



ACT Planning &
Land Authority

Macgregor West Concept Plan

Addenda for Concept Plan

Please note that this Concept Plan Report has been amended in relation to the Territory Plan Land Use Policy for the Neighbourhood Focal Point and the associated community facility site from a Residential Land Use Policy to a Community Facility Land Use Policy.

The Neighbourhood Focal Point and the associated community facility site is referred to in Sections 3.5 and 5.11 and indicated in the Concept Plan, Indicative Subdivision Plan and the Important Planning Requirements Plan.

Following a further review, the land take for the combined site has been reduced from 8,000m² to 4,000m².

This concept plan was originally adopted as a Guideline under the Territory Plan. These original content of the plans have not been amended since their adoption, but are included in the new Territory Plan and have statutory effect.

Under the *Planning and Development Act 2007*, a concept plan:

- applies the principles and policies in the structure plan, to future urban areas (formerly know as defined land); and
- is a precinct code in the Territory Plan.

A concept plan is used to guide the preparation and assessment of estate development plans (which are development applications), and can also be used to assist in the assessment of development when an area ceases to be a future urban area.

In this Concept Plan, any references to Land use Policies should be read as a reference to zones.

Consistent with the ACT Government's Affordable Housing Action Plan, the Concept Plan is amended to require that a minimum of 15% of all dwellings in the suburb be affordable housing product.

To provide diversity in affordable land and housing products to meet the Government's requirement, the controls for blocks up to 250m² have been incorporated into Residential Zones Development controls, which need to be considered during the subdivision design.

To give effect to the Government's Affordable Housing Action Plan, this Concept Plan is further amended to specify the following locational requirements for Compact Blocks:

- compact blocks must be located opposite high quality open space. If this is not possible, then located within the vicinity of 100m from high quality open space or parkland or alternatively adjacent to a wide verge with high quality landscaping and medium sized street trees;
- if the compact block is accessed from the front, the block should be located on an internal local road and not fronting a main collector road;
- if the compact block is accessed from the rear, the blocks can be located fronting a collector road;
- compact blocks may be suitable for corner blocks and section ends but may also facilitate a narrower section depth.
- compact blocks and the adjacent public realm are required to be integrated so that a high quality streetscape is provided for the residents, which includes on-street parking (as required), street trees, verge crossings, services, footpaths and garbage collection points.

Estate Development Plans prepared under this concept plan must have regard to these requirements. Any amendments to the concept plan other relevant codes within the Territory Plan in order to give effect to these requirements, will be undertaken in accordance with section 96 of the Planning and Development Act 2006. That section requires the Authority to vary the plan once and estate development plan is approved, to remove the Future Urban Area overlay and identify the zones to apply to the land consistent with the estate development plan. Section 96 also enables the Authority to incorporate any other element of the estate development plan that should be ongoing, such as the identification of compact blocks (if necessary).

1	INTRODUCTION	1
1.1	Concept Planning Process	1
1.2	Background.....	1
1.3	Site Description.....	1
2	MACGREGOR WEST CONCEPT PLAN	3
2.1	Objectives	3
3	INDICATIVE SUBDIVISION PLAN	5
3.1	Housing Mix	5
3.2	Traffic / Road Connections	5
3.3	Open Space Structure	5
3.4	Environment Conservation	5
3.5	Neighbourhood Focal Point	5
4	INDICATIVE LANDSCAPE PRINCIPLES PLAN	7
4.1	Urban Edge.....	7
4.2	Estate Entry Feature.....	7
4.3	Access Streets and Collector Roads	7
4.4	Local Parks	7
4.5	Swales and Retention Ponds	7
5	IMPORTANT PLANNING REQUIREMENTS	9
5.1	Specific Planning Intentions	9
5.2	Ecological Assessment.....	11
5.2.1	Golden Sun Moth	11
5.2.2	Ginninderra Creek Corridor	11
5.3	Open Space Provision	11
5.4	Tree Protection	12
5.5	Heritage	12
5.6	Odour	12
5.7	Contamination.....	12
5.8	Bushfire Risk.....	13
5.9	Dwelling Numbers and Housing Mix.....	15
5.10	Detailed Planning Guidelines	15
5.10.1	Access.....	15
5.10.2	Block Orientation and Sizes.....	15
5.10.3	Car Parking / Car Courts.....	16
5.11	Commercial / Community Facilities	16
5.12	Road Network / Hierarchy	17
5.12.1	Road Hierarchy and Functional Classifications	17
5.12.2	Access Points.....	17
5.13	Bus Services.....	17
5.14	Cycle Paths.....	19
5.15	Pedestrian Network	19
5.16	Equestrian.....	21
5.17	Indicative Development Staging	22
5.18	Engineering Services.....	24
5.18.1	Water Supply.....	24
5.18.2	Sewerage	24
5.18.3	Stormwater Management.....	24
5.18.4	Other Infrastructure	24
5.19	Works Associated with Development	24
5.20	Further Investigations	25

FIGURES

Figure 1	Metropolitan Context	2
Figure 2	Macgregor West Concept Plan	4
Figure 3	Indicative Subdivision Plan.....	6
Figure 4	Indicative Landscape Principles Plan	8
Figure 5	Important Planning Requirements Plan.....	10
Figure 6	Bushfire Protection Measures	14
Figure 7	Road Hierarchy Plan	18
Figure 8	Existing Pathways within Macgregor	19
Figure 9	Pathway Network Plan	20
Figure 10	National Equestrian Trail	21
Figure 11	Indicative Development Staging	23

TABLES

Table1:	Block Size / Dwelling Mix	15
Table 2:	Minimum Block Dimensions by House Type	16

1 INTRODUCTION

The Macgregor West Concept Plan Report outlines the planning objectives, principles and important planning requirements which will inform more detail future planning and development of the estate. The Concept Plan has been adopted as a Guideline under the Territory Plan. As such, the Concept Plan guides planning decisions and is required to be taken into consideration in development and land use proposals.

Additional detail planning analysis and background information on the planning of this estate is contained in the Macgregor West Concept Plan Background Report. Reference to this Report is necessary to understand the basis of the Concept Plan and the Indicative Subdivision Plan.

1.1 Concept Planning Process

Concept planning is the next step in the planning hierarchy after the 1992 Environmental Impact Statement (EIS), Outline Plan and Variation to the Territory Plan for West Belconnen. A Concept Plan is a planning tool, which provides a greater level of detail by specifying notional land uses, broad infrastructure requirements, higher order road network (distributor roads), key features and boundaries of the estate. It is a plan and report that documents the planning requirements for a proposed development area (established or Greenfield) and includes Important Planning Requirements. The Concept Plan once endorsed by the ACT Planning and Land Authority (Authority) in consultation with other government agencies becomes a Guideline under the Territory Plan.

1.2 Background

Macgregor West is identified by the Territory Plan as having a Residential Land Use Policy with a Defined Land Overlay and an Area Specific Policy (A4 - Single Storey Development). The area was originally identified for future residential development together with Dunlop in 1992 as part of the EIS and Variation to the Territory Plan for West Belconnen. The development of Macgregor West was also confirmed through the Canberra Spatial Plan.

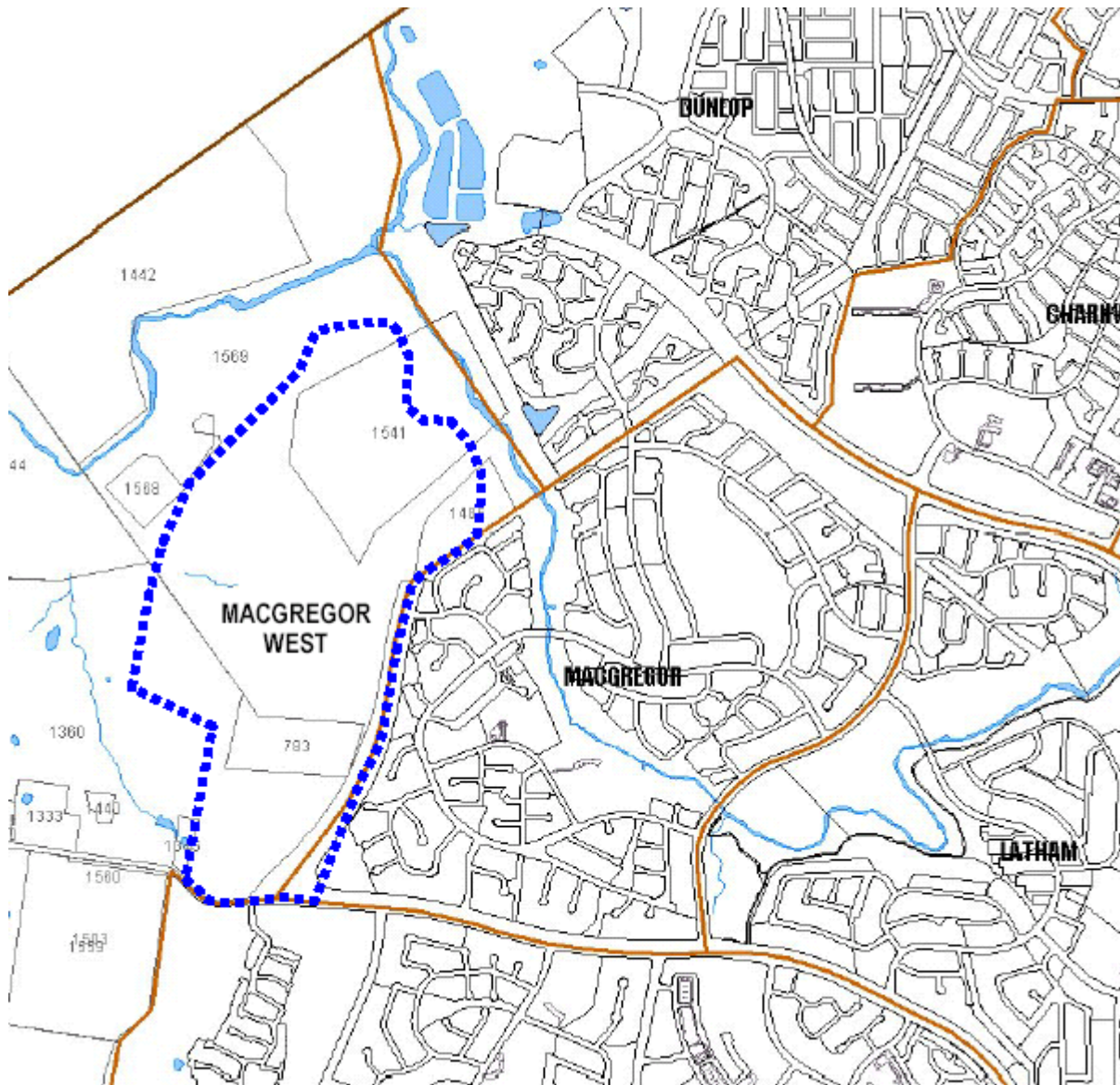
1.3 Site Description

Macgregor West is located on the western edge of Belconnen adjacent to Macgregor, south of Dunlop and north of the Belconnen Golf Course and Woodhaven Green Residential Estate. Figure 1 shows Macgregor West in the metropolitan context.

The study area for Macgregor West has an overall area of approximately 124ha. It is one of the last remaining Greenfield residential areas in Belconnen. Macgregor West is approximately 14km from Civic, 7km from Belconnen Town Centre, and 2km from Kippax Group Centre.

The terrain comprises undulating topography draining to Ginninderra Creek to the north and west. The site is predominately used for grazing purposes including horse agistment, pending its development. The land has been cleared of native vegetation for many years, but contains trial plantings established in the 1970s of various tree and shrub species to assess their suitability to the Canberra region.

Figure 1 Metropolitan Context



2 MACGREGOR WEST CONCEPT PLAN

The Concept Plan for Macgregor West is shown in Figure 2. The Concept Plan is supported by the Indicative Subdivision Plan, Indicative Landscape Principles Plan and Indicative Engineering Master Plan that show planning, engineering and environmental issues, taking into account all the identified constraints and opportunities for the site.

2.1 Objectives

The overarching objectives established to guide the Concept Plan include:

- Develop an integrated diverse community with a strong identity and sense of place by ensuring flexibility to meet changing needs through a diverse housing product, a variety of living options and opportunities for affordable housing;
- Provide a high level of permeability and connectivity with adjoining suburbs particularly Macgregor and Holt (Kippax);
- Provide safe, compact and walkable residential precincts with easy access to recreational, commercial and community facilities;
- Incorporate innovations in Water Sensitive Urban Design and reduction of greenhouse emissions; and
- Create a subdivision which maximises efficient utilisation of existing resources and provides an economic return to the Territory.



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3 INDICATIVE SUBDIVISION PLAN

An Indicative Subdivision Plan is shown at Figure 3 that provides an estate-wide planning solution. The detail shown demonstrates that the Concept Plan is a pragmatic outcome by using the Important Planning Requirements and other information to arrive at a water sensitive, ecologically sustainable, efficient and 'liveable' urban environment.

Both the Concept Plan and Indicative Subdivision Plan embody the urban design objectives and principles of sustainability. They are based on the assessment of a range of alternative options for the preferred pattern of residential subdivision. The primary attributes of the Concept Plan and Indicative Subdivision Plan are summarised below.

3.1 Housing Mix

The concept plan provides for a mix of housing types with flexibility to meet market needs. Over 80% of housing will be single detached dwellings. Higher density housing such as townhouses, terrace houses or units fronting the main collector road and the Neighbourhood Focal Point (NFP) make up the remaining 20%.

3.2 Traffic / Road Connections

The main vehicle access will be from Southern Cross Drive. Two further connections into the existing suburb of Macgregor are also proposed, at the extension of Cannan Crescent and onto Osburn Drive near Clode Crescent, to provide connections to Macgregor Primary School and the local centre precinct. Osburn Drive will experience some increase in traffic, but this will not have a significant impact and Osburn Drive will continue to operate well within its capacity. A roundabout is proposed on the intersection link near Clode Crescent. A further option of connecting the estate with Ginninderra Drive is also suggested but is subject to future assessment. This connection is not required on traffic grounds.

3.3 Open Space Structure

The Concept Plan establishes an open space network that retains significant stands of mature eucalypts, provides local open space with playgrounds, provides pedestrian and bicycle links to the wider area, and connects the development to the further open space areas at the "Urban edge".

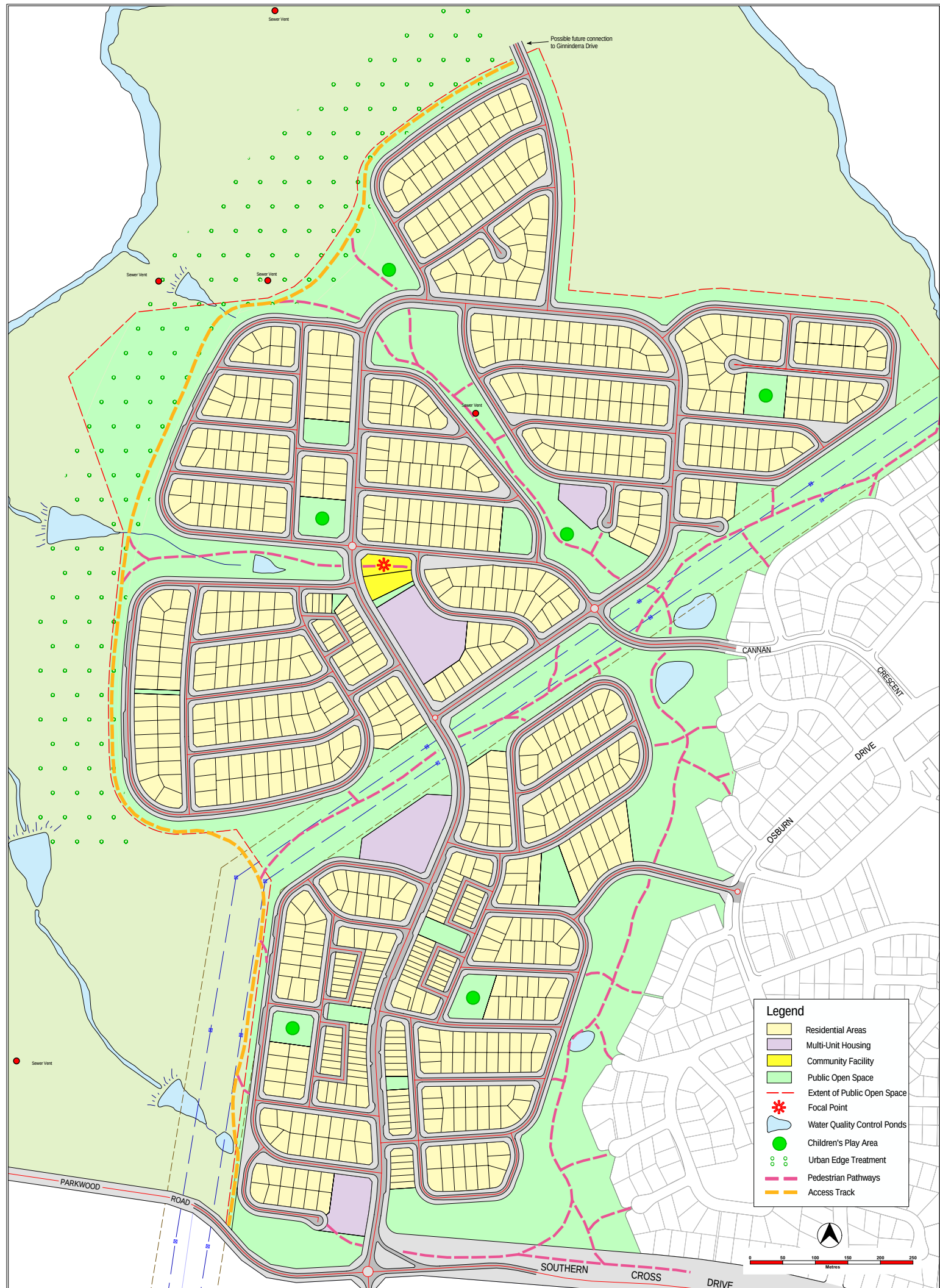
Consistent with the Territory Plan, a landscape corridor is to be retained between the western edge of existing Macgregor and the new development area. The corridor varies in width but, on average, is approximately 100 metres wide. This buffer space will retain the existing trees and equestrian trail, and will be enhanced with new landscaping and paths.

3.4 Environment Conservation

Consistent with the Territory Plan, the Ginninderra Creek corridor is to be retained as Urban Open Space between the new development and Dunlop. This will provide an open space buffer for the existing residents and protection of the creek. A wider open space buffer is proposed than that identified by the Territory Plan so as to protect a population of endangered Golden Sun Moths which occur along the creek corridor.

3.5 Neighbourhood Focal Point

The Neighbourhood Focal Point (NFP) area is the main common ground for the Macgregor West community. It will be located generally along the central linear open space spine adjacent to the identified community facility site. It will be an attractive, convenient focal point for a range of complementary social activities. The NFP might include formal open spaces with sitting, relaxing and play areas. The community facility use may include a child care centre or a community activity centre, consistent with the Territory Plan requirements and performance controls for a Residential Land Use Policy area.



Legend

- Residential Areas
- Multi-Unit Housing
- Community Facility
- Public Open Space
- Extent of Public Open Space
- Focal Point
- Water Quality Control Ponds
- Children's Play Area
- Urban Edge Treatment
- Pedestrian Pathways
- Access Track

Figure 3 Macgregor West Indicative Subdivision Plan

4 INDICATIVE LANDSCAPE PRINCIPLES PLAN

The Indicative Landscape Principles Plan recognises and responds to the general planning objectives and principles contained in the Concept Plan.

Figure 4 shows the broad landscape intentions, the main elements of which are discussed below.

4.1 Urban Edge

Native planting should provide an appropriate interface with open space areas. The Landscape Principles Plan proposes no street trees on the outside verge of the edge roads in order to reduce the risk of open space grass fires ‘climbing a tree’ and reaching tree crowns close to residences. The intervening roadway offers some low level protection for the residential verge trees.

Rural views from the existing edge of Macgregor will be replaced with an extension of urban environment with a buffer of landscaped open space adjacent to the edge of the new development. A visual transition from the urban area into existing rural landscape will be provided by identifying an area of single storey development on larger blocks (Area Specific Policy A4-Single Storey Development) with adjacent landscaped “Urban Edge” buffer together with appropriate landscaping of the open space spines through the estate.

4.2 Estate Entry Feature

Where space permits, entries to the estate should have strong and distinctive formal planting to enhance the sense of arrival. Planting is to be primarily signature trees of smooth white barked *Eucalyptus mannifera* (or similar) at the three entry/access points (which are all within native dominant open space areas) and where the collector road traverses or adjoins broad open space areas. Place-making elements such as public art and signage are also favoured.

4.3 Access Streets and Collector Roads

Street trees should be planted at regular intervals with one to two trees per block depending on block size. Small to medium sized predominantly native trees are recommended to permit solar access to the adjacent residential blocks. Streets should be identifiable by a particular tree species, thus enhancing legibility. Particular species should be used in specific areas or precincts to create more distinct neighbourhoods.

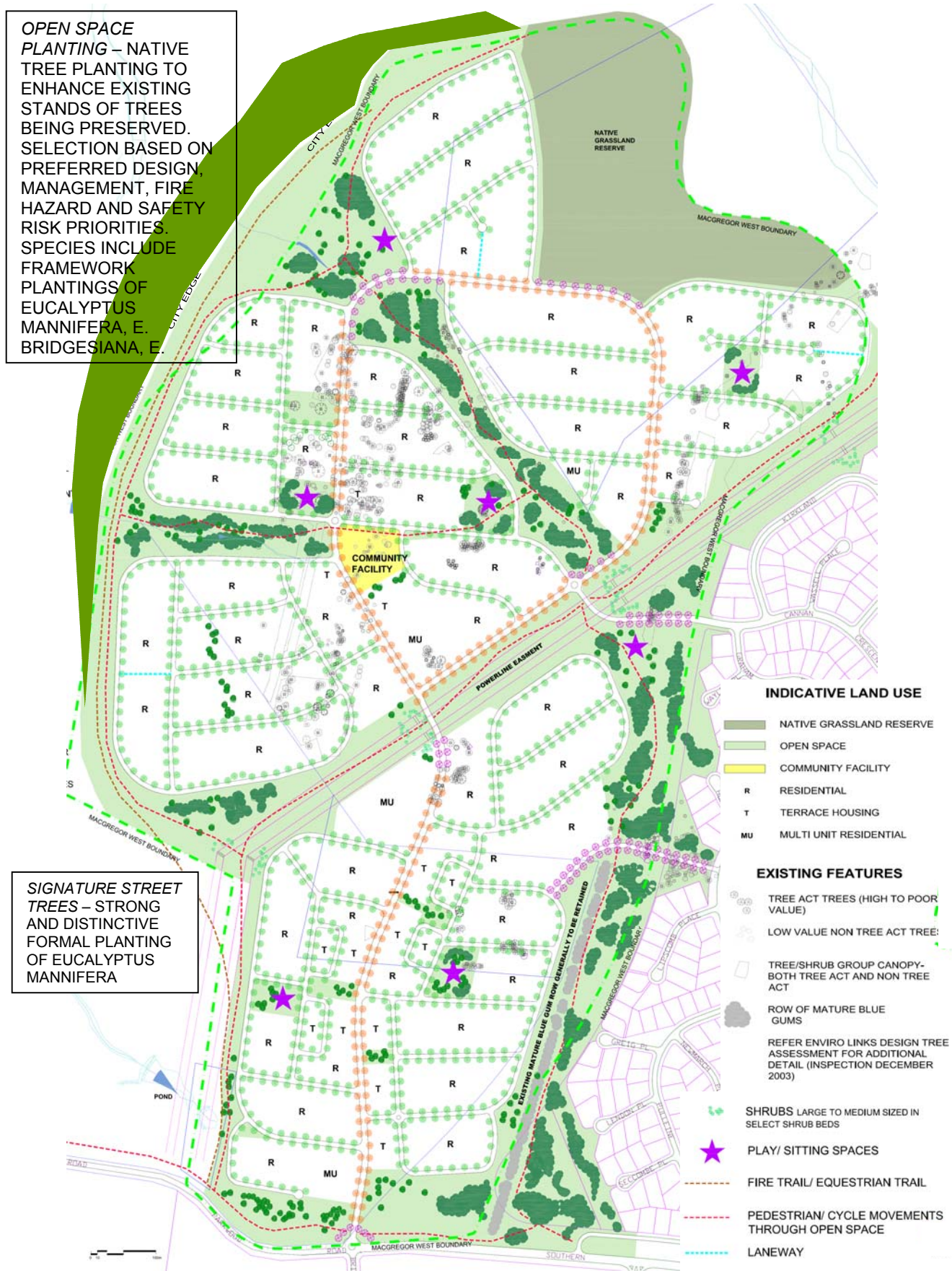
4.4 Local Parks

Planting should incorporate native trees to enhance any existing stands of trees being preserved. No remnant trees occur on the site so tree selection can readily be based on preferred design, management, fire hazard and safety risk priorities, especially in higher use areas. Fire mitigation requirements should also apply to planting in the open space interface and edge roads. Sports and community facilities within parks should incorporate strong and distinctive planting to enhance legibility. Care should be taken with the selection of trees adjacent to playgrounds.

4.5 Swales and Retention Ponds

Planting is to be a dominance of native species such as *Casuarina cunninghamiana* and moisture/ dry condition tolerant Eucalypts such as *E. bridgesiana* and *E. rubida*. Native grasses and tufted hardy shrubs will be used in and around swales and ponds. The inclusion of elements such as rocks, boulders and pedestrian bridges, where appropriate is encouraged.

Figure 4 Indicative Landscape Principles Plan



5 IMPORTANT PLANNING REQUIREMENTS

This section outlines the important planning requirements derived from the Concept Plan that will inform the estate development planning process.

- The Concept Plan shown at Figure 2 presents an overall vision for the development of the new estate and is supported by an Important Planning Requirements Plan, as shown in Figure 5.

5.1 Specific Planning Intentions

The specific planning intentions outlined in the Important Planning Requirements Plan include:

- Establish an open space network that:
 - retains and enhances the landscape corridor adjacent to existing residential areas, providing a buffer and interface to the new development area
 - retains significant stands of mature eucalypts
 - reinforces and protects the Ginninderra Creek reserve system
 - provides local public open space pedestrian/bicycle linkages between existing and future housing
 - provides a strong linear park connection between the neighbourhood focal point and the urban edge open space
 - reinforces distinct suburban development clusters within the primary structure of the new development area
 - softens the impact of the existing power lines by providing appropriate landscape treatment
 - provides open space spines based on existing prominent drainage paths
 - provides a distinct 'urban edge' structure of the suburban-to-rural edge with a continuous edge street or open space landscape interface.
- Create a road layout providing two connections to Macgregor, connecting the new estate to the school and directing the majority of the traffic exiting the suburb through the existing major arterial road, Southern Cross Drive.
- Create a street layout that provides road connection between the existing suburban area and the new urban edge open space.
- Consider future connection options to Ginninderra Drive.
- Utilise edge roads wherever possible as a buffer between residential development and areas of open space including the Golden Sun Moth habitat area.
- Take advantage of external views to rural areas, hills and the creek by east-west orientation of the roads in the western part of the suburb.
- Specify the location of a Neighbourhood Focal Point and associated higher density residential development centrally within the suburb in the close proximity to the intersection of the collector road system.
- Provide for local bus route to be extended to and accommodated through the estate via the Neighbourhood Focal Point and areas of higher density, facilitating and encouraging public transport use.



5.2 Ecological Assessment

A detailed ecological assessment has been undertaken, includes vegetation (grassland) mapping and assessment and Golden Sun Moth Distribution Analysis and Management Assessment.

The ecological studies have highlighted that the area to the north of the study area and immediately adjacent to Ginninderra Creek is an area of habitat for the Golden Sun Moth. Golden Sun Moth (*Synemon plana*) is listed as a critically endangered species under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. As a consequence, the area identified for development has been lessened so as to have minimum impact on the Golden Sun Moth habitat.

The land in the south of the study area (within the current Parkwood horse paddocks) has no ecological attributes that represent either a constraint on development or an opportunity for future environmental enhancement. Most of the remainder of the study area contains some evidence of the original native grassland community but is not exceptional compared with other parts of Canberra.

5.2.1 Golden Sun Moth

The Golden Sun Moth habitat site in Macgregor West (survey undertaken in 2004) covers approximately 70ha, making it the sixth largest site for the species in the ACT. The highest density of moths recorded in the study area was along Ginninderra Creek, particularly on the north-east edge between the study area and Dunlop. The moth was present in lower numbers on the drier slopes overlooking the creek, with a few records extended south as far as the access road to the former sewage treatment works.

Wildlife Research and Monitoring Unit - Territory and Municipal Services (WRMU -TAMS) undertook an additional survey in 2005, which resulted in similar findings to the initial study in 2004. WRMU have confirmed that no additional surveys would be necessary at this stage.

Appropriate land management of the site needs to be implemented immediately as the existing lease expired in December 2005. The current biomass management regime of the site needs to be maintained to allow the Golden Sun Moth habitat to continue and shall be incorporated into land management agreement for the lease/licence of this land.

It was recommended by WRMU that consideration be given to making modifications to the proposed boundary. Although the indicative subdivision layout (see Figure 3) is based on the northern boundary recommended by the ecological assessment, the subdivision may need to be adjusted to the boundary proposed by WRMU. This requires further consideration as part of the estate development planning process, which will also need to take into account bushfire asset protection requirements and habitat implications. A referral under the *Environment Protection and Biodiversity Conservation Act* will also be required.

5.2.2 Ginninderra Creek Corridor

The retention of the Ginninderra Creek corridor as open space is implicit in setting the notional development boundary for the present study. This boundary stops well outside the floodplain and notional corridor for the creek, and can be justified on various engineering and landscaping grounds.

5.3 Open Space Provision

The Concept Plan contains a hierarchy of open spaces and spaces serving different purposes totalling about 30ha and is to be provided generally in accordance with the Important Planning Requirements and the Concept Plan.

5.4 Tree Protection

A detailed tree survey and assessment was undertaken that identified individual trees and tree groups. This information was reviewed by Tree Protection Unit of TAMS and their comments incorporated into assessment.

All of the trees within the study area appear to have been planted or to have spread from earlier plantings. Consequently, they are relatively young and have not developed hollows to the extent of being valuable as nesting habitat. They are therefore not regarded as potential constraints on development from an ecological perspective, nor requiring any particular attention during the development process.

Draft Tree Management Plan - A draft Tree Management Plan (including detailed tree assessment reports and plans) has been prepared and has received in-principle support by TAMS. Removal of young tree planting is supported in principle by TAMS to achieve a good planning/ urban design outcome for the estate.

5.5 Heritage

There have been three cultural heritage surveys undertaken in the general Macgregor West area. Further specific investigations will need to be undertaken at the estate development planning stage for the whole estate to assess and address heritage item mitigation actions and conservation policy in accordance with Aboriginal Heritage Guidelines.

5.6 Odour

An existing odour issue originating from 5 sewer vents (1 within and 4 adjacent to the estate) was identified as a potential development constraint. An Odour Study was carried out on the performance of these vents. This study concluded that the site would be able to be fully developed after increasing the height of the vents (from 10m to 20m) and installing new filtration equipment on three of the vents in order to reduce the odours to within acceptable limits.

5.7 Contamination

A Phase 1 Contamination Assessment was carried out as a part of the Concept Plan study. The purpose of this assessment was to determine whether site contamination is likely to pose a potential risk to human health and the environment (either on or off the site) of sufficient magnitude to warrant a more detailed audit and remediation.

As a result of the assessment, the former Belconnen Sewage Treatment Works (located adjacent to the western boundary of the estate and close to the banks of Ginninderra Creek) was identified for more detailed examination to determine whether the former treatment works has impacted off-site areas.

The ACT Government's "Strategic Plan for Contaminated Sites Management 1995" specifically requires that potentially contaminated land be investigated at the earliest stages of the planning process to ensure a site is suitable for the proposed development.

The further environmental assessment must be undertaken by a suitably qualified environmental consultant along the common boundary of the development and the former treatment works to ensure there have been no off-site impacts from the former treatment works. The resulting assessment report must be forwarded to the Environment Protection Authority for review and endorsement prior to the commencement of development works.

5.8 Bushfire Risk

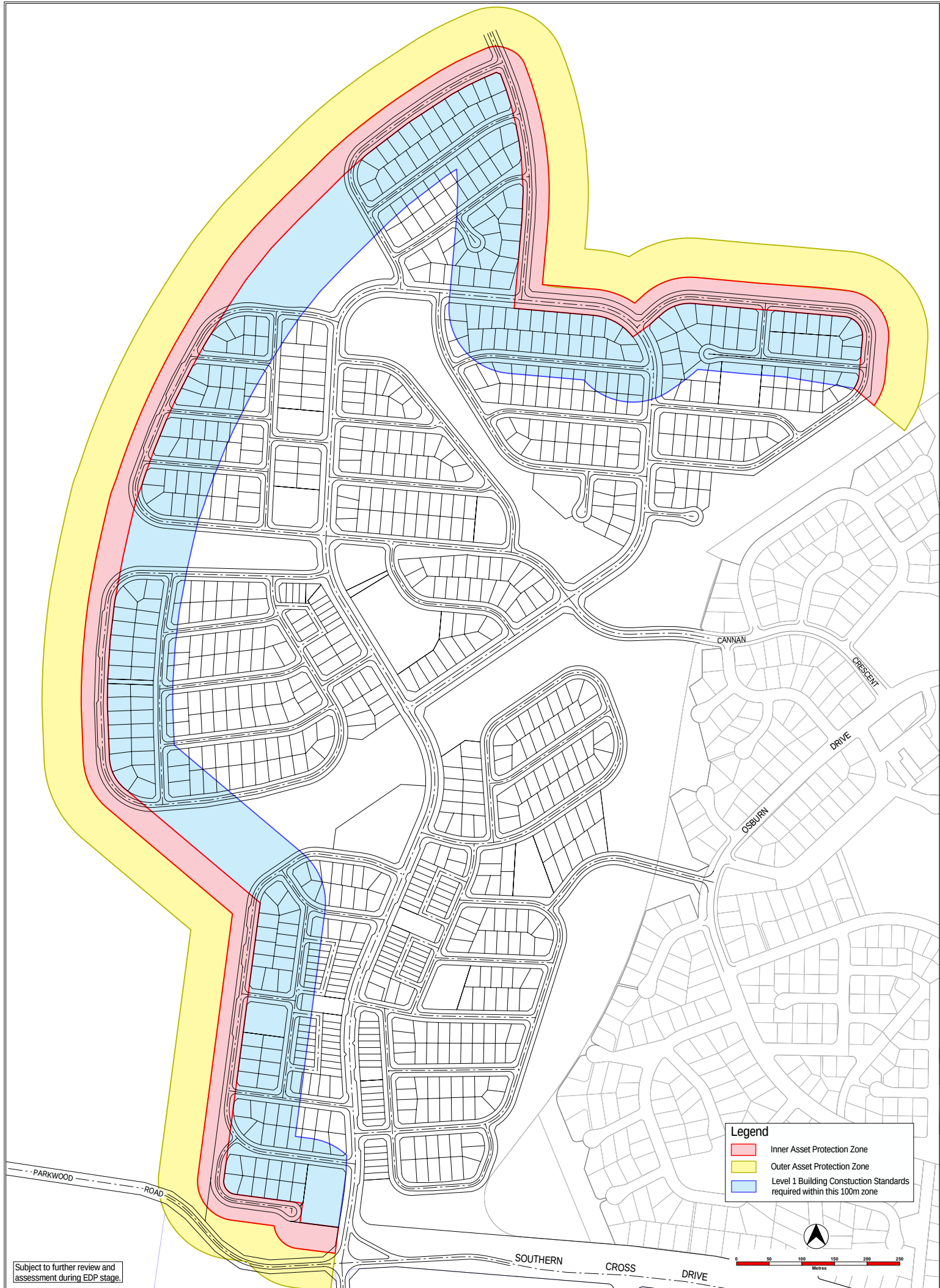
Macgregor West is not identified as a bushfire prone area. However, being a new urban area, it is subject to a bushfire risk assessment consistent with the requirements of the Territory Plan's Planning for Bushfire Risk Management Guidelines.

A bushfire risk assessment was undertaken that identified a number of mitigation measures to lessen the risk from bushfires.

The estate requires Inner and Outer Asset Protection Zones (IAPZ and OAPZ) along the south-western, through western to northern boundaries of 40 metres and 60 metres respectively. In addition higher construction standards (Level 1 under Building Code of Australia and Australian Standards AS3959) are required for the first 100m into the estate. This is detailed in Figure 6 and the Background Report. A fire trail is also required to be constructed to traverse the electricity easements to provide access and egress in an emergency and act as a location for fire-fighters to deploy operational tactics.

In light of a recent broad review of bushfire risk and asset protection zones around the ACT, the Rural Fire Services (RFS) has recommended the IAPZ on a primary edge be a minimum of 30 metres and the OAPZ for the same parameters be a minimum of 80 metres.

To ensure optimum mitigation against the threat of the bushfire, a future bushfire risk assessment is required at the estate development planning process. The assessment is also to investigate fuel management options associated with the Golden Sun Moth habitat area to ensure that adjacent residents are appropriately protected. Basically, if no fuel management is allowed within the grassland then alternative options may include reducing the OAPZ but increasing the IAPZ inside the development boundaries or placing all protection zones within the boundaries of the estate. The width of the remaining asset protection zones also need to be confirmed. The assessment is also to consider the estate within the context of the wider region.



Subject to further review and assessment during EDP stage.



Figure 6 Macgregor West Bushfire Protection Measures

Scale: 1:2500 @ A1 Date: Oct 2006



5.9 Dwelling Numbers and Housing Mix

The Indicative Subdivision Plan at Figure 3 proposes a residential dwelling yield of approximately 1,000 blocks. The proposed mix of block sizes is shown in Table1. The dwelling yield and housing mix is also based on the important planning requirements, the Territory Plan and its A4 area specific policy.

The gross area of the development site is approximately 120ha (excluding the part of the study area identified as golden sun moth habitat), comprising approximately 90ha for residential development and 30ha for public open space. Based on a total of 1,000 dwellings for Macgregor West, this would result in a gross residential density of approximately 12 dwellings per hectare.

Higher densities are proposed along the loop road frontage. In addition, areas are to be set aside for visitor car parking both on-street and off-street adjacent to the Small Scale and Terrace housing blocks.

The 1992 Environmental Impact Assessment (EIS) associated with the Variation to the Territory Plan identified that the estate was to accommodate up to 850 dwellings. It has been determined through the concept planning process that the additional 150 dwellings (i.e. 1000 dwellings for the estate) does not cause a significant change in the scale, size or purpose that was assessed as part of the EIS, consistent with Appendix II.1 of the Territory Plan.

Table1: Block Size / Dwelling Mix

Block type	Dwelling number	%
Multi Unit	70	7
SR2 (251-350m ²)*	30	3
SR3 (351-450m ²)*	110	11
SR4 (451-650m ²)*	700	70
SR5 (650m ² +)*	90	9
Total	1000	100%

NOTE: *SR = Standard Residential Block size categories are consistent with categories used in standard "Deeds of Agreement".

5.10 Detailed Planning Guidelines

5.10.1 Access

Access to private car parking for small-scale blocks having a frontage of less than 10m should be located primarily in rear access lanes or car courts. This minimises the number of kerb crossings and driveways that would interfere with regular spacing of street trees and on-street visitor parking. It also avoids a streetscape character consisting of a row of garages.

5.10.2 Block Orientation and Sizes

Block sizes vary to suit different housing types. Table 2 shows suggested minimum block dimensions for the various housing types. The block sizes illustrated in the table allow for generous habitable private open space to be located directly outside primary internal living

areas. The orientation of blocks as shown in the Indicative Subdivision Plan is designed to match the orientation with the house type accommodated whilst maximising solar penetration to habitable spaces.

Table 2: Minimum Block Dimensions by House Type

House Type	Minimum Width (m)	Minimum Depth (m)	Minimum Area (m ²)	Section Width (m)
Terrace (access from laneway)	8	30	240	70
Courtyard (access from laneway)	10	30	300	70
Courtyard (access from street)	12	30	360	60
Semi-detached house	12	30	360	60
Standard detached house	15	30	500	60

Accordingly, sites for townhouses and semi-detached houses are oriented predominantly north-south so that one primary façade can be oriented to catch the sun. Blocks for courtyard houses take advantage of the open space within the block to open the house to the sun on an east-west orientation.

5.10.3 Car Parking / Car Courts

Where car courts are proposed in the centre of the sections, deep-rooted areas of tree planting for shade and visual amenity should be provided. Habitable spaces and balconies should be oriented to ensure overlooking for passive surveillance and to provide active frontages to the car courts.

Additional car parking should be provided for visitors both on-street and off-street for small-scale blocks (450m² and under), including terrace housing blocks that have laneway vehicle access at the rate of 1 space per 4 dwellings.

5.11 Commercial / Community Facilities

A local centre is not permitted by the Territory Plan. It is proposed that residents will use nearby shopping facilities (eg Holt (Kippax) Group Centre). There is potential that with extra housing in Macgregor West, this may stimulate commercial activity at the existing Macgregor shops which may be revitalised.

A neighbourhood focal point providing good access to public transport and open space is proposed. It is proposed that the site area will be approximately 8,000m² but will be determined at a later stage, associated with future subdivision planning and development. The use of this site will be consistent with those permitted uses identified in the Territory Plan within a Residential Land Use Policy.

In addition, other possible community facility sites may be identified within the open space system for those facilities requiring a smaller land take, such as scout halls and community halls. Demonstrated demand for the development of these sites will be established in later detailed planning stages.

5.12 Road Network / Hierarchy

The road network is shown in Figure 7.

5.12.1 Road Hierarchy and Functional Classifications

The road hierarchy plan proposes the main access/egress to Macgregor West off an extension to Southern Cross Drive. This access will then form a central “loop” road as a major collector serving the entire estate. Minor collector connection roads are proposed into Macgregor on the eastern side of the estate and potentially to Ginninderra Drive to the north. All other streets would act as access streets and access places.

It is recommended that a traffic assessment be undertaken within the local network external to Macgregor West to determine whether any Local Area Traffic Management (LATM) measures are required to be introduced. The assessment and the implementation of any identified measures will be subject to programming and funding.

5.12.2 Access Points

The preferred options for road access points for the proposed development site at Macgregor West are as follows:

- extension/ upgrade of Southern Cross Drive with a major roundabout at the main estate entry point, utilising the existing Parkwood Road reserve at the southern end of the site, access to be controlled with a roundabout
- a new egress point established through the existing open space located between Hone Place and Lipscomb Place on the eastern boundary of the site connecting to Osburn Drive
- utilising the existing Cannan Crescent reserve which establishes a high order link on the eastern boundary of the site
- a potential road link connecting to Ginninderra Drive to the north, subject to feasibility assessment. This connection is likely to have impact on the Golden Sun Moth and as such will require a referral to the Commonwealth under the EPBC legislation

5.13 Bus Services

The Concept Plan makes provision for a central bus route through the suburb, generally meeting the 400m walking distance criteria for over 95% of all housing in the suburb. Two possible bus routes are considered practical to provide the residents of Macgregor West with suitable public transport.

The proposed bus routes through the estate would provide an efficient service via a relatively direct route, and would link to the commercial and community facilities at the Macgregor Local Centre.

5.14 Cycle Paths

There is potential to improve the cycle facilities in the area to promote an alternative to car use by providing recreational cycle facilities. The Concept Plan (Figure 2) makes provision for the following:

- shared pedestrian/bicycle paths in the proposed open space system on identified desire lines
- connections to the existing bicycle network in the Macgregor area
- continuation of the existing cycleway (off-street) along Southern Cross Drive and Ginninderra Drive to the development site
- on-road cycling opportunities throughout the estate.

The extension of Southern Cross Drive will incorporate on-road cycling in accordance with Government Policy. Internal roads do not necessitate specific cycle lanes.

The road and cycle paths for the Macgregor West Study area has been developed in association with the Canberra cycle master plan (refer to website: www.actpla.act.gov.au/plandev/tp-intro/cycle/cyclemasterplan.pdf (Sept 2004)).

5.15 Pedestrian Network

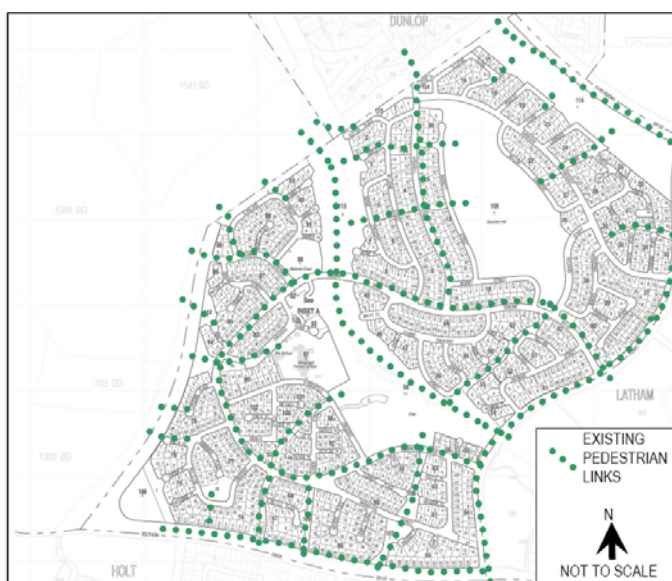
It is recognised that pedestrian activity generated by the estate is likely to be low. However, this does not preclude the exclusion of pedestrian facilities.

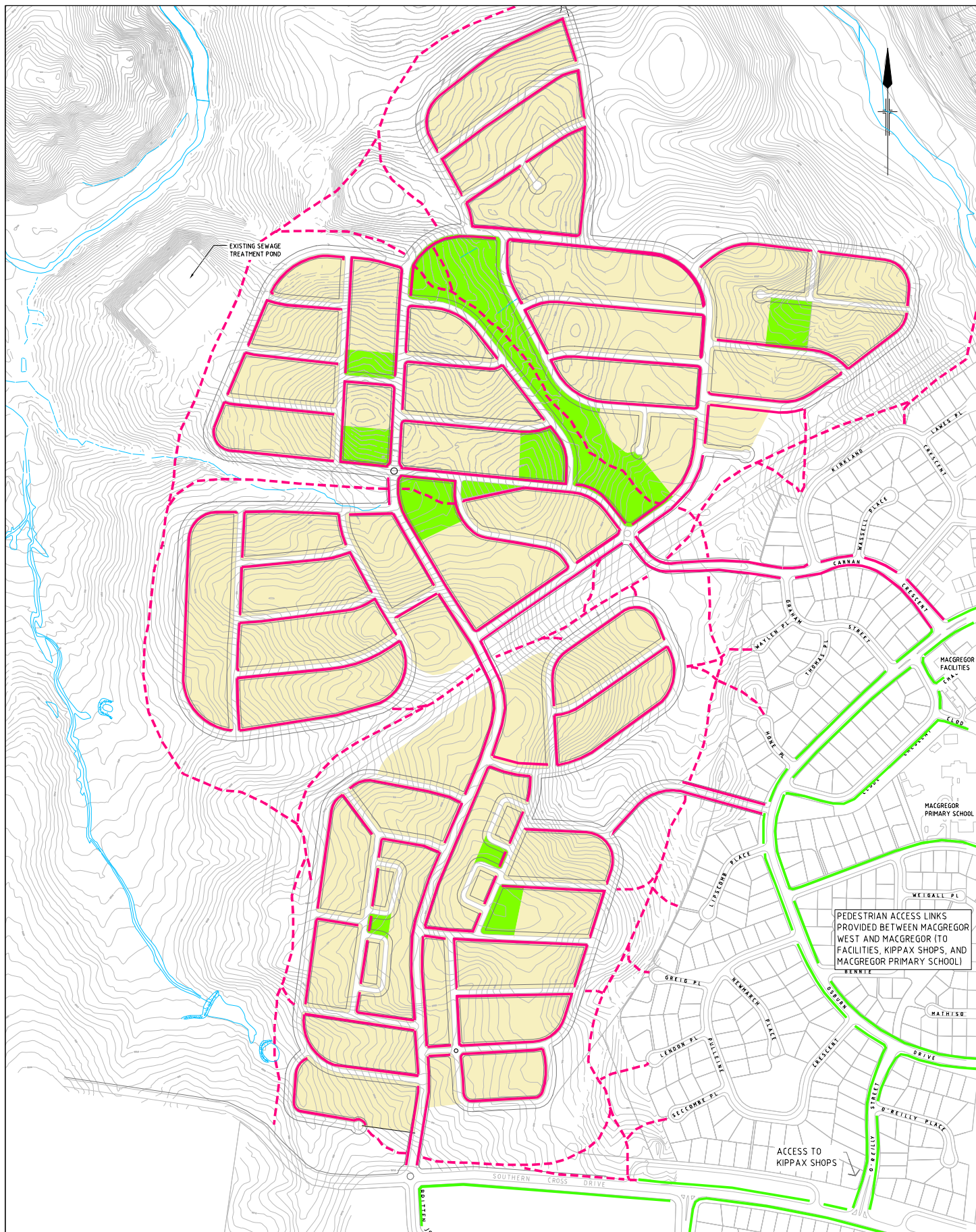
The proposed pedestrian network as shown on Figure 9 provides a link to the existing pedestrian network at the eastern side of the estate to enhance permeability.

Appropriate pedestrian crossing facilities will need to be located across Southern Cross Drive and the eastern boundary of the estate to enhance safety, connectivity and directness for pedestrians with an origin / destination to the east of the subject site to the existing local centre and in particular to the Macgregor Primary School.

Pedestrian and off-road cycling facilities are required to be implemented in accordance with the 'Master Plan for Trunk Cycling and Walking Path Infrastructure 2004 –14' (Roads ACT, September 2004). Pedestrian paths should be incorporated into the final design in accordance with current Government policies, standards and guidelines at a minimum.

Figure 8 Existing Pathways within Macgregor





LEGEND

- FORMAL FOOTPATH NETWORK
- EXISTING FOOTPATH NETWORK
- SHARED PATHS

0 50 100 150 200m

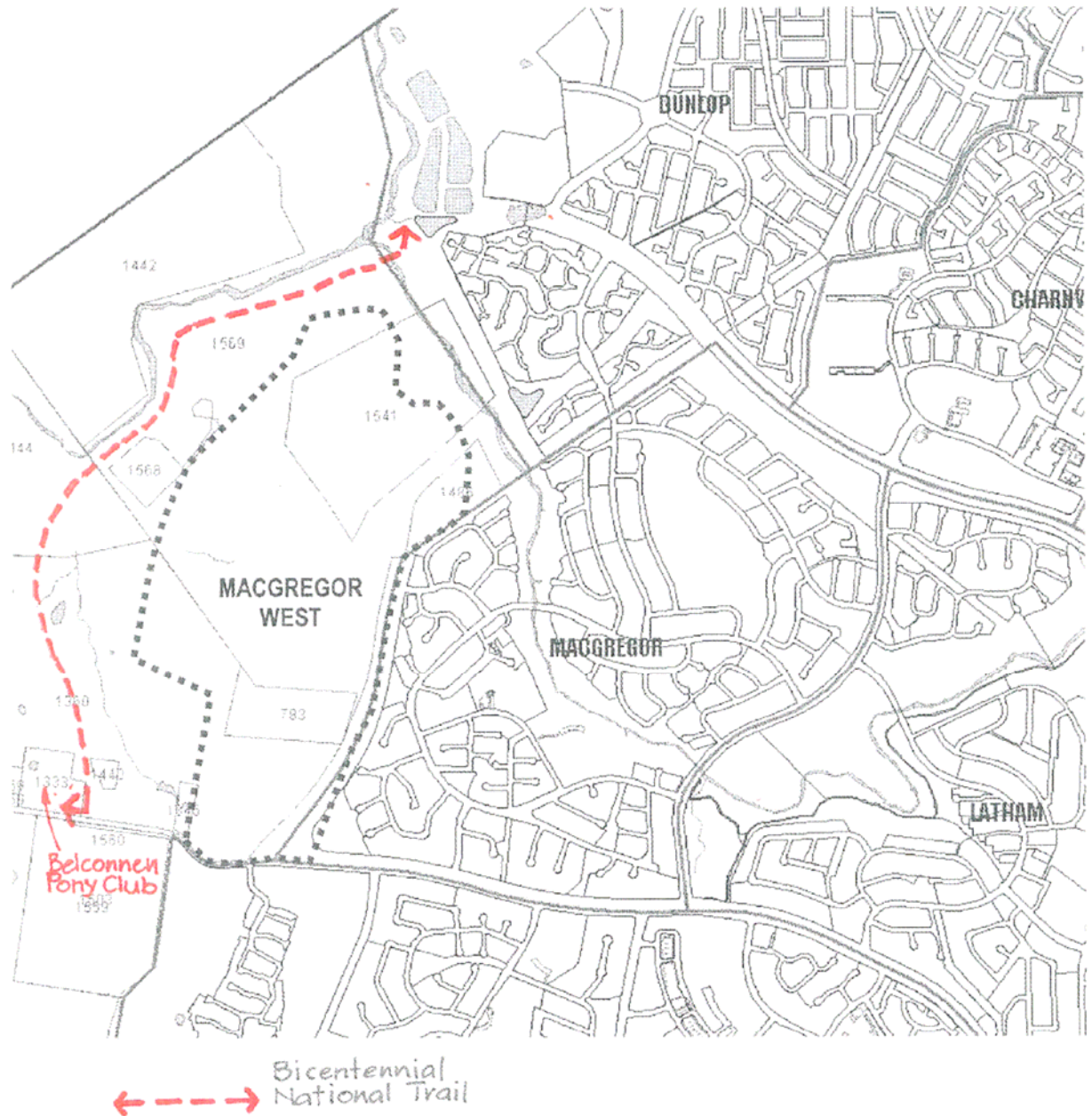


Client **ACTPLA**
 Project **MACGREGOR WEST RESIDENTIAL PLANNING STUDY**
 Title **FIGURE 9 PATHWAY NETWORK PLAN**

5.16 Equestrian

The National Bicentennial Trail is located to the western edge of the estate. The relocation ensures amenity for riders as well as minimises potential conflicts between users, for example dog walkers and horse riders. The route is indicatively identified in Figure 10.

Figure 10 National Equestrian Trail



5.17 Indicative Development Staging

Timing for land release will be determined by the Government taking into account other land releases within Canberra.

Figure 11 shows the indicative staging program.

The staging is based on the provision of infrastructure services within natural drainage catchments.

All areas of land could be developed utilising available servicing infrastructure and without the need for major capital works investment. All necessary infrastructure currently exists within close proximity of the development area. Note: works associated with modifications to the sewer vents are required to be completed prior to development.

Staging should ensure that all construction traffic is directed to the arterial road network. No stage should be reliant on construction traffic utilising existing streets within Macgregor to gain access to the site of construction works.

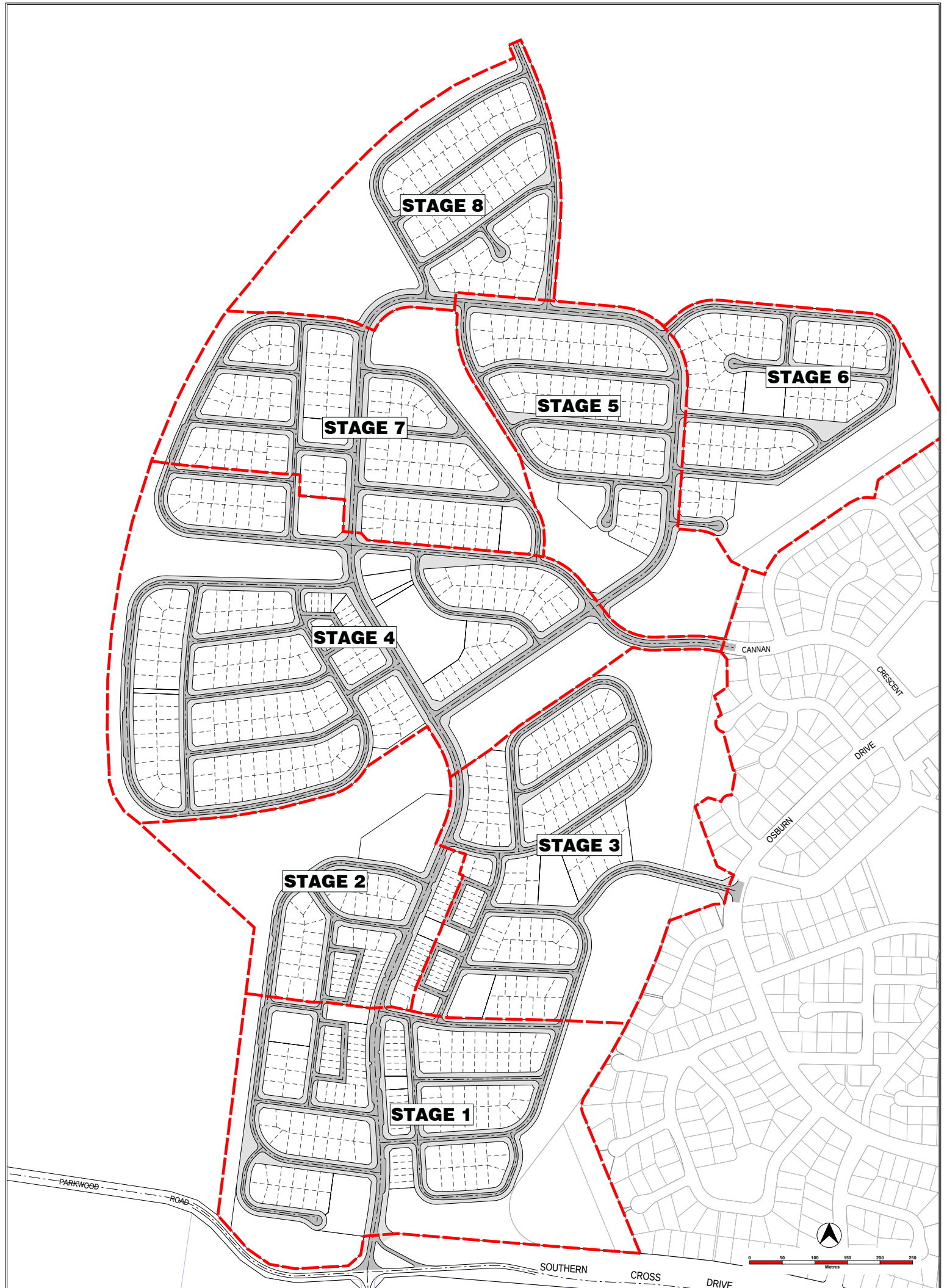


Figure 11

Macgregor West Staging Plan

Authorised by the ACT Parliamentary Counsel — also accessible at www.legislation.act.gov.au

5.18 Engineering Services

5.18.1 Water Supply

Water supply to the new urban development will be serviced from the Spence Reservoir, which has a top water level of RL 642 metres. No major augmentation of the water supply would be required.

5.18.2 Sewerage

The development site has been divided into a number of sewage catchment areas, with these areas in turn examined to ascertain whether there are any constraints to servicing the catchments by gravity sewers. A yield of 1,000 blocks has been assumed for infrastructure and planning purposes.

5.18.3 Stormwater Management

The Concept Stormwater Master Plan includes the results of studies of the stormwater volume for water quality treatment, and the retarding basin size for flood mitigation.

The stormwater concept plan has been subject to preliminary stormwater quality modelling using the MUSIC (model for urban stormwater improvement conceptualisation) program and is generally sufficient in meeting the stormwater management objectives for this area. A summary of the MUSIC modelling exercise undertaken is included in the Background Report.

5.18.4 Other Infrastructure

The normal utility services including electricity, gas and telecommunications would be installed in accordance with agency specifications and design standards. High speed broadband (ADSL) shall also be provided.

All residential streets will have street lighting to TAMS/ActewAGL standard specifications in accordance with the road hierarchy.

Easements having a width in accordance with Australian Standards will be provided to existing High Voltage Powerlines. All internal electricity will be supplied via an underground reticulation network.

5.19 Works Associated with Development

Works are to be provided as part of the development, including:

- upgrading of Southern Cross Drive to the southern entrance to the estate;
- construction/ upgrade to roundabout of intersection on Southern Cross Drive ;
- construction of a new road connection/ intersection to Macgregor via Cannan Crescent;
- construction of a new road connection/ intersection including roundabout to Macgregor via Osborne Drive, between Hone Place and Lipscomb Place;
- construction of water quality control ponds;
- landscaping including the Urban Edge buffer open space;
- remediation of the disused sewerage treatment works to the west of the site;
- Odour control measures must be implemented prior to development proceeding at the site (extension of five ventilation stacks and installation of bio-scrubbers on three ventilation stacks); and
- remediation of Ginninderra Creek including pedestrian/bicycle path and landscaping.

5.20 Further Investigations

Prior to development of the site and to inform the estate development planning process, further detailed investigations are required to be undertaken that are beyond the scope of the Concept Plan. These include:

- Final Tree Management Plan is to be prepared for consideration by Tree Protection Unit TAMS.
- A heritage survey and assessment is required that determines the significance and conservation or management strategies of any heritage item.
- A referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) will be required in relation to potential impact on the habitat of the Golden Sun Moth and resultant boundary to the residential estate.
- study to investigate the potential nature of the road connection to Ginninderra Drive and construction of a new road/ bridge connection from the estate (subject to assessment under the EPBC and funding if connection recommended to proceed.
- A detailed geotechnical investigation should be carried out once road and block layouts are finalised to ensure that subsurface conditions will not adversely affect the construction of infrastructure within the estate.
- Prior to development of the site a detailed Contamination Assessment Report (Phase 2) should be prepared for the site. The issue of possible impacts from the former (West Macgregor) Belconnen Sewage Treatment Works on the proposed development need to be addressed.
- Water Sensitive Urban Design measures adopted within the site should be investigated in detail to determine that the measures proposed do not adversely affect any other infrastructure or private property, prior to finalisation of the road and block layout for incorporating into the Estate Development Plan.
- A detailed Traffic Assessment is required to be undertaken within the local network (external to the estate) to determine whether any Local Area Traffic Management (LATM) measures are required to be introduced, particularly to the intersections of Southern Cross Drive with Florey Drive, Starke Street, Beaurepaire Crescent and Spofforth Street. This is a capital works matter and is subject to programming and funding.
- Clarification and assessment of the specific demand for Older Persons Housing facilities should be undertaken closer to the date of land release if required.
- A further Bushfire Risk Assessment addressing the matters identified should be undertaken and the outcomes incorporated into the design, to the satisfaction of the ACT Planning and Land Authority and the Emergency Services Authority.

The Rural Fire Service has advised that this assessment should also investigate the land use for neighbouring NSW. This will include such things as types of protection measures required on the neighbouring NSW properties, particularly the grazing regimes; any plans for future development in this area of NSW; and the possibility of land use changes such as future forestry plantations and the like. Comment should also be made on the fire fighting capabilities that exist in NSW. The RFS will then need to consider the results of these investigations and may well require further amendments to be made so as to reduce potential risks.

- Issues regarding the visual amenity of the odour control facilities and vent stacks such as landscaping and public art should be given further consideration prior to the commencement of development.