



Bahrs Scrub Local Development Area Plan

December 2012



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1. Executive Summary

1.1 Purpose

The purpose of this report is to outline the Bahrs Scrub Local Development Area Plan.

1.2 Background

Bahrs Scrub is identified as a Local Development Area under the South East Queensland Regional Plan 2009-2031. Since 2009, Council has been in the process of developing the Bahrs Scrub Local Development Area Plan (the plan). The plan is Council's policy for the development of the plan area, including the location and nature of land uses and infrastructure.

In 2010 Council released the Bahrs Scrub Net Developable Area Plan (NDAP) for community comment. The NDAP focussed on environmental matters within the plan area and identified areas:

- to be conserved for environmental purposes;
- to be managed to protect environmental values;
- which may be suitable for urban development.

In November 2011 Council endorsed a revised NDAP. The NDAP provides the basis for more detailed land use and infrastructure planning.

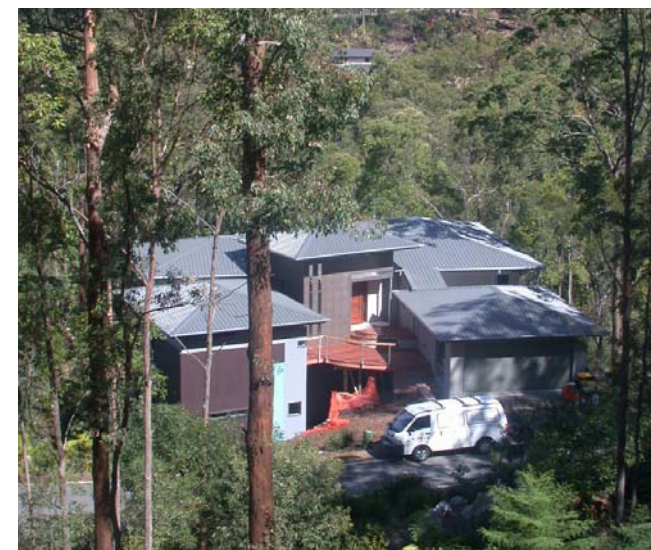
1.3 Bahrs Scrub Local Development Area Plan

The plan outlines, in broad terms, proposed land uses and infrastructure for the plan area. In particular it outlines:

- environment - key environmental areas and how they are to be protected and managed;
- land use - key land uses, particularly a local and neighbourhood centre, and a range of housing types;
- transport - a proposed strategic road network, public transport routes and proposals for walking and cycling;
- infrastructure - a range of infrastructure to be provided including parks, community facilities, stormwater, water supply, wastewater, and electricity infrastructure.

1.4 Next Steps

The plan is Council's policy for the development of the area. The plan will now inform an amendment to the planning scheme. This will involve translating the plan into relevant zones and planning scheme provisions, and following the prescribed plan making process under the [Sustainable Planning Act 2009](#), which involves two formal state interest reviews, and further statutory community consultation ([section 5.5](#)).





2. Introduction

The purpose of this report is to outline the Bahrs Scrub Local Development Area Plan.

This report contains the following sections:

- [Background](#), which provides the overall context and describes the planning process;
- [Site and surrounds](#), which describes the existing physical characteristics of the plan area;
- [Planning framework](#), which provides a summary of planning policy relevant to the plan area;
- [Vision and principles](#), which outlines the overall vision and key principles to guide the development of the plan area;
- [The Plan](#), which outlines the following:
 - o [Environment](#), which indicates how key environmental areas are to be protected and managed;
 - o [Land Use](#), which indicates the land uses for the plan area, including a local centre, a neighbourhood centre, and a range of housing types;
 - o [Transport](#), which provides a road network, public transport routes, and links for walking and cycling;

- o [Infrastructure](#), which provides guidance on a range of infrastructure to be provided including parks, community facilities, stormwater, water supply, wastewater and electricity infrastructure;
- [Next Steps](#), which outlines the next steps in the statutory planning policy process.





3. Background

3.1 Context

Logan City and South East Queensland (SEQ) are projected to grow significantly over the next 20 years. Approximately 280,000 people currently live in Logan City and the population is projected to increase to over 430,000 by 2031. The [South East Queensland Regional Plan 2009-2031](#) requires Logan to plan for an additional 70,000 dwellings by 2031 to accommodate this growing population and changing demographics. Approximately 42,000 of these dwellings are to be constructed in identified broad hectare areas such as Bahrs Scrub, Park Ridge, Flagstone and Yarrabilba.

The Bahrs Scrub Local Development Area Plan (the plan) area is specifically identified in the South East Queensland Regional Plan as a Local Development Area for primarily residential development. The plan area is intended to accommodate a significant part of Logan's predicted growth in a high quality, well integrated residential community.

3.2 Planning process

Planning for the Bahrs Scrub Local Development Area formally commenced in June 2009. The plan making process is shown in [Figure 1](#).

In October 2009 Council undertook initial community consultation to help understand the community's views

on how the plan area should be developed. It quickly became evident that there was significant community interest in environmental matters, and in achieving the appropriate balance between providing for growth and protecting important environmental values.

Draft Net Developable Area Plan

A number of technical studies were commissioned to confirm the environmental values and physical constraints of the plan area. The studies included:

- an ecological assessment;
- a slope analysis and geotechnical assessment;
- a contaminated land assessment;
- a hydraulic assessment;
- a cultural heritage study;
- a landscape and visual amenity assessment; and
- a bushfire report.

In November 2010 Council released a draft Net Developable Area Plan (NDAP) for public consultation. The draft NDAP was informed by the technical studies above and identified areas:

- to be conserved for environmental purposes;
- to be managed to protect environmental values; and
- which may be suitable for urban development.

Endorsed Net Developable Area Plan

Council received 49 submissions on the draft NDAP. Council revised the NDAP in response to submissions

from the community and the state government. In November 2011 Council endorsed the revised NDAP. The endorsed NDAP is provided in [Figure 2](#). A summary of the detailed provisions and intent for each area under the NDAP is provided in [Appendix 1](#).

Draft Local Development Area Plan

In August 2012 Council released a draft plan for public consultation. The draft plan outlined the proposed intent for the plan area.

The draft plan was supported by the following technical reports:

- a housing needs analysis;
- an economic study;
- a social needs assessment;
- a transport assessment;
- an infrastructure and services assessment.

Public consultation of the draft plan was undertaken from 20 August 2012 to 21 September 2012. Council received a total of 49 submissions, along with informal feedback at the Meet the Planner public information day. The Bahrs Scrub Local Development Area Plan Submission Analysis and Response Report provides further details about the consultation process, community feedback and Councils' response to community feedback.



Endorsed Local Development Area Plan

Community feedback on the draft plan has been considered on its planning merits and has informed the endorsed plan for the area. This plan is Council's policy for the development of the area.

Planning Scheme Amendment

The endorsed Bahrs Scrub Local Development Area Plan will inform an amendment to Council's planning scheme. This will involve translating the endorsed plan into relevant zones and planning scheme provisions, and following the prescribed plan making process under the [Sustainable Planning Act 2009](#), which involves two formal state interest reviews, and further statutory community consultation ([section 5.5](#)).





Bahrs Scrub Local Development Area Plan Process

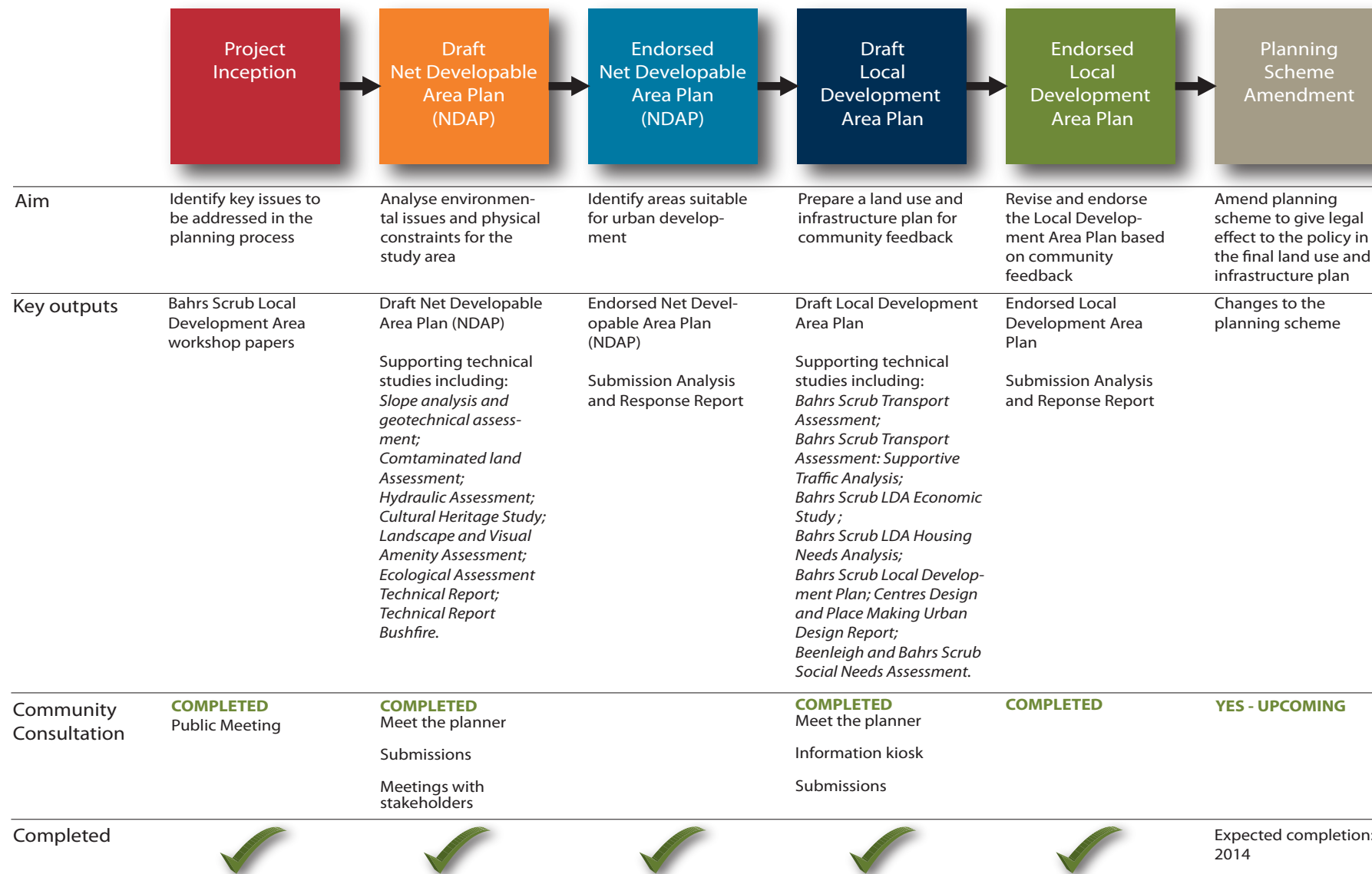


Figure 1 - Planning Process

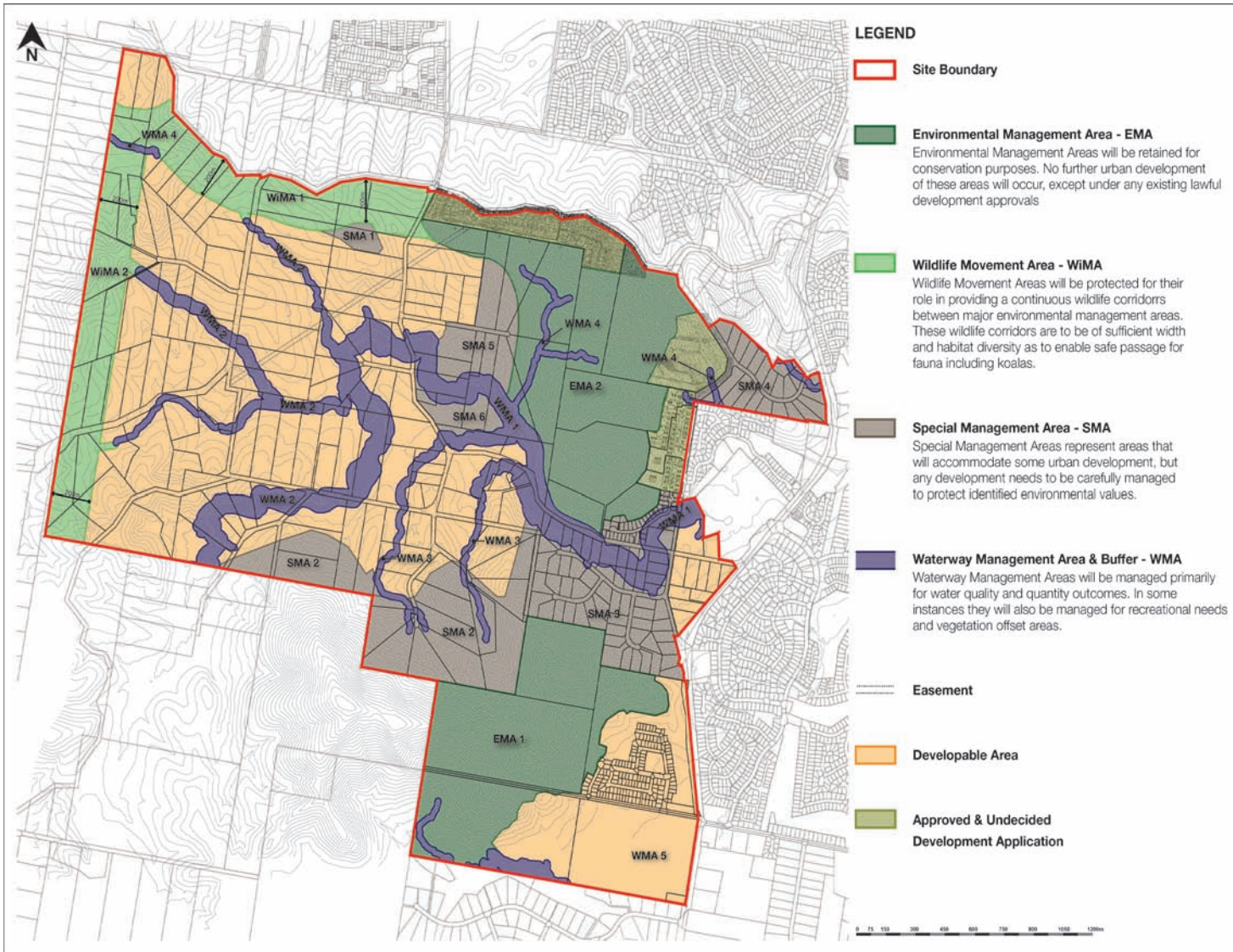


Figure 2 - Net Developable Area Plan (NDAP)



4. Site and Surrounds

4.1 Plan area

The plan area is located approximately 3km south-west of Beenleigh. Beenleigh services a regionally significant catchment and provides key employment and services in business, convenience retail, service uses and administration.

The plan area covers approximately 800 hectares. Much of the plan area consists of steep slopes which are largely forested.

Beaudesert-Beenleigh Road lies to the east, Wuraga Road runs along the northern boundary and Buccan Conservation Park lies to the south. Bordering the plan area to the west are large rural residential properties fronting Sharton Avenue. Windaroo Valley High School is located to the east, Windaroo Primary School and Wuraga Parklands are to the north-east.

The plan area is bisected by an Energex transmission line from the south-west to the north-east. Windaroo Creek runs from the south-west to the eastern edge and onto the Albert River.

Figure 3 shows the existing features of the surrounding area.

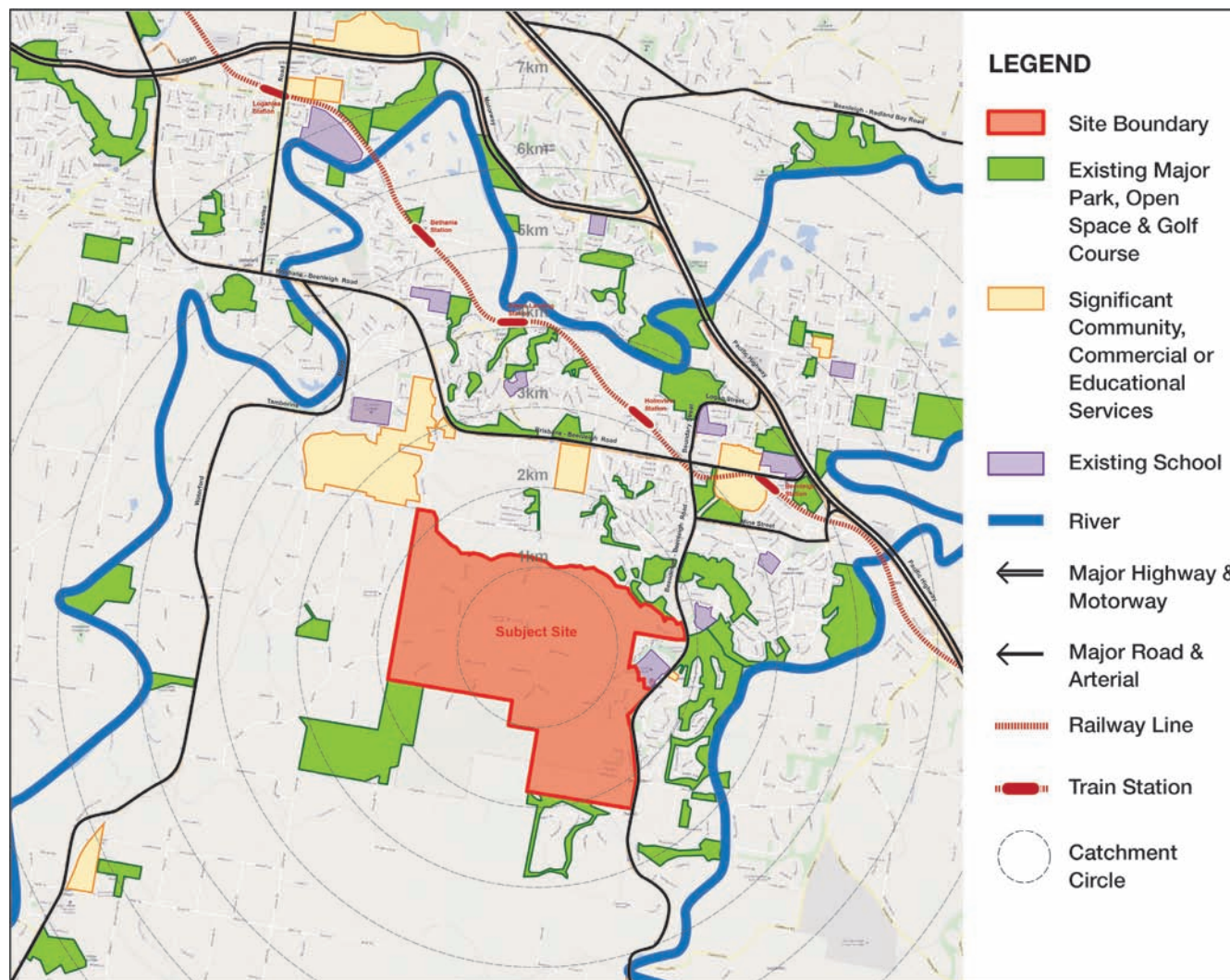


Figure 3 - Context Plan



4.2 Existing land uses

The plan area is generally characterised by single houses on large, rural residential lots of 2 to 4 hectares. There are currently over 500 properties within the plan area with a population of approximately 1,800. Housing on approximately 800m² lots has been developed to the north east and east of the plan area. The plan area does not currently contain any shops, schools or community services.

4.3 Existing environmental values, landscape and open space

The plan area has a central valley that is surrounded by steep hills and ridges, including Clarkes Hill in the north-east and Bahrs Hill in the south. Windaroo Creek flows through the site toward the east and Buccan Conservation Park lies adjacent to the site in the south-western corner.

Clarkes Hill, Bahrs Hill and Buccan Conservation Park contain large state significant tracts of intact vegetation, including stands of vine forest and remnant eucalypt woodlands which provide high habitat values for a variety of fauna including koalas. Vegetated corridors including Windaroo Creek and its tributaries currently link these large intact patches together. There are a number of state-listed vegetation communities present including 'endangered', 'of concern' and 'of least concern' regional

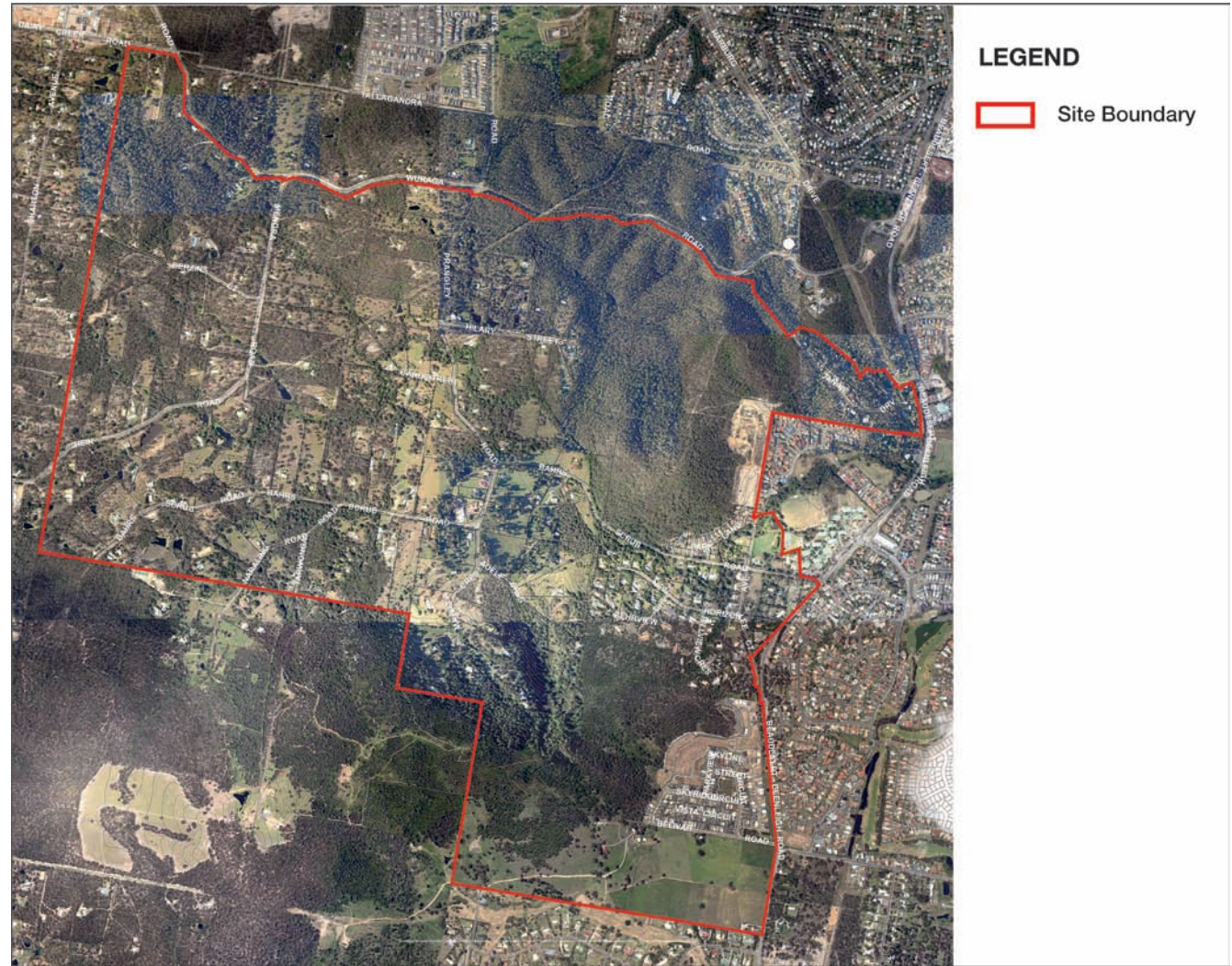


Figure 4 - Site Aerial Plan



ecosystems. Flora species protected under state and federal legislation have been recorded or have the potential to occur within the plan area including Native Macadamia Nut, Veiny Fontainea, Red Coondoo, and Slender Milk Vine.

The plan area has a number of permanent waterways, natural wetlands and constructed dams. The waterways provide habitat and movement corridors for a variety of native animals. Windaroo Creek has significant environmental values including remnant vegetation, high quality aquatic habitat and recreational values.

The forested hills and parts of the northern and western ridges provide regionally significant scenic amenity. The upper slopes of the ridges are locally important landscapes with significant scenic values within the plan area.

Patches of cleared land occur throughout the plan area, particularly through the lower parts of the valley.



Figure 5 - Site Photos



4.4 Existing road network and public transport

The plan area is connected to Beaudesert-Beenleigh Road via Bahrs Scrub Road (east) and Brisbane-Beenleigh Road via Prangley Road and Teys Road (north). Access between the plan area and Waterford -Tamborine Road to the west is via Hein Road and Stegemann Road.

The existing network consists of three types of roads under Council’s jurisdiction: collector roads (Prangley Road and Bahrs Scrub Road); minor collector roads (Menora/Hein Road); and a number of local access roads (generally cul de sacs). There is currently no east-west road connection through the plan area. The existing road network is shown in Figure 6.

There is currently no public transport servicing the plan area. The Gold Coast – Brisbane rail line is located approximately two kilometres north of the plan area. The closest railway stations are Beenleigh and Holmview (Figure 3).

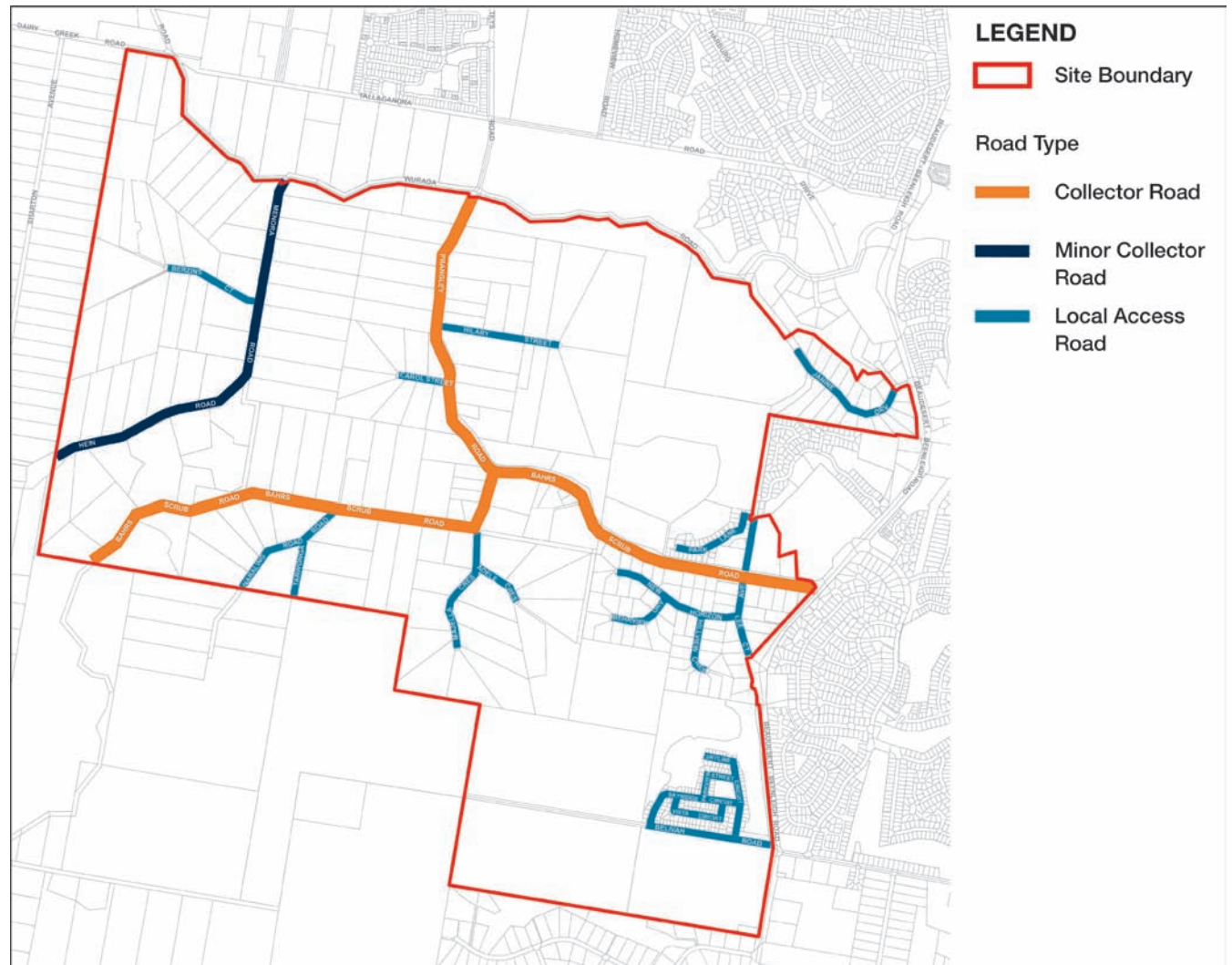


Figure 6 - Existing Road Network Plan



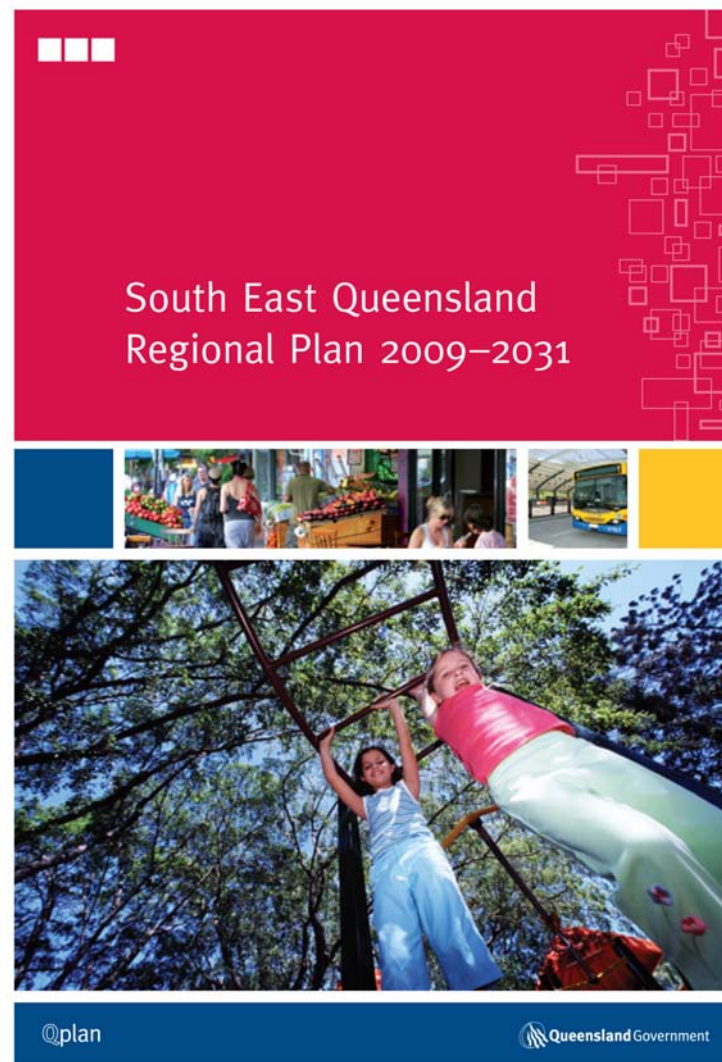
5. Planning Framework

5.1 South East Queensland Regional Plan 2009-2031

[The South East Queensland Regional Plan](#) (the regional plan) is the preeminent plan for south east Queensland. It seeks to sustainably manage growth and the impacts of development to protect and enhance the quality of life in the region. The regional plan is to be reflected in local government planning schemes.

Under the regional plan, Logan is to provide an additional 70,000 dwellings by 2031. Approximately 42,000 of these dwellings are to be delivered in identified broad hectare areas such as Bahrs Scrub, Park Ridge, Flagstone and Yarrabilba. Bahrs Scrub is located in the Urban Footprint. The Urban Footprint 'identifies land that can meet the region's urban development needs to 2031 in a more compact form.'

The regional plan also specifically identifies Bahrs Scrub as a Local Development Area for primarily residential development. Under section 8.10 of the regional plan, Council needs to plan for growth in development areas through comprehensive planning that coordinates future development with infrastructure delivery. Further, under section 8.1.4 of the regional plan, new residential development in development areas is to achieve a minimum net yield of 15 dwellings per hectare.





5.2 City Wide Planning

The Bahrs Scrub Local Development Area Plan is part of Council's overall strategy in planning for future growth. Planning has been undertaken for other major future growth areas of the city. These areas include:

- [Park Ridge](#);
- [Greater Flagstone](#);
- [Yarrabilba](#).

Council's city wide strategy also includes local plans to guide urban development in existing centres and neighbourhood planning areas. These areas include:

- [Springwood](#);
- [Beenleigh](#);
- [Logan Central](#);
- [Loganlea](#);
- [Jimboomba](#);
- [Logan Village](#).

All these different plans are intended to share the housing targets nominated for Logan City in the regional plan. For further information about any of these plans, please call Council on (07) 3412 3412, or visit Council's website <http://www.logan.qld.gov.au>

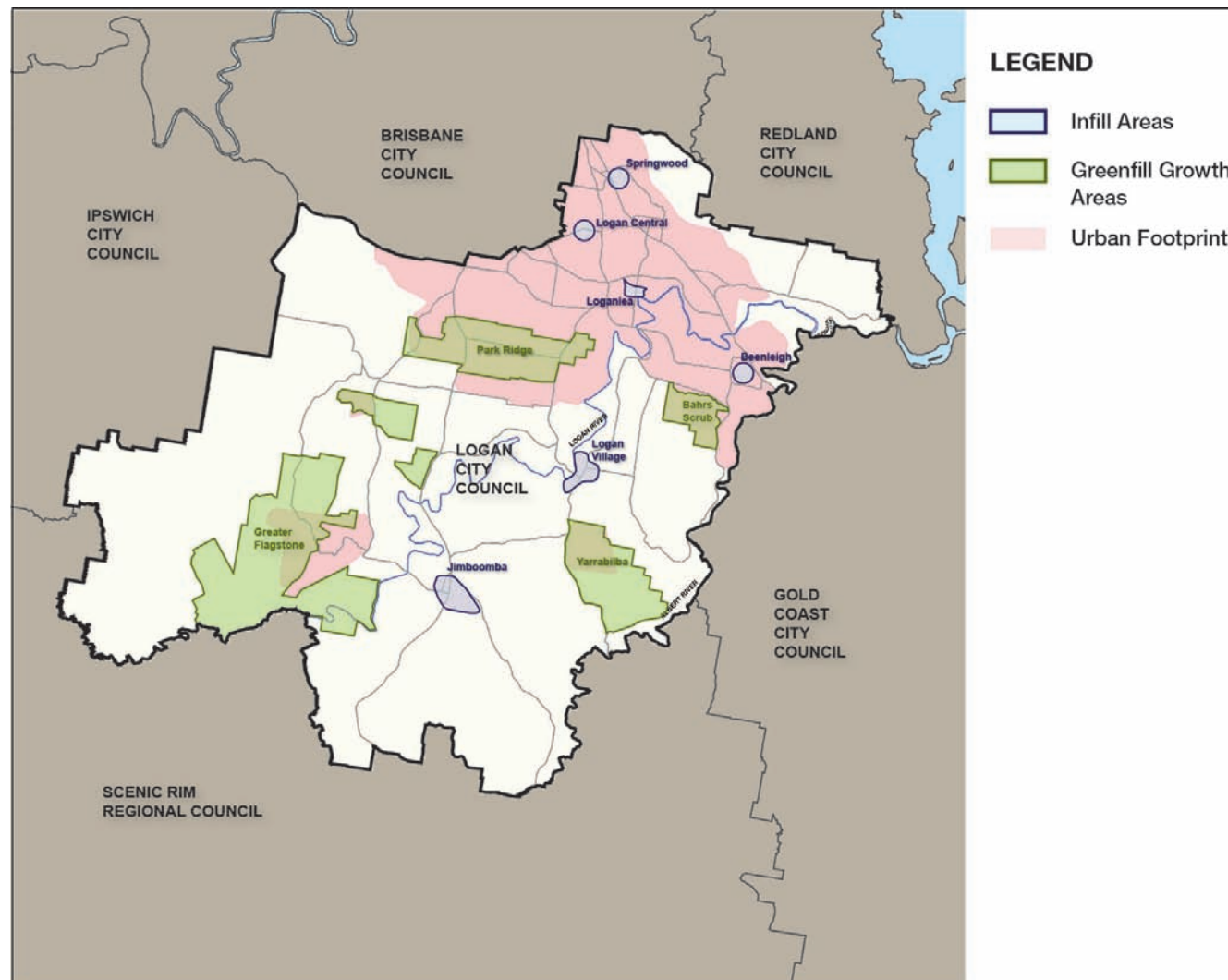


Figure 7 - City Wide Plan



5.3 State Planning Policy 2/10: Koala Conservation in South East Queensland

State Planning Policy 2/10: Koala conservation in south east Queensland (the Koala SPP) seeks to address koala population decline in South East Queensland. The Koala SPP provides strategic direction to achieve a net increase in koala habitat within the South East Queensland Koala Protection Area which includes Logan.

The SPP Koala Habitat Values Mapping (Figure 8) identifies the plan area as containing generally medium and low value bushland, medium and low value rehabilitation, and areas 'not suitable' for koala habitat.

The policy outcomes of the Koala SPP must be considered by Council when preparing a local planning instrument. The outcomes include:

- identifying koala habitat values;
- protecting significant areas of koala habitat value;
- retaining and enhancing habitat connectivity to maintain koala population viability;
- achieving a net gain in bushland habitat by offsetting unavoidable clearing.

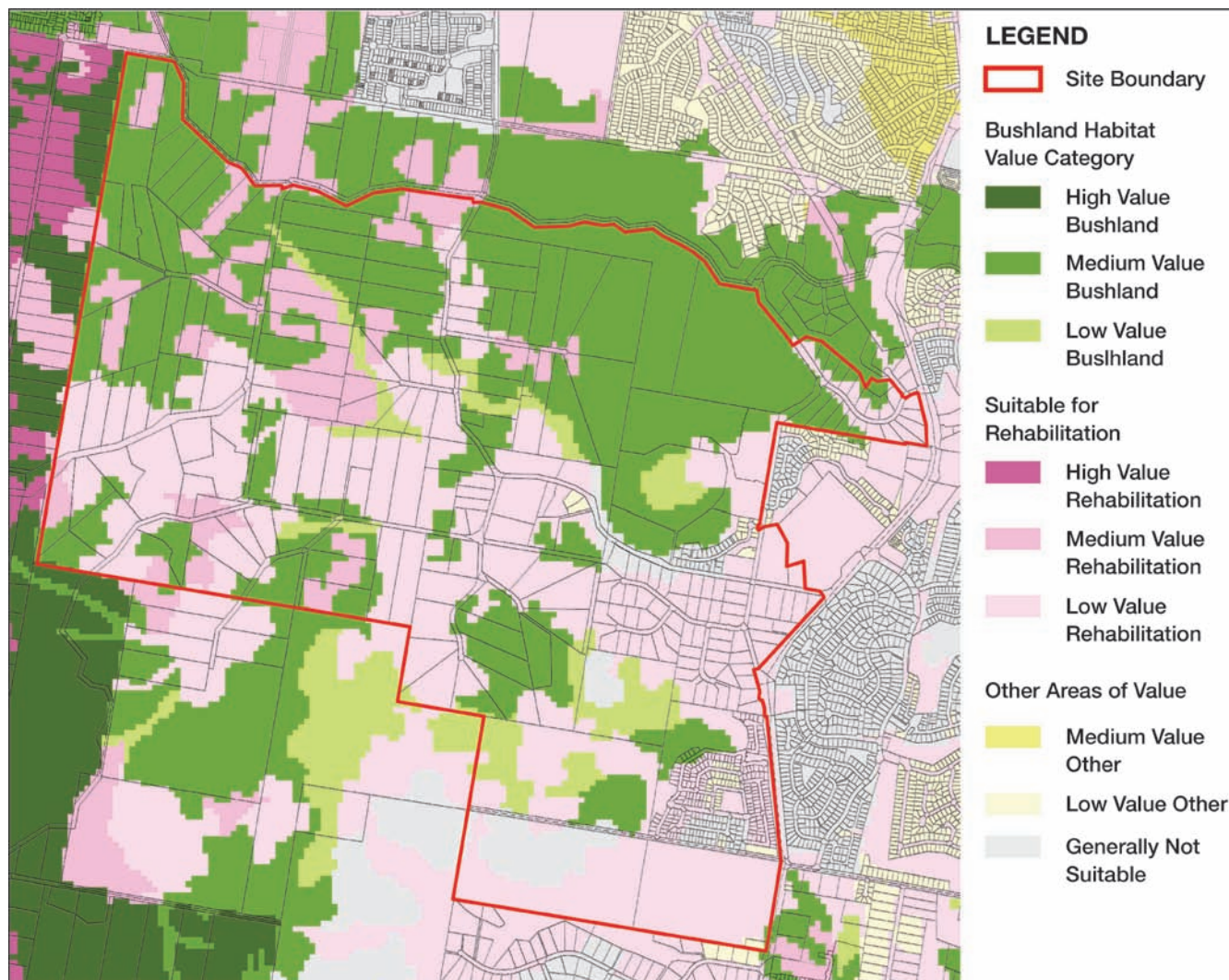


Figure 8 - Queensland Government Koala Mapping



5.4 Gold Coast Planning Scheme

Prior to the local government amalgamations in 2008, the Gold Coast City Council was the relevant planning authority for the plan area. The Gold Coast Planning Scheme 2003 is therefore the relevant planning scheme for the area. Under the Gold Coast Planning Scheme 2003 the plan area is in the Emerging Communities Domain, Detached Dwelling Domain, Park Living Domain and Rural Domain, as indicated in Figure 9. A summary of the existing Gold Coast planning scheme domain provisions is provided in Table 1.

Domain	Preferred Land Uses	Lot size
Detached Dwelling Domain	Low density residential uses, primarily detached dwellings	600m ² - 3000m ²
Park Living Domain	Low density rural residential uses, detached dwellings	4000m ² - 8000m ²
Rural Domain	Rural uses which preserve the landscape and rural character of the hinterland	Greater than 4 Hectares
Emerging Communities	Rural and open space uses to maintain existing land uses until structure planning can be completed	Greater than 4 Hectares

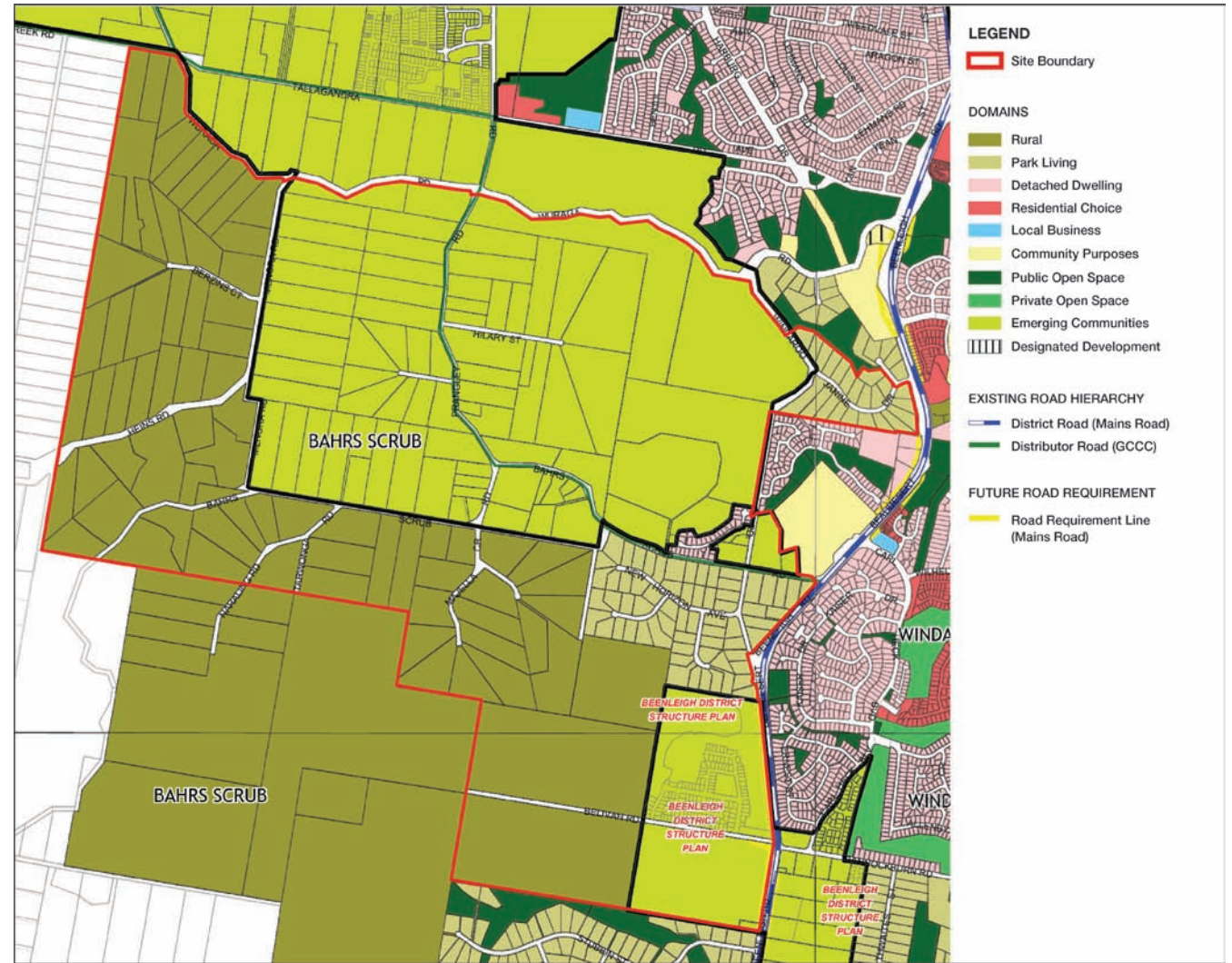


Table 1 - Gold Coast Planning Scheme Provisions

Figure 9 - Existing Zone Plan



The Beenleigh District Structure Plan applies to the Emerging Communities Domain portion of the plan area. The plan area is within the Residential Precinct, Park Living Precinct, and Open Space/Conservation/Landscape Area of the structure plan, as indicated in Figure 10. A summary of the structure plan precinct provisions is provided in Table 2.

Precinct	Preferred Land Uses
Residential Precinct	Residential and associated purposes, subject to detailed environmental assessment
Park Living Precinct	Low density rural residential uses with a semi-rural lifestyle and amenity
Open Space/Conservation/Landscape Area	Environmental conservation and recreation uses

Table 2 - Beenleigh Structure Plan Provisions

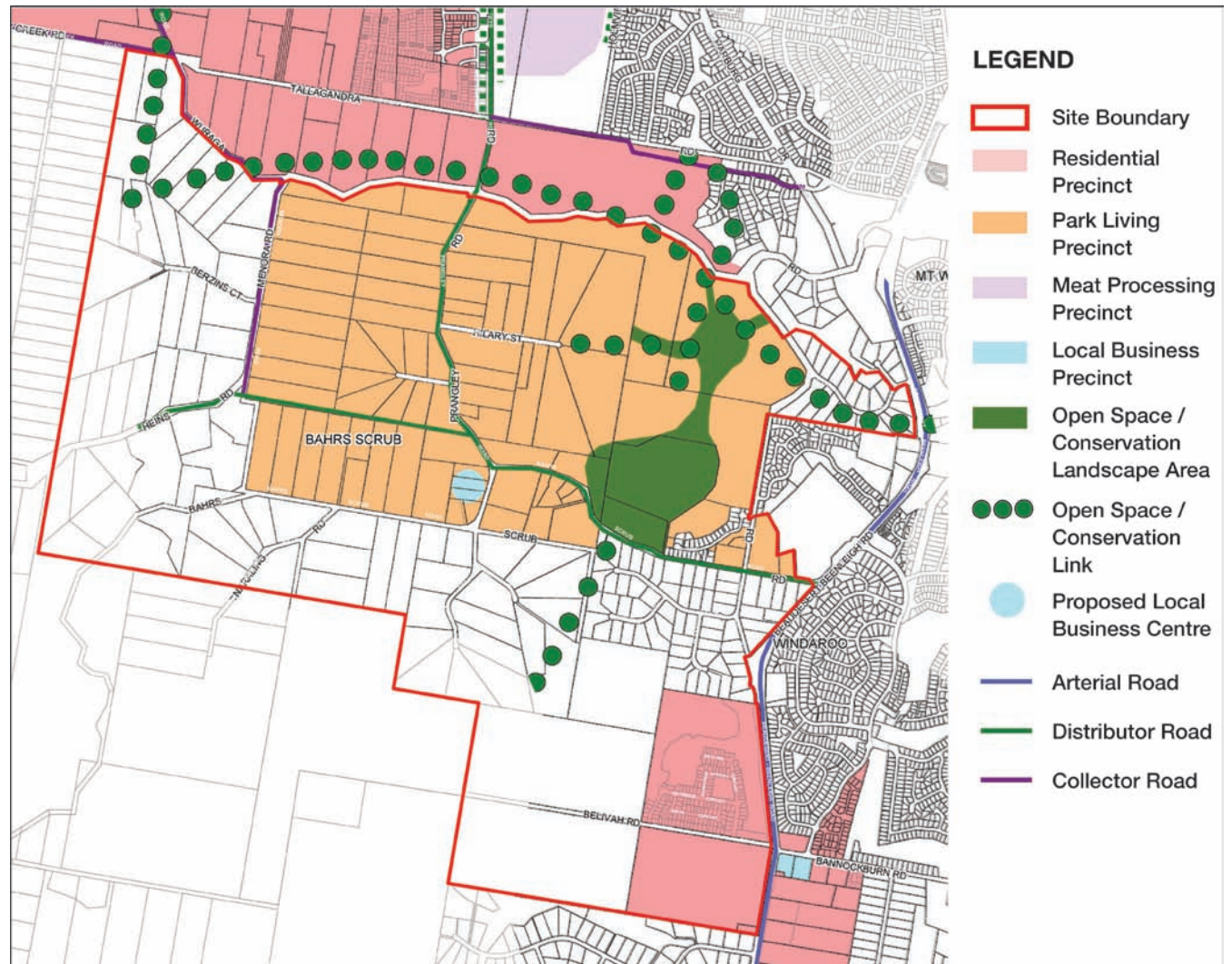


Figure 10 - Beenleigh Structure Plan Precincts



5.5 New Logan Planning Scheme and planning scheme amendment process

Council is currently preparing a new planning scheme to guide the growth of Logan. The new planning scheme will replace the three existing planning schemes currently in use - the *Logan Planning Scheme 2006*, the *Gold Coast Planning Scheme 2003*, and the *Beaudesert Shire Planning Scheme 2007*. The new planning scheme is anticipated to be released for community consultation in 2013.

The Bahrs Scrub Local Development Area Plan provides the strategic intent for the area. It is intended to inform an amendment to the planning scheme. The amendment will translate the strategic intent into the detailed planning scheme provision. The formal amendment process is shown in Figure 11. For more information about planning scheme amendments please see the Queensland Government's [Statutory Guideline 01/12 - Making and amending local planning instruments](#).

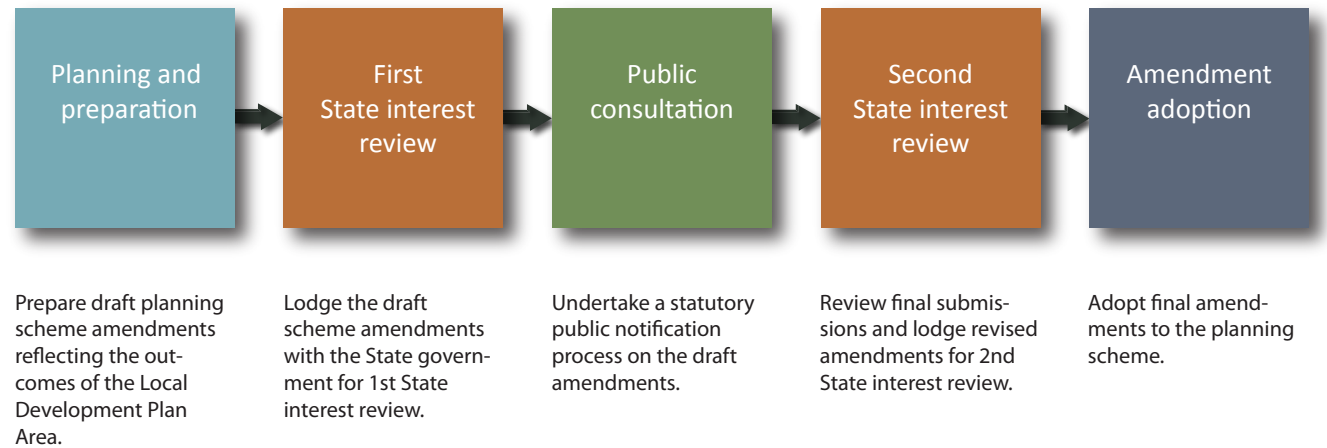


Figure 11 - Planning Scheme Amendment Process



5.6 Priority Infrastructure Planning

As part of the new planning scheme, Council is currently developing a new priority infrastructure plan. This plan will consider expected population and employment growth and determine the infrastructure networks needed to support this population.

Any planned growth identified in the Bahrs Scrub plan area will be included in the future infrastructure planning processes. The types of infrastructure networks in the priority infrastructure plan include:

- stormwater;
- transport (roads & cycleways);
- public parks;
- land for community facilities;
- water;
- wastewater.

Future development contributes towards the establishment of the planned networks by paying a charge, calculated in accordance with the Logan Adopted Infrastructure Charges Resolution (No.3) 2012 or its replacement.

For more information about the priority infrastructure plan and infrastructure contributions, please contact Council on 3412 3412 or visit Council's website <http://www.logan.qld.gov.au>.





6. Vision and Principles

The following vision and principles are prepared to guide the overall development of the plan area.

Vision	<i>“To create a well planned, high amenity residential community, within a high quality natural environment, that is well serviced by transport and local community services and facilities.”</i>		
Principles	<p>Principle 1 - <i>Land Use: Create a well planned, high amenity residential community that helps accommodate Logan’s growing population.</i></p>	<p>Principle 2 - <i>Design and Place Making: Ensure future development contributes to the creation of high quality and high amenity urban places.</i></p>	<p>Principle 3 - <i>Transport and Movement: Ensure the future residential community can access work, recreation and daily needs through a variety of transport modes and with a reduced dependency on private motor vehicles.</i></p>
Objectives	<p>Objectives</p> <ol style="list-style-type: none"> 1. Provide a range of housing types, with higher density housing types near centres and areas of good public transport accessibility. 2. Allow for convenience retail and commercial services to meet the needs of future residents of Bahrs Scrub and reduce the need to travel. 3. Minimise the risk to people and property from inappropriate development in areas subject to flooding, bushfire, or landslip. 4. Locate higher density housing types near convenience centres. 	<p>Objectives</p> <ol style="list-style-type: none"> 1. Require future development to contribute to a high quality public realm by the use of: <ol style="list-style-type: none"> a. appropriate building scale and mass; b. high quality, articulated and varied building façades and landscaping; c. building orientation and design that ensures development positively addresses and engages with public spaces such as roads, paths and parks. 2. Provide high quality urban centres in accordance with the design and planning principles in Appendix 3. 3. Protect the community from crime and anti-social behaviour by applying Crime Prevention Through Environmental Design principles. 4. Mitigate amenity impacts on existing and future dwellings by designing buildings to take into account noise, privacy and overshadowing. 	<p>Objectives</p> <ol style="list-style-type: none"> 1. Increase the number of dwellings in proximity to quality public transport services and the centres. 2. Improve connections through the plan area for walking and cycling by providing new paths and public spaces. 3. Integrate pedestrian and cycle networks with existing and planned networks beyond the plan area. 4. Ensure the plan area’s road network functions at the desired standard of service.



Vision	<p><i>“To create a well planned, high amenity residential community, within a high quality natural environment, that is well serviced by transport and local community services and facilities.”</i></p>	
Principles	<p>Principle 4 - <i>Infrastructure: Provide sufficient infrastructure to accommodate the planned population growth in the area.</i></p>	<p>Principle 5 - <i>Environment: Ensure future development protects and appropriately manages its impacts on existing environmental values.</i></p>
Objectives	<p>Objectives</p> <ol style="list-style-type: none"> 1. Apply desired standards of service for infrastructure. 2. Identify areas that can be serviced by infrastructure. 3. Integrate a new community facility into a proposed local centre to provide the local community with services and activities that support population growth. 	<p>Objectives</p> <ol style="list-style-type: none"> 1. Protect the Environmental Management Areas and Waterway Management Areas from urban development. 2. Manage development within the Wildlife Management Areas to minimise impacts on existing environmental values and maintain functional wildlife corridors. 3. Manage development within the different Special Management Areas to protect the character and important environmental values in these areas. 4. Offset any environmental values that are removed for development where applicable.



7. Bahrs Scrub Local Development Area Plan

7.1 The Plan

This section outlines the plan for the development of Bahrs Scrub to 2031. The plan provides a broad outline of the land uses and infrastructure requirements for the plan area as shown in Figure 12.

The plan provides for the following:

- approximately 4,400 new dwellings and approximately 10,100 people;
- approximately 7,650m² of non residential floorspace including:
 - o 6,600m² of retail;
 - o 450m² of professional services;
 - o 600m² of community uses;
- strategic public transport connections through the area;
- 61% of the plan area protected or managed to maintain environmental values;
- environmental offsets throughout the plan area.

The plan is supported by the range of documents identified in Appendix 5.

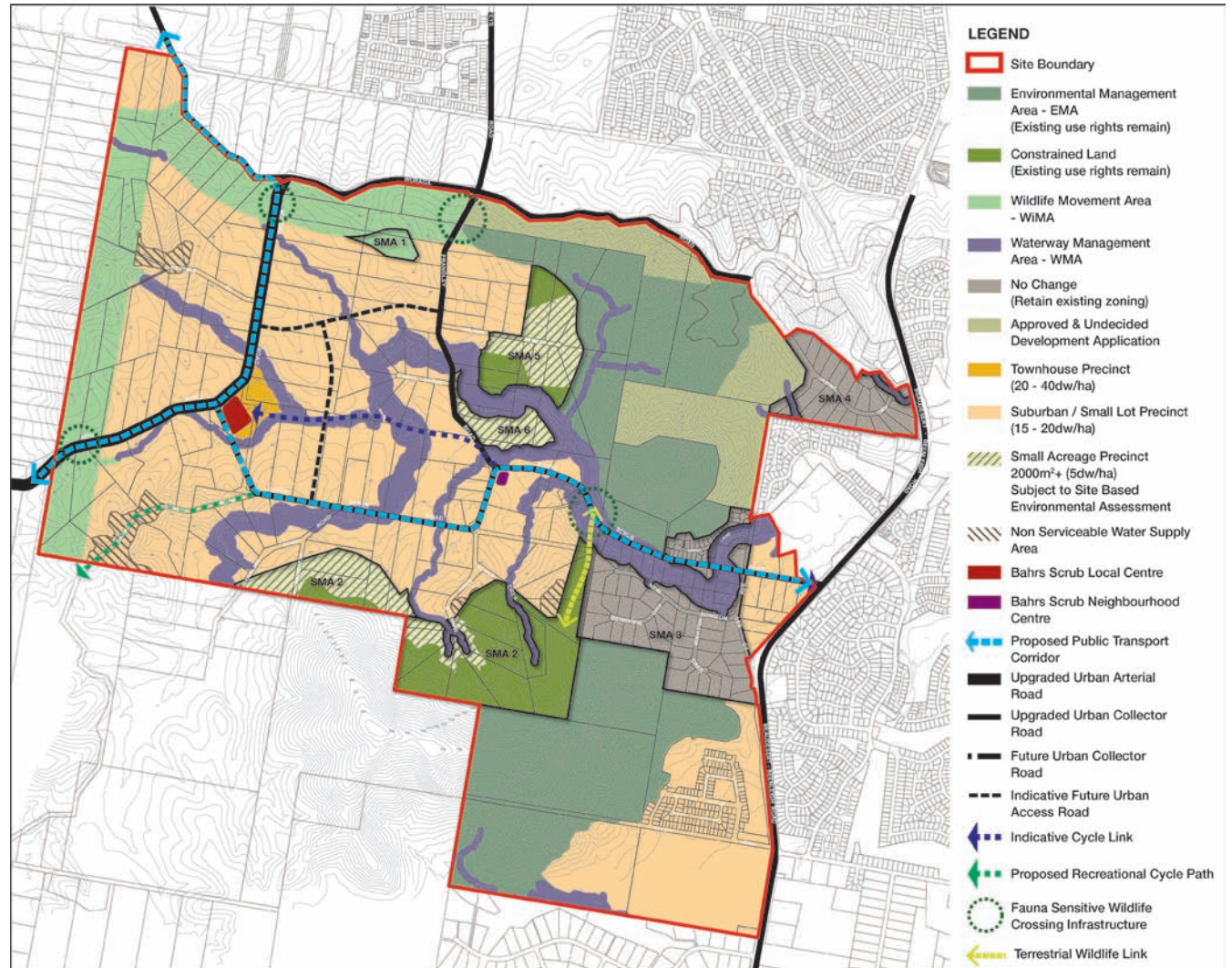


Figure 12 - The Plan



7.2 Environment

Environmental values in the plan area are to be protected in a number of ways:

- the Environmental Management Area is to be protected from further urban development;
- the Wildlife Movement Area is to maintain environmental values and function as wildlife corridors, providing for some limited development;
- the Waterway Management Area is to be protected from further urban development;
- the Special Management Areas are to be developed in particular ways to protect environmental values;
- environmental values removed in the plan area are to be offset.

Figure 13 illustrates these environmental values.

The range of environmental values to be considered are identified in the supporting environmental studies including:

- Slope analysis and geotechnical assessment;
- Contaminated land assessment;
- Hydraulic assessment;
- Cultural heritage study;
- Landscape and visual amenity assessment;
- Ecological assessment technical report;
- Technical report bushfire.

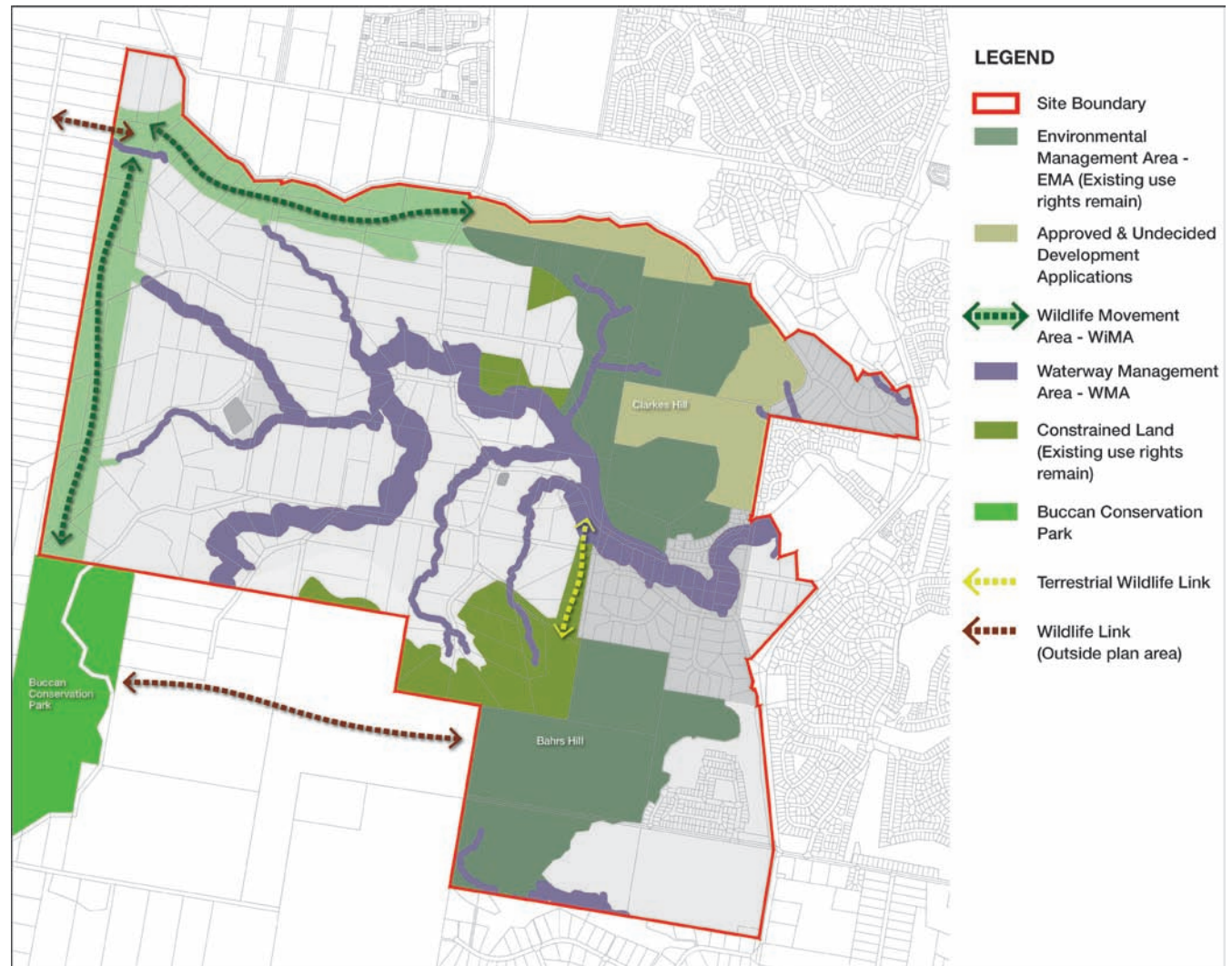


Figure 13 - Overall Environmental Protection & Management Plan



7.2.1 Environmental Management Area

The intent of the Environmental Management Area (EMA) is to protect existing environmental values. No further urban development is intended in these areas. Existing use rights are to remain and the area is to continue to contain single houses on large lots. These are shown in Figure 14.

Environmental values in the EMA include koala habitat, high value ecological areas, large intact patches of remnant vegetation, known locations of protected flora species, and scenic amenity. The EMA contains areas of steep slopes and potential high bushfire hazard, which make it unsuitable for residential development.

There are a number of approved or undecided development applications in the EMA. Development may proceed in accordance with any existing approval. If the approvals were to lapse, the areas are to be protected in accordance with the intent of the EMA.

Measures may be proposed to regulate domestic animal keeping in the EMA. It is not intended that any measures would apply to existing domestic animals.

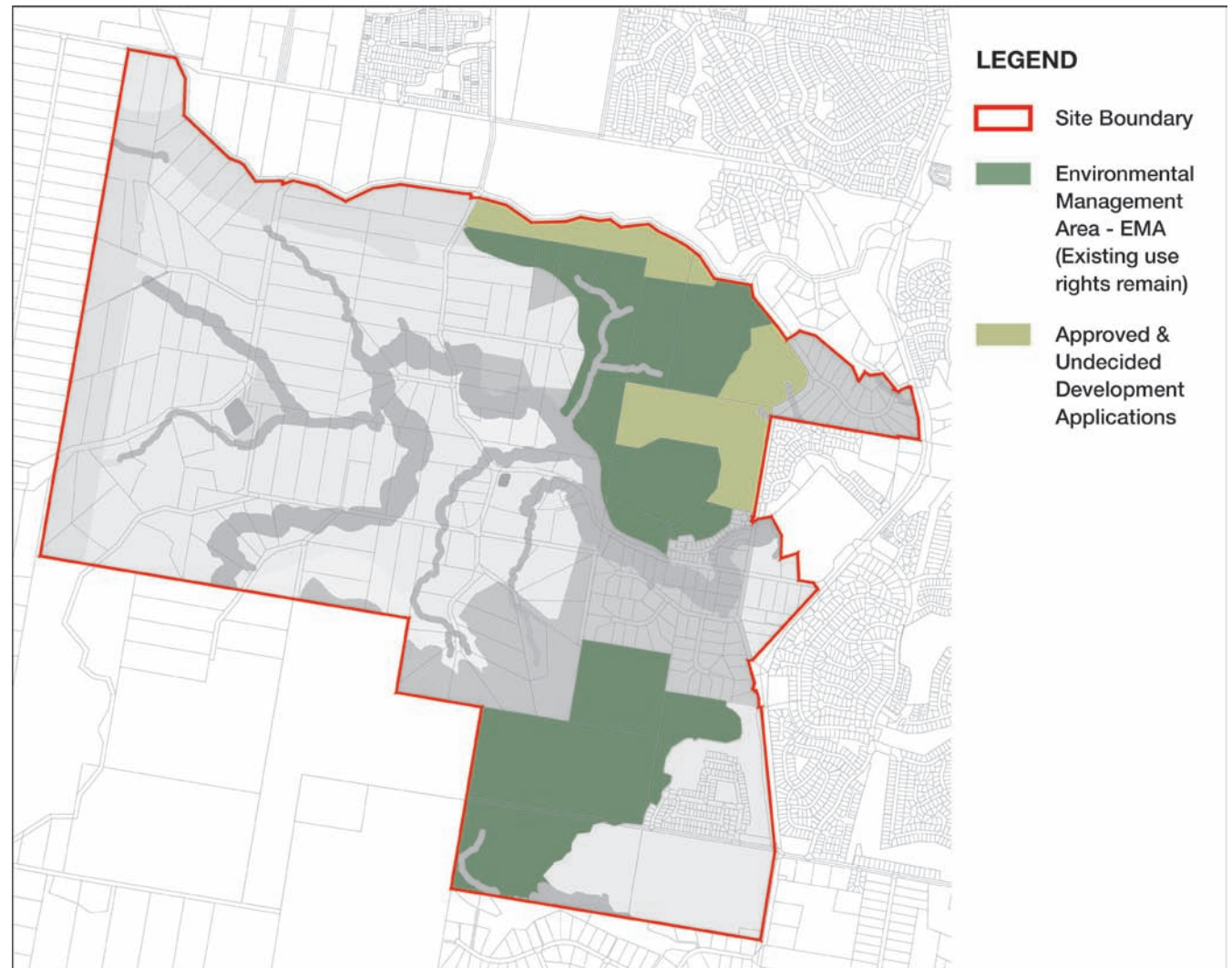


Figure 14 - Environmental Management Area



7.2.2 Wildlife Movement Area

The intent of the Wildlife Movement Area (WiMA) is to maintain habitat and provide a continuous wildlife corridor. This corridor is to help wildlife move safely between the Environmental Management Area and bushland habitat both within and outside of the plan area. These are shown in Figure 15.

Some limited development is to be provided in the WiMA at a density of one dwelling per 1.5ha. This density will allow the area to continue to function as a wildlife corridor. Development should be located in the areas of least ecological value, and should be configured in a way that best facilitates wildlife movement. The total developable footprint (dwelling, ancillary uses and access) is to be limited to 2000m². Some groundtruthing of ecological values consistent with the Ecological Significance Map or Chenoweth Ecological Assessment would be necessary to identify the most suitable development footprint. [Figure 16](#) illustrates this concept.

Alternative development proposals that achieve the intent of the Wildlife Movement Area may also be considered on their merits.

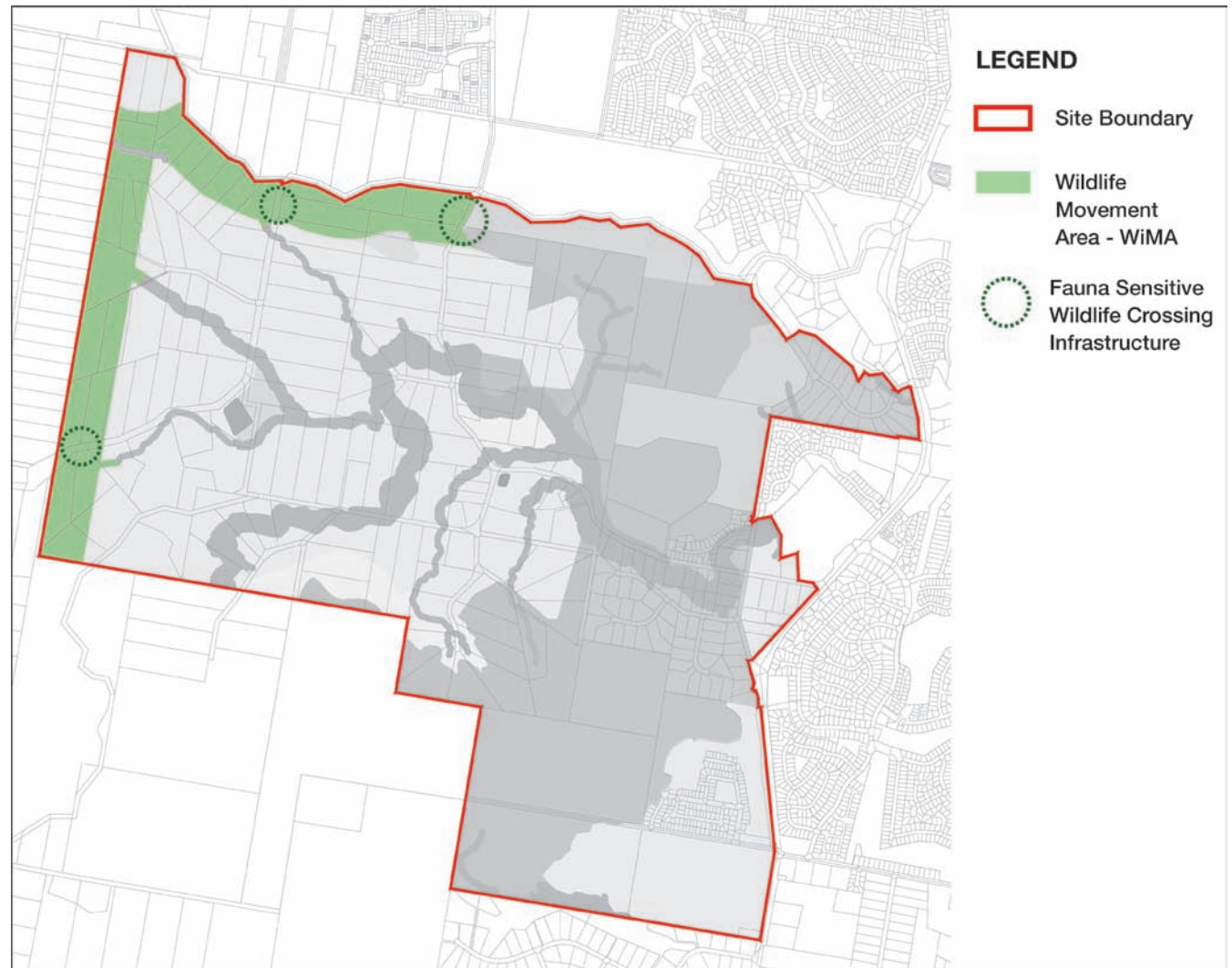


Figure 15 - Wildlife Movement Area Location

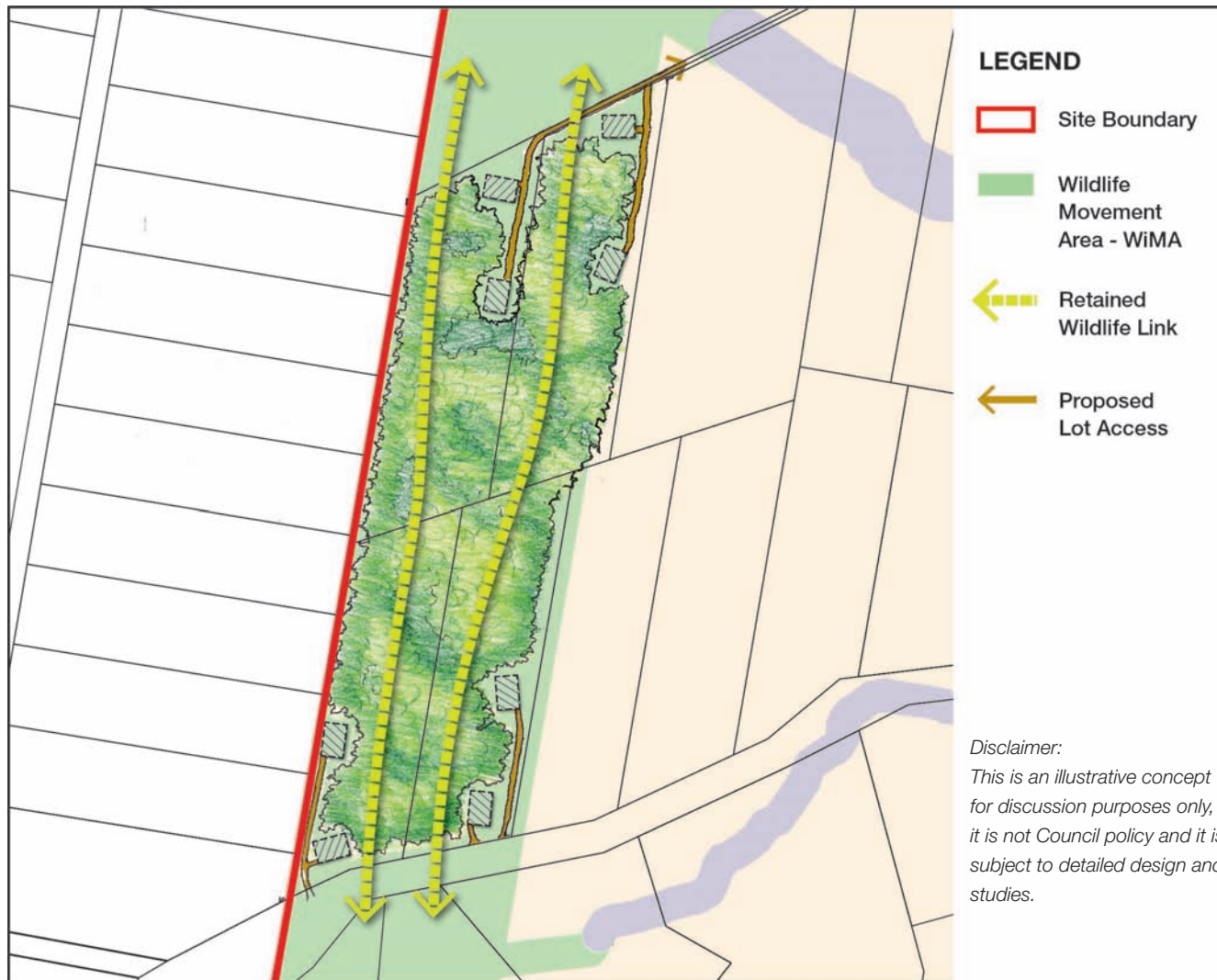


Figure 16 - Example of Retaining Wildlife Movement Function

There is to be no further subdivision in the WiMA. Subdivision would create the need for public access roads, which would sever the WiMA and impede wildlife movement. Any additional dwellings would need to be provided on existing lots and might be titled under a community title scheme.

Fauna friendly fencing is also to be provided to support wildlife movement. Further, to better facilitate wildlife movement, fauna sensitive wildlife crossing infrastructure is to be provided where the WiMA traverses Prangley, Menora and Heins Roads. The type of crossing and exact location will be determined when more detailed road and intersection upgrades are designed. Fauna crossings are to be designed in accordance with “Fauna Sensitive Road Design Manual - Part 2: Preferred Practice” prepared by the Queensland Department of Transport and Main Roads. Further details are provided in [section 7.4](#).

Measures may be proposed to regulate domestic animal keeping in the WiMA. It is not intended that any measures would apply to existing domestic animals.



7.2.3 Special Management Area

Special Management Areas are those areas that have unique attributes that require a more refined planning and management response.

There are six special management areas within the plan area. These are shown on Figure 17.

Each special management area is different and reference will need to be made to [sections 7.2.3.1 - 7.2.3.6](#) for more details on future land use and environmental management intentions for these specific areas.

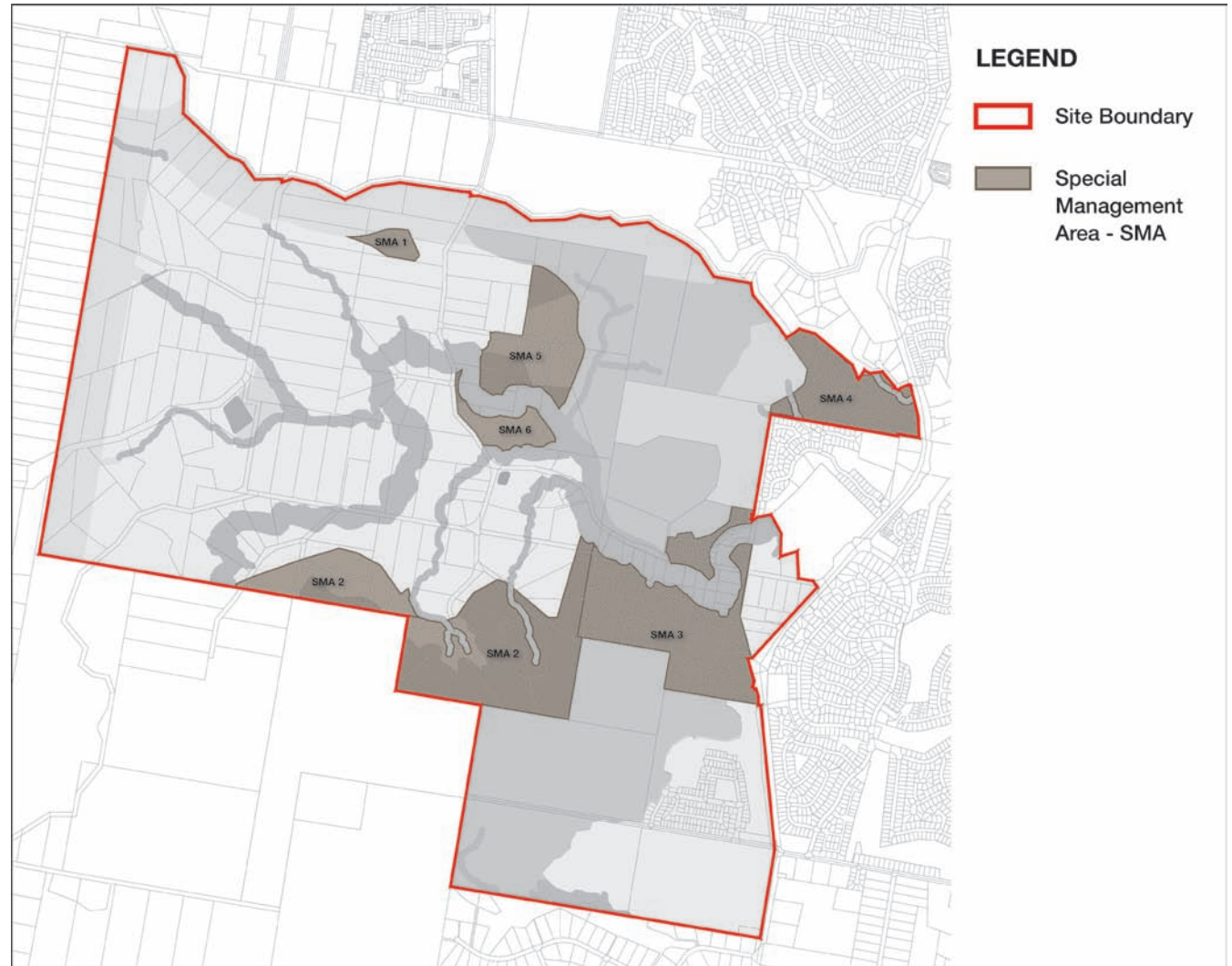


Figure 17 - Special Management Area Locations



7.2.3.1 Special Management Area 1

The intent of Special Management Area 1 (SMA 1) is to maintain essential remnant vegetation, koala habitat, and scenic amenity. The area is highly elevated, has medium value bushland koala habitat on a ridge, and is closely associated with the wildlife movement area. The location of SMA 1 is illustrated in Figure 18.

SMA 1 is to become an extension of the WiMA and accommodate limited development at a density of one dwelling per 1.5ha, on the same basis as the WiMA ([section 7.2.2](#)).

Alternative development proposals that achieve the intent of SMA 1 may be considered on their merits.

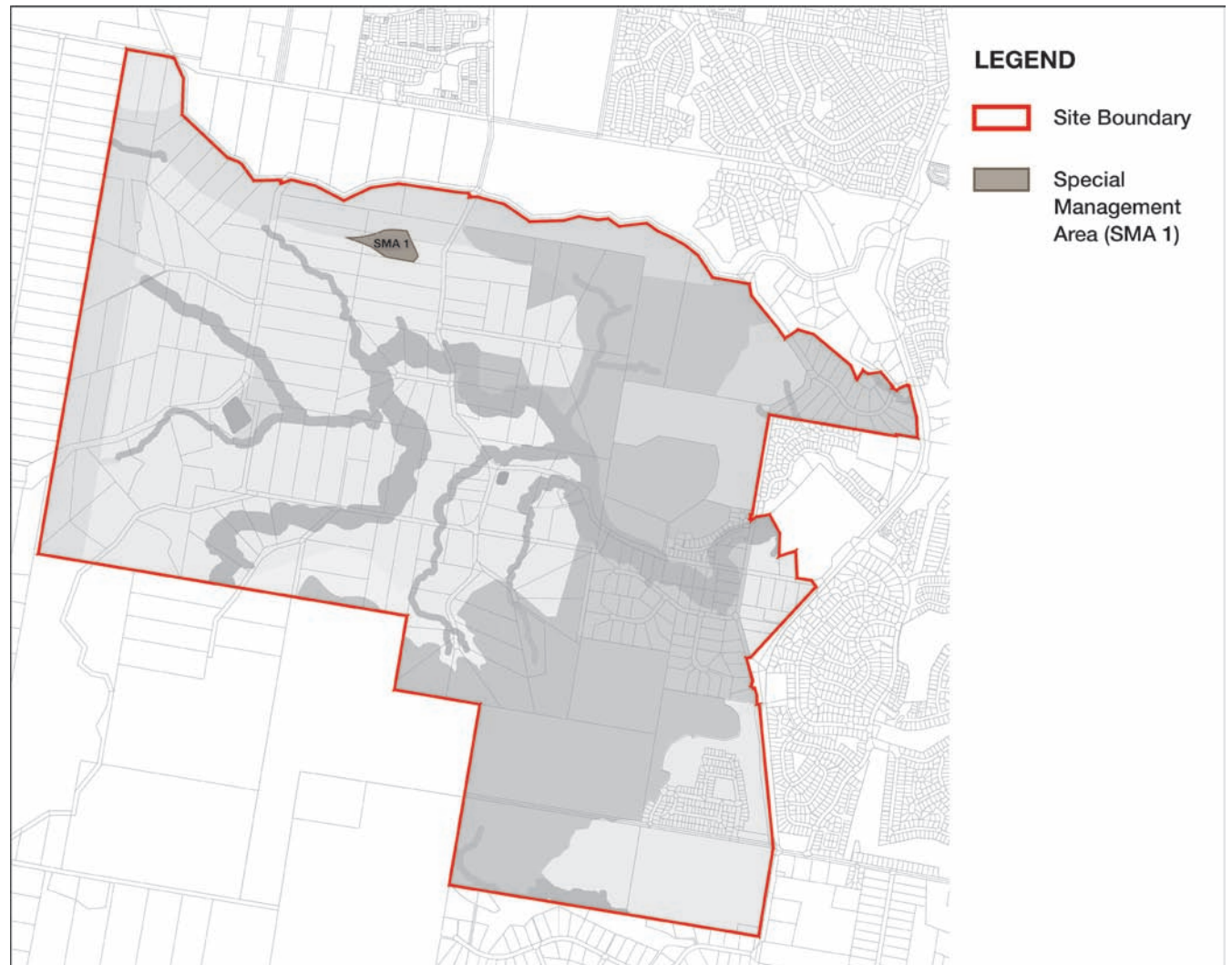


Figure 18 - Special Management Area 1 Location

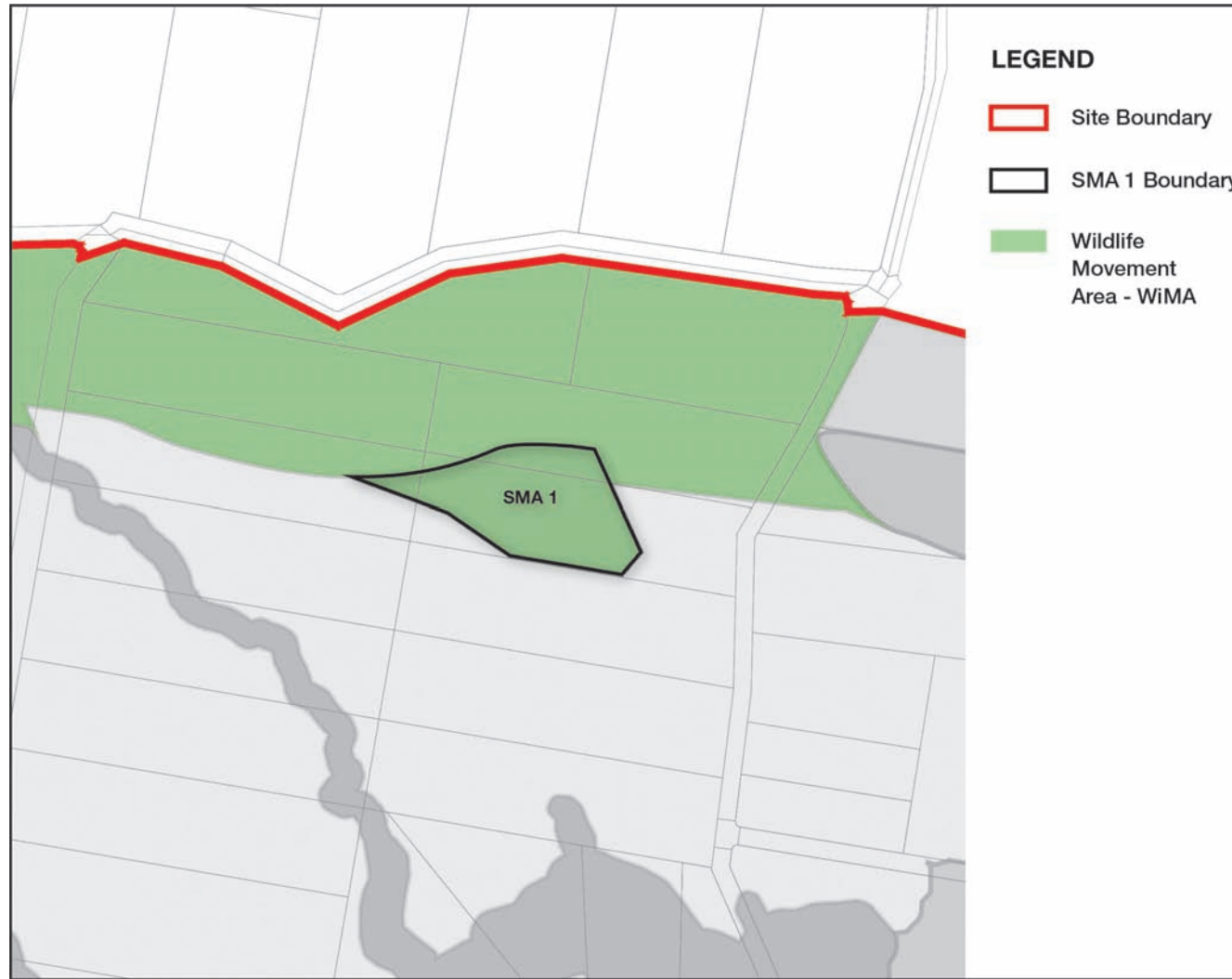


Figure 19 - Special Management Area 1 Detail



7.2.3.2 Special Management Area 2

The intent of Special Management Area 2 (SMA 2) is to protect koala habitat, essential remnant vegetation habitat, vine forest and scenic amenity, whilst providing for limited residential development. SMA 2 should also help strengthen the existing terrestrial wildlife link between Bahrs Hill and Clarkes Hill. The location of SMA 2 is illustrated in Figure 20.

SMA 2 is to be developed in accordance with Figure 21. The southern and western part of the area, which are in the non-serviceable water supply area and constrained by deep slope,. The far eastern part of the area is to be protected to provide a terrestrial wildlife link. Refer to [section 7.5.4](#) for more details on the non-serviceable water supply area.

SMA 2 provides for low density housing, with an average lot size of 2000m² in the western part of the area. Larger lots should be provided where there are steep slopes or important environmental values to be protected and smaller lots may be provided where there are lower ecological values and fewer constraints. Further details on the Small Acreage Precinct are provided in [section 7.3.1](#).

A detailed site based ecological assessment will be required to identify important ecological values on a site. Development will need to be designed to protect identified ecological values.

Alternative development proposals that acheive the intent of SMA 2 may be considered on their merits.

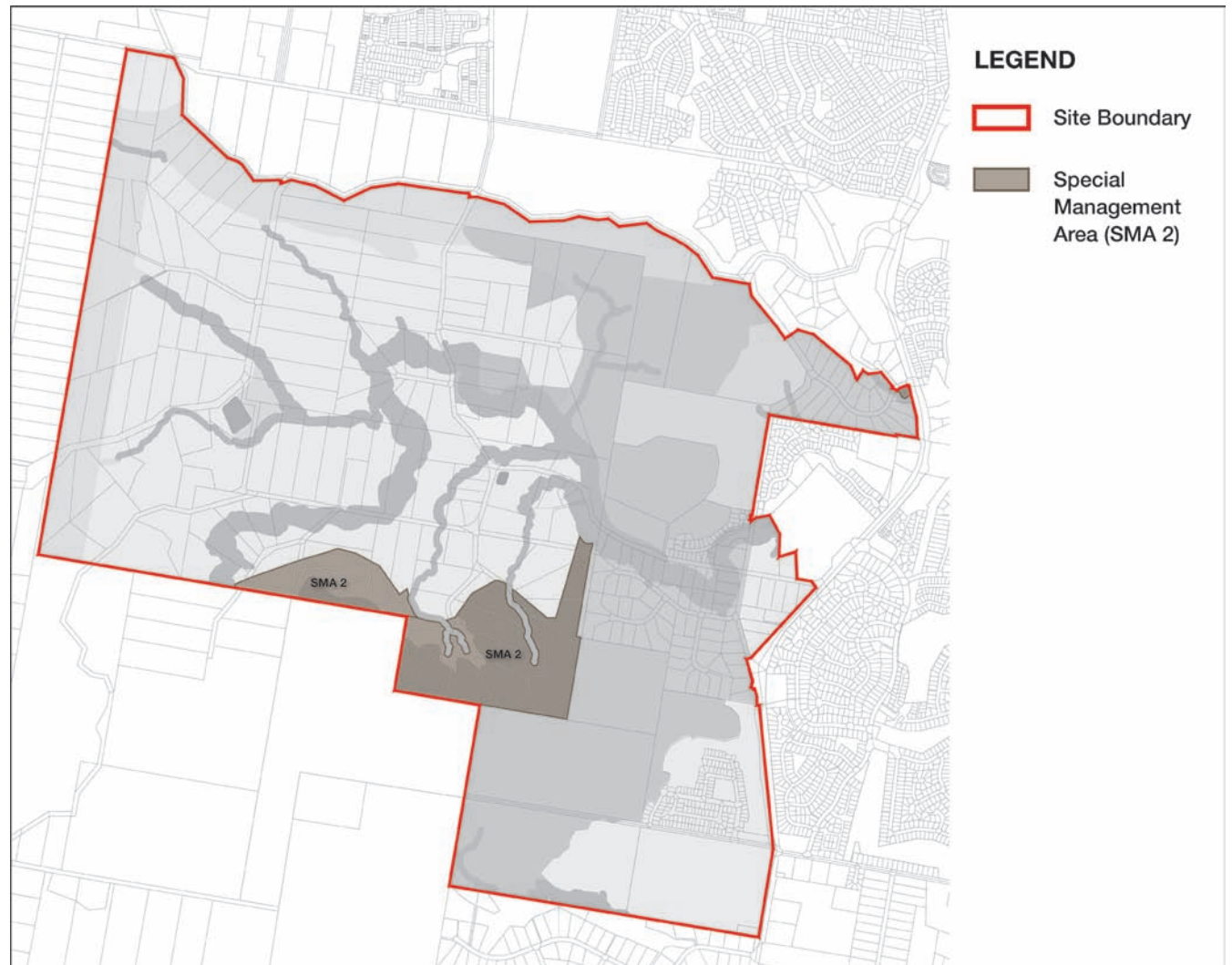


Figure 20 - Special Management Area 2 Location

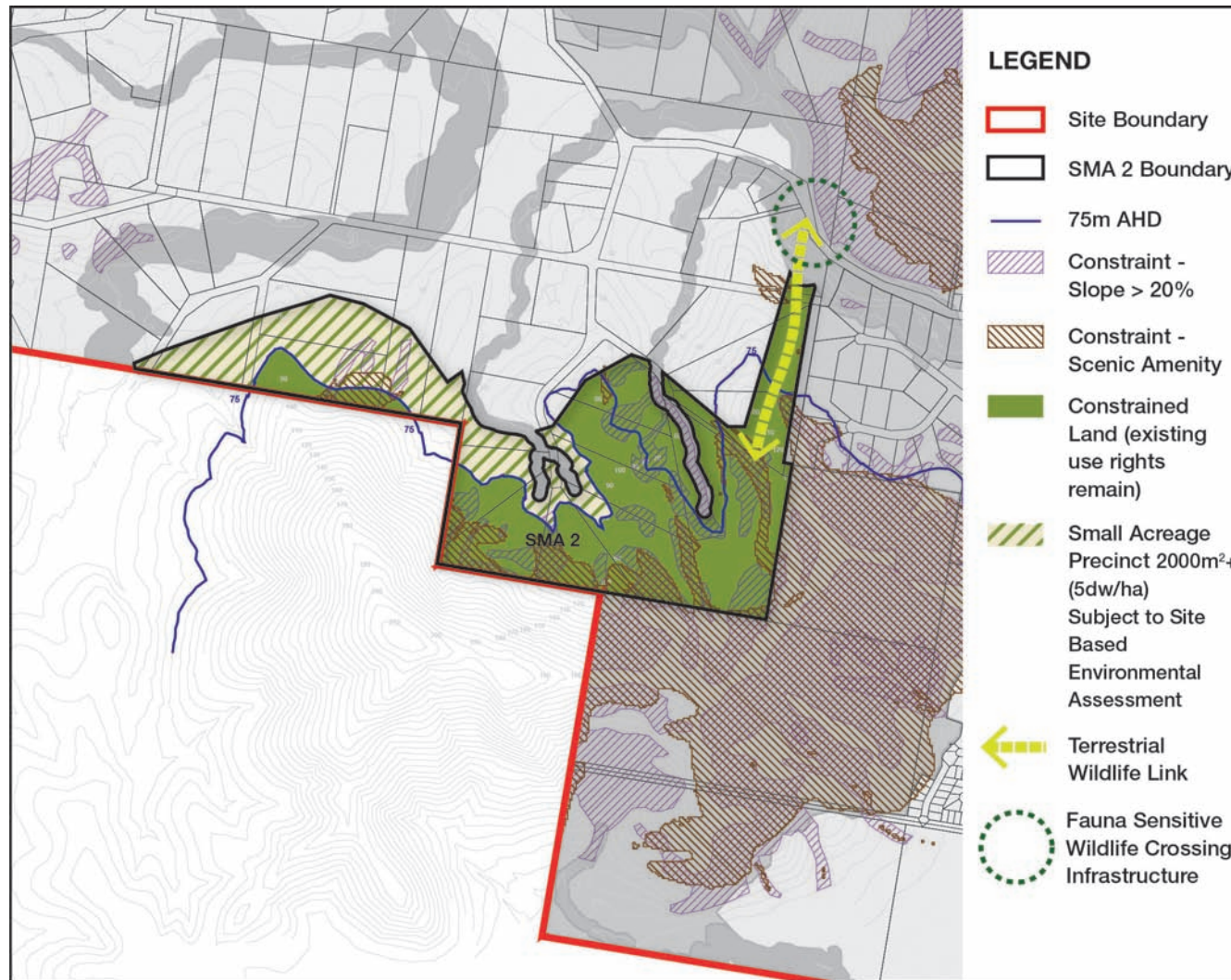


Figure 21 - Special Management Area 2 Detail



7.2.3.3 Special Management Area 3

The intent of Special Management Area 3 is to maintain the existing uses in the area and not to provide for further residential development. This is an established residential area with houses on large lots. The location of SMA 3 is illustrated in Figure 22.

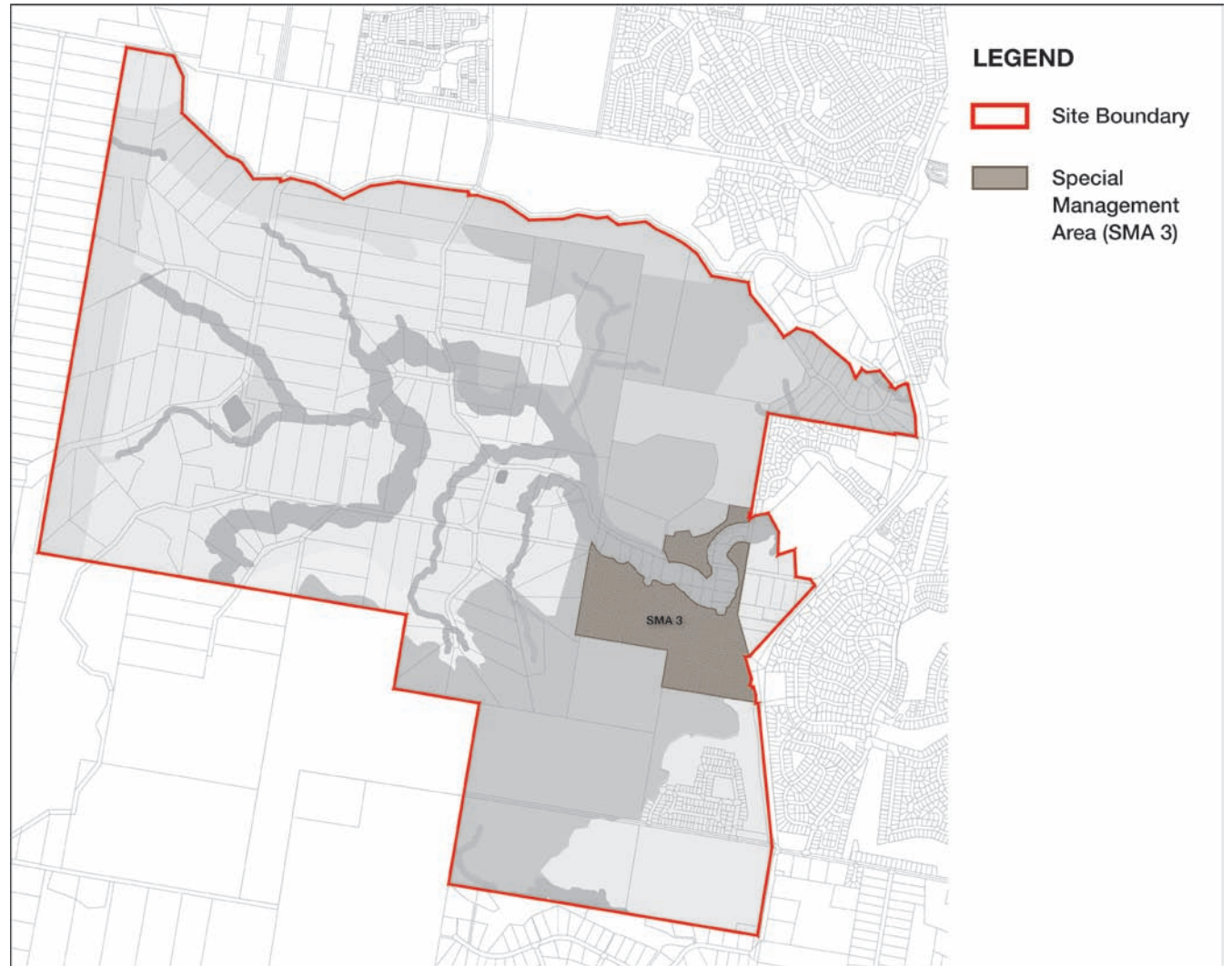


Figure 22 - Special Management Area 3



7.2.3.4 Special Management Area 4

The intent of Special Management Area 4 is to maintain the existing zones and use rights in the area and not to provide for further residential development. This is an established residential area with houses on large lots. The location of SMA 4 is illustrated in Figure 23.

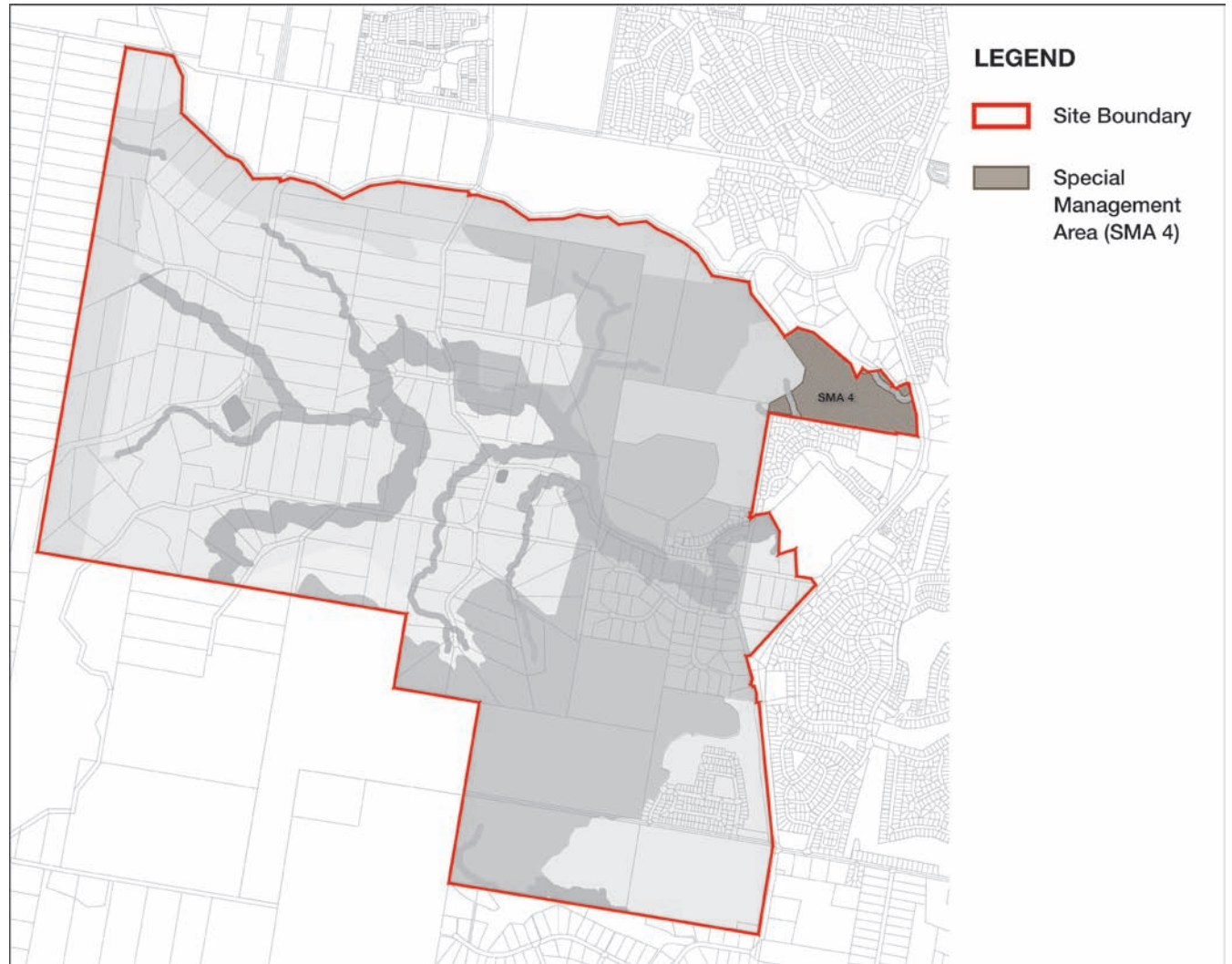


Figure 23 - Special Management Area 4



7.2.3.5 Special Management Area 5

The intent of Special Management Area 5 is to provide for limited further residential development while protecting areas of remnant vegetation and high ecological values within the SMA, and buffering the effects of development on the large intact patches of vegetation in the adjoining EMA. The location of SMA 5 is illustrated in Figure 24.

SMA 5 is to be developed in accordance with Figure 25. The northern and southern parts of the area, which are of high ecological importance, are to be preserved. The remaining area may be developed for low density housing with an average lot size of 2,000m². Larger lots should be provided where there are important environmental values to be protected. Smaller lots may be provided where there are lower ecological values and fewer constraints. Further details on the Small Acreage Precinct is provided in [section 7.3.1](#).

A detailed site based ecological assessment will be required to identify important ecological values on a site. Development is to be designed to protect identified ecological values.

Alternative development proposals that achieve the intent of SMA 5 may be considered on their merits.

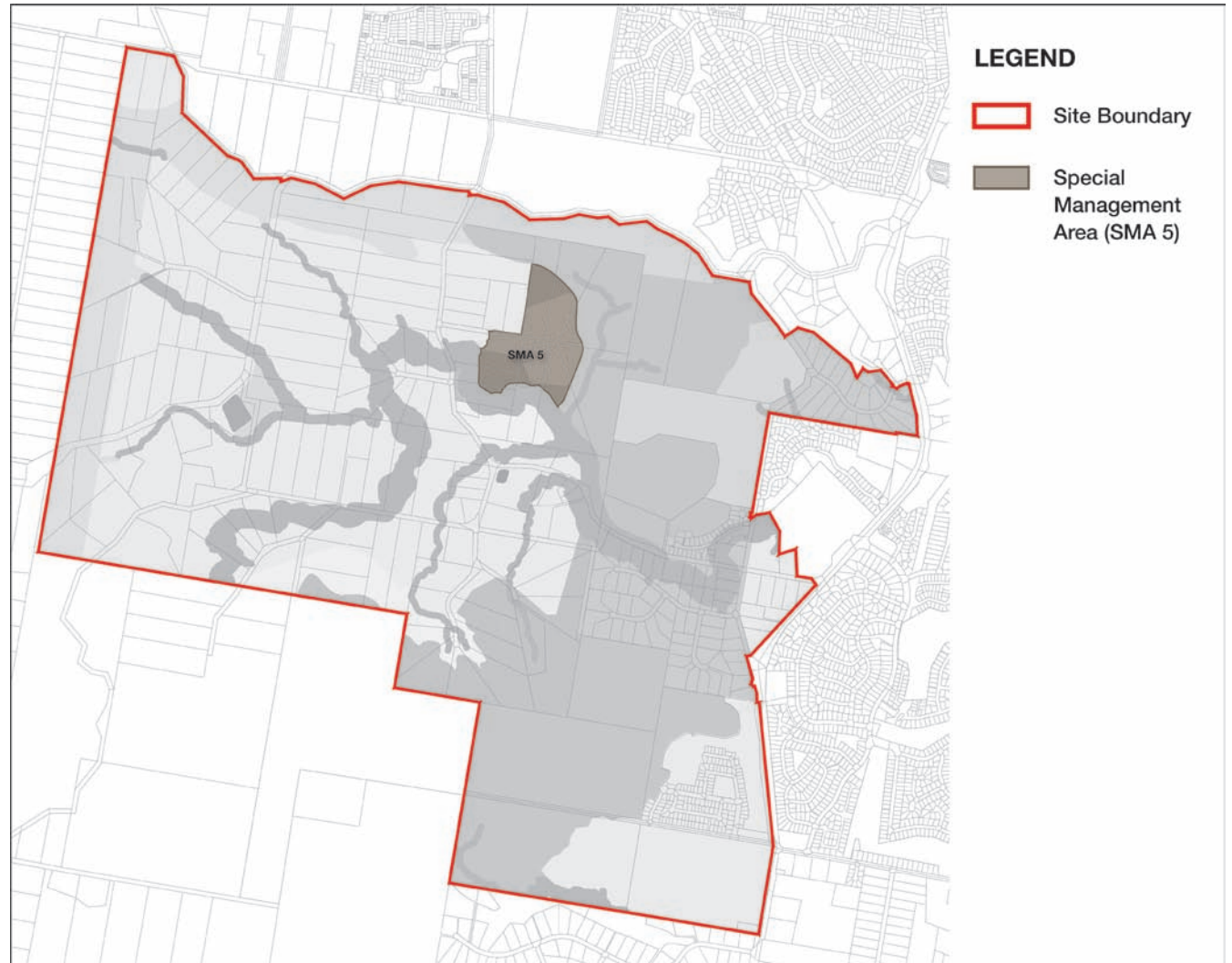


Figure 24 - Special Management Area 5 Location

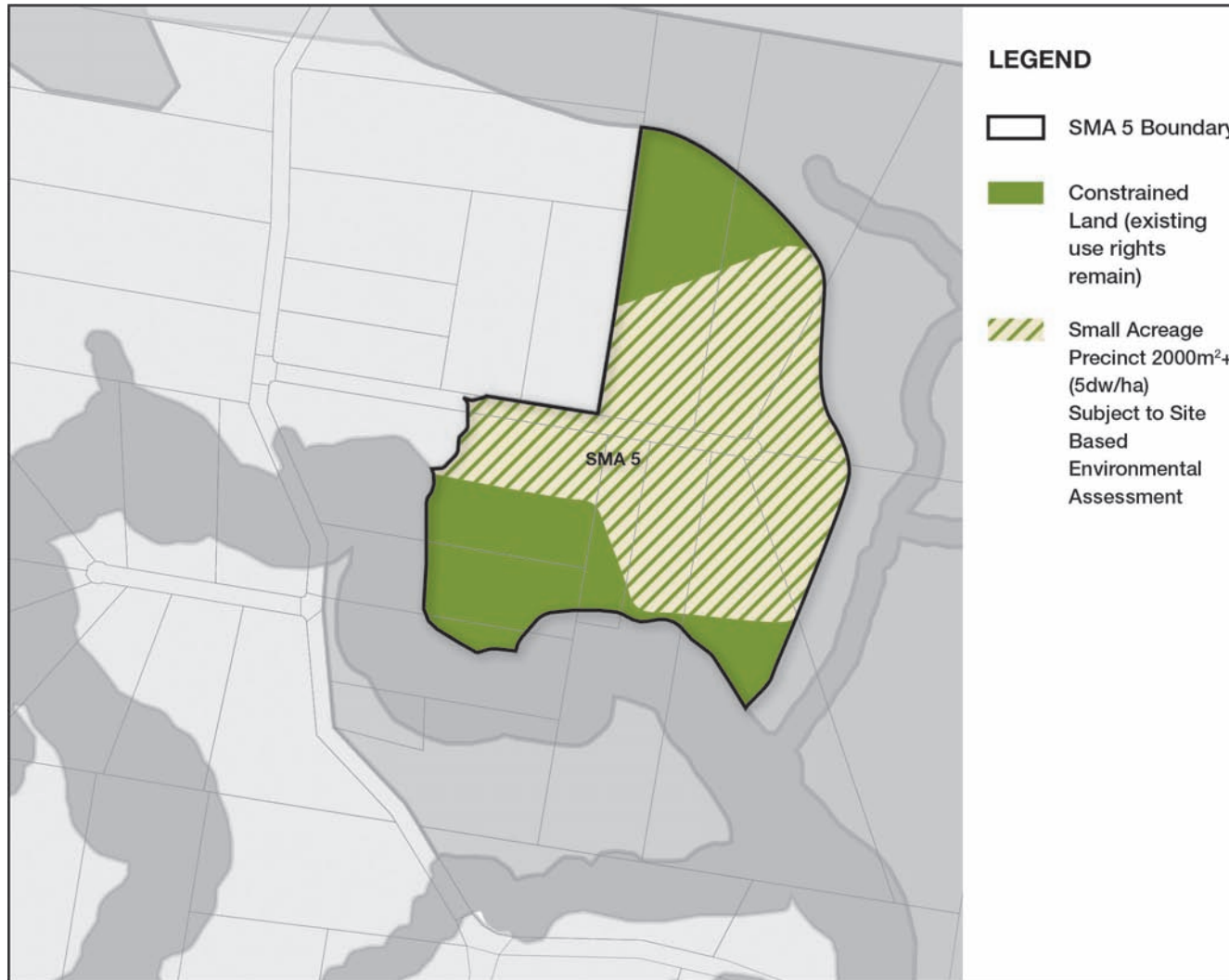


Figure 25 - Special Management Area 5 Detail



7.2.3.6 Special Management Area 6

The intent of Special Management Area 6 (SMA 6) is to provide for limited residential development while protecting areas of remnant vegetation and high ecological values in the area. The location of SMA 6 is illustrated in Figure 26.

SMA 6 is to be developed in accordance with Figure 27. The proposal provides for low density housing, with an average lot size of 2000m² throughout the area. Larger lots should be provided where there are important environmental values to be protected. Smaller lots may be provided where there are lower ecological values and fewer constraints. Further details of the Small Acreage Precinct are provided in [section 7.3.1](#).

A detailed site based ecological assessment would be required to identify the ecological values present on a site. Development will need to demonstrate that these ecological values are protected and enhanced through a suitable conservation and development design response.

Alternative development proposals that achieve the intent of SMA 6 may be considered on their merits.

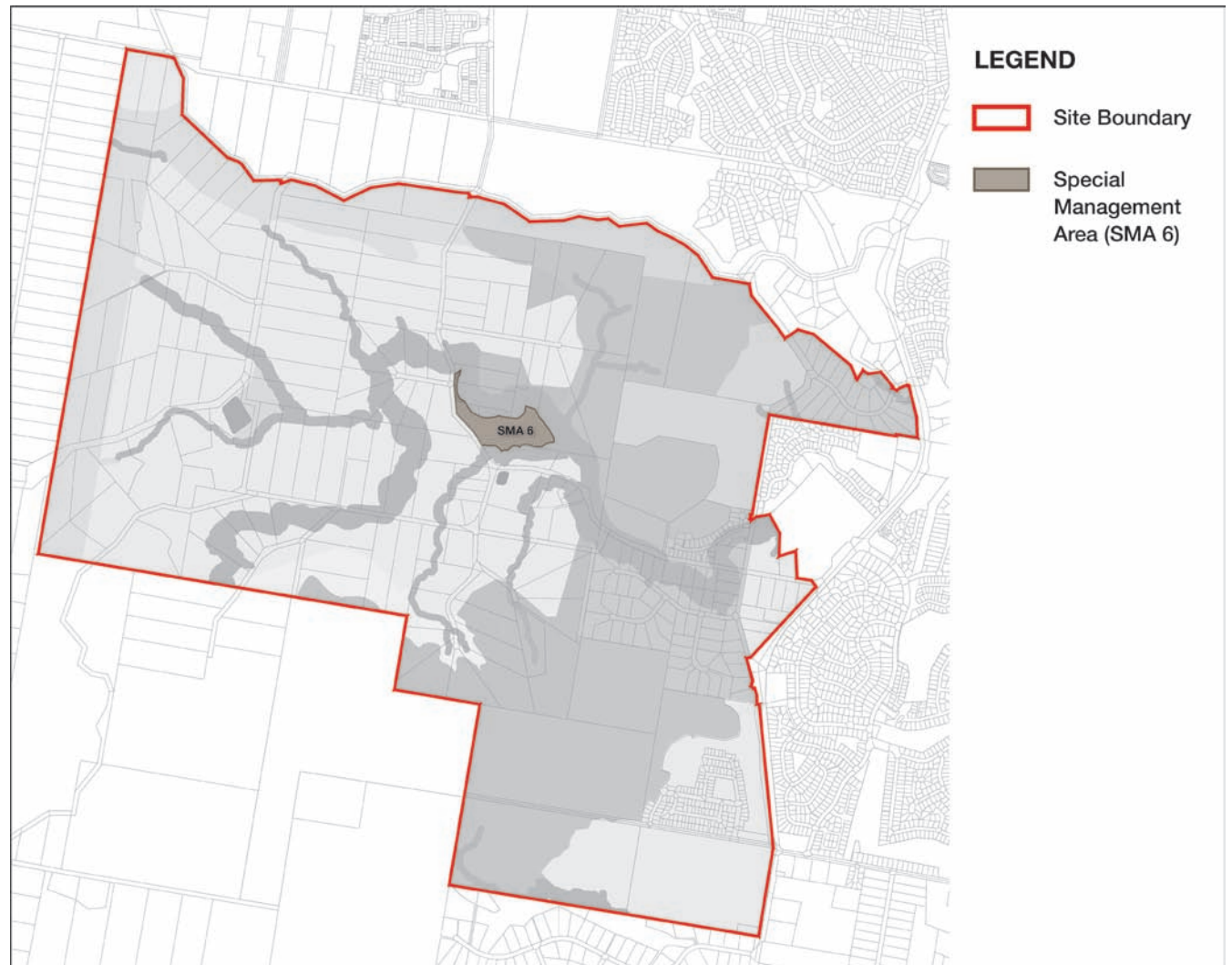


Figure 26 - Special Management Area 6 Location

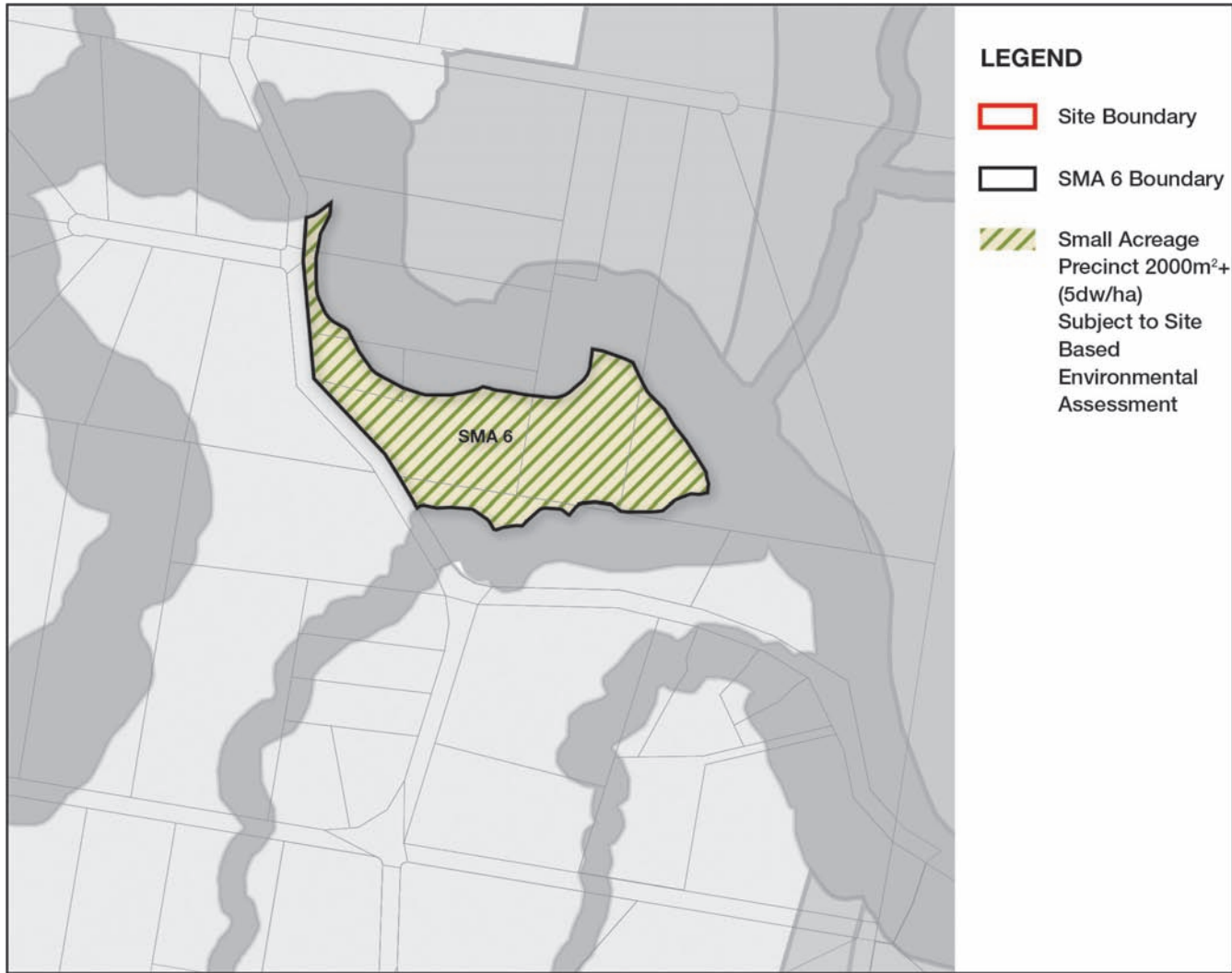


Figure 27 - Special Management Area 6 Detail



7.2.4 Waterway Management Area

The intent of the Waterway Management Area is to protect and enhance waterway environment values and mitigate threats to life and property from future stormwater and flooding events.

No further development is to occur within the Waterway Management Area. Future park, pedestrian or cycleway infrastructure may be considered within the buffer area of waterways where it can be demonstrated that environmental values will be protected or enhanced.

The Flood Affected Area is the area identified as subject to flooding and inundation under Temporary Local Planning Instrument No 1 of 2011 (Logan Interim Flood Response) (TLPI), which is not within the WMA. Any development in this area will need to be managed in accordance with the provisions of the TLPI or its replacement. The location of WMA and TLPI are illustrated in Figure 28.

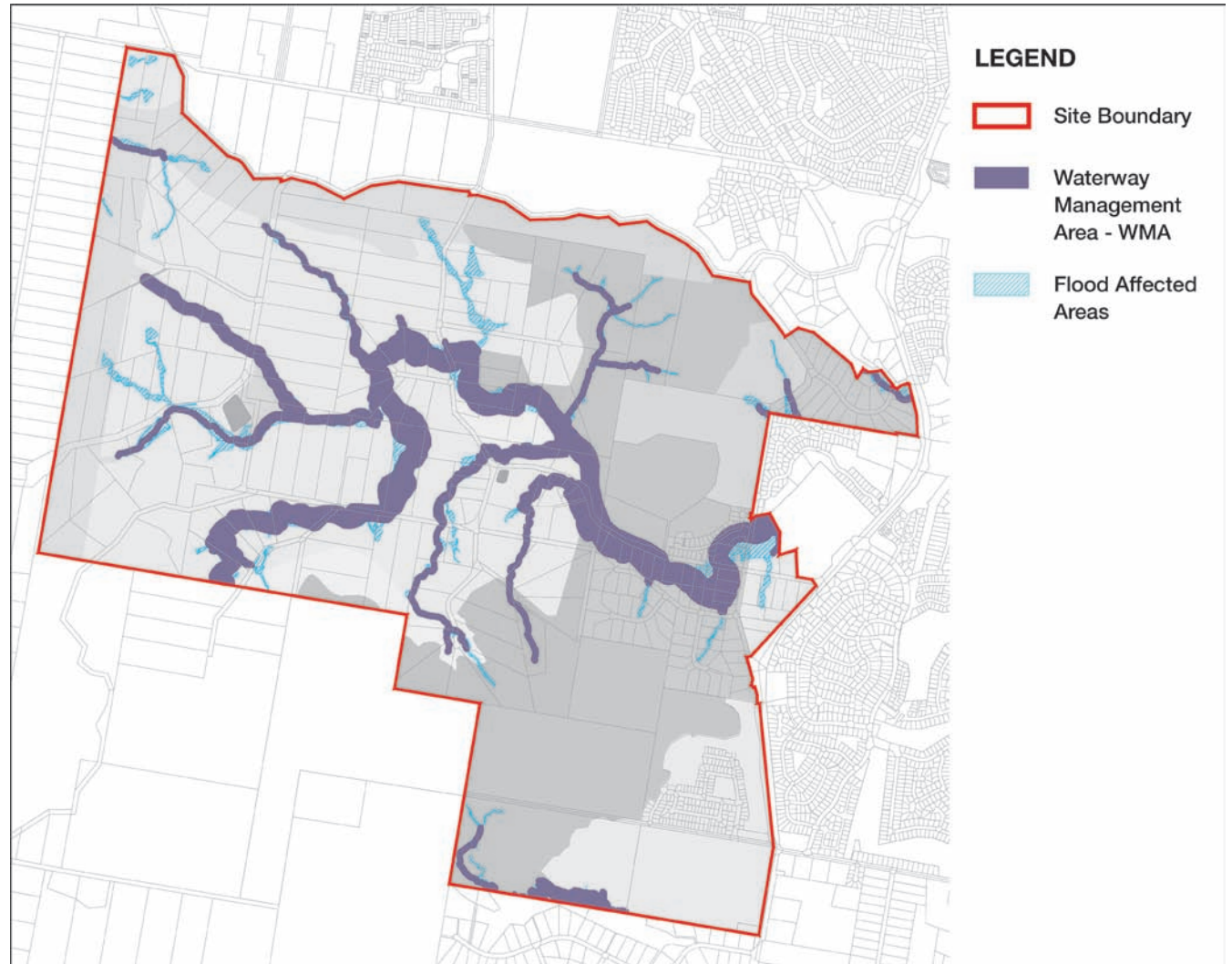


Figure 28 - Waterway Management Area



7.2.5 Environmental Offsets

Environmental offsets will be used to mitigate environmental losses in a particular location while maintaining overall environmental values. An environmental offset allows some vegetation to be removed, on the basis that the ecological values that are removed are replaced. Environmental offsets should provide equal or better ecological values than the vegetation that is removed.

The Bahrs Scrub Environmental Offsets Policy applies to all development in the plan area that involves clearing vegetation. The Bahrs Scrub Environmental Offsets Policy is detailed in [Appendix 2](#).

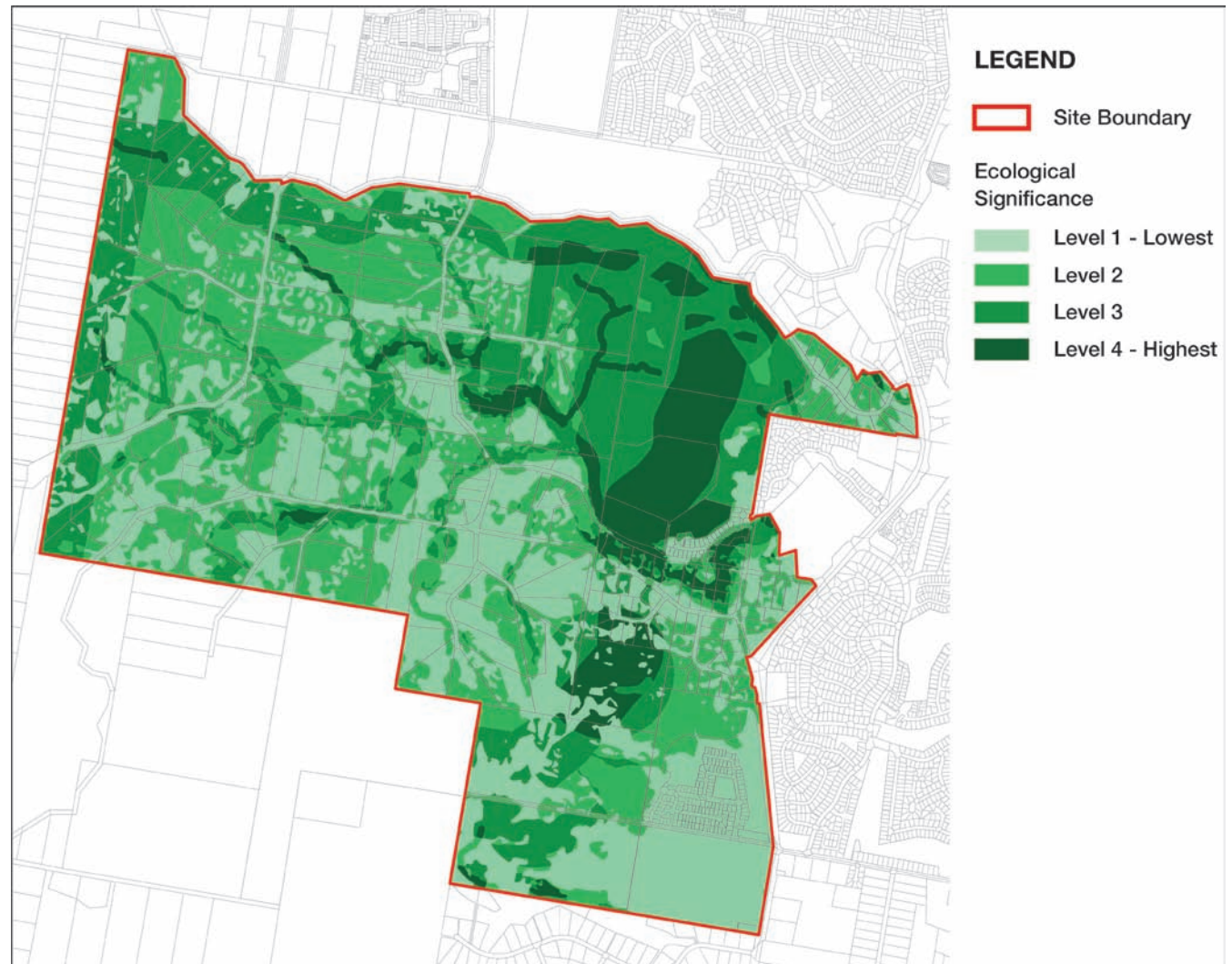


Figure 29 - Ecological Significance



7.3 Land Use

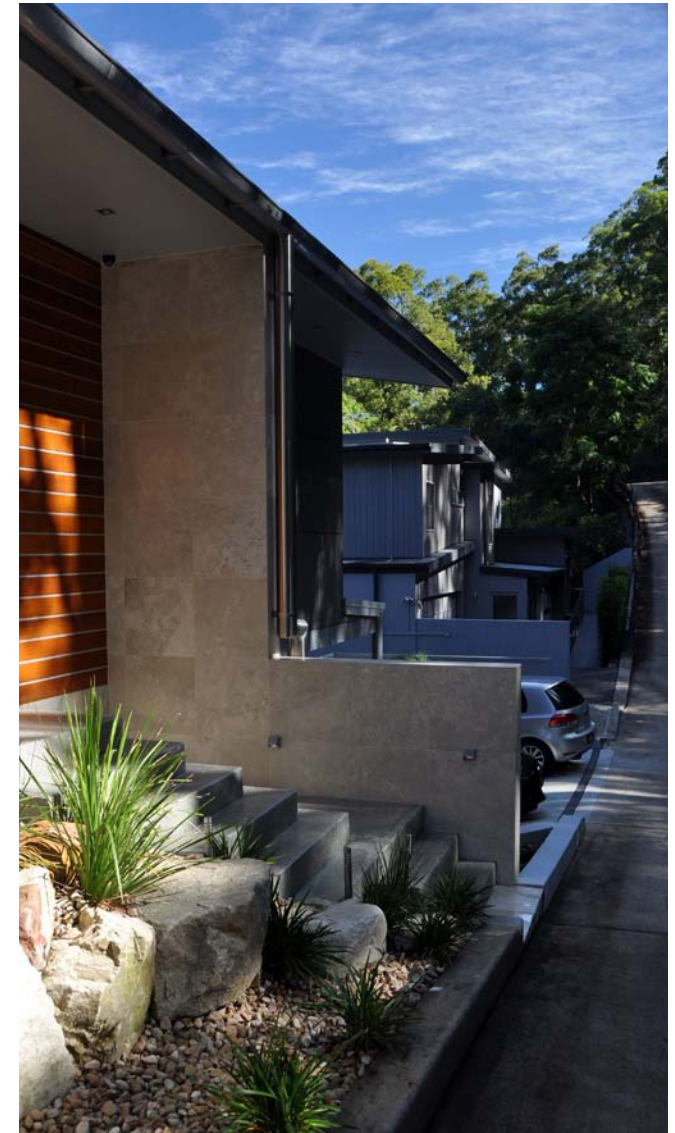
7.3.1 Housing

Bahrs Scrub is to provide a range of different housing options and types that respond to community needs. A Housing Needs Analysis Report was prepared to help guide the provision of future housing choices in the plan area. This report provides an analysis of the likely type and mix of future housing needs. Refer to Figure 30.

The plan provides a range of residential areas including:

- **Small Acreage Precinct**, which provides for single houses on large lots, which maintain important environmental values and respond to site constraints;
- **Suburban / Small Lot Precinct** which primarily provides for detached houses on a range of lot sizes as well as some limited attached housing; and
- **Townhouse Precinct**, which provides for attached housing and detached houses on small lots.

Reference to [section 7.5.4](#) - Water Supply for more details on limitations on residential areas.



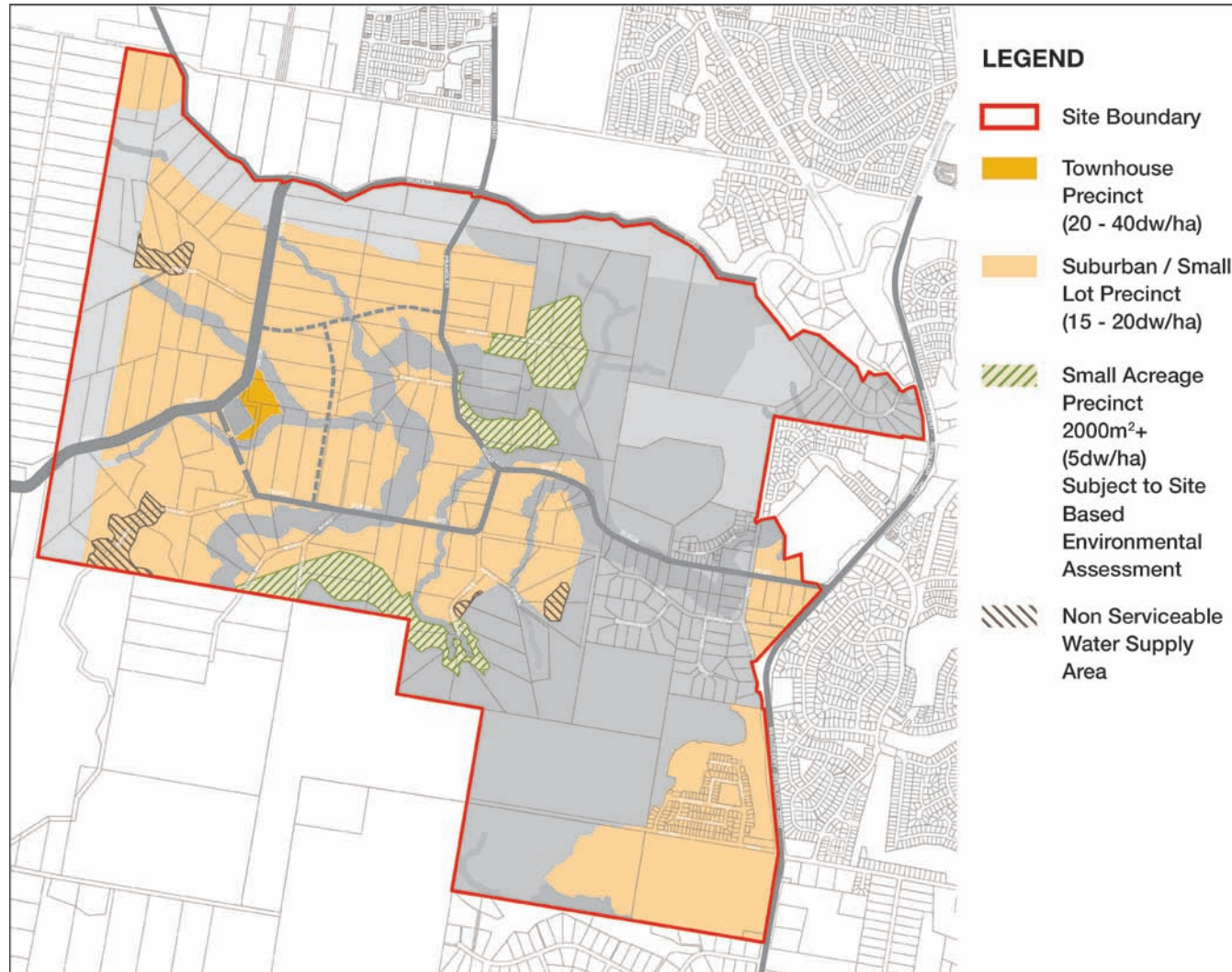


Figure 30 - Residential Land Uses



7.3.1.1 Small Acreage Precinct

The Small Acreage Precinct is to accommodate low density housing primarily comprising houses on large lots. The precinct is located in parts of [SMA 2](#), [SMA 5](#) and [SMA 6](#). These are constrained areas with environmental values. The location of the small acreage precinct is illustrated in Figure 32.

The average density of development is to be 5 dwellings per hectare. This equates to an average lot size of 2,000m². It is expected that some lots will be 2,000m² or greater to accommodate significant environmental values or physical constraints. Other lots may be smaller than 2,000m² where lesser environmental values or physical constraints exist. Refer to Figure 31.

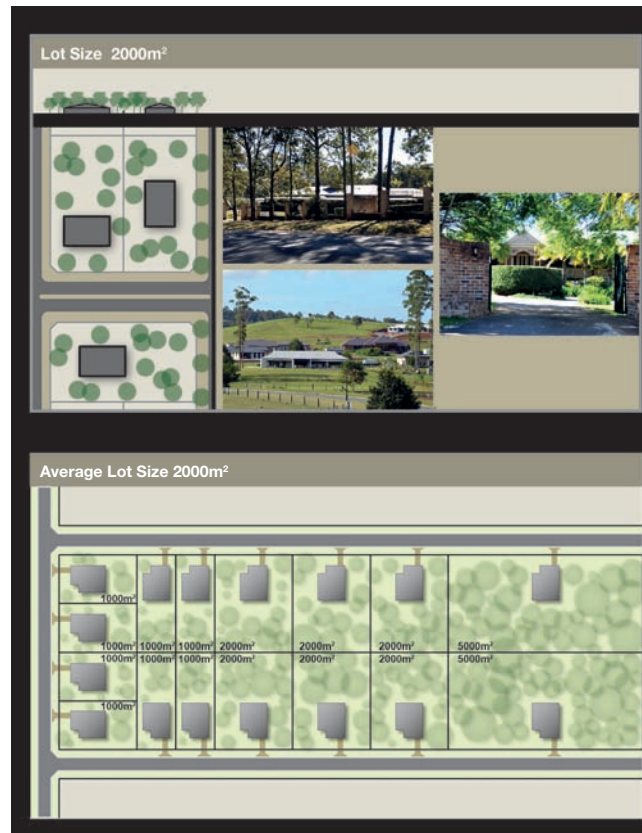


Figure 31 - Small Acreage Precinct

*Disclaimer:
This is an illustrative concept for discussion purposes only, it is not Council policy and it is subject to detailed design and studies.*

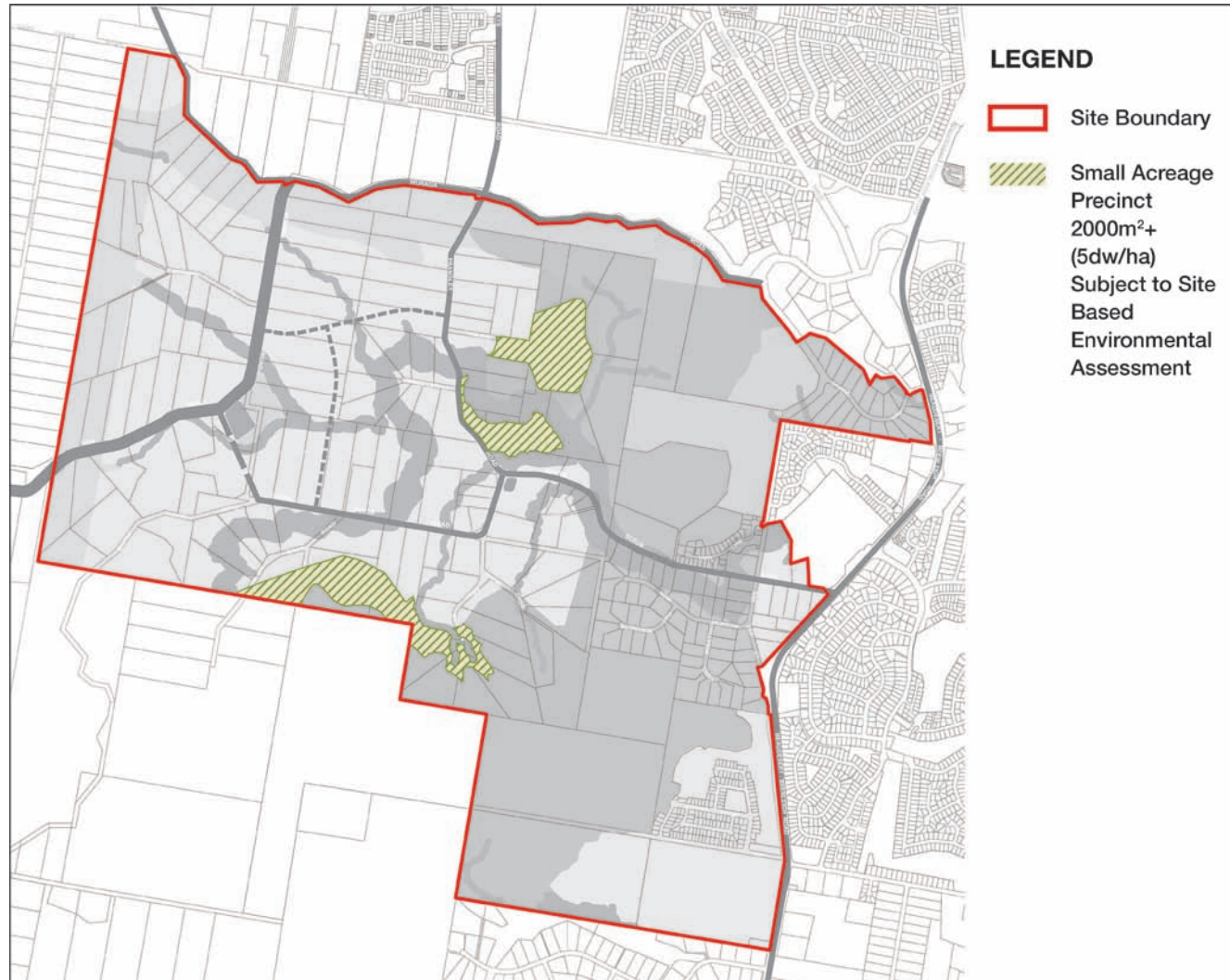


Figure 32 - Small Acreage Precinct Location



7.3.1.2 Suburban / Small Lot Precinct

The Suburban / Small Lot Precinct is to accommodate primarily detached suburban housing on a range of lot sizes. This precinct generally corresponds to the 'developable area' in the endorsed NDAP. The location of Suburban / Small Lot Precinct is illustrated in Figure 34.

The density of development is to be between 15 and 20 dwellings per hectare. This can accommodate a mix of lot sizes up to 1000m². Refer to Figure 33. There are also opportunities for limited attached housing, such as duplexes and triplexes, where they are designed to look like large detached houses. It is envisaged that development at the higher end of the density range is provided in proximity to the centres and areas of good public transport accessibility.

Examples of this type of development can be found at Woodlands, located to the north west of the site at Waterford.

Parts of the Suburban / Small Lot Precinct are further constrained by an absence of a viable water supply. Some areas are located in a high level water supply zone that is to be serviced by a future high level reservoir. Other areas are too high to be provided with a town water service and will have no or limited future residential development potential. Refer to [section 7.5.4](#) - Water Supply for more details.



Figure 33 - Suburban / Small Lot Precinct

*Disclaimer:
This is an illustrative concept for discussion purposes only, it is not Council policy and it is subject to detailed design and studies.*

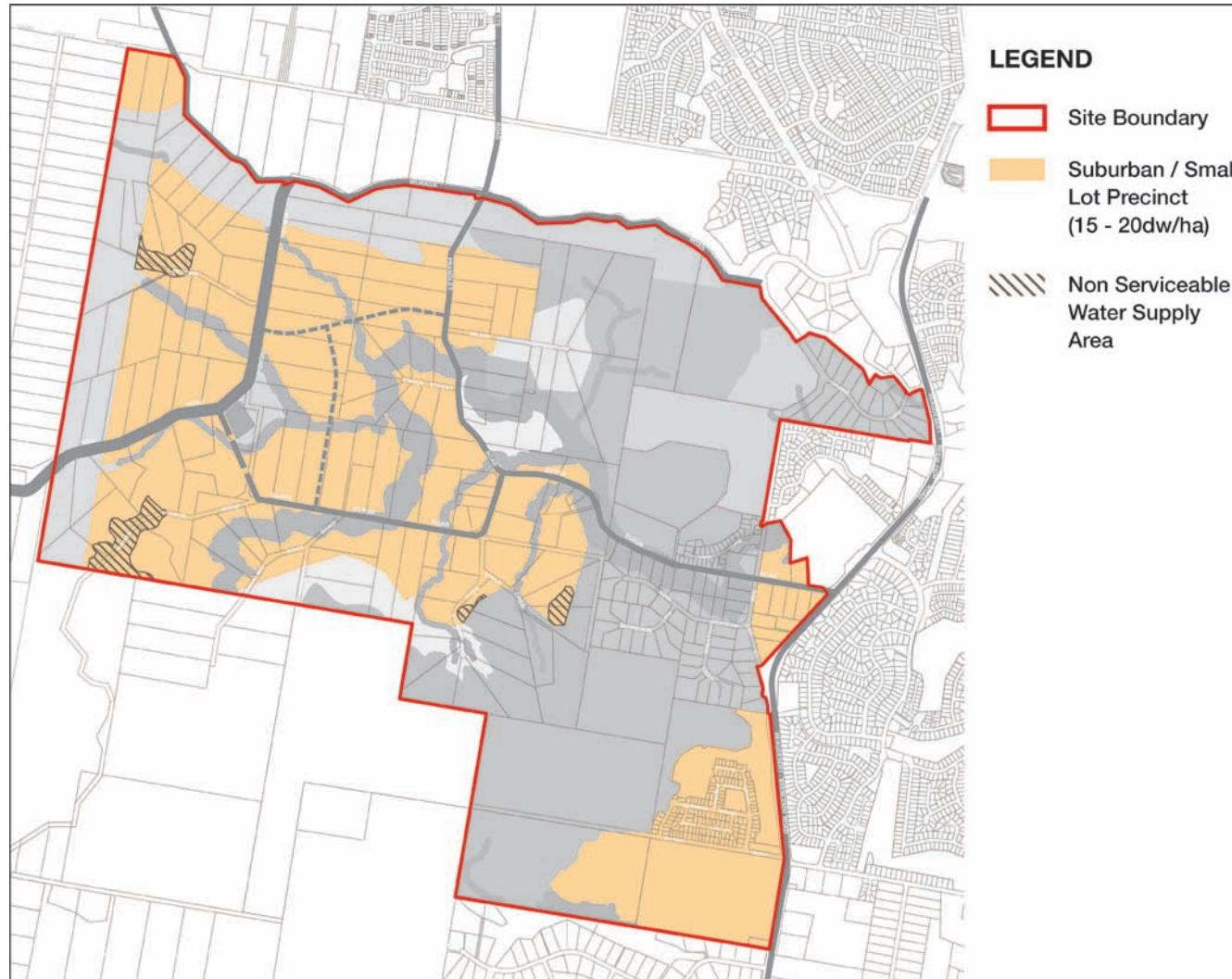


Figure 34 - Suburban Precinct Location



7.3.1.3 Townhouse Precinct

This precinct adjoins the local centre, which is to be the most accessible location in the plan area. The Townhouse Precinct is to accommodate primarily attached housing and detached housing on small lots. The location of the Townhouse Precinct is illustrated in Figure 36.

The density of development is to be between 20 and 40 dwellings per hectare. This accommodates a range of housing types including townhouses, duplexes, and detached housing on small lots. Multi-storey apartment buildings are not to be provided in this area. Refer to Figure 35.

The built form and character of the area is to be low rise residential, where housing is designed to front the street and create a pleasant street environment, and where development is designed to connect to the local centre. It is envisaged that development at the higher end of the density range is provided closest to the local centre.



Figure 35 - Townhouse Precinct

*Disclaimer:
This is an illustrative concept for discussion purposes only, it is not Council policy and it is subject to detailed design and studies.*

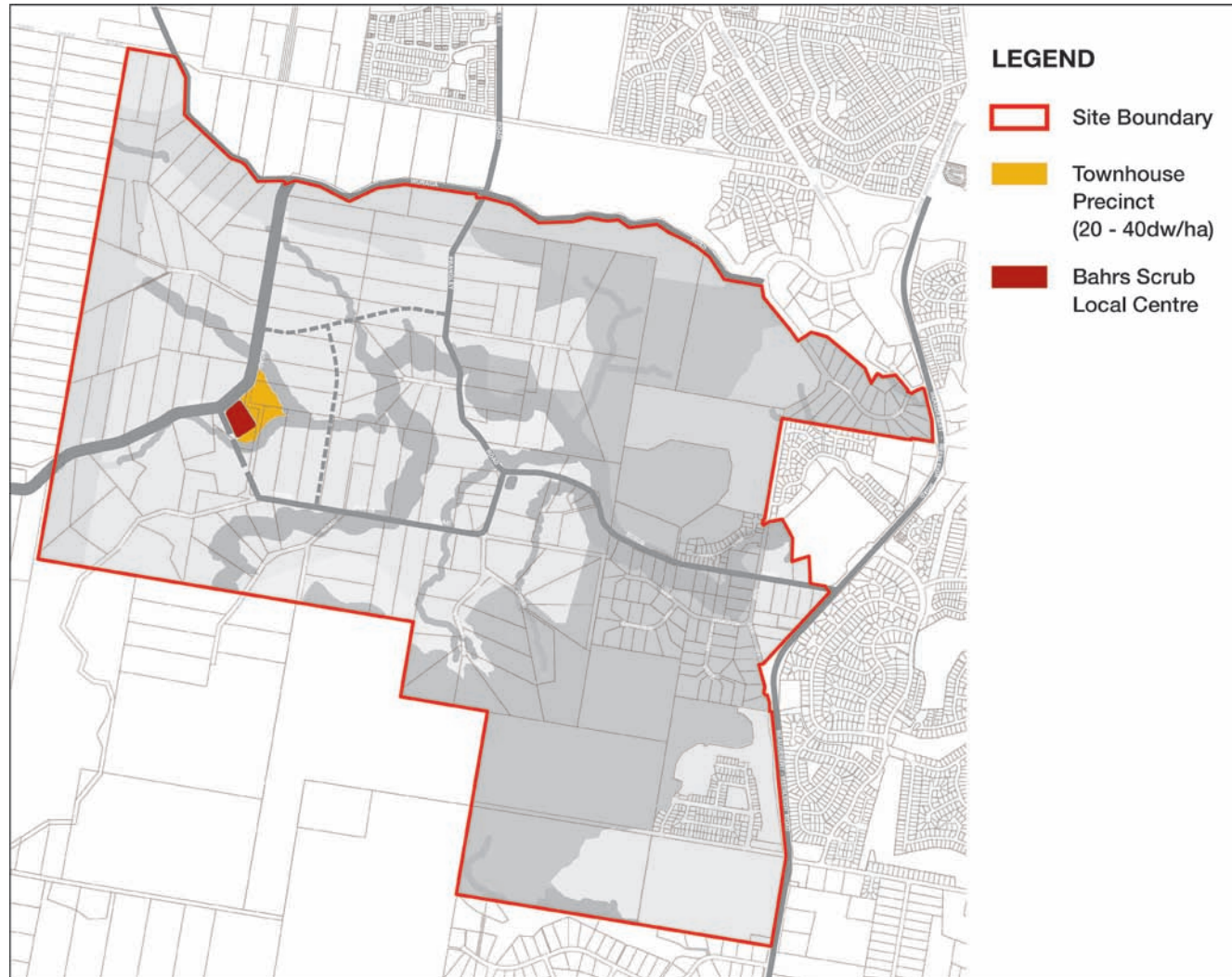


Figure 36 - Townhouse Precinct Location



7.3.2 Centres

The centres are to serve the daily and weekly convenience needs of the residents of the plan area. They are to provide convenience shops and range of supporting services and community facilities. They are also to be the focus for public transport and activity in the plan area.

An Economic Study was prepared by Foresights Partners to help guide the provision of future shopping facilities in the plan area. This study identifies the size, scale and types of centre uses that will be most appropriate and feasible within the plan area. The Beenleigh and Bahrs Scrub Social Needs Assessment also identified a need for a local, multipurpose community facility in the plan area to meet the social and leisure needs of the community.

There are two centres for the plan area and their location are illustrated in Figure 38. They are:

1. Bahrs Scrub Local Centre;
2. Bahrs Scrub Neighbourhood Centre.

The centres are to be designed to create high quality urban places. An Urban Design and Placemaking Report was prepared by Deicke Richards to guide the design of the centres. This report is summarised in [Appendix 3](#).



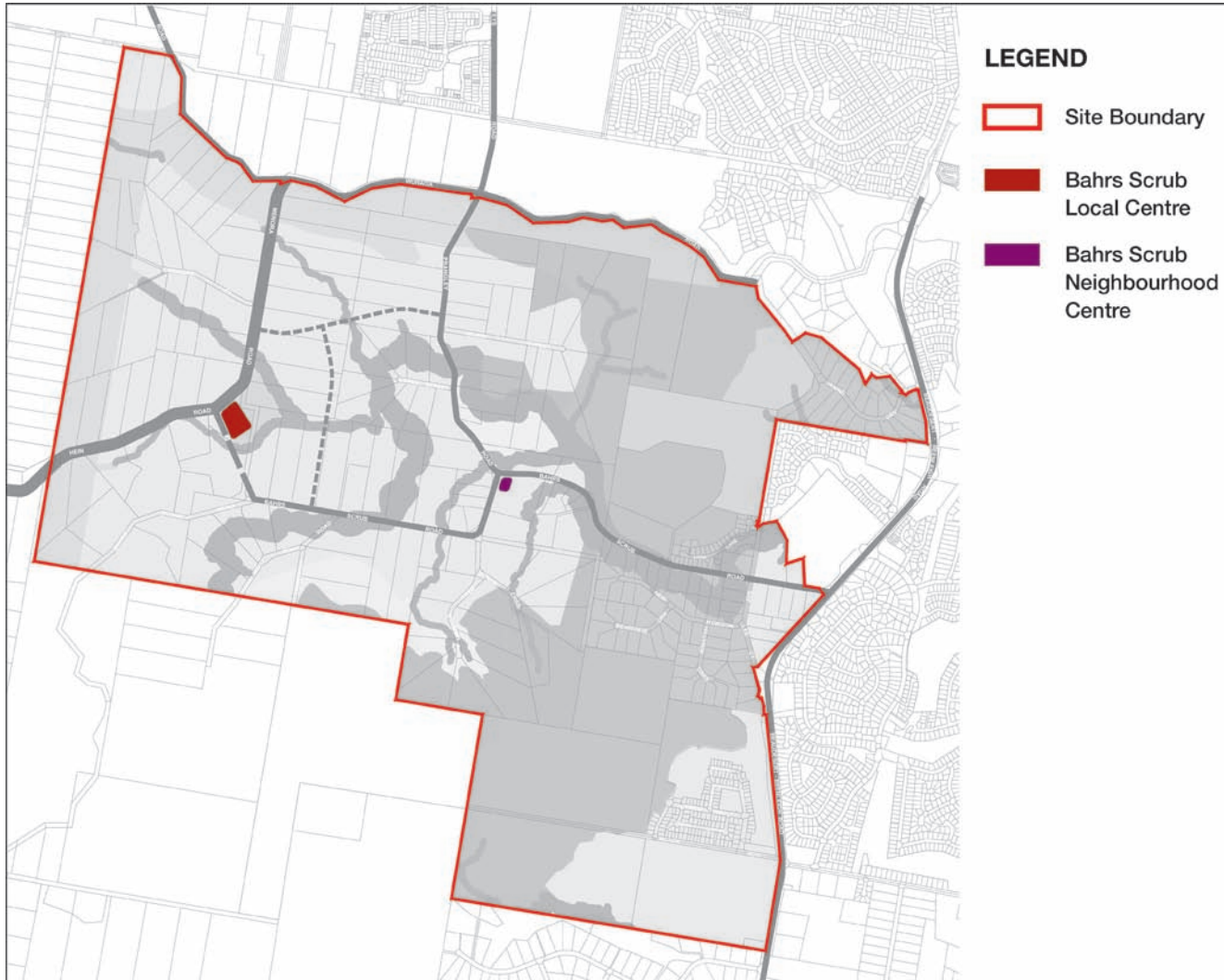


Figure 37 - Centre Locations



7.3.2.1 Bahrs Scrub Local Centre

The location of the Bahrs Scrub local centre is indicated in Figure 38. The local centre is to serve the daily and weekly convenience needs of the area, providing a full line supermarket (such as Coles/Woolworths) and a range of speciality shops and services. It is to accommodate a multipurpose community facility and a civic park, which is to be integrated with a central bus stop. The range of uses are identified in Table 3.

The local centre is in the most accessible location in the plan area and the focus for commerce and activity. Given its accessibility, it would be appropriate for townhouses to be provided close to the centre.

The centre is strategically located in a central part of the plan area on the corner of Menora Road and a proposed extension to Bahrs Scrub Road. It is also in a location where the proposed Park Ridge to Beenleigh bus route and the proposed Beenleigh to Yarrabilba bus route would meet. This will allow the centre to have maximum passing trade and increase its attraction, commercial viability and function as a centre of activity within the plan area.

The centre is to be designed to create a high quality urban place in accordance with Figure 39 and the principles and concepts in Appendix 3.

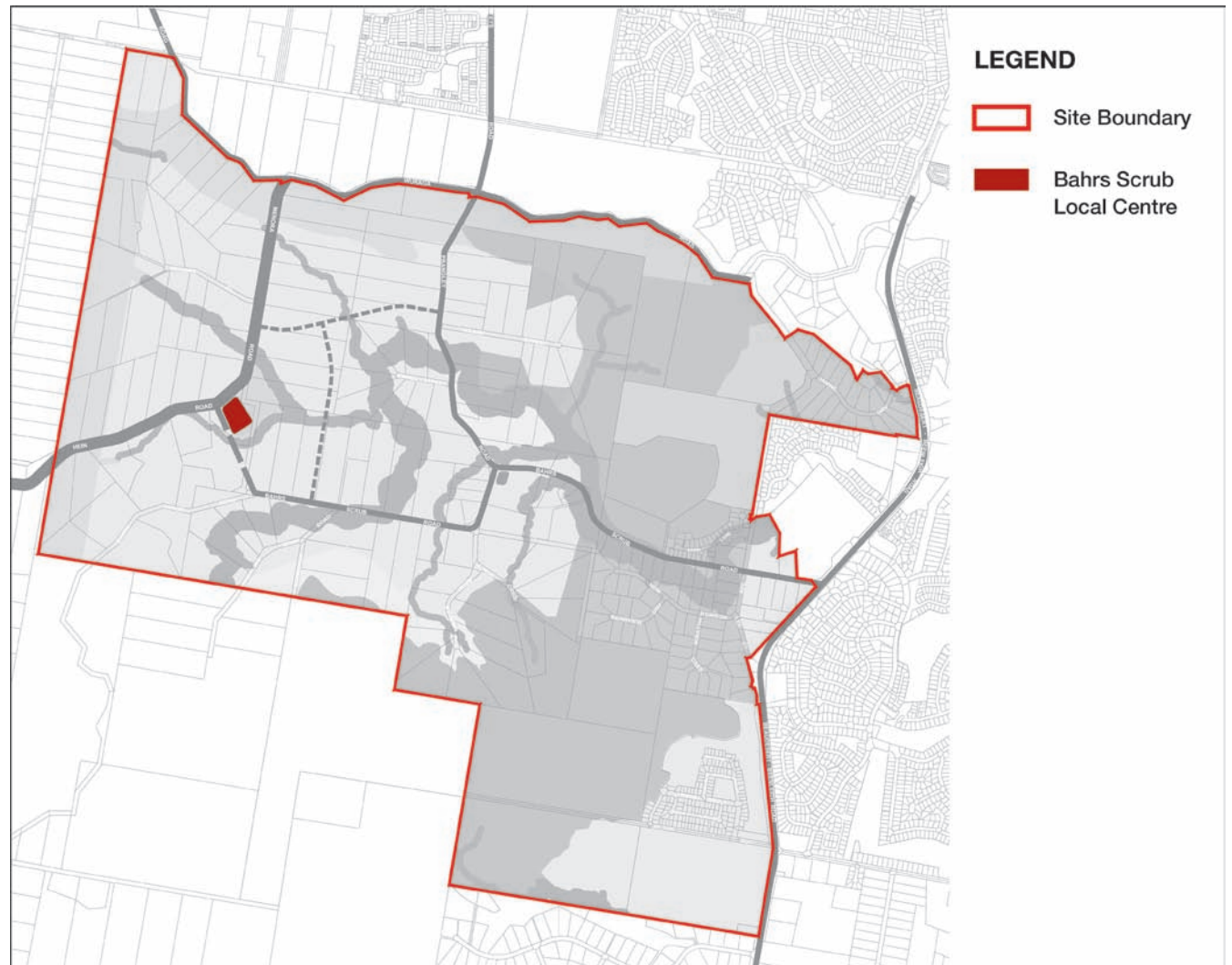


Figure 38 - Local Centre Location



Use	Maximum Gross Leasable area
Supermarket	4,000m ²
Specialty Retail	1,100m ² (Maximum tenancy size: 200m ²)
Professional	450m ²
Community	600m ² (Min)
Total Area	6,000m²

Table 3 - Bahrs Scrub Local Centre Uses



*Disclaimer:
This is an illustrative concept for discussion purposes only, it is not Council policy and it is subject to detailed design and studies.*



Figure 39 - Indicative Local Centre Plan



7.3.2.2 Bahrs Scrub Neighbourhood Centre

The location of the Bahrs Scrub neighbourhood centre is indicated in Figure 40. The neighbourhood centre is to serve the daily convenience needs of the eastern part of the plan area, providing a limited line supermarket (such as IGA/Foodworks) and a range of small scale specialty shops and services. The range of uses are identified in Table 4.

The neighbourhood centre is to be subordinate to the local centre. It provides a focus of activity in the eastern part of the area. Small lot housing and some town house type development might be provided close to the centre.

The centre is strategically located in the eastern part of the plan area at a key junction of Bahrs Scrub Road and Prangley Road. Both the strategic Park Ridge to Beenleigh bus route and Beenleigh to Yarrabilba bus route would pass the centre. This would allow the centre to have maximum passing trade and increase its attraction and commercial viability.

The centre is to be designed to create a high quality urban place in accordance with Figure 41 and the principles and concepts in Appendix 3.

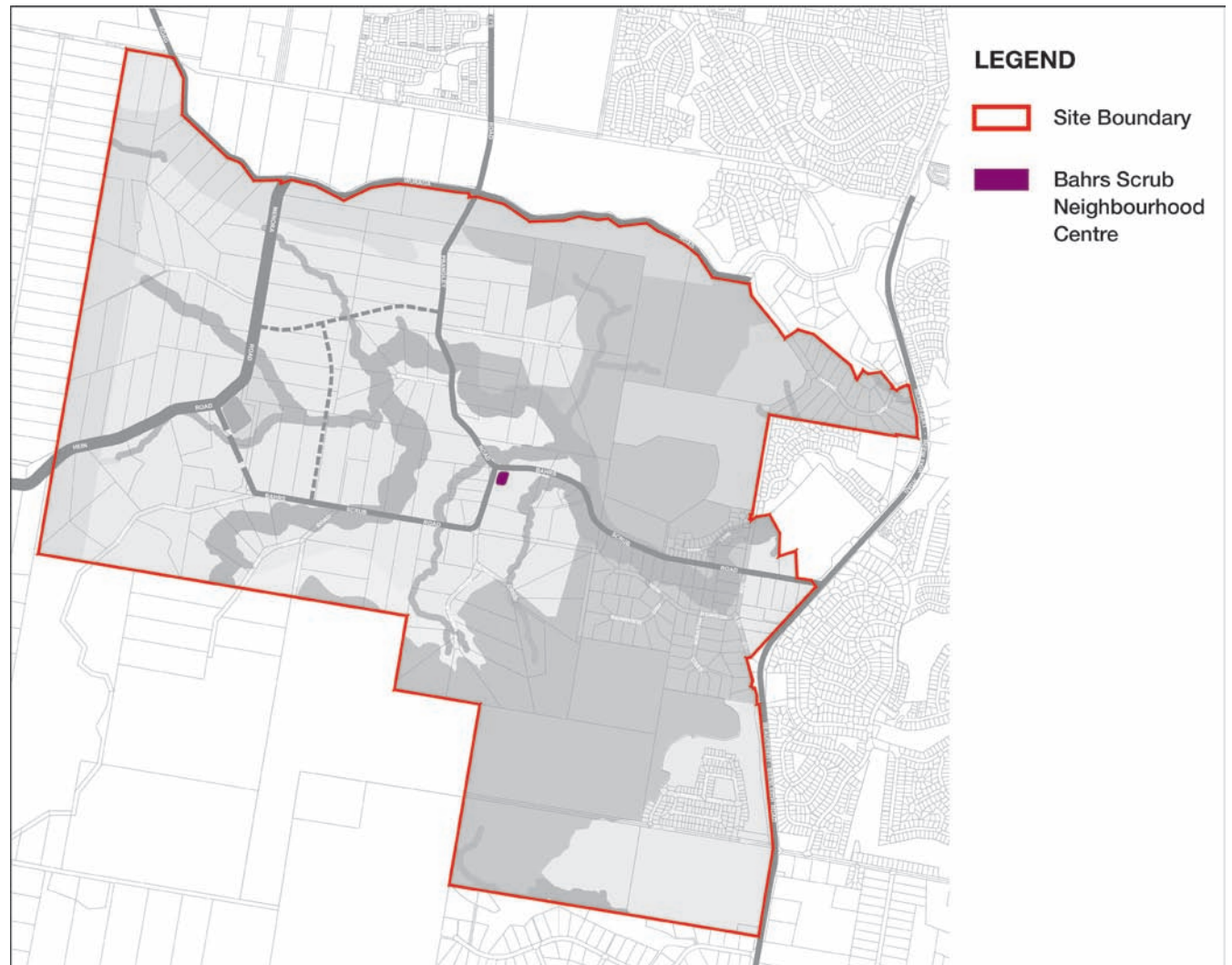
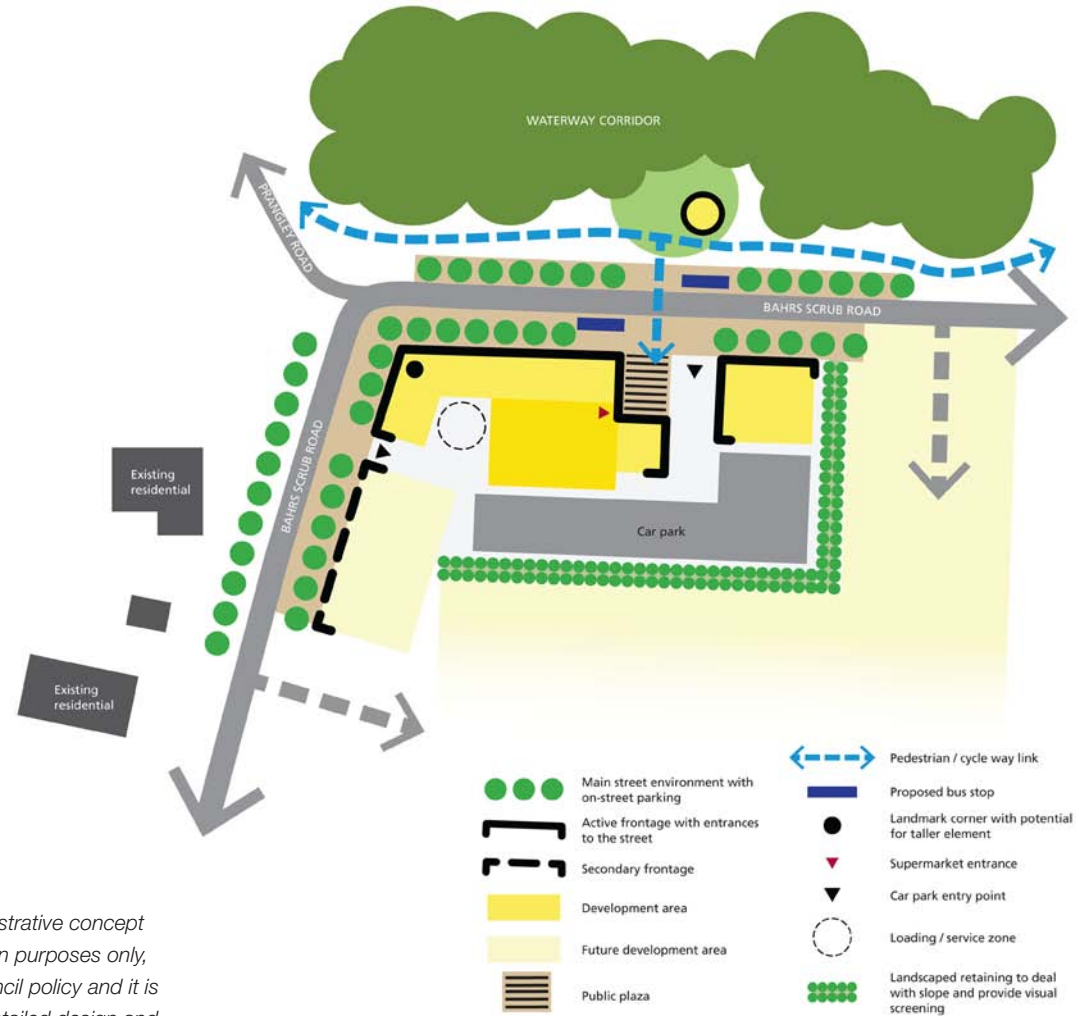


Figure 40 - Neighbourhood Centre Location



Use	Maximum Gross Leasable area
Supermarket	600m ²
Specialty Retail	900m ² (Maximum tenancy size: 100m ²)
Total Retail	1,500m²

Table 4 - Bahrs Scrub Neighbourhood Centre Uses



Disclaimer:
This is an illustrative concept for discussion purposes only, it is not Council policy and it is subject to detailed design and studies.

Figure 41 - Indicative Neighbourhood Centre Plan



7.4 Transport

The plan provides for improvements to the strategic road and public transport networks. Walking and cycling is also to be facilitated throughout the plan area.

A Transport Assessment was prepared by Cardno to help identify future transport needs for the residents of the plan area. A companion Supporting Traffic Analysis was also prepared by Cardno to provide further technical data to support analysis of intersection upgrades.

7.4.1 Roads

Bahrs Scrub is to have an efficient strategic road network that:

- provides efficient connections through the plan area;
- integrates well with land uses, particularly the local and neighbourhood centres and the wildlife movement areas;
- accommodates public transport links through the plan area;
- facilitates a well connected local access network.

The strategic road network is indicated in Figure 42. The network utilises the existing roads and provides for three new connections. The network includes:

- upgrading Menora Road to be an Urban Arterial Road;
- upgrading Bahrs Scrub Road and Prangley Road to

be Urban Collector Roads;

- creating a new 'Urban Collector Road' link between Bahrs Scrub Road and Menora Road;
- creating new 'Urban Access Road' links between Menora Road and Prangley Road, and between this new link and Bahrs Scrub Road. This is an indicative link; the detailed alignment will be determined through the development assessment process.

The road network is to integrate well with the land uses. In particular it provides opportunities to provide the local centre at a key junction on the corner of Menora Road and the new Urban Collector link to Bahrs Scrub Road. Further, a neighbourhood centre is to be located at the key junction between Bahrs Scrub Road and Prangley Road.

The network also limits the further severance and improved contention of the Wildlife Movement Area and Waterway Management Area. Suitable fauna sensitive wildlife crossing infrastructure is to be provided in accordance with the "Fauna Sensitive Road Design Manual - Part 2: Preferred Practice" prepared by the Queensland Department of Transport and Main Roads as indicated in Figure 42.

The network would also facilitate the proposed strategic public transport corridors through the plan area, as indicated in [section 7.4.2](#). More local access roads will

be required to facilitate access throughout the residential areas indicated in the plan. These local access roads are to be provided as a part of development. They are to provide a well integrated and well connected network of local roads.

Future road and intersection upgrades are to be consistent with the Bahrs Scrub Transport Assessment and Bahrs Scrub Transport Assessment: Supporting Traffic Analysis produced by Cardno dated May 2012 and June 2012 respectively.

In addition to the upgrades in the technical documents, the design of the intersection of Berzins Court and Menora Road should be considered to address sight visibility and safety.

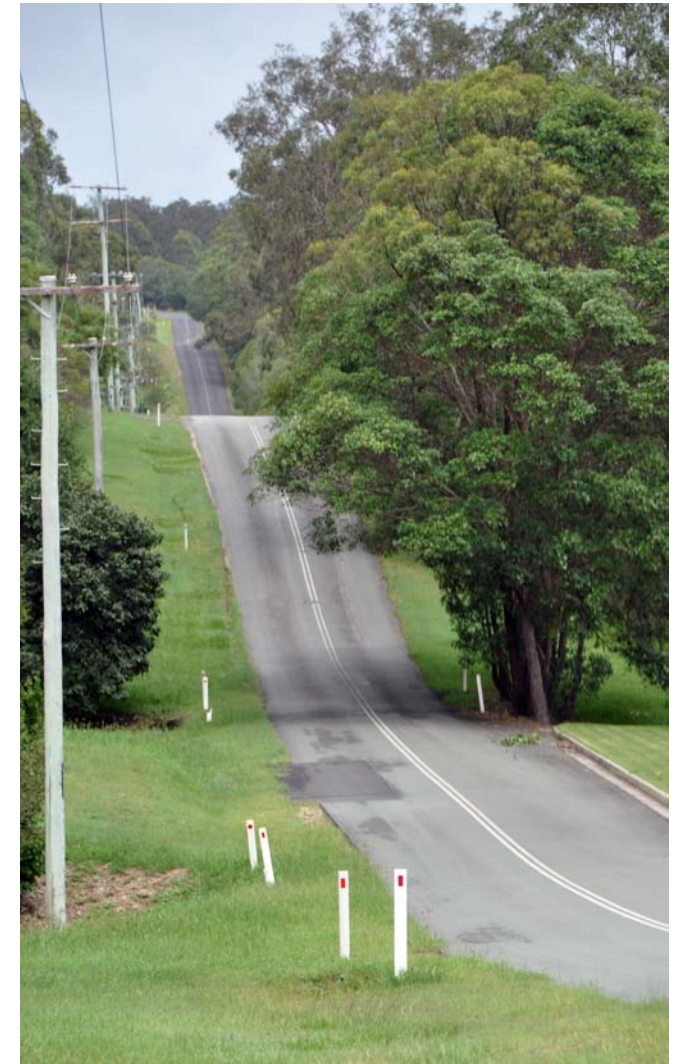
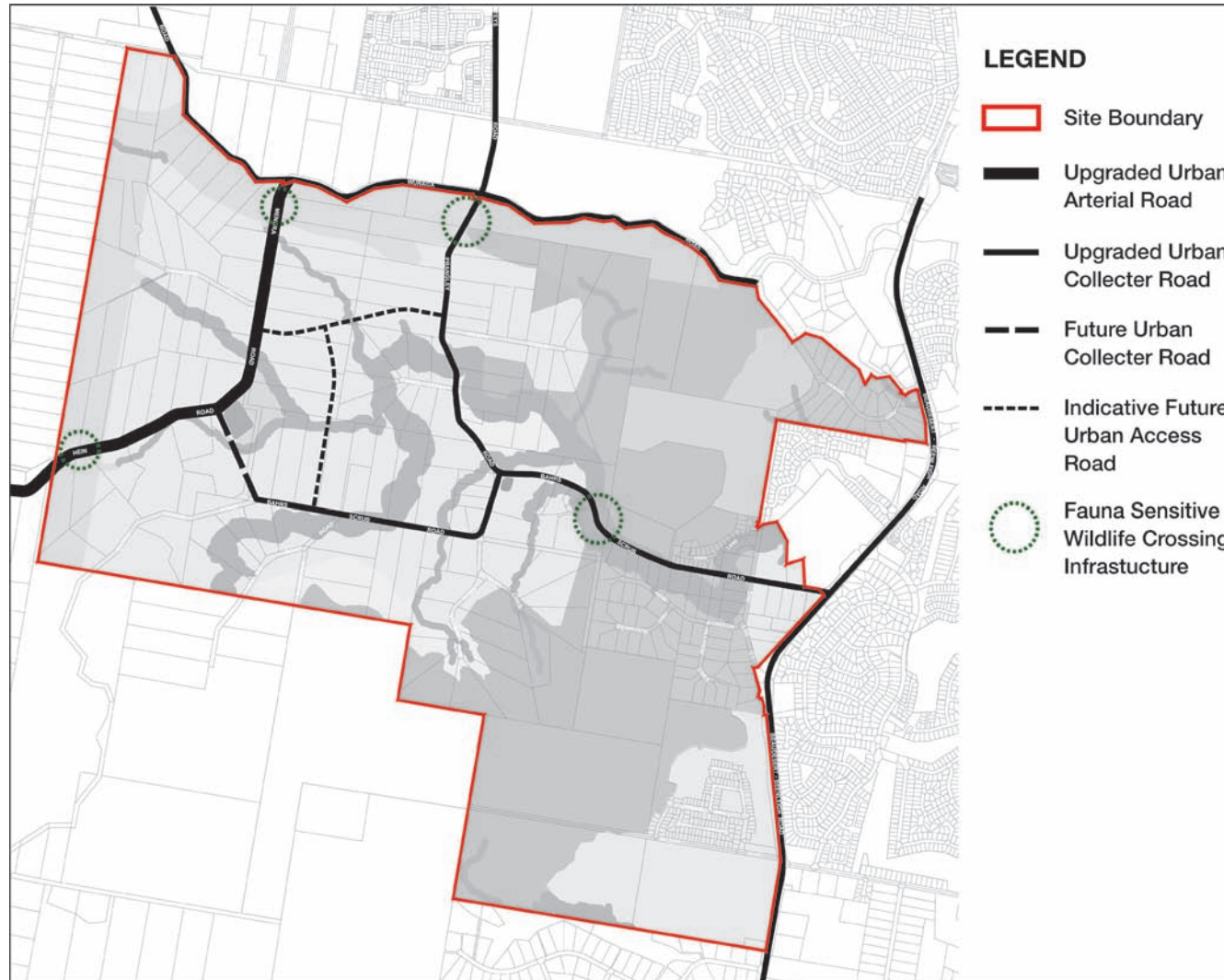


Figure 42 - Strategic Road Network



7.4.2 Public Transport

Bahrs Scrub is to accommodate strategic public transport routes through the plan area, which connect residents to surrounding centres.

There are opportunities to connect Bahrs Scrub to surrounding areas through strategic future public transport corridors. Strategic routes from Park Ridge to Beenleigh, and from Beenleigh to Yarrabilba, pass through the plan area as indicated in Figure 43.

It is proposed that these routes are provided through the plan area as indicated in Figure 44. The proposed routes provide relatively direct connections through the plan area while ensuring most future residents are in proximity to the routes. Both routes converge on the local centre, at the corner of Menora Road and the new Urban Collector link to Bahrs Scrub Road. Both routes also pass the neighbourhood centre at the junction of Bahrs Scrub Road and Pranglely Road.

The final decision on the proposed routes will be determined by Translink, who would operate the bus services.

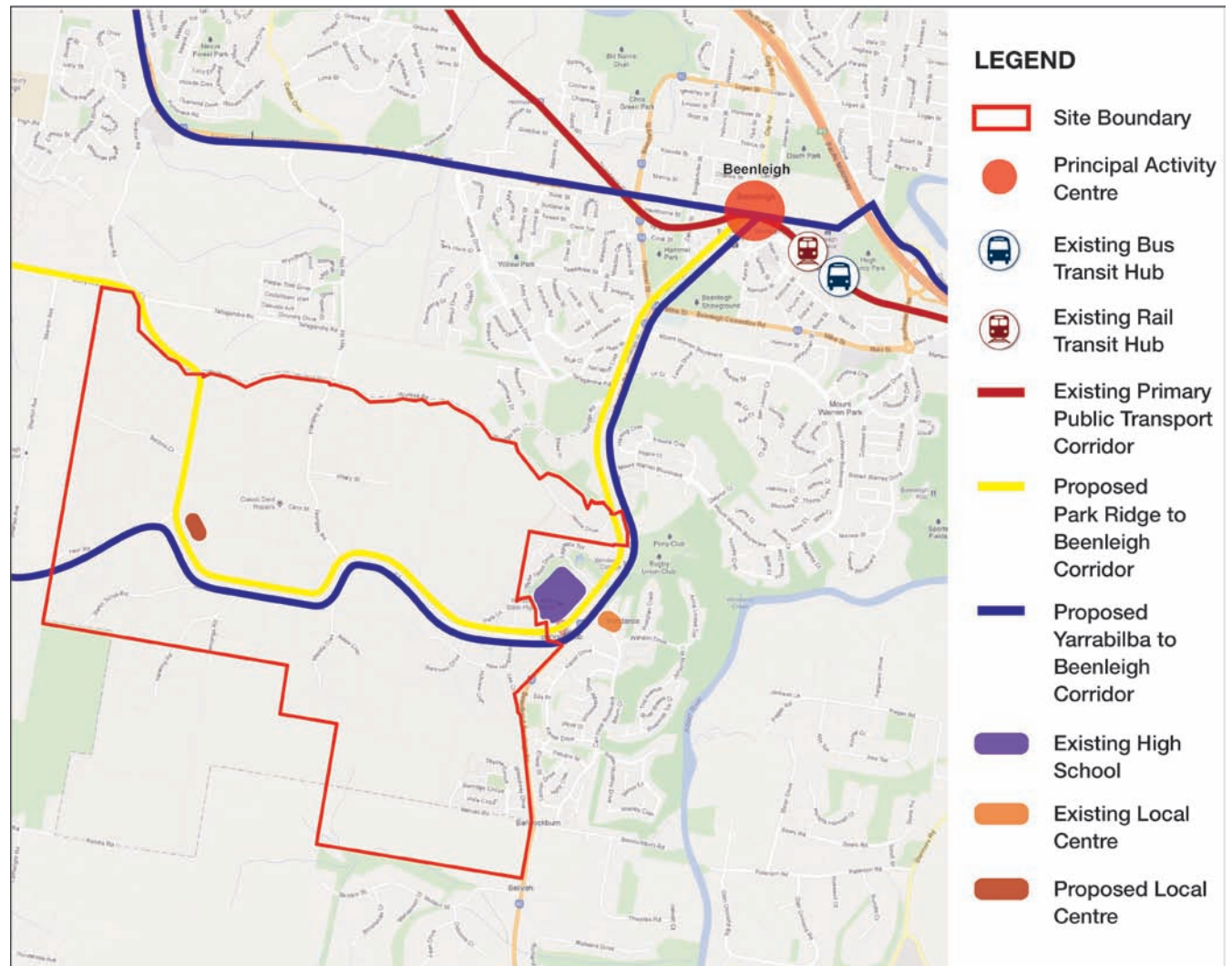


Figure 43 - Strategic Public Transport Corridors

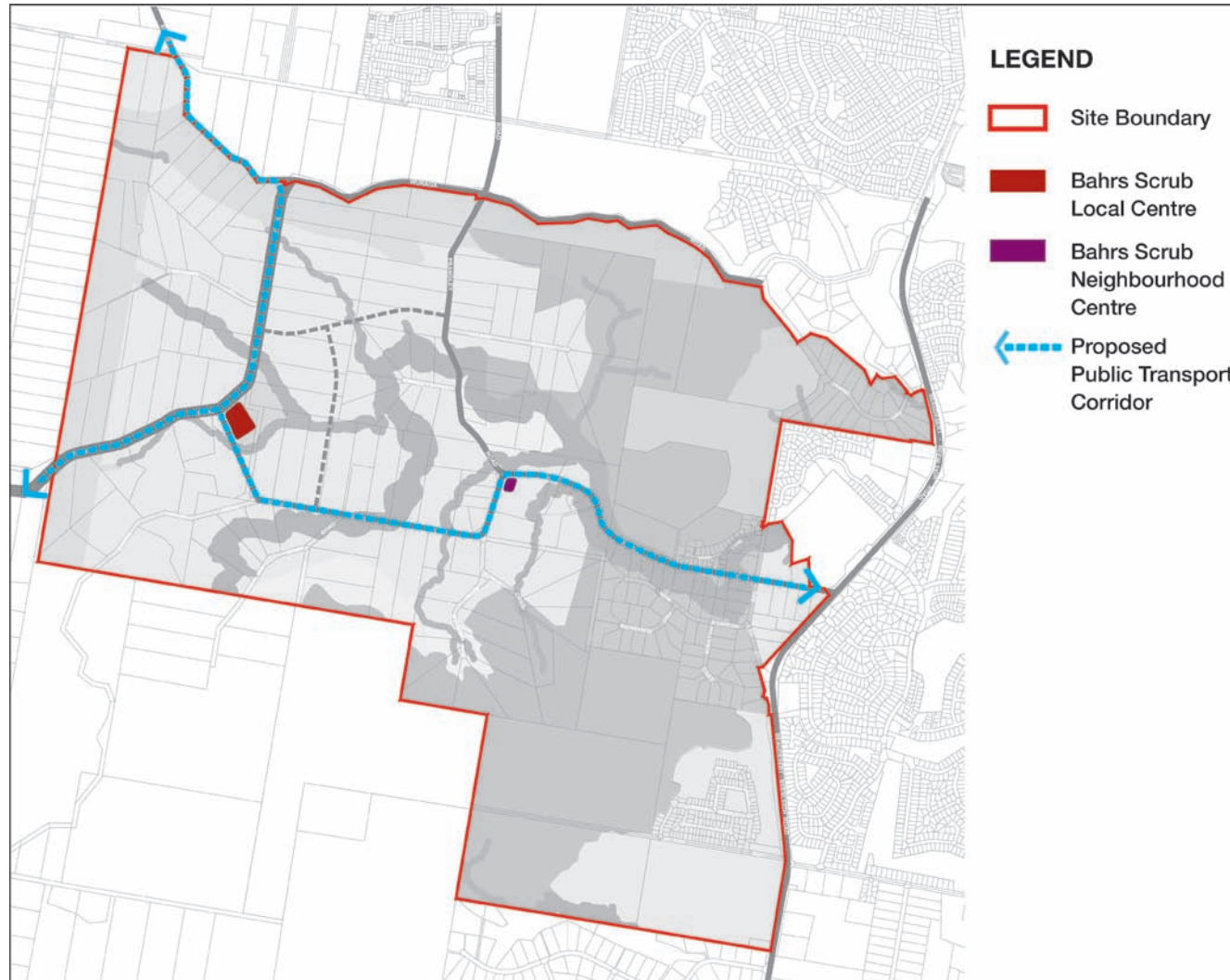


Figure 44 - Proposed Public Transport Routes



7.4.3 Walking and Cycling

Walking and cycling is to be encouraged, to the greatest extent practicable, throughout the plan area. The pedestrian and cycle networks should provide safe, convenient and easily identifiable connections to local destinations within and outside the plan area.

Development should be designed to facilitate walking and cycling, particularly to the local and neighbourhood centres, bus stops, and along areas with high amenity such as within the Waterway Management Area.

Walking and cycling paths should be provided within road reserves. Recreational walking and cycling paths should also be provided within parkland and along waterways and other areas of ecological and scenic value provided they do not detract from these values. In particular, a main recreational cycle path should be provided along Bahrs Scrub Road linking to the Buccan Conservation Park. A cycle link should be provided to connect the Bahrs Scrub Local Centre to Windaroo as indicated in Figure 45.

Walking and cycling links need to be designed in accordance with Crime Prevention Through Environmental Design principles. Pedestrian and cycle paths should be provided through the development application process and should provide quality links from a development site to its surroundings.

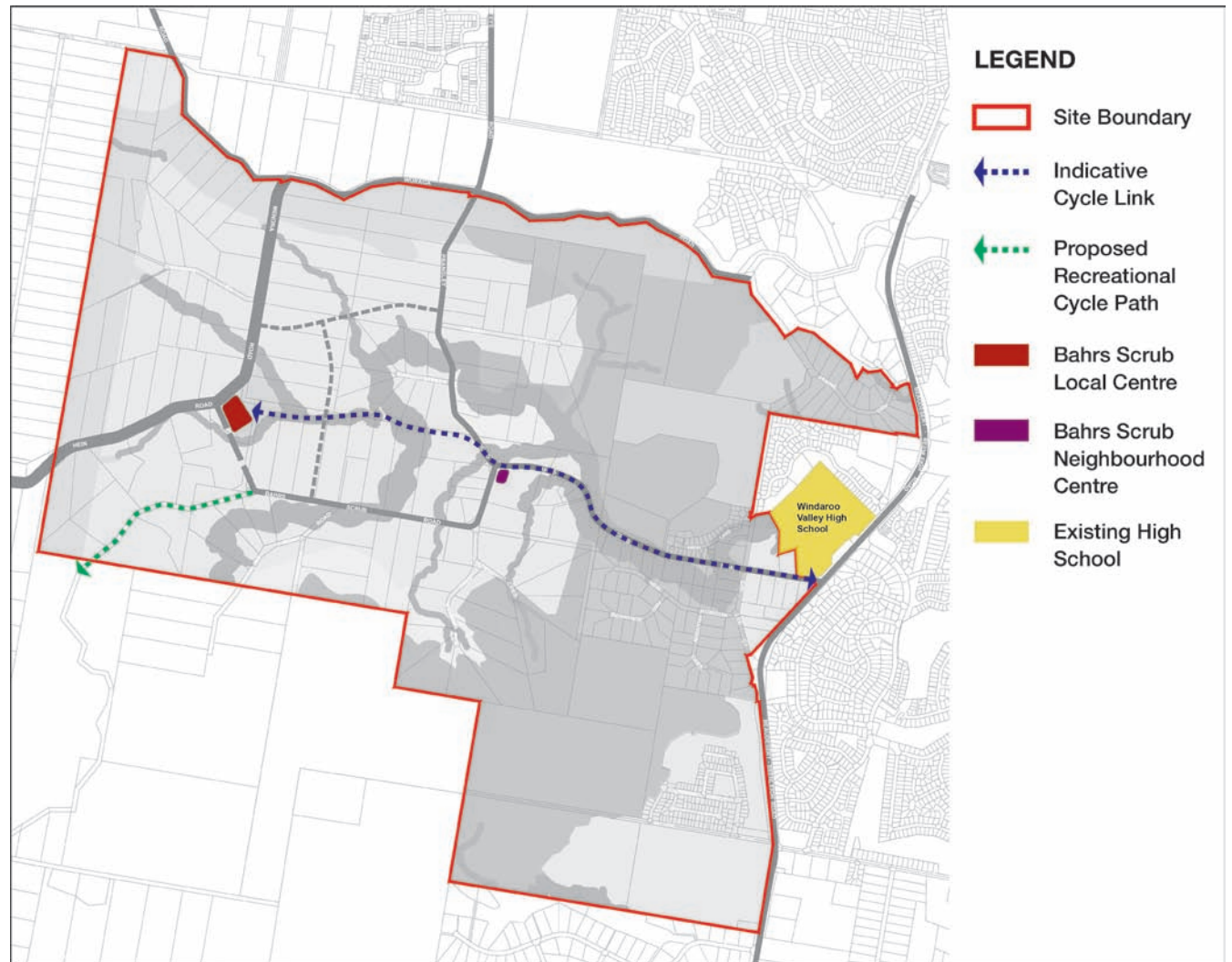


Figure 45 - Indicative Cycle Link



7.5 Infrastructure

A range of infrastructure will be provided in the plan area including:

- parks;
- community facilities
- stormwater;
- water supply;
- wastewater;
- electricity;

An Infrastructure and Services Assessment was prepared by Cardno. This assessment was complemented by a number of technical studies prepared by Allconnex and the Logan Water Alliance regarding a regional water supply network. Details of these studies are in [Appendix 5](#).





7.5.1 Parks

Bahrs Scrub is to have sufficient high quality parks to provide a range of active and passive recreational opportunities in the plan area.

Parks are to be provided in accordance with Council's desired standards of service. The standards provide criteria regarding the number, type, location, and design of parks, relevant to the planned population of an area.

The standards indicate that a range of new parks are to be located in the plan area including: three local parks; one civic plaza; and one potential district sports park, as indicated in Table 5.

Local parks are to be at least 1ha and should be distributed throughout the plan area so that all residents are within walking distance to a local park. They should provide local active recreation and play spaces and facilities. An example of a local park is provided in Figure 46.

Proposed Park	Number	Size
Local Park	3	1 ha
Civic Plaza	1	600m ²
District Sports Park	1	6-8 ha

Table 5 - Park Requirements

A civic plaza is to be provided as part of the local centre. It should be at least 600m² and would contain significant hardstand areas; it would be a place for people to meet and congregate in the centre. Restaurants and cafés could front the civic plaza to provide an active and vital area. It should also integrate with the proposed bus stops for the centre. An example of a civic plaza is provided in Figure 47.

A district sports park may also be provided within the plan area. It should be between 6ha and 8ha and comprise relatively flat land. The district sports park would serve a wider catchment than the plan area and provide open space sports facilities to serve district needs. It should be of sufficient size to accommodate a range of summer and winter sports throughout the year. An example of a district sports park is provided in Figure 48.

Parks may be provided as a part of a development application. For example, it is envisaged that as a part of the development of the local centre, the civic plaza will be provided. Further, applications for large scale residential development may include a local park. Development that does not provide parkland that meets Council's desired standards of service will need to provide a financial contribution to Council for parks. Council will use this money to buy land in the area for parkland as it becomes available. All parks are to meet the detailed location and design criteria in the Council's desired standards of service, including the relevant dimensions of parks and

requirements regarding the slope and flood immunity of land.



**Figure 46 - Example local recreation park
(Kookaburra Park, Slacks Creek)**



**Figure 47 - Example civic plaza
(Orion Shopping Centre, Springfield)**



**Figure 48 - Example district sport park
(Civic Centre Park, Logan Central)**



7.5.2 Community Infrastructure

Bahrs Scrub should have a local community facility to support urban development and population growth.

Council is currently working on a draft Community Infrastructure Strategy that will set the direction for provision of new community facilities into the future. Council's Strategy is generally in accordance with the South East Queensland Regional Plan 2005-2026 guidelines for community facilities called: Implementation Guideline No. 5 Social infrastructure planning. Council also has an endorsed Desired Standard of Service for the provision of community infrastructure. A Beenleigh and Bahrs Scrub Social Needs Assessment report has also been undertaken.

Implementation Guideline No. 5 and Council's Endorsed Desired Standard of Service for Community Infrastructure indicates that a local level community centre should be provided for a population of between 6,000 - 10,000 persons and the floor area should be between 600-800m² depending on the type of use for the facility, with a site area of between 2,000-5,000m². Accordingly a local community facility will be required within the Bahrs Scrub area. The community space will support the changing community needs and provide opportunities for community activities, service provision and community development. The Beenleigh and Bahrs Scrub Social Needs Assessment also recommends that a local community facility is provided in the plan area.

Implementation Guideline No. 5 identifies that community facilities should be located in or near activity centres with public transport access, and may be co-located with schools, child care centres, or other local facilities. Accordingly, the new community facility should be provided in or near the Bahrs Scrub local centre to ensure the facility is visible and highly accessible.





7.5.3 Stormwater

Stormwater needs to be managed in a way that protects people and property; and protects ecological values and water quality in the plan area.

Stormwater management needs to address two key issues: water quantity and water quality. Water quantity management involves managing the volume of water that is created from rainfall events in a way that protects people and property. Water quality management involves managing the pollutants that accumulate in stormwater as it moves over land, in a way that adequately protects ecological values.

A sub-catchment based stormwater infrastructure system is to be developed in Bahrs Scrub. A sub-catchment based system involves providing stormwater infrastructure to manage stormwater quantity and quality at the discharge point of a stormwater sub-catchment area. Development is to provide stormwater infrastructure in accordance with the design principles in Appendix 4.

No site based stormwater infrastructure systems are to be provided, unless they are deemed temporary and are capable of being connected to an appropriate sub-catchment based system within a 5 year timeframe. Council will not take ownership of temporary site based systems and these would need to be serviced and appropriately maintained by private land owners.



Figure 49 - Sub-catchment Based Stormwater System



7.5.4 Water Supply

Bahrs Scrub needs to have an adequate and cost effective water supply network to support urban development.

The areas that can be serviced by water supply are indicated in Figure 50. The Water Service Area can be provided with water supply now with minimal infrastructure upgrades.

The High Level Zone may be provided with water supply in the future. Significant infrastructure upgrades are required to allow water to be supplied to this area. Additional water pumps and an additional reservoir for the High Level Zone would be required before water can be provided to this area.

Council will not provide water infrastructure to the Non-Serviceable Area. This area is over 75m above sea level.

The areas above are still indicative. The precise boundaries of the water supply areas will be determined once further detailed water supply modelling and planning is undertaken, and can depend upon a range of detailed engineering considerations. The suitability of a site for water supply can be considered as a part of the development application process.

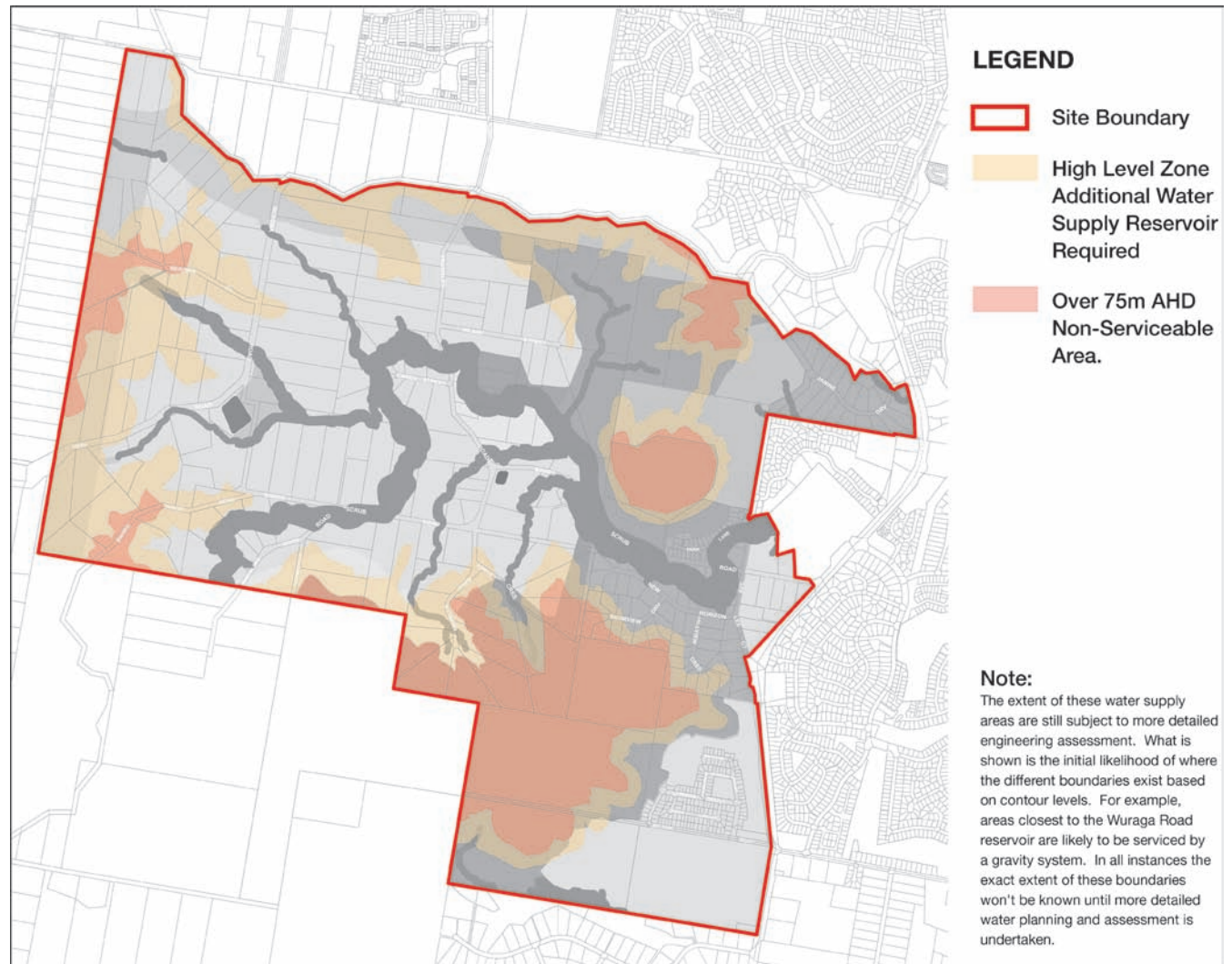


Figure 50 - Water Supply Plan



7.5.5 Wastewater

Bahrs Scrub needs to have an efficient and cost effective wastewater network to support urban development.

The whole plan area can be serviced by wastewater infrastructure. The relevant wastewater catchment areas are indicated in Figure 51.

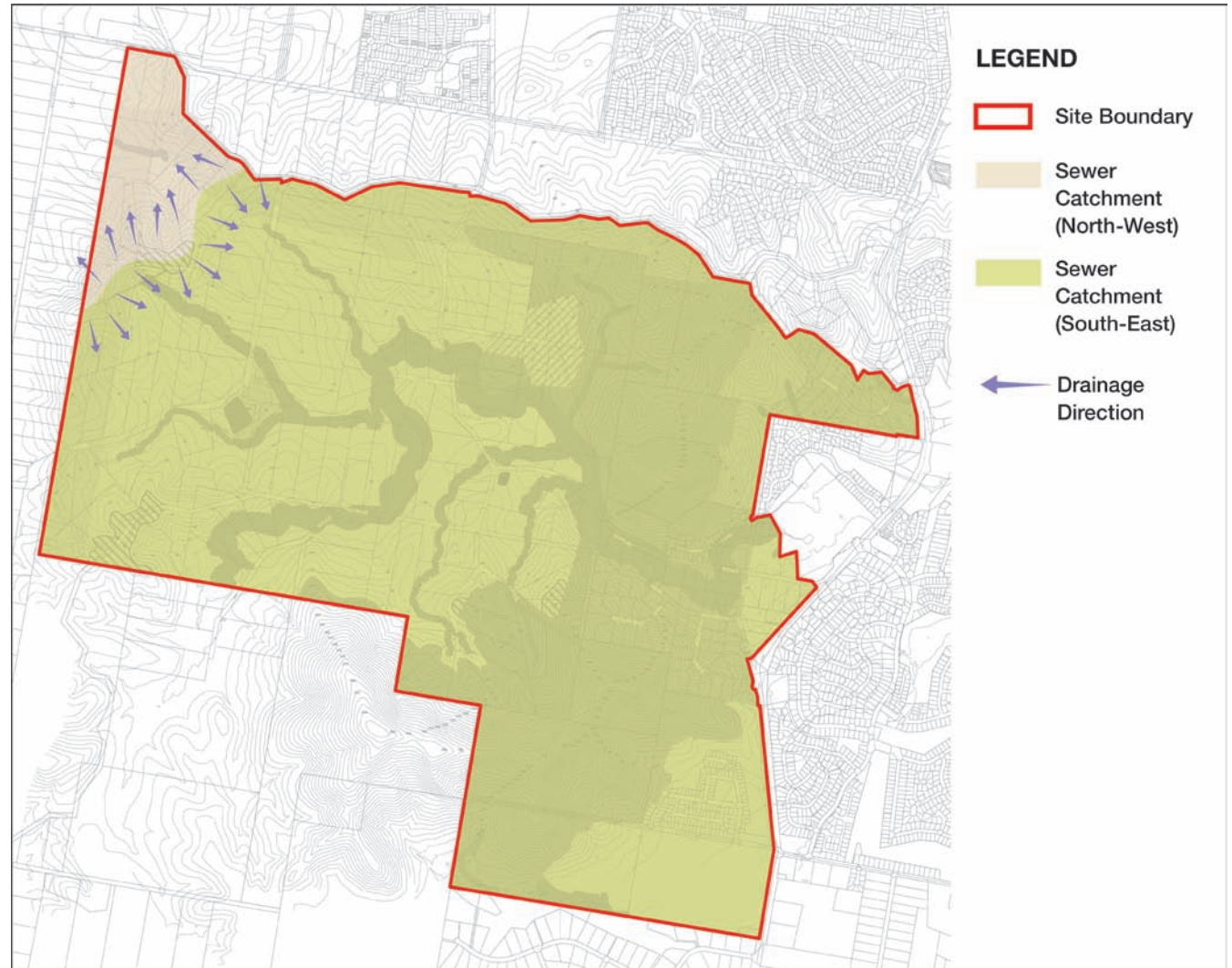


Figure 51 - Wastewater Catchment Areas



7.5.6 Electricity

Bahrs Scrub needs to have an adequate electricity network and needs to accommodate the regional infrastructure that currently transverses the plan area to support urban development in the area and in surrounding areas.

An existing 33kV overhead line and easement transverse the plan area. Maintaining this line and easement is likely to constrain the development of the plan area. It is proposed that the line is realigned to correspond with the proposed new road network as indicated in [Figure 42](#).

Two new electricity substations may also need to be provided. Each new substation would require approximately 4,000m² of site area. Indicative locations for these substations are in the Bahrs Scrub Local Development Area Master Planning: Infrastructure and Services Assessment prepared by Cardno 31 May 2012. Refer to [Appendix 5](#) for more detail.

Energex will have the final decision for these matters.





8. Next Steps

The endorsed Bahrs Scrub Local Development Area Plan is Council's policy for the development of the area. The next step in the planning process is to translate the plan into planning scheme provisions for incorporation into the planning scheme. This is a statutory process that must be undertaken in accordance with the *Sustainable Planning Act 2009 (SPA)*.

SPA stipulates that the new planning scheme must be reviewed by the State Government and undergo further community consultation before it can be adopted. The zonings and development controls over the properties within the plan area are to change to reflect the endorsed Bahrs Scrub Local Development Area Plan. The Priority Infrastructure Plan may also be amended to reflect planning infrastructure for the area. For further information on the Council's planning scheme, please contact Council on (07) 3412 3412.



Appendix 1 - Net Developable Area Plan (NDAP)

The Net Developable Area Plan (NDAP) was endorsed in October 2011. It shows the areas which are to be conserved for environmental purposes, the areas which need to be managed to protect environmental values, and the areas which may be suitable for urban development.

The NDAP informed the detailed land use and infrastructure planning in the Bahrs Scrub Local Development Area Plan. The plan area includes areas with high ecological and scenic amenity values, and areas subject to flooding and bushfire hazards. These are all constraints to urban development. Council analysed these development constraints to formulate the NDAP.

The technical studies underpinning the NDAP are:

- Ecological Assessment;
- Slope Analysis and Geotechnical Assessment;
- Contaminated land assessment;
- Hydraulic Assessment;
- Cultural Heritage Study;
- Landscape and Visual Amenity Assessment; and
- Bushfire Report.

The areas identified in the NDAP are shown in Figure A1.1.

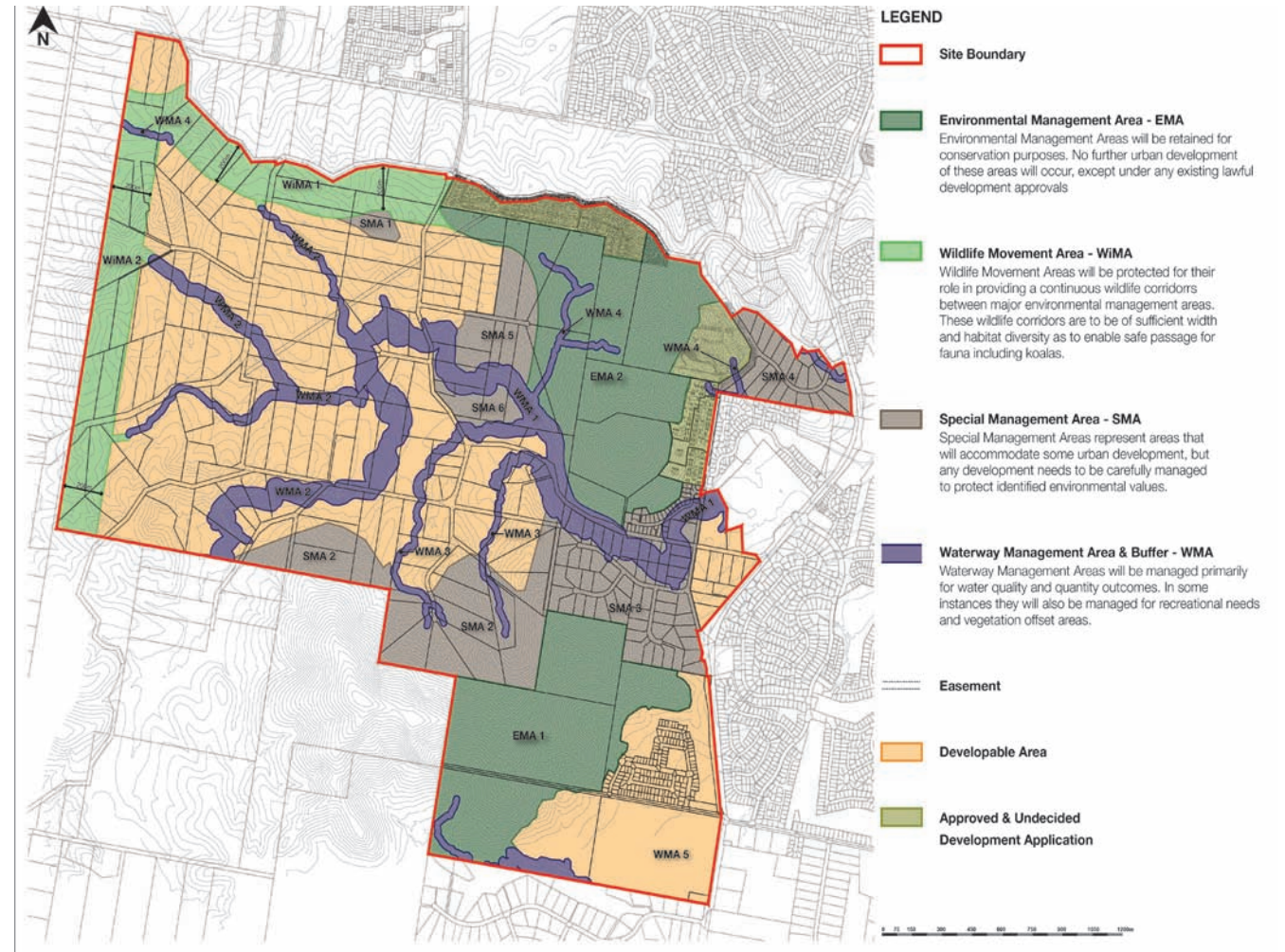


Figure A1.1 - Net Developable Area Plan (NDAP)



A1.1 Developable Area

The developable area represents the area of land that may be developed for urban purposes. Some of this land has environmental values which will need to be assessed in any future development applications. These values may reduce the development potential of those parcels of land or require vegetation offsets. Infrastructure provision and servicing requirements may also reduce the area of land available for urban development.

A1.2 Environmental Management Areas

The Environmental Management Areas (EMAs) have significant environmental values and will be protected from further development. These areas include large tracts of intact vegetation communities and areas with flora and fauna protected under state and federal legislation. No further development will occur here, but existing use rights will remain. The EMAs are discussed further in [Section 7.2.1](#).

The management intent for the EMAs is to:

- Prevent further urban development in these areas;
- Protect and enhance existing environmental values; and
- Ensure there is an appropriate transition and buffer between the EMAs and any urban development.

A1.3 Wildlife Movement Areas

The Wildlife Movement Areas (WiMAs) provide corridors and habitat for wildlife movement, linking core environmental areas within the plan area and bushland habitat outside Bahrs Scrub. The WiMAs are further discussed in [Section 7.2.2](#).

The management intent for the WiMAs is to:

- Protect and enhance core environmental values;
- Provide a major corridor linkage for koala and wildlife movement between Clarkes Hill through to Buccan Conservation Park and the Logan River;
- Preserve regionally and locally significant scenic amenity values; and
- Provide an appropriate transition and buffer between the WiMAs and the developable area.





A1.4 Special Management Areas

The Special Management Areas (SMAs) generally have specific environmental or scenic amenity values. Development must be carefully managed to ensure these values are protected and enhanced. Land use proposals for these areas are outlined in [Sections 7.2.3](#)

A1.4.1 SMA 1 and SMA 2

The management intent for SMA 1 and SMA 2 is to allow for some urban residential development that:

- Maintains or enhances existing scenic amenity values;
- Maintains and enhances existing environmental values; and
- Mitigates bushfire hazards.

A1.4.2 SMA 3 and SMA 4

The management intent for SMA 3 and SMA 4 is to:

- Maintain the existing environmental values; and
- Prevent any further re-development or urban intensification.

A1.4.3 SMA 5 and SMA 6

The management intent for SMA 5 and SMA 6 is to:

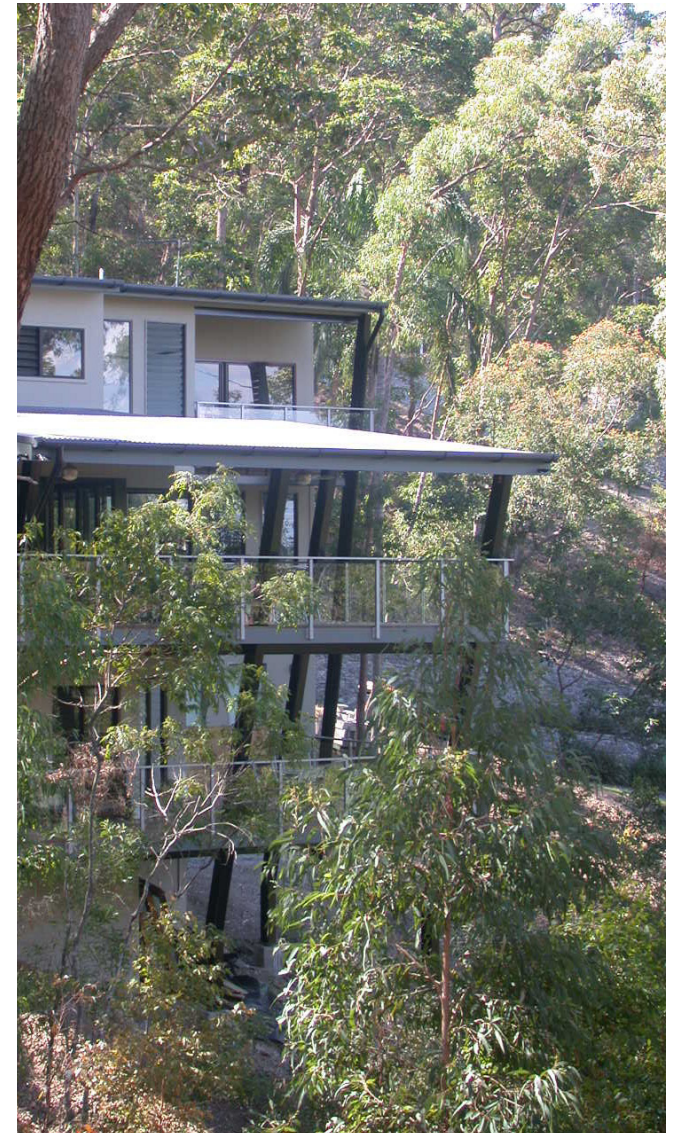
- Allow for some urban residential development while protecting high ecological value areas, including any currently unidentified protected flora species; and
- Ensure environmental values are assessed prior to any future development.

A1.5 Waterway Management Areas

Waterway Management Areas (WMAs) are intended to protect and enhance waterway environmental values including water quality, aquatic and riparian habitats, and the connection between habitats and water based recreational opportunities such as swimming and fishing. The WMAs are discussed further in [Section 7.2.4](#).

The management intent for the WMAs is to:

- Protect and enhance environmental values of the waterways;
- Protect or reinstate the natural hydrological processes of the waterways;
- Retain & rehabilitate the creeks in a natural state;
- Stabilise the bed and banks of the existing creeks;
- Protect and enhance local wildlife movement corridors;
- Manage the impacts of development on water quantity and quality; and
- Ensure that downstream properties do not suffer a net worsening from future development.





Appendix 2 - Bahrs Scrub Environmental Offsets Policy

The following Bahrs Scrub Environmental Offsets Policy applies to all development in the plan area that involves clearing vegetation.

A2.1 Environmental offset principles

- 1 To achieve the purpose and overall outcomes of the Bahrs Scrub Local Development Area Plan, development should protect and appropriately manage its impacts on existing environmental values, resulting in a net gain in biodiversity and ecosystem values through offsetting unavoidable clearing.
- 2 The following principles apply to offsets:
 - a. environmental offset does not replace or undermine existing standards or regulatory requirements, or be used to allow development in areas otherwise prohibited through legislation or policy;
 - b. environmental impact is first to be avoided, then minimised, before considering the use of offsets for any remaining impact;
 - c. an environmental offset achieves an equivalent or better environmental outcome.
 - d. offsets should be provided:
 - i. within Logan Local Government Area; and;
 - ii. in strategically important locations such as in the Wildlife Movement Areas and Waterway Management Areas identified in the Bahrs Scrub Local Development Area Plan; or
 - iii. in strategically important locations such as adjacent to or within Environmental

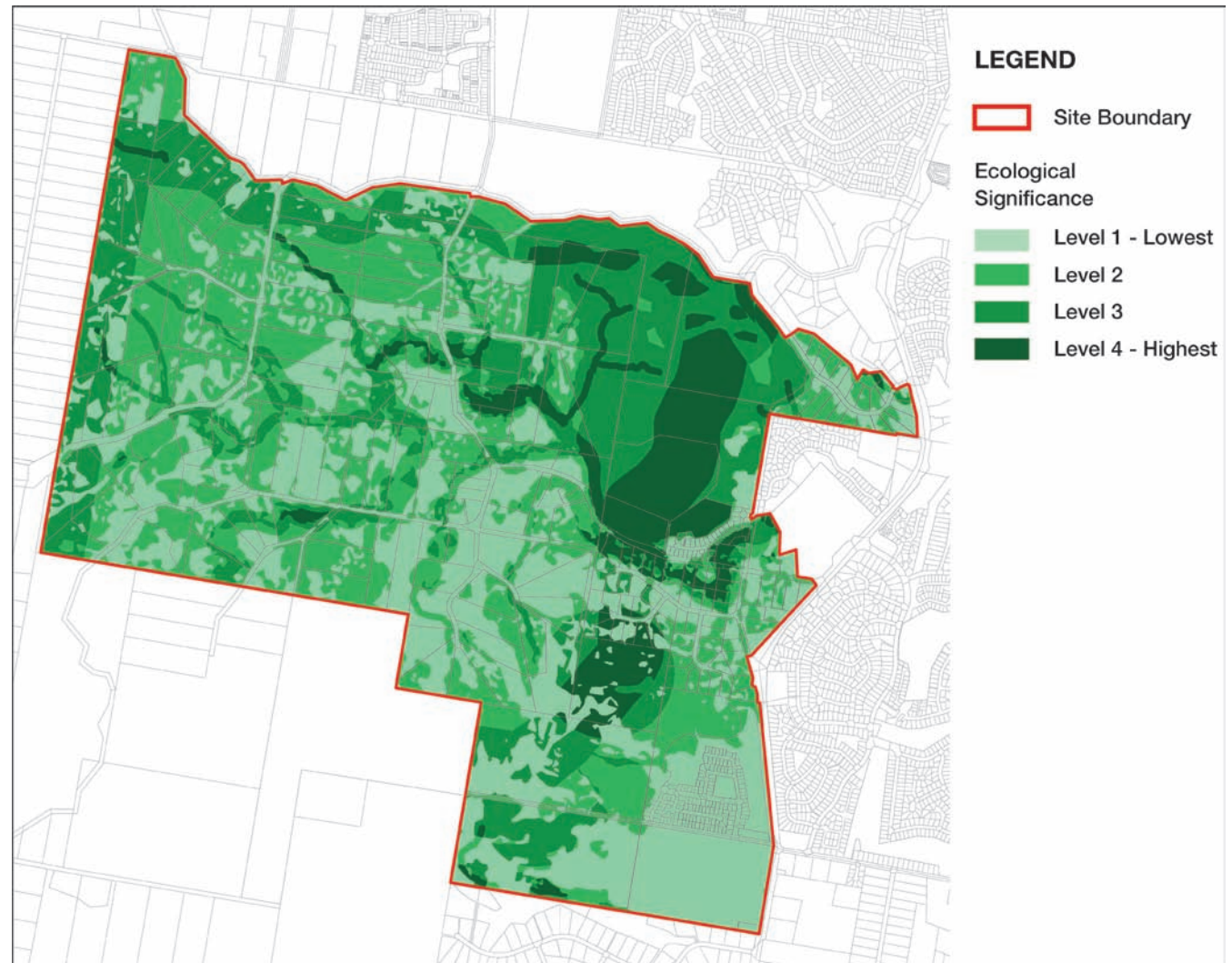


Figure A2.1 - Ecological Significance Map



- Management Areas, conservation areas or corridors identified by Logan City Council;
- iv. bordering a conservation park.
- e. offset provisions must minimise the time lag between the impact and delivery of the offset.
- f. offset sites must become secure conservation land.

A2.2 Environmental offset delivery options

- 1 An environmental offset is provided by:
 - a. an infrastructure agreement under the Sustainable Planning Act 2009; or
 - b. conditions of a development permit under the relevant planning scheme.

A2.3 Types of environmental offset

- 1 There are two types of environmental offsets:
 - a. an infrastructure contribution consisting of:
 - i. a financial contribution; or
 - ii. a land contribution;
 - b. a restoration offset on the same premises from which the vegetation is cleared.

A2.4 Restoration offsets

- 1 A restoration offset is used for an offset occurring on private land for private purposes. Where native vegetation has been cleared it is offset on the same premises to meet the offset requirement.
- 2 Restoration offsets apply where:
 - a. the unavoidable impacts of development are offset

- to another area on the same lot;
- b. the restoration offset will provide an environmental gain in biodiversity and ecosystem; values, such as rehabilitating degraded areas, wildlife habitats, connectivity and corridor; and values;
- c. an offset site on the same lot is large enough to accommodate the offset required.

- 3 The restoration offset is calculated by the local government using the methodology specified in section A2.7.1 of this policy.

A2.5 Infrastructure contribution offsets

- 1 Where an environmental offset cannot be achieved through a restoration offset, an environmental offset can still be achieved through an infrastructure contribution.
- 2 An environmental offset being an infrastructure contribution applies where:
 - a. the unavoidable impacts of development are unable to be offset on the same lot; or
 - b. the offset area on the same premises will not provide an environmental gain such as the rehabilitation of degraded areas, wildlife habitat, connectivity or corridor values;
 - c. an infrastructure agreement exists under the Sustainable Planning Act 2009 between the local government and the applicant for the proposed development.
- 3 An environmental offset being an infrastructure

- contribution consisting of:
 - a. a financial contribution being funds used by the local government to purchase, revegetate and maintain environmental offset land; or
 - b. a land contribution being the provision of the environmental offset land to the local government, as part of an infrastructure agreement, where the offset enhances and contributes to conservation areas or corridors identified by the local government, including the Wildlife Movement Area, Waterway Management Area, or Environmental Management Area identified in the Bahrs Scrub Local Development Area Plan.

- 4 The offset being an infrastructure contribution is calculated using the methodology specified in section A2.7.2 or A2.7.3 of this policy.

A2.5.1 Offset being a financial contribution

- 1 An environmental offset in the form of a financial contribution must be paid to the local government prior to operational works approval.
- 2 The local government will purchase and maintain offset land as an infrastructure contribution via a financial contribution.

A2.5.2 Offset being a land contribution

- 1 The location of land contribution offset sites must:
 - a. enhance and contribute to conservation areas or corridors identified by the local government, including the Wildlife Movement Area, Waterway Management Area, and Environmental Management Area; and



- b. contain no trees, or native trees must be less than 4m in height, and/or have a density of less than one native tree per 10m²; and
 - c. remnant vegetation on the site is not counted towards an offset. Remnant vegetation is identified by the Vegetation Management Act 1999 as vegetation where the dominant canopy has greater than 70% of the height and greater than 50% of the cover relative to the undisturbed height and cover of that stratum and dominated by species characteristic of the vegetation's undisturbed canopy; and
 - d. a site containing remnant vegetation can be considered for a land contribution if the remainder of the site meets the suitability requirements for an offset.
- 2 A five-year management period of the site must achieve the following objectives and outcomes of revegetation in order for the local government to accept it as an offset:
- a. plant survival of at least 80%; and
 - b. native tree (canopy and mid-storey species) density \geq one tree per 10m²; and
 - c. evidence of recruitment on site; and
 - d. no class 1 or 2 weeds present on site, and less than 5% weed cover across the site for other weed species; and
 - e. species diversity representative of regional ecosystem of the site.
- 3 The applicant is responsible for all:
- a. administrative costs including but not limited to costs associated with reconfiguration, surveying, transfer of ownership to the local government and protection of the offset site;

- b. rehabilitation costs that include, but are not limited to, revegetation, weed and pest management and monitoring for a period of five years.
- c. An environmental offset in the form of a land contribution, required as a condition of the development approval is transferred to the local government as a freehold lot and a preservation covenant will be applied under section 97A (3) (b) of the Land Title Act 1994.

A2.6 Linkages with carbon offsets/sinks

- 1 Where an offset is provided as a condition of a development approval, the offset site is not a formal carbon offset/sink.

Editor's note—
The Australian Government's National Carbon Offset Standard contains further information about the application of a carbon offset/sink.

A2.7 Calculation of offsets

- 1 There will be two methods for calculating offsets:
 - a. for Wildlife Movement Areas, Waterways, Remnant Vegetation, and Vine Forest as identified by the local government, and for all other areas of native vegetation where the density of native trees is equal to or greater than one tree per 10m², the offset requirement is calculated on a per square metre basis of native vegetation cleared;
 - b. for scattered vegetation where the density of trees is less than one native tree per 10m², and not within Wildlife Movement Areas, Waterways, Remnant Vegetation, or Vine Forest as identified by the local government, the offset requirement is calculated on the

number of native trees and native habitat trees to be cleared.

- 2 A vegetation clearing plan must be provided to the local government in order to calculate the offset requirement.

Native vegetation: means a tree, a bush, a shrub, a grass or other vascular plant and includes any part of a tree, a bush, a shrub, a grass or other vascular plant which is indigenous to Australia.

Native tree: means a tree which is: indigenous to Australia; and greater than four metres in height; or with a trunk circumference of 31.5 cm or greater measured at 1.3 metres from the ground.

Native habitat tree: means a tree which is: indigenous to Australia; and has a trunk circumference of 220 cm or more measured at 1.3 metres above ground level; or contains a hollow.

A2.7.1 Calculation for a restoration offset

- 1 Restoration offsets will be calculated as follows:
 - a. two square metres of native vegetation are revegetated for every square metre cleared in all other areas; or
 - b. two trees of the same species are replanted for every native tree cleared for scattered vegetation; and
 - c. four trees of the same species are to be replanted for every native habitat tree cleared in scattered



vegetation; or

d. an additional twenty square metres of native vegetation are revegetated for every native habitat removed in all other areas.

2 Restoration offsets are maintained until the native trees or native habitat trees or native vegetation is self-sustaining.

A2.7.2 Calculation for a financial contribution offset

1 An infrastructure contribution being a financial contribution is calculated as follows:

$$ICF = (AC + RC + LC) \times SO$$

Editor's note—

The equation is calculated as follows:

- (a) ICF is the infrastructure contribution being a financial contribution;
- (b) AC is the administrative cost (dollars per hectare) that is the cost associated with acquisition and protection of the offset;
- (c) RC is the rehabilitation cost (dollars per hectare) that includes revegetation, weed and pest management and monitoring (dollars per hectare);
- (d) LC is the land cost that is the amount an applicant has to pay to purchase one hectare of offset site from the local government's offset land. This is determined by the price the local government paid for the land plus consumer price index.
- (e) SO is the size of offset land (in hectares) that is required to be offset.

2 The size of the offset land required is determined either:

- a. by the number of native trees and native habitat trees cleared where:
 - i. a native tree is offset at the rate of 10m² per tree;
 - ii. a native habitat tree is offset at the rate of 20m² per tree; or
- b. by the size of the clearing site and the ecological indexes of the offset site and clearing site as follows:
SO= SC x EIC/EIS

Editor's note—

The equation is calculated as follows:

- (a) SO is the size of the offset site in hectare.
- (b) EIS is the ecological index of the offset site calculated as in section A2.8.
- (c) SC is the size of the clearing site in hectares,
- (d) EIC is the ecological index of the clearing site calculated as in section A2.8

A2.7.3 Calculation for a land contribution offset

- 1 Where the applicant provides a land contribution being offset land rather than a financial contribution, the applicant is responsible for providing suitable offset land which in size is equal to the greater of:
 - a. the size of the clearing site; or
 - b. an offset site calculated on a per square metre basis as in section A2.7.2.

A2.8 Ecological index

- 1 The ecological index of a premise, clearing site or offset site is the sum of its ecological values expressed per unit area (hectare). The local government will calculate the ecological index and provide an ecological index certificate.
- 2 Calculation of the ecological index of clearing sites or offset sites relies on the ecological values of the land as determined by the Ecological Significance Map for Bahrs Scrub (Figure A2.1). This figure identifies spatially mapped areas of land called polygons containing similar ecological values.
- 3 (The ecological index of a clearing site or offset site is calculated as follows:

$$EI = (S \times V)P1/St + (S \times V)P2/St + \dots + (S \times V)Pn/St$$

Editor's note—

The equation is calculated as follows:

- (a) EI is the ecological index of the clearing site or offset site;
- (b) S is the size of the polygons P1 to Pn within the clearing site or offset site;
- (c) V is the ecological values of the polygons P1 to Pn within the clearing site or offset site as identified in Figure 1: Ecological Significance Map;
- (d) St is the total size in hectares of the clearing site or offset site.



Appendix 3 - Centre Design and Place Making

A3.1 Design Principles for Local Centre

- 1 Development orients, fronts and activates the new main street with entrances and windows along this frontage. This is an environment with street tree planting and high quality public realm and landscaping.
- 2 Development also orients towards the new connection road as the main vehicular connection with the rest of the development area.
- 3 The new connection road provides a main street environment between the two signalised intersections. A small amount of kerb side car parking is provided on-street along this street to service the centre and passing vehicles.
- 4 Pedestrian movement is focused along the streets with a high quality and clear connection to the waterway corridor to the north. Crossing points are limited to the signalised intersections.
- 5 Bus stops are included along the new connection road in close proximity to the plaza and signalised intersection.
- 6 Public plazas form part of the Local Centre development. These are associated with main pedestrian entrance to the centre from the Menora/Hein Road intersection and located along the main street. These plazas provide space for the community to gather and may include cafes etc.
- 7 Access to the waterway corridor is enhanced and celebrated with clear physical and visual links.
- 8 A new main street is located parallel to the new connection road. The street is pedestrian focussed with limited vehicle movements and car parking to support after hours trading and surveillance.
- 9 The supermarket is set back from the new main street and adjoined by retail tenancies. Entry to the supermarket is from a public plaza and is clear and legible. The loading/service zone is located to reduce visual and noise impacts.
- 10 The primary car park area is located in an undercroft/basement under the supermarket. Additional at-grade car parking is located to the east of the centre. Car parks are treed and additional landscape screening is provided to mitigate impacts on the surrounding land uses. Entries to the car park are clear and legible.
- 11 Landscaped retaining is used in the centre to create sensible tiers for development and car parking. When determining the final levels, the pedestrian connections and public realm impacts are the key considerations.
- 12 The character of Bahrs Scrub is reflected in the architecture of the buildings within the Local Centre.
- 13 The interface with the surrounding residential development is to be carefully considered. There is potential for higher density residential to front the waterway corridor, adjoining the centre, and taking advantage of the amenity of this feature.
- 14 Pedestrian connections from the adjacent development are provided on-street where possible.
- 15 Local Centre development is in accordance with the concept layout plan in Figure A3.1



- 1 The centre is located on the movement economy at the intersection of Hein/Menora Road and the new connection road. Development steps down the slope. A plaza space (possibly covered) and landmark element act as a focal point for the centre and link the signalised intersection to the main street and supermarket.
- 2 The one-way pedestrian focused main street runs parallel to the new connection road. Double sided retail, community and office uses front and activate this space. On-street parking supports after hours retailing. The waterway corridor can be seen at the end of the new main street.
- 3 The supermarket is sited with the primary entry at the northern corner onto the plaza. Undercroft/basement car parking is located underneath, accessed from the service lane.
- 4 New signalised intersection with pedestrian crossing located 120m from the Menora/Hein Road intersection. This provides all turns access to the centre.
- 5 Additional left in only access is from Menora Road. This links to the one-way main street and at-grade car parking areas.
- 6 Tiered at-grade car parking areas are located at the east of the centre with landscaped retaining between to deal with slope
- 7 Additional car parking is located closer to the supermarket. This shared car park space can be closed and used for a market square on weekends
- 8 Community uses or a restaurant (possibly 2 storey) incorporated into the buildings at the intersection of Hein/Menora Road fronting onto the plaza space.
- 9 Additional community uses could also be located against the waterway corridor with views over and car parking tucked underneath.
- 10 Physical and visual links to the waterway corridor are maintained. A pedestrian path/ cycleway is located against the waterway corridor.
- 11 Bus stops are located on the new connection road within close proximity of the community facilities and signalised intersection with pedestrian crossing.
- 12 Future development parcels suitable for commercial or higher density residential located against Menora Road and overlooking the waterway corridor
- 13 A street connection against the waterway corridor provides access to future residential development to the east
- 14 A community park anchored by a landmark structure on the corner of Menora/Hein Road and the new connection road. There is no vehicle access to this point due to the proximity of the intersection



LOCAL CENTRE — CONCEPTUAL LAYOUT PLAN

Figure A3.1 - Local Centre Concept Plan



A3.2 Design Principles for Neighbourhood Centre

- 1 Development orients, fronts and activates Bahrs Scrub Road with entrances and windows along this frontage.
- 2 Bahrs Scrub Road provides a main street environment with street tree planting and high quality public realm and landscaping.
- 3 A portion of car parking is provided on-street along Bahrs Scrub Road to service the centre and passing vehicles.
- 4 Pedestrian movement is focused along the streets with a high quality and clear connection to the waterway corridor to the north.
- 5 Bus stops are included along Bahrs Scrub Road in close proximity to the plaza and pedestrian crossing.
- 6 A public plaza forms part of the Neighbourhood Centre development. This is associated with the entrance to the supermarket and provides space for the community to gather. It may include cafes etc.
- 7 Access to the waterway corridor is enhanced and celebrated with the inclusion of a civic space at this location. A safe, connection from the public plaza across Bahrs Scrub Road is provided.
- 8 The supermarket is set back from the street and located behind by retail tenancies. The loading / service zone is located to reduce visual and noise impacts. The entry to the supermarket is clear and legible.
- 9 At-grade car parking is located at the rear of the centre, hidden by other development. The car park is treed and additional landscape screening is provided to deal with the slope and mitigate impacts on the surrounding land uses.
- 10 Entries to the car park are provided from both street frontages.
- 11 The rural character of Bahrs Scrub is reflected in the architecture of the buildings within the Neighbourhood Centre.
- 12 The interface with the existing large lot residential is to be carefully considered and may have a more residential character.
- 13 Pedestrian connections from the adjacent development are provided on-street where possible.
- 14 Existing vegetation on-site is retained where possible.
- 15 Neighbourhood Centre development is in accordance with the concept layout plan in Figure A3.2



NEIGHBOURHOOD CENTRE — CONCEPTUAL LAYOUT PLAN

Figure A3.2 - Neighbourhood Centre Concept Plan



Appendix 4 - Stormwater Infrastructure Design Principles

Flood management design objective	
Criterion	Design Objective
Preserve the peak flow behaviour downstream of the site to ensure conveyance and safety is maintained	Limit the post development peak to 2 to 100 average recurrence interval (ARI) event discharges at the boundary of the site and downstream to pre-development peak discharges.
Waterway stability design objective	
Criterion	Design Objective
To reduce the impacts of urban development on channel bed and bank erosion by limiting changes in flow rate and flow duration within receiving waters.	Limit the post development peak 1 year average recurrence interval (ARI) event discharges within the receiving waters to pre-development peak one year ARI event discharges.
Stormwater quality objectives	
Score	Discharge Criteria (% reduction in mean annual load)
Total suspended solids (TSS)	80%
Total phosphorous (TP)	60%
Total nitrogen (TN)	45%
Gross Pollutants (GP)	90%
Waterway buffer requirements	
Criterion	Design Objective
Preserve and rehabilitate all waterways.	<p>Apply the waterways buffer requirements as outlined in the Bahrs Scrub Local Development Area Plan. This defines waterways buffers as being the following:</p> <p>Major waterways (stream order 3) are defined by:</p> <ul style="list-style-type: none"> • Minimum of 30m either side of the top of bank; or • Q100 level, whichever is greater. <p>Minor waterways (stream order 1&2) are defined by:</p> <ul style="list-style-type: none"> • Minimum of 15m either side of the waterway centreline where the top of bank can not be clearly defined; • Minimum of 10m either side of the top of bank where it can be clearly defined; or • Q100 level, whichever is greater.



<p>The waterway buffer areas are primarily managed to protect and enhance environmental values, including habitat, connectivity and water quality.</p>	<p>Excepted where provided for below - degraded areas within the waterway buffer area are to be rehabilitated.</p> <p>Where a stormwater management facility is proposed within the waterway buffer area then:</p> <ul style="list-style-type: none"> • Any such facility must be located within an existing degraded or cleared area. • No existing trees are to be removed to accommodate the facility. • Only half the buffer width can be utilised for stormwater treatment including batters and hydraulic structures except in locations where broad Q100 flood plains exist or treatment elements are proposed within existing on line dam structures. • Any areas requiring scheduled maintenance such as sediment fore bays must remain outside buffer areas. • No walls or significant above ground structures may be built within the buffer area. • 1 in 4 or flatter batters are vegetated with appropriate local species to complement the buffer and improve overall biodiversity. <p>Where a recreation facility is proposed within the waterway buffer area then it should be located within an existing cleared or degraded area.</p>
<p>Fish passage</p>	
<p>Criterion</p>	<p>Design Objective</p>
<p>Improve the movement of fish through the permanent ponded zones of the Bahrs Scrub waterways</p>	<p>Reconstruct existing culverts and structures in the permanently ponded zones of the waterways to support fish movement.</p> <p>Where possible avoid stormwater management structures in the permanently ponded waterways. Where structures (flood bunds and hydraulic controls) are located within permanently ponded waterway-design them to allow fish passage.</p> <p>Ensure all new waterway crossings are designed and constructed to ensure fish passage.</p>



Dams	
Criterion	Design Objective
Restore connectivity along waterways.	<p>All in-line dams are to be decommissioned and upstream waterways restored. Some existing in-line dams can be retained, subject to agreement with Council, where their banks are highly stable, heavily vegetated and the waterway is highly ephemeral. Where this is the case then:</p> <ul style="list-style-type: none"> • A stormwater pipe will need to be constructed at the approximate invert of the channel in the base of the dam. • The pipe will need to be of sufficient size to pass a defined storm event (i.e. 10 year ARI) and specifically designed for this site.



Appendix 5 - Supporting Documents

The Bahrs Scrub Local Development Area Plan is supported by the following documents:

- Bahrs Scrub LDA: Slope Analysis and Geotechnical Assessment;
- Bahrs Scrub Local Development Area: Contaminated Land Assessment;
- Bahrs Scrub Local Development Area: Hydraulic Assessment;
- Bahrs Scrub: Cultural Heritage Study;
- Bahrs Scrub Local Development Area Plan: Landscape and Visual Amenity Assessment;
- Bahrs Scrub: Ecological Assessment Technical Report;
- Bahrs Scrub: Technical Report Bushfire;
- Beenleigh and bahrs Scrub Social Needs Assessment
- Bahrs Scrub Transport Assessment;
- Bahrs Scrub Transport Assessment: Supportive Traffic Analysis;
- Bahrs Scrub Local Development Area Master Planning: Infrastructure and Services Assessment;
- Bahrs Scrub LDA Economic Study;
- Bahrs Scrub LDA Housing Needs Analysis;
- Bahrs Scrub Draft Planning Study;
- Bahrs Scrub Local Development Plan: Centres Design and Place Making Urban Design Report
- Bahrs Scrub Local Development Area Plan: Promoting Positive Social and Community Outcomes Paper

