



Wagga Wagga

Lloyd Conservation Management Plan 2010

This document was compiled
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CONSERVATION MANAGEMENT PLAN FOR THE LLOYD URBAN RELEASE AREA

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1. INTRODUCTION

As a requirement of the Biodiversity Certification for the Wagga Wagga Local Environment Plan 2010, Wagga Wagga City Council is required to adopt a Conservation Management Plan for the Lloyd E2 zone.

This Conservation Management Plan relates to land known as the Lloyd Urban Release Area and to the associated areas zoned as Environmental Conservation (E2) and Public Recreation (RE1) under the Wagga Wagga Local Environmental Plan 2010.

1.1 Purpose of the Plan

The purpose of this plan is to provide directions to Wagga Wagga City Council staff and the community about how to conserve and manage the land falling within Public Recreation (RE1) and Environmental Conservation (E2) zones.

1.2 Relevant Lands

This Plan of Management is for the Lloyd Environmental Conservation (E2) zone, an area of 251ha (Figure 1). **Note:** There are small adjustments to the boundaries of the RE1 area that connects the east and west E2 areas and to the adjacent E2 area on the east side. At the time of writing these changes still required official gazettal.

1.3 Regional Setting

The Lloyd Environmental Conservation (E2) zone is a bushland zone and forms an important part of Wagga Wagga's landscape. Its highest point is 328 metres above sea level which provides a good vantage point overlooking the city.

The Silvalite Environmental Conservation (E2) zone is in close proximity to the Lloyd E2 zone, to the north-west, and is separated by the railway. The Lloyd E2 zone forms part of the Wiradjuri Walking Track which connects Willans Hill, the southern edge of the Wagga Wagga urban area, the Silvalite E2 zone and the Murrumbidgee River.

1.4 History of Land Use

Various activities have occurred in the Environmental Conservation (E2) zone over its history, including:

Grazing

Gravel extraction and quarrying

Soil conservation works

Informal recreation.

Figure 1. Local Environmental Plan Zones in the Lloyd Biodiversity Certification Area (red outline).

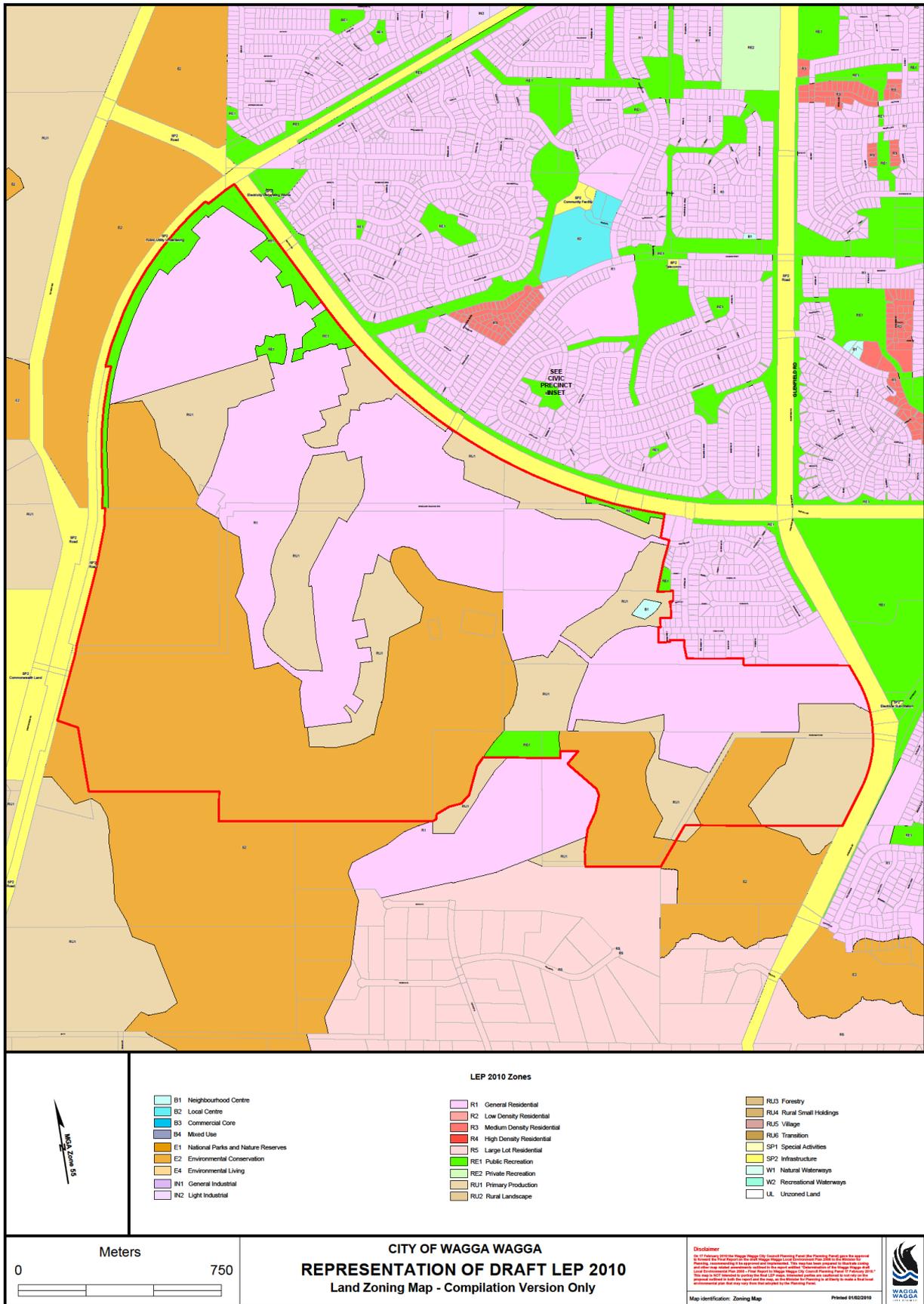


Figure 2. The Public Recreation (RE1) conservation connective corridor (green) that connects the eastern and western E2 areas (brown) in Lloyd. Hatching over the RE1 area shows the adjustment required so that the RE1 area fulfils the requirements for offset areas.



Figure 3: Squirrel Glider habitat area (green outline) that is to be retained in the Lloyd Structure Plan.



PART A - MANAGEMENT OF ENVIRONMENTAL CONSERVATION (E2) LAND ON COUNCIL MANAGED AREAS

2. PLANNING CONTEXT

2.1 Previous Plans

The area has traditionally been rural land and there are no known previous management plans for the area.

2.2 Relevant Legislation

Legislation that is relevant to this Plan includes:

- Public Works Act 1912
- Environmental Planning and Assessment Act 1979
- Crown Lands Act 1989
- Local Government Act 1993
- Noxious Weeds Act 1993
- Threatened Species Conservation Act 1995
- Protection of the Environment Operations Act 1997
- Rural Fires Act 1997
- Companion Animals Act 1998
- Environment Protection and Biodiversity Conservation Act 1999
- Pesticides Act 1999
- Water Management Act 2000
- Native Vegetation Act 2003
- Wagga Wagga Local Environmental Plan 2010
- State Environmental Planning Policies

The Environmental Conservation (E2) lands within the Lloyd Urban Release area (see Figures 1, 2 and 3) land will be transferred to public ownership as part of Planning Agreements which support the rezoning and development of adjoining land for residential development. The Environmental Conservation (E2) land will become community land under the Local Government Act 1993.

Local Government Act 1993

The Local Government Act directs that all non operational community lands require plans of management. The Act prescribes the following guidelines for the preparation of plans of management for community lands:

1. A Council must prepare a draft plan of management for community land.
2. A draft plan of management may apply to one or more areas of community land, except as provided by this Division.
3. A plan of management for community land must identify the following:
 - a. The category of the land,
 - b. The objectives and performance targets of the plan with respect to the land,
 - c. The means by which the Council proposes to achieve the plan's objectives and performance targets,
 - d. The manner in which the Council proposes to assess its performance with respect to the plan's objectives and performance targets, and may require the

prior approval of the Council to the carrying out of any specified activity on the land.

2.3 Relevant Planning Policies

The construction of all open space infrastructure that complies with the Wagga Wagga Development Control Plan is exempt development. Wagga Wagga City Council has developed a range of other planning initiatives which influence this Plan. These include the:

- Wagga Wagga Community Strategic Plan 2008-2018
- Wagga Wagga City Council Management Plan 2009-2013
- Wagga Wagga Development Control Plan 2010
- Recreation and Open Space Strategy 2005
- Wagga Wagga Environmental Sustainability Strategy 2009-2013
- Wagga Wagga Community Social Plan 2009 – 2013
- Wagga Wagga Bikeway Plan 1998
- Strategic Plan for Management of Public Land in the City of Wagga Wagga 1995

2.4 Community Consultation

This Conservation Management Plan has been developed in conjunction with community consultation involving interviews with key stakeholders, a public workshop and public exhibition.

3. VALUES OF THE ENVIRONMENTAL CONSERVATION (E2) ZONE

The Lloyd Environmental Conservation (E2) zone has natural, cultural, educational, scientific, recreational, operational and development values.

3.1 Recreational Values

Bushwalkers and the public frequently use the Wiradjuri Walking Track that traverses the E2 zone.

3.2 Natural and Cultural Values

The Lloyd Environmental Conservation (E2) zone is becoming increasingly more important as a remnant piece of natural environment given the extensive loss of natural landscapes on the south west slopes (Priday and Mulvaney 2005). The E2 zone is considered to have high conservation value. It contains approximately 165 plant species including 53 introduced species, 91 species of birds, five species of native mammals and an extensive number of amphibians and reptiles (Murphy 1999). The E2 zone also contains a number of threatened species and communities such as the Superb Parrot, Squirrel Glider and the White Box, Yellow Box and Blakely's Red Gum Woodland.

3.2.1 Flora

The vegetation of the Environmental Conservation (E2) zone contains a mixture of dry eucalypt and grassland communities with some artificial wetland areas. Most of the woodland vegetation within the Lloyd E2 area is described as White Box, Yellow Box, Blakely's Red Gum Woodland (hereafter referred to as Box-Gum Woodland) which is an Endangered Ecological Community (EEC) listed under the NSW Threatened Species Conservation Act 1995. Approximately 1% of the E2 land is covered by the

Wagga Wagga Hills Open Forest vegetation community which is an association of Western Grey Box (*Eucalyptus microcarpa*), Blakely's Red Gum (*E. blakelyi*) and White Cypress Pine (*Callitris glaucophylla*). This vegetation community is identified as vulnerable because it has gone from an estimated pre-1850 area of 2030ha to a current area of 304ha (Priday and Mulvaney 2005).

The natural vegetation has been previously disturbed by grazing. The resultant vegetation consists of even aged stands of woodland which exist throughout much of the E2 zone with occasional larger mature trees.

3.2.2 Fauna

There is a range of fauna habitats in the Environmental Conservation (E2) zone including forest areas and grasslands. A range of species occur in these habitats including reptiles, amphibians, birds and marsupials, particularly the Squirrel Glider which is listed as an Endangered Population in the Wagga Wagga Local Government Area. Additional Threatened mammal species that may occur in the E2 zone include Little Pied Bat and the Yellow-bellied Sheath-tailed Bat. The E2 zone provides a significant habitat for woodland birds including Threatened bird species such as the Superb Parrot, Diamond Firetail, Brown Treecreeper, and Grey-crowned Babbler (Ecological Australia 2008).

3.2.3 Cultural Heritage

The Wagga Wagga area has a strong indigenous history. Artefacts found at several locations indicate that Aboriginal communities used the Environmental Conservation (E2) area and the Lloyd Release Area in general. The E2 zone also has a history of European land use, particularly grazing.

3.3 Educational Values

The Lloyd E2 zone is sought after for educational purposes given that it is easily accessible and has significant natural values. It is used for educational purposes by:

- Charles Sturt University
- Primary and secondary schools from around Wagga Wagga
- TAFE
- Youth groups such as Scouts

3.4 Operational Values

Service utilities of water, stormwater, electricity and telecommunications pass through the RE1 and Environmental Conservation (E2) areas.

3.5 Scientific Values

There is an abundance of flora and fauna species in the E2 zone that provide scientific interest and a range of scientific papers provide information on the flora and fauna of the E2 zone (see References). Local and visiting people use the E2 zone for photography and bird watching.

3.6 Development Values

A major development issue for the Lloyd area is the management of ground water and control of ground salinity in the Lloyd and Glenfield areas. Salinity is managed through development controls included within the Lloyd Urban Release Area DCP and the Lloyd

section within DCP 2010. The Conservation Management Plan supports the management of salinity through the retention and management of native vegetation.

3.7 Proposed Community Land

It is proposed to designate Council controlled land in the Environmental Conservation Area (E2) as Community Land and dedicate these lands as Wildlife Protection Areas in accordance with provisions in the NSW Companion Animals Act 1998.

4. MANAGEMENT ISSUES

The following management issues have been identified after review of the site and discussions with Council staff, landowners and Department of Environment, Climate Change and Water (DECCW) staff. These issues are addressed in the management strategies in Section 5.

4.1 Vehicle Access

Only emergency and maintenance vehicles shall have vehicular access to the Environmental Conservation (E2) area. This restriction is necessary to prevent off-road recreational vehicles making tracks that lead to soil erosion problems, particularly along drainage lines and on slopes.

4.2 Soil Erosion

Contour banks for soil erosion control have been constructed in past decades over parts of the Environmental Conservation (E2) zone. There is an active quarry at the south-east of the E2 zone and when this is decommissioned the area must be rehabilitated with suitable species consistent with the surrounding vegetation community.

4.3 Rubbish Dumping

Historically, the Environmental Conservation (E2) zoned land became a target area for illegal dumping of household rubbish and trade waste. Public access to the E2 area must be restricted to reduce the opportunities for rubbish dumping in the E2 zone. Any dumped rubbish must be removed when it is reported.

4.4 Weeds

There is a range of weed species in the Environmental Conservation (E2) zone including noxious weeds. The major weeds include:

- St John's Wort (noxious) (*Hypericum perforatum*)
- African Boxthorn (noxious) (*Lycium ferocissimum*)
- Blackberry (noxious) (*Rubus fruticosus*)
- Horehound (*Marrubium vulgare*)
- Paterson's Curse (*Echium plantagineum*)
- Onion Grass (*Asphodelus fistulosus*)

Some of the wider spread weeds such as St Johns Wort and Paterson's Curse pose the largest threat to the integrity of the E2 zone, especially in the open woodland and grassland areas. Woody weeds such as Black Locust, African Boxthorn and Blackberry also exist. The Environmental Conservation zone needs to be strategically sprayed for these weeds on a regular basis and species specific control programmes that are aligned to Council's updated Class 4 Noxious Weeds Management Plan need to be implemented on a seasonal basis to protect sensitive areas. This will be undertaken as part of Council's annual weed control program.

4.5 Feral Animals

Foxes are the major pest species impacting on the Environmental Conservation (E2) zone. Other feral animals such as rabbits, hares, dogs and cats also occur in the E2 zone. Council staff will implement control measures to remove these animals from the E2 areas.

4.6 Domestic Animals

Stray domestic animals, e.g. dogs, cats, horses, donkeys, sheep, goats and cattle, must be removed whenever they are found in the Environmental Conservation (E2) zone land. Persons who exercise their dogs in the E2 land must keep them on a lead at all times and stay within 10m of the designated walking tracks.

Predation by Cats, *Felis catus*, is listed as a Key Threatening Process in Schedule 3 of the Threatened Species Conservation Act, 1995. With regard to this key threatening process, control of cats is a requirement of the Biodiversity Certification for the Wagga Wagga Local Environment Plan 2010 (refer to C3 in the Lloyd DCP 2010). To comply with this control requirement, all cats and kittens in the Lloyd subdivision must be kept in the house or in an escape proof enclosed run or room between the hours from sunset to sunrise each day (Refer to Figure 4). The cats and kittens must also have an identification microchip inserted in accordance with the Companion Animals Act 1998.

4.7 Protection of Endangered Woodland Communities

Remnant Box-Gum woodland is located mostly on the higher slopes and ridge lines of the Environmental Conservation (E2) zone. Its understorey has been disturbed but the community still contains many mature trees. The conservation status of this community is locally significant (Priday and Mulvaney 2005) as well as being a nationally listed endangered ecological community (EEC). Council will work with the CMA and local community groups such as Landcare to rehabilitate this community to a regionally significant vegetation community with judicious planting of native trees, shrubs and ground cover species. Camping and recreational fires are not permitted in the Environmental Conservation areas.

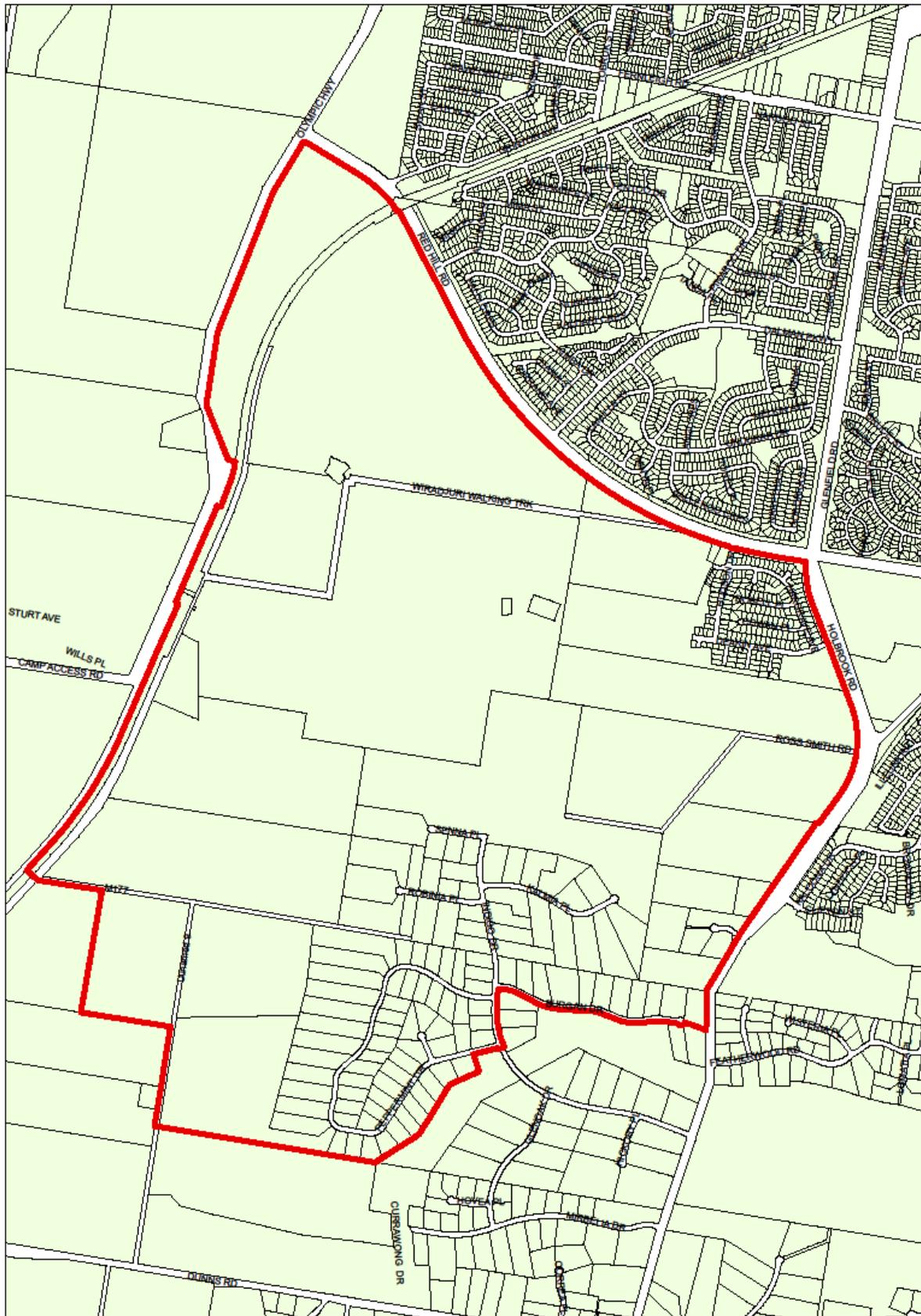
4.8 Bushfire Management

Control of wildfires in the Environmental Conservation (E2) zone is critical for public safety, the preservation of biodiversity values, and protection of property.

The perimeter fence of the E2 area shall be erected according to the subdivision plans along sections where there is no existing fence between Council controlled land and private property. These plans shall ensure that along sections of the fence that adjoin Rural Residential and Residential areas, the fence is erected with more than 20m space from any tree species that has a mature height greater than 10m. The 20m buffer distance is consistent for Asset Protection Zones for woodlands with slopes less than 20° (Refer to "*Planning for Bushfire Protection, December 2006*" published by the NSW Rural Fire Service). Within this 20m buffer only short shrubs with a mature height of less than 4m, forbs and grasses shall be permitted to grow.

A 4m wide fire trail shall be constructed by grading or slashing, to NSW Rural Fire Service Standards within the 20m buffer and follow the boundary fence at a practical distance from it. Where the Council controlled E2 land adjoins Rural zoned land the fire trail shall follow close to the boundary but avoiding established trees. The fire trail shall be maintained according to NSW Rural Fire Service standards.

Figure 4: Cat Control area (red outline) that is applied to the Lloyd Urban Release Area.



4.9 Connective Conservation Corridor

The purpose of this Public Recreation (RE1) zoned land is to provide an area of revegetation that will be part of the offset requirements for the Lloyd Release Area. It will accommodate the Wiradjuri Walking Track and provide a wildlife movement corridor between the Environmental Conservation (E2) lands on the east and west of the Lloyd Release Area. The RE1 area, as currently drawn on the 2010 LEP map is slightly smaller than the agreed area during planning of the Wagga Wagga Local Environment Plan. The agreed area has a 100m minimum north-south distance and the difference is shown in Figure 2. This RE1 area in the LEP map must be adjusted to fulfil the native vegetation offset requirements for Lloyd.

This RE1 area is devoid of trees and Squirrel Gliders would not traverse through the area. To establish the connectivity for Squirrel Gliders a series of poles with nest boxes for shelter should be erected that would allow the gliders to traverse from the E2 areas in the east to the E2 areas in the west. These poles should remain in place until the revegetation plantings had grown sufficiently to be adequate for glider cover and facilitate travel through the habitat.

4.10 Wiradjuri Walking Track

In the 1970s the Department of Lands initiated the development of the Wiradjuri Walking Track to provide public access to Crown Land Reserves within the urban area. The total length of the track is more than 30km.

The Wiradjuri Walking Track passes through the Environmental Conservation (E2) areas and connects with the Silvalite Reserve to the west and with the Hilltop ridgeline to Willans Hill in the east. At present there are two options for the position of the Track through the Lloyd Release Area. The final position will depend on decisions made by the NSW Land and Property Management Authority (formally Department of Lands).

4.11 Firewood collection

Many homes in Wagga and the surrounding area rely on wood-fired heaters during the winter. This leads to many wood-fired heater owners often taking advantage of fallen timber lying on the ground in reserves to which they have access. Coarse woody debris (logs over 20cm diameter) in woodlands and forest is an important source of habitat and food for birds and mammals and should be retained within the E2 zone.

4.12 Inappropriate Recreation use

Box Gum Woodland often contains open grassy areas which may be targeted by locals as areas appropriate for BMX, Mountain Bike or Motorbike use. It is important to educate local residents that these activities are not permitted within the E2 reserve and that any jumps or tracks created without the permission of council will be destroyed and rehabilitated.

4.13 Integration of the Conservation Management Plan

A major management issue for the Lloyd area is the management of ground water and control of salinity in the Lloyd and Glenfield areas. The Conservation Management Plan is integrated with the **Wagga Wagga Development Control Plan Lloyd Urban Release Area 2010**, particularly Section 3 Heritage Conservation, Section 4 Environmental Hazards and Conditions, and Section 5 Environmental Conservation, Biodiversity and Natural Resource Management.

5. MANAGEMENT STRATEGIES

The following management strategies have been developed from the management objectives and issues identified in the previous section. The strategies include specific actions, ongoing actions and policies.

5.1 Objectives of Management

The following specific land management objectives are based on the issues and values of the Environmental Conservation (E2) zone as identified in the Wagga Wagga Local Environment Plan 2010.

1. Protect and rehabilitate the natural values of the E2 zone
2. Manage recreation for sustainable use
3. Permit utilities to function in the E2 zone
4. Manage the E2 zone cooperatively with the community

5.2 Management Actions and Implementation of the Plan

The following actions will be undertaken according to their timeframe. These actions will be used as a basis for future budget consideration and provide the specific direction for operational works plans.

Activity No.	Action	Timeframe
5.2.1 Protect and rehabilitate the natural values of the E2 zone		
1	Removal of any naturally occurring materials, flora or fauna, dead timber, bush rock and fire wood is prohibited.	2010, on-going
2	Encourage flora and fauna research within the Environmental Conservation (E2) zone, especially research that gives a long term analysis of the health of the flora and fauna populations.	2010, on-going
3	The following weed species will be prioritised for control: St John's Wort, Horehound and woody weeds. Sprays used in all programs will be bioactive or amphibian friendly herbicides.	2010, on-going
4	An annual spray program will occur along all tracks.	2010, on-going
5	Weed infestations areas will be monitored and control action taken.	2010, on-going
6	Only local provenance native vegetation is to be planted in the E2 zone.	2010, on-going
7	Council will promote the regional natural corridor linking Environmental Conservation (E2) lands on Willans Hill, Lloyd, Silvalite and Pomingalarna Reserves, and the Murrumbidgee River.	2010, on-going
8	A fire management plan is to be prepared for the Environmental Conservation (E2) zone which protects assets and enhances the natural biodiversity.	2010 - 2011
9	A perimeter fire management trail network will be maintained consistent with the Lloyd Urban Release Area and strategic access gates to the E2 zone will be maintained.	2010 - 2011

Activity No.	Action	Timeframe
10	A rehabilitation plan for the E2 zone will be prepared as a priority. The plan will aim to rehabilitate the Box-Gum EEC and other disturbed areas The plan will include earthworks, plantings of local native species and mitigation works.	2010, on-going
11	A schedule will be devised that will effect regular and, as required, control of domestic animal and feral animals in the E2 area.	2010, on-going
12	All informal vehicle tracks other than the designated management tracks will be deep ripped and revegetated as a priority.	2010, on-going
5.2.2 Manage recreation for sustainable use.		
13	Vehicle access will only be permitted in designated areas and will be controlled by lockable gates.	2010, on-going
14	Emergency vehicles and vehicles for management purposes will have access via locked gates.	2010, on-going
15	The E2 zone boundary fencing will be maintained in a form and condition which stops vehicle access except at Council designated entry points.	2010, on-going
16	Any new buildings or facilities within the E2 zone will be assessed by Council for visual and environmental impacts on the basis of the values of the E2 zone. Where possible these will co-locate with existing facilities and avoid impacts on associated developments such as access roads and firebreaks.	2010, on-going
17	Interpretation signage is to be provided at the visitor nodes. Interpretation themes could include the history of the E2 zone, flora and fauna and cultural heritage. Signage will also inform that domestic animals are not permitted within the Wildlife protection Area and penalties apply for infringements.	2010 - 2011
18	Signage installed reminding users not to build new tracks or jumps for mountain or BMX bikes.	2010 - 2011
19	No camping is allowed, including users of Wiradjuri Walking Track.	2010, on-going
20	Applications for recreation areas and for communication towers or similar utilities will be assessed as required by Wagga Wagga City Council	2010, on-going
5.2.3 Manage the E2 zone cooperatively with the community.		
21	On the adoption of this Conservation Management Plan Council will seek to facilitate community involvement with the management of the E2 zone.	2010, on-going
22	Signage installed reminding users that firewood and bush rock collection is prohibited	2010 - 2011
23	Council will implement Ranger patrols throughout the E2 area.	2010, on-going

Activity No.	Action	Timeframe
24	Unauthorised activities within the E2 zone will be penalised under the provisions of the relevant legislation.	2010, on-going
25	Council will work with the community and seek to obtain additional management funds from various fund managers such as the Murrumbidgee Catchment Management Authority.	2010, on-going
26	Council will initiate a long-term research project that will investigate and monitor the biodiversity changes in the E2 areas over the next 30 years and include monitoring the effectiveness of the RE1 connective corridor. This research project will be done in collaboration with Charles Sturt University and the necessary base-line data will be obtained prior to any development that is adjacent to the E2 and RE1 areas or would impact on the use of the Lloyd Release Area by native animals.	2010, on-going

PART B - MANAGEMENT OF ENVIRONMENTAL CONSERVATION (E2) LAND ON PRIVATE PROPERTY AREAS

6. REVEGETATION

Parts of the Lloyd Environmental Conservation (E2) area that are on private property are subject to revegetation with local native species under the requirements of DCP 2010, Section 5. This revegetation will enhance the value of the E2 area.

7. DOMESTIC CAT CONTROL

Predation by Cats, *Felis catus*, is listed as a Key Threatening Process in Schedule 3 of the *Threatened Species Conservation Act*, 1995. Control of cats is a requirement of the Biodiversity Certification for the Wagga Wagga Local Environment Plan 2010 (refer to C3 in the Lloyd DCP 2010).

The Environmental Conservation (E2) zone of the Lloyd Urban Release Area also includes rural residential lots in the Glenoak subdivision area and residential lots in Hilltop. Domestic cats are known to travel more than 360m while hunting and travelling through their residential neighbourhoods. Cats housed at residences in Robina Place, Kalmia Place, Burgan Drive (North side), Peppermint Drive, Bursaria Place and Indigo Drive (north of No. 12) could all easily hunt in the E2 area. Likewise, cats housed at residences in Melia Place could hunt in the E2 area. To comply with this Biodiversity Certification control requirement, all cats and kittens living at houses in the above addresses must be kept in the house or in an escape proof enclosed run or room between the hours from sunset to sunrise each day (Figure 4). The cats and kittens must also have an identification microchip inserted.

PART C - MANAGEMENT OF PUBLIC LAND ON OPEN SPACE AREAS

8. RETENTION OF NATIVE VEGETATION

Native vegetation in open space areas, and including areas along riparian drainage lines, will be retained and as appropriate revegetated with native species that are local to the environment and vegetation community.

The native vegetation of these areas is to be retained and include the mature trees as habitat for wildlife. Potentially dangerous trees can be cut down and the trunk and branches placed as habitat in a suitable location. Applications can be made to Council staff to cut down potentially dangerous trees. Wherever possible, fallen branches will be left on the ground to form habitat for ground fauna. Any trees, both living and dead, that are removed are to be replaced by other local native species at a ratio of ten trees for each tree removed. These replacement trees shall be planted either within the Open Space area or within the E2 areas.

PART D - RETENTION OF SQUIRREL GLIDER HABITAT ON PRIVATE PROPERTY

9. VEGETATION RETENTION

The trees in the area of identified Squirrel Glider habitat outside the E2 zone (see Figure 3), and trees along drainage lines to the west and south of the quarry at Lloyd are to be retained.

REFERENCES

Ecological Australia (2008). "Wagga Wagga Planning Study Environmental / Biodiversity report for Lloyd". Report prepared for Willana Associates on behalf of Wagga Wagga City Council.

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