to be directly relevant to the Molonglo Riparian Strategy are indicated below. Maintaining terrestrial and aquatic habitat connectivity will be important for the viability of species populations at a local and regional level. Care needs to be taken to ensure that barriers to wildlife movement are avoided.

- Develop integrated land use and transport planning
- Pursue an urban forest replacement program
- Protect areas of high conservation value
- Develop an ecosystem connectivity map
- Plant one million new trees
- Undertake a community education program
- Undertake a carbon sequestration audit

Biodiversity corridors such as the Molonglo River and riparian buffers will be needed to enable ecosystems to move through the landscape under changing climate conditions. The connectivity study recently undertaken by the ANU to fulfil dot point four above indicates that the Molonglo River Corridor is important for habitat connectivity for woodland birds, strongly flying birds (e.g. superb parrot), mammals and amphibians.

Volumes of water released from Scrivener Dam are likely to be affected by climate change and will require ongoing review to ensure environmental flow objectives are met.

5.6 LAND USE CLASSIFICATION

As indicated in **Figure 1**, the study area is currently zoned Non-Urban 'NUZ4 River Corridor' and classified as 'special purpose reserve' under the *Planning and Development Act 2007* 'to provide for public and community use of the area for recreation and education'. To more accurately reflect the objectives of conserving and rehabilitating biodiversity, amenity and recreational opportunities as described in this Strategy, it is recommended that the study area be rezoned as 'nature reserve'. Management objectives for this zone are listed in Schedule 3 of the Act as follows:

- To conserve and restore the natural environment
- To provide for public use of the area for recreation, education and research

⁹ http://www.environment.act.gov.au/climate_change/weathering_the_change/Climate_Change_Action_Plan.pdf

Appropriate land use zonings for areas within the river corridor will be investigated further during development of the River Park Concept Plan.

5.7 MONITORING

Monitoring will be needed to determine the effectiveness of actions in meeting objectives in **Table 1** and be essential to inform adaptive management practices. Monitoring and record keeping needs to be conducted in accordance with TAMS (LMP)'s requirements. A detailed monitoring plan should be developed and implemented so that the success in the fulfilment of the management objectives can be gauged. Such a monitoring plan would include some of the elements listed under **Sections 5.7.1** and **5.7.2**.

5.7.1 Biodiversity

- Location of monitoring sites e.g. transects, quadrats, incidental observations, photo points. All monitoring sites should be identified in the field by star picket, GPS location (easting and northing) and individual code.
- Templates and database (e.g. the MERV¹⁰ customised Access database)
- Flora monitoring
 - Vegetation community structure and condition
 - Dominant plant species (including weeds)
 - Threatened species and potential habitat
 - Condition assessment (e.g. fire history, disturbance, resilience)
 - Number size, extent and condition of fauna habitat features (e.g. logs, hollows, stags, litter, rock, water bodies)
 - Opportunistic fauna observations
- Targeted fauna monitoring that capture seasonal differences. The fauna monitoring techniques to be used will depend on the habitat available. For example:
 - Diurnal bird surveys
 - Herpetological surveys
 - Anabat surveys
 - Call Playback and Spotlighting for nocturnal birds and mammals, frogs
- Results of on-ground work (e.g. species, area and numbers planted, and weed management).
- GIS maps to illustrate, as a minimum:
 - Monitoring locations
 - Ecological features at each monitored site
 - Changes over time to compare baseline conditions with subsequent results

5.7.2 Recreational usage

User surveys and automated monitoring could be employed to determine:

- Types of recreation being conducted e.g. mountain bike riding, equestrian, walking, picnicking

¹⁰ MERV is a freely available database for Monitoring and Evaluation of the Restoration of Vegetation. For more details refer to: <http://www.envite.org.au/>

- Locations where recreation is occurring e.g. Clos Crossing, southern perimeter track
- Frequency of recreational experience in the area e.g. daily, weekly, monthly, rarely
- Demand for additional or different facilities and experiences
- Breaches of restricted activities e.g. unauthorised 4WD
- Perception of value e.g. amenity, safety

5.7.3 Reports

Monitoring reports will need to interpret the data and provide plain English conclusions suitable to inform a non-scientific audience of values and trends (which may be suitable for use in community education material). Monitoring reports should build on each other as additional information becomes available. The analysis in each report should be supported by information such as maps, tables and photographs.

6 Next steps

In summary, the steps to be taken to implement this Strategy are as follows:

- Prepare a River Park Concept Plan that examines in detail the recommendations of this Strategy, provides an integrated plan for the whole of the Molonglo River corridor adjoining future urban areas, and provides the framework for a detailed plan of management
- Clarify and assign roles and responsibilities for implementation
- Prepare a business case for funding and obtain funds
- Obtain required approvals, licences and permits
- Establish and implement monitoring and reporting procedures

A construction environmental management plan (CEMP) should be prepared for implementation by contractors and agency staff working in the development area. The CEMP should provide (for example) protocols for removal of weeds and pine wildlings, controlling soil erosion and stockpiling rocks for reuse in Pink-tailed Worm Lizard habitat.

References

ACT Government 2007. *Ribbons of Life: ACT Aquatic Species and Riparian Zone Conservation Strategy. Action Plan No. 29.* Department of Territory and Municipal Services, Canberra.

ACT Government 2008. *ACT Water Report 2007-08.* Department of Territory and Municipal Services, Canberra.

ACT Government 2008a. *Coombs Concept Plan. Precinct Codes for Section 93 of the Planning and Development Act 2007.* Authorised 19 December 2008.

ACT Government 2008b. *Structure Plan – Molonglo and North Weston.* Authorised 19 December 2008.

ACT Government 2007. *Weathering the Change: The ACT Climate Change Strategy 2007-25.* The Department of Territory and Municipal Services, Canberra.

ACT Planning and Land Authority 2009. *Waterways – Water Sensitive Urban Design General Code.*

Australian Bushfire Protection Planners 2006. *Bushfire Risk Assessment Stage 2 (Molonglo Valley).* Prepared for the ACT Planning and Land Authority, ACT Government, Canberra.

Australian Bushfire Protection Planners 2005. *Bushfire Risk Assessment (Molonglo Valley), Australian Capital Territory.* Prepared for the ACT Planning and Land Authority, ACT Government, Canberra.

Buchanan, R.A. 2009. *Restoring Natural Areas in Australia.* NSW Department of Industry and Investment.

Commonwealth of Australia 2010. *Caring for our Country Business Plan 2010-11.* Department of Environment, Water, Heritage and the Arts, and the Department of Agriculture, Fisheries and Forestry.

Eco Logical Australia 2009a. *Draft Strategic Assessment Report of the Molonglo and North Weston Structure Plan.* Prepared for the ACT Planning and Land Authority, ACT Government, Canberra.

Eco Logical Australia 2008. *Molonglo River Riparian Zone Vegetation and Habitat Survey and Mapping Project.* Prepared for the ACT Planning and Land Authority, ACT Government, Canberra.

Eco Logical Australia 2009b. *Molonglo Valley Ecological Report – EPBC Listed Flora, Ecological Communities and Golden Sun Moth Mapping in the Molonglo Valley.* Prepared for the ACT Planning and Land Authority, ACT Government, Canberra

Greening Australia Capital Region 2006. *Lake Burley Griffin Willow Management Plan.* Prepared on behalf of the Molonglo Catchment Group.

Jones, S.R. 1992. *Habitat relationships, diet and abundance of the endangered pygopodid, Aprasia parapulchella.* B. App. Sc. (Honours) Thesis, University of Canberra.

- Jones, S.R. 1999. *Conservation biology of the pink-tailed worm lizard (Aprasia parapulchella)*. Unpublished PhD thesis, Applied Ecology Research Group, University of Canberra.
- Lovett, S. and Price, P. (eds) 2007. *Principles for Riparian Lands Management*. Land & Water Australia, Canberra.
- Molonglo Catchment Group & ACT NRM Council 2010. *Draft Molonglo River Rescue Action Plan*. Caring for our Country.
- National Capital Authority 2009. *Consolidated National Capital Plan Incorporating Amendments*. Commonwealth of Australia, September 2009.
- Osborne, W.S. 2007. *Environmental planning principles for the protection of the Pink-tailed Worm-lizard Aprasia parapulchella in the Lower Molonglo Valley, ACT*. Institute for applied Ecology, University of Canberra. Report to ACTPLA.
- Osborne W. S. and McKergow, F.V.C. 1993. *Distribution, population density and habitat of the pink-tailed legless lizard (Aprasia parapulchella) in Canberra Nature Park*. Technical Report 3 ACT Parks and conservation service, Canberra.
- Osborne, W., Lintermans, M. and Williams, K.D. 1991. *Distribution and conservation status of the endangered pink-tailed legless lizard (Aprasia parapulchella) (Kluge)*. ACT Parks and Conservation Service, Research Report 5.
- Red-Gum Environmental Consulting undated. *Molonglo River Corridor Boundary Study. Molonglo River ACT*. Prepared for the National Capital Authority.
- Sharp, S., Macdonald, T., Kitchin, M. and Dunford, D. 2007. *Setting Conservation Targets for Vegetation Communities in the ACT*. Report to the Natural Resource Management Council. ACT Parks, Conservation and Lands, Canberra.
- Skinner, S. 2009. *The Molonglo Catchment Health Indicator Program Report: January to June 2009*. Molonglo Catchment Group.
- Urban Services undated. *Design Standards for Urban Infrastructure #20 - Urban Edge Management Zones*.

Appendix A: Methodology

This strategy was developed in close consultation with agencies and the community, and informed by field observations and literature/data review.

Consultation

December 2009 – Project inception and site visit

11 January 2010 – Recreation trails

11 January 2010 – Equestrian trails

February 2010 – Catchment groups

18 February 2010 – Agencies

February 2010 – Community

Fieldwork

Eco Logical Australia has conducted ecological survey in the corridor in 2008 and 2009. Results from these surveys were incorporated in the Strategy, where relevant.

Additional fieldwork was undertaken specifically for this Strategy. An initial inspection of the study area was performed with representatives from the LDA in December 2009. This was used to get an overview of the site and discuss the key issues.

A second round of fieldwork was done by Tammy Haslehurst (Senior Ecologist) and Beth Medway (Project Manager) in early February 2010 to:

- Review possible locations for new river crossings, with particular consideration given to PTWL habitat and buffers
- Validate the vegetation mapping, consistent with ACT vegetation classifications
- Determine the main types of weeds
- Determine if erosion is a problem

A final site inspection was done after a period of heavy rainfall in February 2010. The main changes observed were:

- Greater erosion along tracks
- Higher water levels in the river
- Substantial debris (mainly logs) in the river

Appendix B: Legislation and policies

This Strategy has been prepared within the legislative and policy framework outlined below. Both Commonwealth and ACT law and policy govern planning in the Molonglo study area.

Commonwealth legislation

Australian Capital Territory (Planning and Land Management) Act 1988

The *Australian Capital Territory (Planning and Land Management) Act 1988* introduced arrangements for the planning and development of the Territory. The necessity for the new planning arrangements was a consequence of the Commonwealth's decision to introduce self-government to the Australian Capital Territory. The *Australian Capital Territory (Planning and Land Management) Act 1988* established the National Capital Planning Authority as a Commonwealth Government agency with the responsibility to prepare, administer and review a National Capital Plan.

Chapter 8 of the *Consolidated National Capital Plan* (National Capital Authority 2009) states that the Molonglo River corridor is part of the National Capital Open Space System and that its integrity as a natural system is preserved in the context of the urban system. As an area of 'Special Requirements', the National Capital Plan considers the river corridor to be of national significance and as such should be developed in accordance with its national significance.

The National Capital Plan states that the Molonglo River Corridor defines zones for which the primary aim is to:

Reinforce and preserve their landscape and heritage values and their ecological continuity, while providing for a balanced range of recreational and tourist related uses.

General policies for the entire river corridor set in the National Capital Plan are tabulated below.

ISSUE	POLICIES
Key Objective	To conserve the essential landscape and environmental character of the river and its natural and cultural values and to provide a balanced range of river and off-river recreation and other uses in a manner that reinforces and protects the river corridor as a unified system.
Streamflow and Water Quality	To maintain the streamflow, and to protect the water quality of the river from any adverse external influences, and ensure compatibility between land uses, water uses and the natural character of the river.
Nature Conservation	To protect the ecological resources of the river and river corridor, preserving natural areas in a relatively undisturbed state, maintaining a diversity of habitats, protecting significant natural sites and native plants and animals, and sustaining the ecological integrity and continuity of the river system for migrating fish and other wildlife populations

ISSUE	POLICIES
Landscape	To maintain and enhance the scenic and landscape character of the corridor and associated areas, preserving that which is valuable and enhancing unsatisfactory areas; and to ensure that any development is unobtrusive and compatible with its surroundings and the intrinsic landscape qualities of the river corridor.
Cultural Heritage	To protect and conserve the cultural heritage resources, including their landscape context.
Recreation	To provide opportunities for a balanced range of recreational activities appropriate to the characteristics of the river and adjacent land and in the context of the provision of recreation in the ACT.
Transport and Access	To provide for public access to the river corridor for Canberra residents and tourists in a manner compatible with the other planning policies, and which recognises the need for choice and diversity for the different sections of the community. Make provision for a system of walking and interpretation trails within the river corridor.
Education, Scientific Study and Research	To provide opportunities for appropriate environmental education, interpretation, research and scientific programmes; these should also enrich and broaden the recreational experience.
Timber Production	To use and manage the existing softwood plantations of the river corridor for continuing commercial timber production.

Source: Appendix F of the National Capital Plan

The National Capital Authority is involved in the project steering committee for this Strategy to ensure consistency with the National Capital Plan.

Environment Protection and Biodiversity Conservation Act 1999

ACTPLA has prepared *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC) referrals to the Commonwealth for the suburbs of Coombs and Wright, and a Strategic EPBC Act Assessment for the entire East Molonglo Structure Plan. These documents address a range of Matters of National Environmental Significance that are relevant to the river corridor, and have identified the need to address urban and recreation interface issues and the long term conservation management objectives of the river corridor in more detail.

The Pink-tailed Worm Lizard (*Aprasia parapulchella*) has been recorded within the study area and its habitat has been mapped. The *Environment Protection and Biodiversity Conservation Act 1999* lists *A. parapulchella* as a threatened species. The Department of the Environment, Water, Heritage and the Arts has decided that urban development in parts of Coombs is 'not a controlled action if undertaken in a particular manner'. Measures that must be taken to avoid significant impacts are applicable to the riparian study area and surrounds, and these are incorporated in this Strategy.

ACT legislation

Planning and Development Act 2007

The planning framework for the study area is provided by the *Planning and Development Act 2007*, as described below. The object of the *Planning and Development Act 2007* is to provide a planning and

land system that contributes to the orderly and sustainable development of the ACT. It sets out requirements for the Territory Plan, which is the key statutory planning document, providing the policy framework for the administration of planning and development in the ACT. The purpose of the Territory Plan is to manage land use change and development in a manner consistent with strategic directions set by the ACT Government, Legislative Assembly and the community.

The Territory Plan must not be inconsistent with the National Capital Plan (refer to the *Australian Capital Territory (Planning and Land Management) Act 1988*).

The Territory Plan includes a statement of strategic directions, a map (the Territory Plan Map) which sets out zones and precincts in the ACT, objectives and development tables applying to each zone as well as a series of general, development and precinct codes. It also includes structure plans and concept plans for the development of future urban areas. **Figure 1** replicates the Structure Plan for Molonglo.

The study area is currently zoned Non-Urban 'NUZ4 River Corridor' and classified as 'Special Purpose Reserve' through Variation 281 to the Territory Plan, as shown in **Figure 1**. Its boundary reflects topographic features, ecological values and the provision of adequate land for public access and landscaping. Schedule 3 of the *Planning and Development Act 2007* states the management objective for special purpose reserve as being 'to provide for public and community use of the area for recreation and education'.

Objectives of NUZ4 River Corridor are:

- Conserve the ecological and cultural values of the ACT's major river corridors
- Protect stream flow, water quality and flood plains from adverse impacts
- Ensure that the type and intensity of development is sustainable
- Provide opportunities for a range of ecologically sensitive water and land based recreational activities
- Ensure compatibility between land uses, water uses and the general character of the rivers
- Provide opportunities for appropriate environmental education and scientific research activities
- Prevent development that would significantly increase fire hazard

Nature Conservation Act 1980

The *Nature Conservation Act 1980* provides authority for the Conservator of Flora and Fauna to manage public land reserved for conservation of the natural environment. Activities that are inconsistent with management objectives for nature conservation are controlled. Special measures for the conservation of a species or community of concern can be introduced in a reserved area, including restriction of access to important habitat. The *Nature Conservation Act* gives Special Protection Status to *A. parapulchella*.

Part 8 of the *Nature Conservation Act 1980* sets provisions for reserved areas. A reserved area includes an area of public land that is reserved under the Territory Plan as a special purpose reserve and is not leased land. The provisions under Part 8 include limitations and restrictions to activities within a reserved area, native vegetation clearing, and damage to land. For example, the following activities and facilities need to be controlled:

- Entry fees
- Signage

- Rubbish
- Barbeques
- Driving or parking motor vehicles
- Camping
- Infrastructure e.g. picnic shelters
- Revegetation
- Clearing native vegetation

The Conservator may restrict access or certain types of activities following consideration of a detailed plan of management.

Pest Plants and Animals Act 2005

The *Pest Plants and Animals Act 2005* aims to protect the ACT's land and aquatic resources from threats from pest plants and animals; to promote a strategic and sustainable approach to pest management; to identify pest plants and animals; and to manage pest plants and animals. The Act provides for the declaration of pest plants and animals and the preparation of management plans. It also prescribes offences in relation to propagation, supply and reckless disposal of pest plants, and supply, keeping and reckless disposal of pest animals.

Fisheries Act 2000

The *Fisheries Act 2000* provides the framework for sustaining and protecting native fish species and providing high quality fishing opportunities in the ACT. The Molonglo study area is classified as 'Open Waters' which means it is open to fishing all year. However, fishing is banned because of poor water quality.

Environment Protection Act 1997

The main purpose of the *Environment Protection Act 1997* is to provide protection for the environment from pollution and other forms of environmental harm. The Act sets water quality guidelines.

Water Resources Act 1998

The *Water Resources Act 1998* establishes the Environmental Flow Guidelines which specify the flows required to maintain aquatic ecosystems in the ACT and cover both surface and groundwater. Environmental flows have a profound effect on the riparian environment, however this Strategy does not comment on the adequacy of flows released from Scrivener Dam because it is not likely that this regime will be managed differently in future.

Structure Plan and Concept Plan

Molonglo and North Weston are identified in The Canberra Spatial Plan (2004) as the next major potential 'greenfield' area to accommodate Canberra's urban development over the next thirty years and beyond. Subsequent investigations by ACTPLA, in collaboration with the National Capital Authority (NCA), determined that the area is suitable for urban development and ultimately propose that the area could support a future population of around 55,000 people.

Territory Plan Variation No. 281 (DV281) introduced a Structure Plan for Molonglo and North Weston. It sets out the principles and policies that apply to the Molonglo Valley future urban area, including:

- The river corridor is recognised as an important natural asset to the ACT and region. It will be planned as an integral part of the National Capital Open Space System by providing for continuity of recreation use with surrounding open space and the Murrumbidgee River corridor.

- The environmental quality, landscape setting, natural and cultural values of the river corridor will be reinforced by the provision of an open space corridor on each side of the Molonglo River.
- Provision will be made along the river corridor for a balanced range of recreational activities appropriate to the characteristics of the river and adjacent land, and in a manner that reinforces and protects the natural and cultural values of the river corridor.
- Strong recreational links are to be facilitated in Molonglo and North Weston from Lake Burley Griffin to the Molonglo River, and between Stromlo Forest Park and the Canberra International Arboretum and Gardens.

The Structure Plan only applies to urban development areas, so does not directly affect this riparian strategy. However, this Strategy needs to consider edge effects and connectivity with recreation tracks, open space corridors, and pressures on the corridor generated by the urban population.

DV281 also introduced concept plans for the suburbs of North Weston, Coombs and Wright. These provide further detail design and policies relevant to the development

The first residential estate (North Weston) and capital works at Coombs and Wright (major road, stormwater ponds and trunk sewer) commenced in 2010.

Other plans and strategies

There are a number of other programs, strategies and guidelines relevant to this Strategy. These include:

- Coombs, Wright and North Weston estate development plan, and landscape and urban design guidelines (LDA)
- Molonglo District Sustainability Strategy (LDA)
- National Weed Strategy
- TAMS Design Standards for Urban Infrastructure No. 20 - Urban Edge Management Zones
- Ribbons of Life: ACT Aquatic Species and Riparian Zone Conservation Strategy. Action Plan No. 29 (ACT Government 2007)
- Draft Molonglo River Rescue Action Plan (Molonglo Catchment Group and ACT NRM Council 2010)

ACT Aquatic Species and Riparian Zone Conservation Strategy (ASRZCS)

The vision for the Murrumbidgee and Molonglo Rivers set by the ACT Government (2007) in the *ACT Aquatic Species and Riparian Zone Conservation Strategy* is to:

Make an outstanding contribution to the conservation of aquatic and riparian ecosystems of the upper Murrumbidgee River catchment.

The vision of the ASRZCS is supported by the following goals:

- *Conserve in perpetuity viable, wild populations of all aquatic and riparian native flora and fauna species* in the ACT (*including declared threatened species).*
- *Conserve in perpetuity aquatic and riparian native vegetation communities in the ACT as viable and well-represented ecological communities.*
- *Aquatic and riparian communities and habitats in the ACT are maintained and where degraded, rehabilitated to support the range of flora and fauna typical of the ACT. Rehabilitation may*

include the re-introduction of threatened or locally extinct fish species to ACT and/or regional streams where they no longer occur naturally.

- *Maintain in perpetuity a well-connected system of aquatic and riparian environments that support movement of aquatic and riparian fauna in the ACT and region.*

Molonglo River Rescue Action Plan (MRRAP)

The *Draft Molonglo River Rescue Action Plan* (Molonglo Catchment Group and ACT NRM Council 2010) has the following vision for the Molonglo River:

A healthy river managed for sustainability and enjoyment

Supporting the vision of the MRRAP are the following concepts:

- To stop further degradation of the river, and see it become healthier, more attractive and more accessible through actions such as:
 - Improving the health of instream and riparian habitats
 - Improving water quality, particularly reducing sediment and nutrient input
 - Creating an environment that fosters native flora and fauna, and is accessible and amenable to people
 - Protecting threatened species and communities where they occur on or near the river
 - Reducing the spread and impacts of woody weeds particularly Willow, Blackberry and other deciduous trees
 - Making best use of available and environmental flows to improve the health of the river
- To demonstrate what is possible through strategic, coordinated interventions involving government and non-government organisations and landholders working together
- To strengthen community and commercial interest and engagement in working to restore the Molonglo River

Molonglo Valley Landscape and Visual Assessment (Annan Alcock 2006)

Landscape Corridors: Riparian ... landscape corridors should remain primarily natural. Where these corridors intersect with centres and urban areas, a more formalised treatment should be considered, analogous to riverine urban parklands. Significant vegetation should be retained and planted in these areas to create linear open spaces for habitat and recreation.

Typical Riparian Corridors: Riparian corridors provide significant environmental and recreational linkages throughout the Molonglo Valley development. These areas are used to structure the overall plan in the following ways:

- Natural drainage lines
- Cycle, pedestrian and equestrian routes
- Natural habitat avenues for wildlife and endangered species
- Promote and preserve Canberra's country/city feel as inspired by Walter Burley Griffin

Riparian corridors will have a core vegetation component of largely untouched native vegetation although pedestrian and occasional vehicle bridge crossing will be required. Outside this, including the requirement for abatement, water management and recreation, will be managed with reduced density of vegetation and understorey management. This corridor will contain water sensitive urban design features ... and recreational trails.

Appendix C: SWOT analysis

VALUE	STRENGTH OF EXISTING CONDITIONS	WEAKNESS OF EXISTING CONDITION	OPPORTUNITY FOR FUTURE	POSSIBLE FUTURE THREATS
Recreation	<p>Existing network of tracks and two constructed river crossings</p> <p>Area is currently well used for recreation activities such as mountain bike riding and equestrian</p> <p>Incorporates the Bicentennial National Trail</p> <p>Links to nearby areas such as the Arboretum, Stromlo Forest Park and Equestrian Park</p>	<p>Some tracks are steep, eroded or won't link to proposed urban access points</p> <p>Need to install safety rails on crossings and check that engineering standards are met for all recreational facilities</p> <p>Swimming is not currently recommended because of poor water quality</p>	<p>Create 'open space' recreation areas (e.g. for picnics) in suitable locations that are currently heavily weed infested</p> <p>Improve the condition and position of the track network to connect with urban links and provide for a variety of users</p> <p>Improve opportunities for swimming by improving water quality</p>	<p>Safety needs to be addressed, especially for multi-use trails</p> <p>Tracks and recreation areas will need to be maintained to avoid erosion, litter etc</p>
Amenity	<p>High points along the river corridor and nearby hills offer views across the Molonglo Valley</p>	<p>Heavy weed infestation, including burnt pine forest, has resulted in poor amenity throughout much of the study area</p>	<p>Amenity along the tracks is likely to improve as weeds are progressively removed and native vegetation is rehabilitated</p> <p>Better track maintenance will also improve amenity</p>	<p>Litter, vandalism, noise and other issues associated with urban development may adversely affect amenity</p>
Topography and drainage	<p>Diversity of alluvial flats and terraces, steep slopes and hilltops</p> <p>Molonglo River defines the landscape and offers pools, rapids, braided sections and has a number of ephemeral tributaries</p>	<p>Flow is controlled by Scrivener Dam</p> <p>Flash floods can occur following heavy rain in the catchment or dam release, and are particularly noticeable in rocky sections of the river</p>	<p>Maintain 'natural' characteristics within the riparian corridor</p> <p>Implement water sensitive urban design features in the adjacent urban areas</p>	<p>Stormwater inflows will change as impervious surfaces and other engineering structures are created as part of the urban development</p> <p>The main channel is relatively stable at present, but could become eroded or unstable if the flow regime changes significantly</p>
Terrestrial ecology	<p>Some native flora and fauna species are present even though the area has undergone significant modification associated with past rural and forestry activities, and the 2003 wildfire</p> <p>Presence of <i>Aprasia parapulchella</i> - the only threatened species that has been recorded in the study area</p>	<p>Severe weed infestation in the mid and upper reaches of the study area has reduced habitat value and ecosystem health</p> <p>Difficult to recognise the distribution of remnant vegetation communities</p>	<p>Significant scope to improve ecosystem health, including the proportion of native species and communities, and to improve connectivity with rehabilitated riparian areas upstream and downstream</p> <p>Maintain and improve habitat for threatened species</p>	<p>Rehabilitation will be difficult to achieve unless substantial resources are applied over a long time</p> <p>Grazing by stock will need to be phased out carefully to ensure that weeds that may have been suppressed are replaced by native species</p>
Aquatic ecology and water quality	<p>The Molonglo River appears to offer a variety of aquatic habitats including in-stream, fringing vegetation and large woody debris</p>	<p>Swimming is not recommended in the Molonglo River because of poor water quality</p> <p>Limited data is available regarding water quality and aquatic ecology</p>	<p>Improved water quality would enable swimming and enhance aquatic ecosystems</p> <p>'Showcase' good stormwater management practices associated with urban development</p>	<p>Urban development often results in a decline in water quality and aquatic ecosystem health</p> <p>Grazing by stock will need to be phased out to reduce adverse impacts to water quality and soils</p> <p>Predicted climate change may result in less rainfall and a reduction in river flows and aquatic habitat</p>

Appendix D: Potential threatened species

Potential threatened and migratory species and their habitat characteristics are tabulated below for species listed under the ACT *Nature Conservation Act* and the Commonwealth *Environment Protection and Biodiversity Conservation Act*. Habitat availability is an estimation of the likelihood of occurrence of the species in the study area, including low or high potential. Future habitat availability refers to habitat conditions that are predicted to occur in future following rehabilitation of the study area in accordance with this Strategy.

SPECIES (COMMON NAME)	SPECIES (SCIENTIFIC NAME)	EPBC ACT	NC ACT	HABITAT CHARACTERISTICS	CURRENT HABITAT AVAILABILITY	FUTURE HABITAT AVAILABILITY
Macquarie Perch	<i>Macquaria australasica</i>	Yes	Yes	Cool, shaded upland streams with deep rocky pools and substantial cover	Low	Low
Murray River Crayfish	<i>Euastacus armatus</i>	-	Yes	Large and small streams in a variety of habitats. Prefers faster flowing cool water habitats of the main channel of rivers	Low	Low
Varied Sitella	<i>Daphoenositta chrysoptera</i>	-	Yes	Well treed habitats rather than sparsely trees habitats. In ACT, species has preference for areas with <i>E. macrorhyncha</i>	Low	Low
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	Yes	Yes	Wide range of forested habitats. Favours areas with relatively complex midstorey, often in association with complex rock formations, hollow bearing trees, rocky escarpment, fallen logs	No	No
Brown Tree creeper	<i>Climacteris picumnus</i>	-	Yes	Grassy woodland with native understorey, fallen wood, large live and dead trees	Low	Low
Hooded	<i>Melanodryas</i>	-	Yes	Drier Eucalypt forest, woodland and scrub, grasses and low shrubs. Yellow	Low	Low

SPECIES (COMMON NAME)	SPECIES (SCIENTIFIC NAME)	EPBC ACT	NC ACT	HABITAT CHARACTERISTICS	CURRENT HABITAT AVAILABILITY	FUTURE HABITAT AVAILABILITY
Robin	<i>cucullata</i>			Box-Red Gum Grassy Woodland important		
Regent Honeyeater	<i>Xanthomyza phrygia</i>	Yes	Yes	Drier temperate woodlands and open forests including forest edges and wooded farmland. Yellow Box-Red Gum Grassy Woodland important	Low	Low
Small Purple Pea	<i>Swainsona recta</i>	Yes	Yes	Open woodland with native grassy understorey dominated by kangaroo grass, poa tussock or spear grasses	No	No
Superb Parrot	<i>Polytelis swainsonii</i>	Yes	Yes	Forages on ground for grass seeds and herbs but also feeds in the canopy and outer branches of shrubs. Yellow Box-Red Gum Grassy Woodland important	Low	High
Swift Parrot	<i>Lathamus discolor</i>	Yes	Yes	Inhabits mainly dry open Eucalyptus forests and woodlands, usually box-ironbark communities and Yellow Box-Red Gum Grassy Woodland	Low	High
White-winged Triller	<i>Lalage sueurii</i>	-	Yes	In ACT, found in and around grassy woodland areas including Yellow Box-Red Gum Grassy Woodland, and Apple Box and Candlebark woodlands	Low	High
Brown Wrinklewort	<i>Rutidosis leptorrhynchoides</i>	-	Yes	Margins of Yellow Box-Red Gum Grassy Woodland with native understorey. Extends into native grasslands	No	No
Perunga Grasshopper	<i>Perunga ochracea</i>	-	Yes	Natural temperate grasslands and secondarily derived grasslands dominated by wallaby, kangaroo and spear grasses with forb food plants in intertussock spaces	Low	Low
Grassland Earless Dragon	<i>Tympanocryptis pinguicollis</i>	Yes	Yes	Restricted to temperate grasslands including secondarily derived grasslands	Low	Low
Ginniderra	<i>Lepidium</i>	Yes	Yes	Natural temperate grasslands dominated by <i>Bothriochloa</i> and <i>Austrostipa</i>	Low	Low

SPECIES (COMMON NAME)	SPECIES (SCIENTIFIC NAME)	EPBC ACT	NC ACT	HABITAT CHARACTERISTICS	CURRENT HABITAT AVAILABILITY	FUTURE HABITAT AVAILABILITY
Peppercress	<i>ginninderrense</i>			species		
Golden Sun Moth	<i>Synemon plana</i>	Yes	Yes	Native grasslands dominated by <i>Austrodanthonia</i> species	Low	Low
Striped Legless Lizard	<i>Delma impar</i>	Yes	Yes	Natural temperate grasslands and secondarily derived grasslands dominated by perennial tussock grasses, although it is also present in exotic-dominated grass areas	High	High
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	Yes	-	Large rivers, fresh and saline lakes, reservoirs, coastal seas and islands	Low	Low
Rainbow Bee Eater	<i>Merops ornatus</i>	Yes	-	Open country, most vegetation types; sand dunes, banks	High	High
Rufous Fantail	<i>Rhipidura rufifrons</i>	Yes	-	Occurs in rainforest and wet sclerophyll forests along the east coast and adjacent ranges	No	No
No common name	<i>Pomaderris pallida</i>	Yes	-	Occurs along the plateau edge and very steep upper slopes and cliffs of river valleys	No	No
White-throated Needletail	<i>Hirundapus caudacutus</i>	Yes	-	Inhabit forested coastal and mountain regions, farmland and orchards	Low	Low
Satin Flycatcher	<i>Myiagra cyanoleuca</i>	Yes	-	Breed and forage in the taller, wetter eucalypt forests of coastal SE Aust in gullies, plains and tablelands	No	No
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Yes	-	Feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, fruits of rainforest trees and vines, and also forage	Low	Low

SPECIES (COMMON NAME)	SPECIES (SCIENTIFIC NAME)	EPBC ACT	NC ACT	HABITAT CHARACTERISTICS	CURRENT HABITAT AVAILABILITY	FUTURE HABITAT AVAILABILITY
				in cultivated gardens and fruit crops		
Austral Toadflax	<i>Thesium australe</i>	Yes	-	Occurs in grassland or grassy woodland. Often found in damp sites in association with Kangaroo Grass	Low	Low
Cattle Egret	<i>Ardea ibis</i>	Yes	-	Forage on or near cattle and roost in trees lining waterways	High	High
Pink-tailed Worm Lizard	<i>Aprasia parapulchella</i>	Yes	-	Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by kangaroo grass. Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks.	Present	Present
Australian Painted Snipe	<i>Rostratula australis</i>	Yes	-	Found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled	Low	Low
Booroolong Frog	<i>Litoria booroolongensis</i>	Yes	-	Mountainous areas near rocky streams, often found under rocks and debris.	Low	Low
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog	<i>Litoria castanea</i>	Yes	-	Lives in permanent water bodies such as lakes, ponds and dams with lots of vegetation around the edges.	Low	Low
Murray Cod, Cod, Goodoo	<i>Maccullochella peelii peelii</i>	Yes	-	Occurs in the waterways of the Murray–Darling Basin in a wide range of warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs.	Low	Low
Hoary	<i>Leucochrysum albicans</i> var.	Yes	-	Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils.	Low	Low

SPECIES (COMMON NAME)	SPECIES (SCIENTIFIC NAME)	EPBC ACT	NC ACT	HABITAT CHARACTERISTICS	CURRENT HABITAT AVAILABILITY	FUTURE HABITAT AVAILABILITY
Sunray	<i>tricolor</i>					
Tuggeranong Lignum	<i>Muehlenbeckia tuggeranong</i>	Yes	-	<p>This species is known only from flood terraces on the eastern bank of the Murrumbidgee River near Tuggeranong on the southern outskirts of Canberra (NSW Southern Tablelands botanical district) (Makinson & Mallinson 1997). It is as yet only known from the Pine Island area in the Murrumbidgee Corridor Nature Reserve (Mallinson et al. 1998).</p> <p>Occur on river bank terraces prone to occasional flooding, and on an adjacent gentle slope. This section of the river is typified by rapids, sand reaches and boulders, with uneven rocky flood terraces, some up to about 100 m wide, at 2-8 m above normal river level.</p>	No	Low
Button Wrinklewort	<i>Rutidosia leptorrhynchoides</i>	Yes	-	Occurs in box-gum woodland, secondary grassland derived from box-gum woodland or in natural temperate grassland; and often in the ecotone between the two communities.	Low	Low
Great Egret, White Egret	<i>Ardea alba</i>	Yes	-	Occurs in wide range of wetland habitats (inland and coastal, freshwater and saline, permanent and ephemeral, open and vegetated, large and small, natural and artificial).	High	High
Latham's Snipe, Japanese Snipe	<i>Gallinago hardwickii</i>	Yes	-	Occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation.	Low	Low
Painted Snipe	<i>Rostratula benghalensis s. lat.</i>	Yes	-	Inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank	Low	Low

SPECIES (COMMON NAME)	SPECIES (SCIENTIFIC NAME)	EPBC ACT	NC ACT	HABITAT CHARACTERISTICS	CURRENT HABITAT AVAILABILITY	FUTURE HABITAT AVAILABILITY
				emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum <i>Muehlenbeckia</i> or canegrass or sometimes tea-tree (<i>Melaleuca</i>).		
Fork-tailed Swift	<i>Apus pacificus</i>	Yes	-	Migrates to eastern and northern Australia in October and leaves between May and August.	High	High

Appendix E: EPBC Act Referral Decision



Australian Government

Department of the Environment, Water, Heritage and the Arts

Kelvin Walsh
 Director
 Planning Service
 ACT Planning and Land Authority
 GPO Box 1908
 Canberra ACT 2601

Date: 16/04/2010
 EPBC Ref: 2009/5050
 EPBC contact: Chris Murphy
 6274 1821
 chris.murphy@environment.gov.au

Dear Mr Walsh

Decision on reconsideration Urban development in parts of the suburb of Coombs – Molonglo Valley, ACT (EPBC 2009/5050).

I am writing to advise of the outcome of the request for reconsideration of the above proposal pursuant to section 78 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) dated 2 March 2010.

I have carefully considered the information and the circumstances concerning the proposed action and the impacts that the action will have, or is likely to have, on the matters protected under the EPBC Act.

I have decided to revoke the original decision and substitute a new decision that the proposal is a not controlled action if undertaken in a particular manner.

Please note that the particular manner requirements that form part of this new decision differ from the original particular manner requirements.

The proposed action must be undertaken in the manner specified if it is to avoid having a significant impact on the following matters protected by the EPBC Act:

- Listed threatened species and ecological communities (sections 18 & 18A)

Please note that this decision only relates to the potential for significant impact on the specific matters protected by the Australian Government under Chapter 4 of the EPBC Act.

A copy of the document recording this decision is enclosed.

If you have any questions about the referral process or this decision, please contact the EPBC project manager and quote the EPBC reference number shown at the beginning of this letter.

Thank you for your assistance in this matter.

Yours sincerely



Ms Vicki Middleton
 Assistant Secretary
 Environment Assessment Branch



Australian Government

Department of the Environment, Water, Heritage and the Arts

Notification of REFERRAL DECISION – not controlled action if undertaken in a particular manner

URBAN DEVELOPMENT IN PARTS OF THE SUBURB OF COOMBS – MOLONGLO VALLEY, ACT (EPBC 2009/5050)

This decision is made under Sections 75 and 77A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Proposed action

person named in the referral	Director Planning Policy, ACT Planning and Land Authority.
proposed action	To develop part of the suburb of Coombs, Molonglo Valley, ACT, as described in the referral received by the Department on 25 August 2009 (EPBC 2009/5050) and request for reconsideration dated 2 March 2010.

Referral decision: Not a controlled action if undertaken in a particular manner

status of proposed action	The proposed action is not a controlled action provided it is undertaken in the manner set out in this decision.
----------------------------------	--

Person authorised to make decision

Name and position	Ms Vicki Middleton Assistant Secretary Approvals and Wildlife Division
--------------------------	--

signature



date of decision 16 April 2010

manner in which proposed action must be taken	<p>The following measures must be taken to avoid significant impacts on:</p> <ul style="list-style-type: none"> • Listed threatened species and communities (sections 18 & 18A). <ol style="list-style-type: none"> 1. Maintain a buffer zone of at least 20 metres from moderate and high quality <i>Aprasia parapulchella</i> habitat as identified at Annexure 1, except when inconsistent with other measures in this notice. 2. Ensure vehicles do not drive over and keep all forms of disturbance, such as heavy earth moving equipment and other construction activity away from moderate and high quality <i>Aprasia parapulchella</i> habitat at Annexure 1, except when
--	---

inconsistent with other measures in this notice.

3. Prevent construction spoil and any material used in soil stabilisation and revegetation from running down slope over mapped *Aprasia parapulchella* habitat areas at Annexure 1.
4. Prevent the spread or planting of trees, shrubs or weeds (e.g. Blackberry *Rubus fruticosus*) within 20 m of high and moderate quality *Aprasia parapulchella* habitat at Annexure 1. Trees and shrubs will not be planted in areas that could potentially shade moderate and high quality habitat or buffers;
 - 4.1. All construction machinery will be washed to prevent the spread of weeds prior to entering the site. All machinery operating below the proposed edge road will be washed; if machines have been (a) offsite or (b) entered or operated in the area of former pine plantation identified at Annexure 1.
5. Prevent stormwater, occurring as a result of this action, from flowing over moderate and high quality *Aprasia parapulchella* habitat patches below the sewer line at Annexure 1.
6. Erect permanent fencing to enclose all moderate and high quality *Aprasia parapulchella* habitat at Annexure 1. Fencing will be designed to minimise unregulated public access, rock collection, access by domestic animals and unregulated stock grazing.
7. An edge road as indicated on page 27 of the Coombs and Wright Concept Plan will separate residential development from the river corridor.
8. A management strategy will be implemented, and ensure that;
 - 8.1. Habitat values for high and moderate quality *Aprasia parapulchella* patches below the edge road are maintained and improved, including removal and on-going management of weeds;
 - 8.2. Any fire, biomass management, or fuel reduction required as a result of the action within 20 m of moderate and high quality habitat at Annexure 1 will be conducted in an ecologically sympathetic manner with the conservation of *Aprasia parapulchella*. Grazing will only be used as a management technique when it is undertaken in accordance with expert advice;
 - 8.3. Signs containing educational/public information concerning the conservation of *Aprasia parapulchella* in the Molonglo Valley will be erected in consultation with expert advice.
9. Measures 1 and 2 will not apply with respect to the construction of public access ways to the river corridor through moderate quality *Aprasia parapulchella* habitat or buffer areas at Annexure 1. Access ways will be planned and designed in accordance with expert advice to minimise impact and conserve habitat values for *Aprasia parapulchella*;
 - 9.1. Access ways will not pass through high quality *Aprasia parapulchella* habitat at Annexure 1.

-
10. Surface rocks suitable for *Aprasia parapulchella* from within the Coombs pond inundation area and access way alignments will be used to rehabilitate areas of potential habitat below the sewer line in accordance with expert advice. Rehabilitation will not take place within mapped high quality habitat at Annexure 1. Rocks and any machinery will be washed of all soil and organic matter prior to use for rehabilitation.
 - 10.1. A monitoring program developed in accordance with expert advice will survey rehabilitated habitat areas annually for 5 years, following final completion of the trunk sewer. As part of the monitoring program, a baseline survey will be conducted prior to the construction of houses and annual results will be published on an appropriate ACT Government website.
 11. For Patch 2 (Annexure 1) all measures, except measure 1 apply. In addition;
 - 11.1. Within 20 m of patch 2, machinery will only operate from within or above the sewer alignment; excavated material will not be stockpiled below the alignment.
 - 11.2. All land disturbed within 20 m of Patch 2 will be rehabilitated to improve current *Aprasia parapulchella* habitat value in accordance with expert advice. Specifically surface rocks will be retained and replaced and disturbed areas will be revegetated with local native grasses, sterile Rye and specifically Kangaroo grass (*Themeda australis*).
 12. Patch 4 (Annexure 1) will be rehabilitated to improve *Aprasia parapulchella* habitat value below the sewer alignment as per the measure outlined in 11.2.
 - 12.1. All development other than the trunk sewer will avoid the rehabilitated portion of Patch 4 (Annexure 1) by a minimum buffer of 20m.
 13. A wildlife expert experienced with *Aprasia parapulchella* will check all potential habitat that is disturbed prior to construction. Any *Aprasia parapulchella* specimens found will be relocated to the nearest suitable habitat.
 14. The above measures do not apply to the area identified as Patch 1 (Annexure 1), except for measures 10 and 13.

**The 20 m buffer referred to in this notice is to be measured from the edge of relevant mapped Aprasia parapulchella habitat.*

***Expert advice means: someone with demonstrated expertise in Aprasia parapulchella.*



HEAD OFFICE

Suite 4, Level 1
2-4 Merton Street
Sutherland NSW
T 02 8536 8600
F 02 9542 5622

SYDNEY

Suite 604, Level 6
267 Castlereagh Street
Sydney NSW 2000
T 02 9993 0566
F 02 9993 0573

ST GEORGES BASIN

8/128 Island Point Road
St Georges Basin NSW 2540
T 02 4443 5555
F 02 4443 6655

CANBERRA

Level 4
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 6103 0148

HUNTER

Suite 17, Level 4
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 4910 0126

NAROOMA

5/20 Canty Street
Narooma NSW 2546
T 02 4476 1151
F 02 4476 1161

COFFS HARBOUR

35 Orlando Street
Coffs Harbour Jetty NSW 2450
T 02 6651 5484
F 02 6651 6890

ARMIDALE

92 Taylor Street
Armidale NSW 2350
T 02 8081 2681
F 02 6772 1279

BRISBANE

93 Boundary St
West End QLD 4101
T 0429 494 886

WESTERN AUSTRALIA

108 Stirling Street
Perth WA 6000
T 08 9227 1070
F 08 9227 1078

Appendix L

Phase 1 Contamination – Coombs Mapping and Agency Endorsement



DEPARTMENT OF
THE ENVIRONMENT,
CLIMATE CHANGE,
ENERGY AND WATER

ID MS
SCANNED

File Ref: 05/6199

Mr Miloje Beljic
ACT Planning and Land Authority
2nd Floor North, Dame Pattie Menzies House, 16 Challis Street,
Dickson ACT 2602

Dear Mr Beljic

**ENDORSEMENT OF PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
REPORT FOR PRECINCT OF NORTH WESTON - REISSUED –
BLOCKS 671, 672, 673, 1137, 1138, 1155, 1193, 1208, 1210 WESTON CREEK
BLOCKS 5 & 7 SECTION 81 WESTON WESTON CREEK
BLOCKS 2, 3, 8, 12, 13, 14 & 15 SECTION 83 WESTON WESTON CREEK
BLOCKS 5, 9 & 10 SECTION 94 WESTON WESTON CREEK**

The Environment Protection Unit (EPU) has reviewed the report titled "Final Phase 1 Environmental Site Assessment Report for the precinct of North Weston in Weston Creek" (Project Number 3002156) by SMEC Australia Pty Ltd dated February 2009.

The EPU has assessed the report and endorses the consultant's findings that on the basis of the studies remedial works and validation sampling must be undertaken by a suitably qualified environmental consultant within the areas of the site identified below prior to it being suitable for its intended residential development:

- animal burial pit (TP1336)
- leaking sewer point (TP1122)

On completion of remediation and validation works a validation report must be prepared by the suitably qualified environmental consultant and forwarded to the EPU for review and endorsement.

DEPARTMENT OF THE ENVIRONMENT, CLIMATE CHANGE, ENERGY AND WATER • ENVIRONMENT PROTECTION

Level 3 Annexe, Macarthur House 12 Wattle Street, Lyneham ACT GPO Box 158 Canberra ACT 2601

Telephone Canberra Connect 132281 Fax 02 6207 6084 website www.tams.act.gov.au

A site specific construction environmental management plan (CEMP) must also be prepared by a suitably qualified environmental consultant and endorsed by the EPU prior to the commencement of redevelopment works at the site. The CEMP must detail appropriate management strategies to deal with the building and waste materials identified in the Phase 1 Environmental Site Assessment report and any unexpected findings encountered during site development works.

The works to date have been undertaken to the satisfaction of the Environment Protection Authority in accordance with the Contaminated Sites Environment Protection Policy November 2000 and associated guidelines.

This letter of endorsement must be read in conjunction with the above report and supersedes the previous letter of endorsement dated 12 January 2009.

This should not be taken as a warranty by the Environment Protection Authority or the Territory that the land is fit for any particular purpose.

Yours sincerely

A large grey rectangular box redacting the signature of Mark Heckenberg.

Mark Heckenberg
Environment Protection

12/02/2009



DEPARTMENT OF
THE ENVIRONMENT,
CLIMATE CHANGE,
ENERGY AND WATER

ID MS
SCANNED

File Ref: 05/6199

Mr Miloje Beljic
ACT Planning and Land Authority
2nd Floor North, Dame Pattie Menzies House, 16 Challis Street,
Dickson ACT 2602

Dear Mr Beljic

**ENDORSEMENT OF PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
REPORT FOR COOMBS AND WRIGHT – REISSUED
PART BLOCK 13 - STROMLO
PART BLOCKS 658, 1171, 1187, & 1196 - WESTON CREEK**

The Environment Protection Unit (EPU) has reviewed the report titled "Final Phase 1 Environmental Site Assessment Report for Coombs and Wright, Molonglo" (Project Number 3002156) by SMEC Australia Pty Ltd dated February 2009.

The EPU has assessed the report and endorses the consultant's findings that on the basis of the studies remedial works and validation sampling must be undertaken by a suitably qualified environmental consultant within the areas of the site identified below prior to it being suitable for its intended residential development:

- TP2151 and TP 2152 (Reference Point Number 6)

On completion of remediation and validation works a validation report must be prepared by the suitably qualified environmental consultant and forwarded to the EPU for review and endorsement.

A site specific construction environmental management plan (CEMP) must also be prepared by a suitably qualified environmental consultant and endorsed by the EPU prior to the commencement of redevelopment works at the site. The CEMP must detail appropriate management strategies to deal with the building and waste materials identified in the Phase 1 Environmental Site Assessment report and any unexpected findings encountered during site development works.

The works to date have been undertaken to the satisfaction of the Environment Protection Authority in accordance with the Contaminated Sites Environment Protection Policy November 2000 and associated guidelines.

DEPARTMENT OF THE ENVIRONMENT, CLIMATE CHANGE, ENERGY AND WATER • ENVIRONMENT PROTECTION

Level 3 Annexe, Macarthur House 12 Wattle Street, Lyneham ACT GPO Box 158 Canberra ACT 2601

Telephone Canberra Connect 132281 Fax 02 6207 6084 website www.tams.act.gov.au

This letter of endorsement must be read in conjunction with the above report and supersedes the previous letter of endorsement dated 20 January 2009.

This should not be taken as a warranty by the Environment Protection Authority or the Territory that the land is fit for any particular purpose.

Yours sincerely

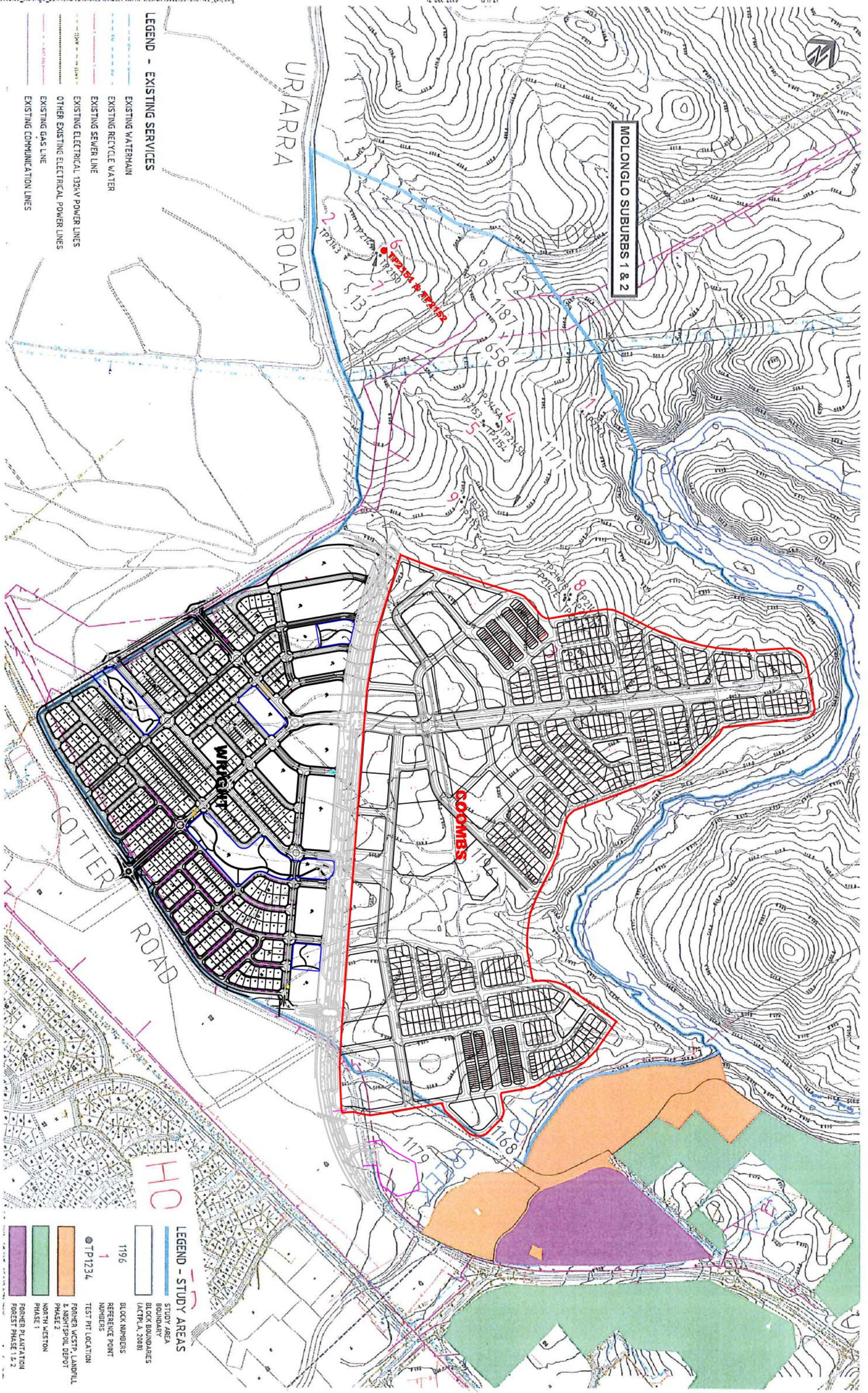


Mark Heckenberg
Environment Protection

12/02/2009

- X_HOL_CADASTRAL
- X_HOL_CONV_2D_EX
- X_HOL_MH_RD_CLASS_11
- X_HOL_PHASE_BDRY
- X_HOL_UTILK
- X_HOL_UTILK_PRES
- X_AT_FID_DOC_HOL_ESA
- X_HOL_PHASE_AREA
- X_LEG_PHASE
- X_HOL_FEATURE_NAMES
- X_LEG_SERVICES_PRES
- X_HOL_ESA_ECH2008_1

- LEGEND - EXISTING SERVICES**
- EXISTING WATERMAIN
 - EXISTING RECYCLE WATER
 - EXISTING SEWER LINE
 - EXISTING ELECTRICAL 132kV POWER LINES
 - OTHER EXISTING ELECTRICAL POWER LINES
 - EXISTING GAS LINE
 - EXISTING COMMUNICATION LINES



MOLONGLO

WRIGHT and COOMBS

SCALE 1:5000
 0 50 100 200

SMBC
 SMBC AUSTRALIA PTY LTD
 UNIT 27, 11, KENNEDY STREET, SYDNEY NSW 1588
 PO BOX 504, SYDNEY ACT 2001 AUSTRALIA
 PH (02) 929 9999 FAX (02) 929 9944

- LEGEND - STUDY AREAS**
- STUDY AREA BOUNDARY
 - BLOCK BOUNDARIES (ACTPLA, 2008)
 - BLOCK NUMBERS
 - REFERENCE POINT
 - TEST PIT LOCATION
 - FORMER WESTP. LANDFILL & NIGHTSPILL DEPOT PHASE 2
 - NORTH WESTON PHASE 1
 - FORMER PLANTATION FOREST PHASE 1 & 2

MOLONGLO - DETAILED GEOTECHNICAL INVESTIGATION AND ENVIRONMENTAL SITE ASSESSMENT
COOMBS AND WRIGHT
SAMPLE LOCATION PLAN

FIGURE 2