

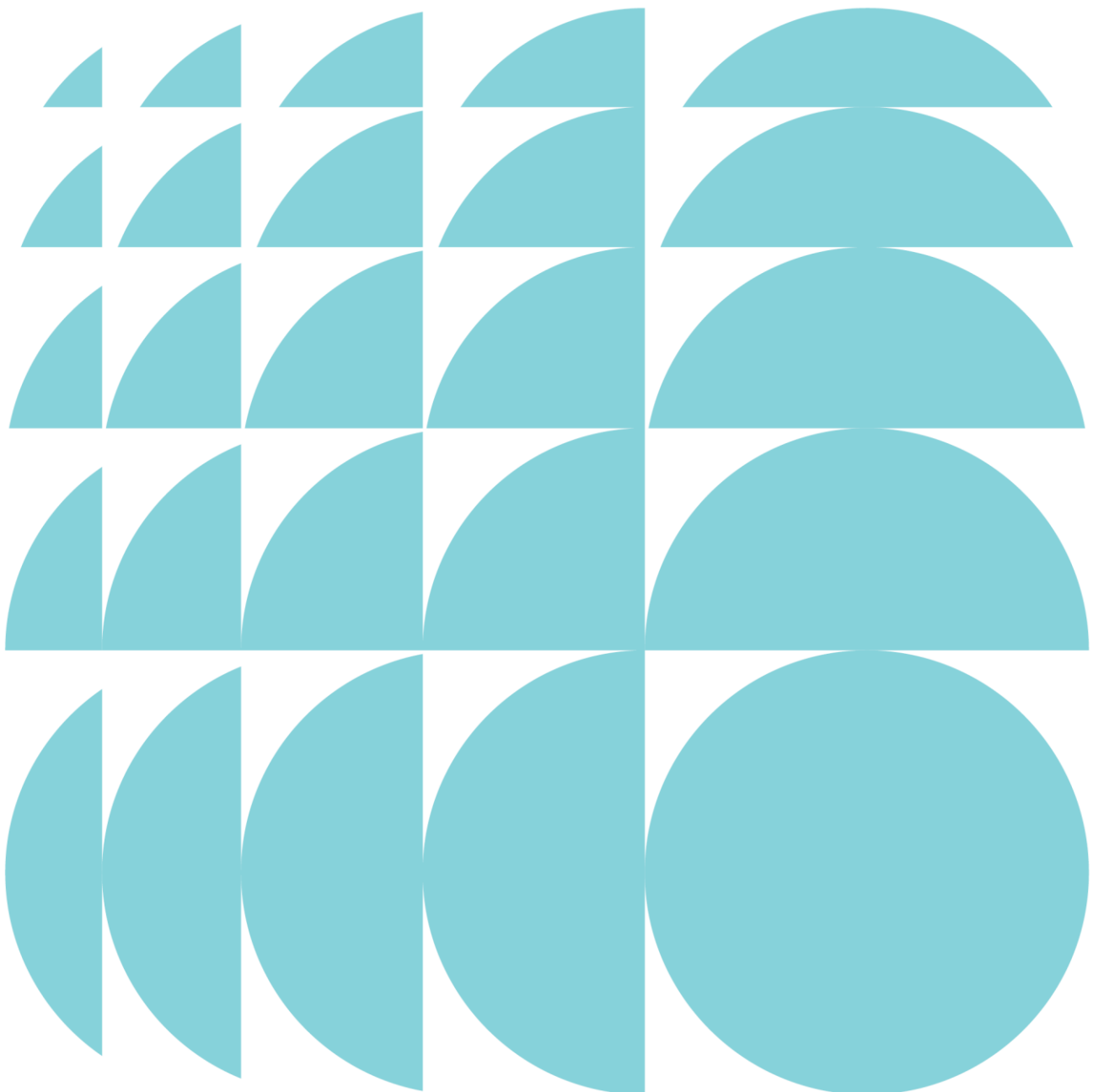
ETHOS URBAN

Consolidated Concept Plan

Calderwood Urban Development Project
Consolidated Concept Plan

Submitted to Department of Planning, Industry
and Environment
On behalf of Lendlease Communities

25 October 2021 | 17119



Ethos Urban acknowledges the Traditional Custodians of Country throughout Australia and recognises their continuing connection to land, waters and culture.

We acknowledge the Gadigal people, of the Eora Nation, the Traditional Custodians of the land where this document was prepared, and all peoples and nations from lands affected.

We pay our respects to their Elders past, present and emerging.

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- K** Concept Plan Transport Accessibility Study & Transport Management and Accessibility Plan (TMAP), Mod 4 Traffic Assessment & Calderwood Road approved plans
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eco logical Australia
- N** Riparian Consistency Report
eco logical Australia
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Y	Social and Economic Impact Assessment for Mod 4	<i>Ethos Urban</i>
Z	Urban Design Report	<i>RPS</i>

*Note the mod 4 assessments concluded that there were no changes to these issues when compared to the original assessments and as such have not been included in this document.

Executive Summary

The rezoning of approximately 700 hectares of land and a Concept Plan approval for development of the Calderwood Urban Development Project (CUDP) site for approximately 4,800 dwellings and 50 hectares of mixed use / land has been determined by the Minister for Planning on 8 December 2010.

The Concept Plan approval has subsequently been modified three times, the most significant of these being modification 4 (Mod 4) where the Deputy Secretary Assessment and Systems Performance, Planning and Assessment approved the following changes:

- increase the number of dwellings from 4,800 to 6,000
- allow for reduced residential lot sizes in certain areas
- increased open space and community facilities
- changes to road infrastructure
- changes to dedication of land for schools
- changes to water cycle management
- changes to ESD measures

Approved Project

Concept Plan

The approved Concept Plan includes approximately 6,000 dwellings and 50 hectares of mixed use land to be used for a range of uses including residential, retail, commercial, community, education and light industrial uses.

A new Town Centre and a Village Centre are to be established, incorporating a range of retail, commercial, business, light industrial, education, entertainment, civic, community, recreation, residential, tourist and visitor accommodation and mixed use employment.

The approved development includes an open space master plan, riparian corridor network and the retention and protection of land with identified significant or contributory biodiversity for environmental conservation and / or environmental management purposes. It will deliver new roads and physical utilities infrastructure, as well as community facilities.

The approved Concept Plan is the planning and development framework to be used by consent and approval authorities to assess future development proposals within the Calderwood Urban Development Project site. It identifies the parameters and outcomes for future development and describes key elements of the environmental strategies that are to be implemented.

SEPP Amendment

The listing of the Calderwood Urban Development Project site as a State Significant Site within Appendix 15 of the State Significant Precincts SEPP has established a new planning and approvals regime for the site.

The land is now zoned a combination of R1 General Residential, R5 Large Lot Residential, B4 Mixed Use, E2 Environmental Conservation, E3 Environmental Management, RU2 Rural Landscape and RE1 Public Recreation.

The SEPP Amendment has established a number of development controls to guide future development on the site including minimum lot sizes and maximum building heights.

A Development Control Strategy is included as part of the approved Concept Plan providing further detailed design controls for future subdivision and residential built form.

As a consequence of this neither the Shellharbour Local Environmental Plan 2013 or the Wollongong Local Environmental Plan 2009, nor the respective Development Control Plans applying to those local government areas apply to the Calderwood Urban Development Project.

Infrastructure delivery and development contributions

The approved Concept Plan is accompanied by an executed State Voluntary Planning Agreement which is being updated consistent with Condition C14 of the Mod 4 approval. The approved Concept Plan is also supported by Voluntary Planning Agreements entered into with both Wollongong and Shellharbour Councils for the delivery of infrastructure, services and utilities required to meet the future demands of the development.

The executed Voluntary Planning Agreements include road network improvements, land for education facilities (primary and high schools), district and local open space, and community and human services infrastructure including a large multi-purpose community resource centre, temporary community centre and monetary contributions towards library facilities. Condition C12 of Mod 4 requires satisfactory arrangements to be made with Shellharbour Council consistent with this condition and for Lendlease to consult with Wollongong Council as to whether a new or updated VPA is required.

Regional Land Use Planning

The Strategic Justification for the Project that led to the rezoning of the site under the State Significant Precincts SEPP and to approval of the Concept Plan by the Minister for Planning demonstrated that:

- The project is sustainable in environmental, social and economic terms.
- The Project is consistent with the Illawarra Regional Strategy and meets each of the Sustainability Criteria set out at Appendix 1 of that Strategy.
- The three levels of Governments are committed to proactively addressing housing supply and affordability.
- The Project can underpin the supply of residential land in the Illawarra without undermining implementation of the West Dapto Release Area (WDRA).
- The project can be delivered and serviced independently of the WDRA.
- The Project is supported by a viable implementation strategy that will leverage ready access to existing infrastructure capacity, provide structural enhancement to the regional infrastructure base and deliver savings and efficiencies in Government infrastructure expenditure.
- The site has a high ratio of urban to non-urban capable land. It is relatively free of major physical and environmental constraints and is suitable for the land uses proposed. It is compatible with surrounding existing and future land uses and environmental constraints that do exist on site can be appropriately integrated, managed and / or conserved as part of the development proposal.
- Consistent with the Illawarra Regional Strategy urban development represents the most viable and effective future use of the land. The Project secures the land for this use.
- The Project has significant public benefit and is in the public interest having regard to its conservation outcomes, social and community benefits, contribution to local and regional economic growth and job creation and sustainability measures.

Housing affordability

Housing affordability is a major policy concern at the National, State and Illawarra regional and local level.

A large number of Shellharbour residents are experiencing housing stress and there is a significant lack of affordable housing available for purchase for low and moderate income earners. The capacity of residents to purchase housing in the Shellharbour market is tight and is rapidly worsening.

The Project delivers housing affordability through increased land supply in the short to medium term, the delivery of a wide range of housing choices, matching housing choices with consumer's ability to pay and specifically targeting affordable housing solutions through product development and other initiatives including government programs. The project meets a demonstrated strategic need that delivers and maintains housing choice, diversity and relative affordability levels for Shellharbour residents.

A significant market entry level housing component will help reduce housing stress and encourage economic activity by attracting and retaining a skilled and younger labour force and increasing disposable incomes of residents.

Sustainability

Social

The Project delivers integrated planning and design that coordinates community, physical, transport and economic outcomes.

It will deliver a range of residential densities, lot sizes and dwelling types and create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place. It delivers key social sustainability outcomes.

Economic

The Project will have a series of quantifiable economic benefits and positive flow on effects to neighbouring communities and business, including:

- Direct injection of an estimated \$2.9 billion into the local economy during the construction period in the form of payments to goods and service providers;
- Creation of an additional \$6.3 billion in net value for the Shellharbour economy over the project period;
- Assistance in maintaining existing employment positions particularly in the construction sector, and create an additional 8000 full time equivalent positions, with around 5,260 of these located in the Shellharbour LGA. This yields a high job containment ratio of over 60% for the development. Trip containment will contribute positively to a reduction in trip generation and to minimising the carbon footprint of the development.

As a developer lead master planned community, the Project can be delivered in a manner that achieves a relatively high level of self containment in terms of employment generation, retail expenditure and vehicle trip generation. This self containment will contribute positively to reducing the carbon footprint of the development as compared to traditional Greenfields residential development.

The proposed infrastructure and servicing strategy provides for structural enhancements to the region's infrastructure base and long term synergies with other proposed release areas. It will deliver efficiencies and economies of scale in infrastructure delivery and thus improve the sustainability of regional infrastructure to support future urban growth within the wider region.

The Project will provide an appropriate level of retail floor space to support the future population without adversely impacting on known existing or planned future centres and development.

Environmental

The Project will make a positive contribution to the achievement of travel and vehicle use goals in the Illawarra. A comprehensive package of deliverable sustainable transport measures is identified to assist in achieving a 10% mode shift away from private vehicle. Measures include timely provision of facilities and services, a diversity of land uses and housing types across the project, walkable access to key amenities and an holistic approach to the design of the street network, carefully balancing the needs for vehicle movement with the needs of pedestrians and cyclists. It will form part of a larger urban area and assist in the achievement of a public transport catchment that can be serviced by economically efficient transport services.

The Project makes special provision for home based businesses and working from home in accordance with the principles of the National broadband network. Combined with employment lands and a new Town Centre and Village centre, this will reduce car dependency and trip generation rates.

The Project retains core biodiversity areas within the site and incorporates both east west and north south regional habitat connectivity. It presents a long term ownership and management regime for the protection of environmentally significant land.

The Project adopts flood plain management and water sensitive urban design measures and features that respond to an analysis of potential climate change impacts. The large size of the site and its availability for coordinated development enable the delivery of an holistic flood plain mitigation plan and water cycle management strategy that will result in a net improvement in water quality in Marshall Mount Creek, Macquarie Rivulet and as a consequence Lake Illawarra.

Water cycle management integrates with urban design, salinity risk and riparian corridor protection measures.

Lendlease is committed to delivering a sustainable development. The Calderwood Development has been certified a 6 star Green Star Community by the Green Building Council of Australia representing world leadership in master planning.

Energy sustainability for the Project focuses on reducing the demand for energy through the efficient design of the urban form to capitalise on the natural features of the site. Demand will also be mitigated through consumer demand initiatives including BASIX requirements for dwelling design.

The Project adopts potable water supply conservation targets and identifies sustainable integrated options for water supply, wastewater and stormwater servicing.

Infrastructure

Servicing strategy

The site is a significant consolidated land holding. Consolidated landholdings with scale provide the opportunity for integrated delivery of infrastructure, services and facilities.

The Project is supported by a clear and viable infrastructure servicing strategy that leverages readily accessible existing infrastructure and demonstrates that the Project can be implemented as a standalone proposal.

The Project presents an opportunity to provide infrastructure and high quality new facilities in a timely manner based on leading practice sustainability principles and sustainable funding, management and maintenance arrangements.

Whilst the Project can be implemented as a standalone proposal, the proposed infrastructure and servicing strategy provides structural enhancements to the Region's infrastructure base and long term synergies with other proposed Release Areas.

The infrastructure and servicing strategy minimises implementation risk and cost to Government by utilising Lendlease expertise and delivery proposals.

Independence from West Dapto Release Area

Calderwood and WDRA represent the last remaining greenfields urban release areas of scale in the Illawarra.

Whilst the projects will be virtually contiguous when fully developed, and the timing of the release of land in both areas is likely to overlap, their respective early stages of release (ie initial development fronts) are more than 10km apart and will be supported by an entirely different services and delivery implementation mechanism – WDRA is government led, Calderwood is private sector led.

Both developments have different servicing provisions and therefore do not significantly affect each other.

The infrastructure, services and facilities implementation and delivery proposal for Calderwood demonstrates that the Project can be serviced independently of West Dapto and will not affect the provision of infrastructure for the WDRA other than positively with respect to providing structural enhancements to the region's infrastructure base.

Environmental Impact

Detailed investigations of site constraints demonstrate that the land is relatively free of major physical constraints and has a relatively high ratio of urban capable to non-urban capable land.

Land incorporated into the site riparian network, open space master plan and environmental conservation lands under the Concept Plan and zoned E2 Environmental Conservation, E3 Environmental Management, RU2 Rural Landscape and RE1 Public Recreation accords with the findings, conclusions and recommendations of detailed technical investigations.

The detailed investigations of site constraints and environmental assessment justified the determination of the R1 General Residential, R5 Large Lot Residential and B4 Mixed Use Zone boundaries as being the urban capable footprint of the site.

The approved Concept Plan and SEPP Amendment proposal presents an holistic and integrated outcome having regard to riparian, flooding, biodiversity and water quality and quantity and other environmental outcomes.

The Strategic Justification for the Project, the Environmental Assessment and the technical supporting investigations provided a detailed assessment of the environmental impact of the proposed land use change (SEPP Amendment proposal) and Concept Plan development. It demonstrated that the proposed development is satisfactory with respect to:

- National, State and local legislative requirements, planning instruments and policy;
- Future patterns of growth and development in the Illawarra, including regional land use planning.
- Transport and accessibility, including cumulative impacts of traffic growth.
- Biodiversity and riparian corridors.
- Flood impact, drainage and stormwater management.
- European and Indigenous cultural heritage impact.
- Bushfire risk assessment.
- Physical and social / community infrastructure needs and impact.
- Contamination, land stability, acid sulphate soils, erosion, ground water impacts.
- Landscape and visual impact.

All measures that have been recommended as part of the detailed technical investigations and studies to mitigate potential environmental impacts have been incorporated into the approved Concept Plan and / or gazetted SEPP Amendment, or are included in the approved project Statement of Commitments.

1.0 Introduction

On 8 December 2010 the Minister for Planning determined (with modifications) the Calderwood Urban Development Project Concept Plan (MP09_0082) (referred to herein as the “Calderwood Concept Plan”). Following approval of the Calderwood Concept Plan, on 14 January 2011, Schedule 3 (now Appendix 15) of State Environmental Planning Policy (State Significant Precincts) 2005 (the State Significant Precincts SEPP) was amended and the Calderwood Urban Development Project site rezoned. Together, the planning provisions at Appendix 15 of the State Significant Precincts SEPP and the approved Calderwood Concept Plan establish the planning regime to guide the future development of the site.

The Calderwood Concept Plan has subsequently been amended three (3) times and this version of the Consolidated Concept Plan encompasses the changes made under all the modification applications.

- Modification 1 (withdrawn): modification to Condition C12 Local Infrastructure Contributions to align with the Voluntary Planning Agreement between Lendlease and Shellharbour City Council and to reflect the findings of the Land and Environment Court of NSW (LEC) matter with respect to local contributions to be made to Wollongong City Council.
- Modification 2 (approved): Confirmation that no minimum lot size applies to the subdivision of special subdivision areas of the CUDP site, being the riparian/environmental corridors and environmental reserves to enable dedication of public infrastructure to the relevant council in a timely and efficient manner.
- Modification 3 (withdrawn): amendments to Condition B6 to clarify locational criteria for integrated housing, timing for subdivision of integrated housing and various minor amendments to the DCS.
- Modification 4: (approved) to allow for increased and a more diverse housing supply at Calderwood, and the inclusion of minor amendments to the DCS. The modification proposes a total of approximately 6,000 dwellings on the same land as the approximately 4,800 dwelling already approved.
- Modification 5 (approved): permit subdivision of certain land known as Clover Hill into lots of just over 2000m² size, to permit a residential housing estate on the site, which includes E3 Environmental Management zoned portions. Amendments were also made to conditions B3 and B7.

State Significant Precincts SEPP

The land use zoning and development control provisions that apply to the Calderwood Urban Development Project Site are contained within Appendix 15 of the State Significant Precincts SEPP.

Concept Plan Approval

The approved Calderwood Concept Plan comprises the following documentation:

- “*State Significant Site Study and Environmental Assessment Report – Calderwood Urban Development Project*” dated March 2010, as amended by the “*Preferred Project Report – Calderwood Urban Development Project*” dated August 2010, prepared by JBA Planning Consultants (JBA), as amended by “*MP09_0082 MOD 4 Environmental Assessment Report*” dated 9 August 2018, as amended by the “*Response to submissions and Preferred Project Report*” dated 31 May 2019, as amended by the “*Addendum Response to Submissions*” dated 5 May 2020, all prepared by Ethos Urban Planning Consultants, as amended by additional information submitted on 17 July 2020, and 27 August 2020 and 26 February 2021 from Lend Lease;

as modified by the Department’s modifications of approval set out in:

- Schedule 2, Part B of the Concept Plan Notice of Determination;

and by the further assessment requirements set out in:

- Schedule 2, Part C of the Concept Plan Notice of Determination.

Future development within the Calderwood site is required to be generally consistent with the plans and documentation (including any appendices therein) referenced above.

A copy of the consolidated Notice of Determination of the Calderwood Concept Plan (MP09_0082) is included at **Appendix A**. **Appendix B** contains the Notices of Determination that have been issued for the three subsequent modifications to the Concept Plan.

A full set of the series of drawings that comprise the approved Concept Plan, as modified in Mod 4, is included at **Appendix C**.

Voluntary Planning Agreements

In determining to approve the Calderwood Concept Plan, the Minister required that the Proponent (Delfin Lend Lease at the time, now Lendlease Communities) enter into a planning agreement for State infrastructure contributions prior to approval for the project, or any stage of the project. A copy of the Calderwood Urban Development Project Voluntary Planning Agreement between Delfin Lend Lease and the Minister for Planning, and the subsequent Deeds of Amendments are included at **Appendix D**. This is being updated consistent with Condition C14 of the Mod 4 approval.

Subsequent to this, Lendlease Communities has entered into Voluntary Planning Agreements with both Shellharbour City Council and Wollongong Council for the provision of relevant local infrastructure. Copies of those planning agreements are also provided at **Appendix D**. Condition C12 of Mod 4 requires satisfactory arrangements to be made with Shellharbour Council consistent with this condition and for Lendlease to consult with Wollongong Council as to whether a new or updated VPA is required.

EPBCA Determination

On 26 February 2010 the Proponent made a referral to the Department of Environment, Water, Heritage and the Arts (DEWHA) for a determination as to whether or not the then proposed rezoning and development was a controlled action under the Environment Protection and Biodiversity Conservation Act (EPBCA). The referral included details of the proposal and the site, and identified the measures included in the then Concept Plan application and rezoning proposal to mitigate potential impacts on matters of National Environmental Significance.

On 30 March 2010 DEWHA notified the Proponent that the proposed rezoning and development is not a controlled action and therefore may proceed without further assessment under the EPBC Act. A copy of the EPBCA determination is included at **Appendix E**.

Lendlease is liaising with DAWE in relation to the Mod 4 approval, and working through the referral process to confirm a continued 'no controlled action' status.

1.1 Consolidated Concept Plan

Condition A4 of the Concept Plan Notice of Determination (MP09_0082) requires a consolidated version of the Concept Plan, combining the approved components of the Environmental Assessment, Preferred Project Report, Statement of Commitments, and modifications required by the Concept Plan approval to be submitted to the Department of Planning.

This report is the Consolidated Concept Plan for the Calderwood Urban Development Project. The purpose of the Consolidated Concept Plan is to provide an integrated document that presents the approved Calderwood Urban Development Project Concept Plan and sets out all of the requirements to be addressed for the next stages of the development.

It consolidates into a single document the:

- approved components of the State Significant Site Study and Environmental Assessment Report – Calderwood Urban Development Project dated March 2010 prepared by JBA;
- approved components of the Preferred Project Report – Calderwood Urban Development Project dated August 2010 prepared by JBA;

- Mod 4 approved documents and assessment reports;
- modifications of approval at Schedule 2, Part B of the Concept Plan Notice of Determination; and
- further assessment requirements set out in Schedule 2, Part C of the Concept Plan Notice of Determination.

2.0 The Site

The Calderwood Urban Development Project site is located within the Calderwood Valley in the Illawarra Region. It is approximately 700 hectares in area with approximately 107 hectares of land in the Wollongong LGA and the balance located within the Shellharbour LGA.

The Calderwood Valley is located along Marshall Mount Creek (which forms the boundary between the Shellharbour and Wollongong LGAs), and is bounded to the south by the Macquarie Rivulet, to the south-west by Johnston's Spur and to the north and west by the Illawarra Escarpment. Beyond Johnston's Spur to the south is the adjoining Macquarie Rivulet Valley within the suburb of North Macquarie. The Calderwood Urban Development Project site extends south from the intersection of North Marshall Mount Road and Marshall Mount Road to the Illawarra Highway. The regional context of the site and the LGA boundary is illustrated by **Figure 1**.

The land to which the approved Concept Plan applies and full title description is shown on **Figure 2** and in **Table 2**. It is noted that **Table 2** does not contain all of the lots that have been created by Lendlease and subsequently sold. A summary of the stages that have been completed or are subject to a development approval are provided in the **Table 3**.

The Concept Plan site also includes Macquarie Rivulet, which is Crown Land, and the public road reservations of Calderwood Road and North Macquarie Road which are owned by Shellharbour Council. Marshall Mount Creek is in various ownership, partly incorporated into existing lots that adjoin or straddle the riparian corridor.

Table 1 Land ownership and legal description

Property	Legal Description	Existing land use
299 North Macquarie Road, North Macquarie	Lot 4 in DP 259137	Low intensity farming
317 Calderwood Rd, Calderwood	Lot 2 in DP 608238	Low intensity farming
337 North Macquarie Road Calderwood	Lot 5 in DP 259137	Low intensity farming
"Meadow Wood", 379 Calderwood Road, Calderwood	Lot 1 in DP 998349	Low intensity farming
"Riversdale" North Macquarie Road, Calderwood	Lot 1 in DP 1044038	Dairy
"Parkview", 24 Yellow Rock Road, Yellow Rock	Lot 1 in DP 194903	Dairy
"Marshall Mount House", Marshall Mount Road, Albion Park	Lot 2 in DP 2534	Low intensity farming (part of Marshall Mount Creek)
221 North Macquarie Road, Calderwood	Lot 3 in DP 259137	Agistment
"Cleddau", 129 North Macquarie Road, North Macquarie	Lot 41 DP 1258406	Agistment
"Calderwood Farm" 320 Calderwood Road, Calderwood	Lot 22 in DP 809156 and Lot 112 in DP 851153	Horse stud
159 North Macquarie Road, North Macquarie	Lot 42 DP 1258406	Low intensity farming
"Brushgrove", 248 North Macquarie Road, North Macquarie	Lot 6 in DP 259137	Agistment
342 Calderwood Road, Calderwood	Lot 21 in DP 809156	Other
347 Calderwood Road Calderwood	Lot 1 DP 608238	Other
368 Calderwood Road, Calderwood	Lot 10 in DP 619547	Other
Illawarra Highway, Calderwood	Lot 1 in DP 996926	Dairy
440 North Macquarie Rd, Calderwood	Lot 2 DP 158988	Dairy
128 North Macquarie Rd, Calderwood Valley	Lot 100 DP 1251724	Horse Stud
	Lot 42 DP 878122	Hobby farm

Property	Legal Description	Existing land use
Marshall Mount Methodist Cemetery	Lot 1 DP 195342	Cemetery
79 and 81 Escarpment Drive, Calderwood	Lots 101 and 102 DP 1249814	Hobby farm
Macquarie Rivulet	Bed to top of bank	

This CCP clarifies the responsibilities between Lendlease and non-core land owners (not listed above but located within the Calderwood Project site) at Calderwood.

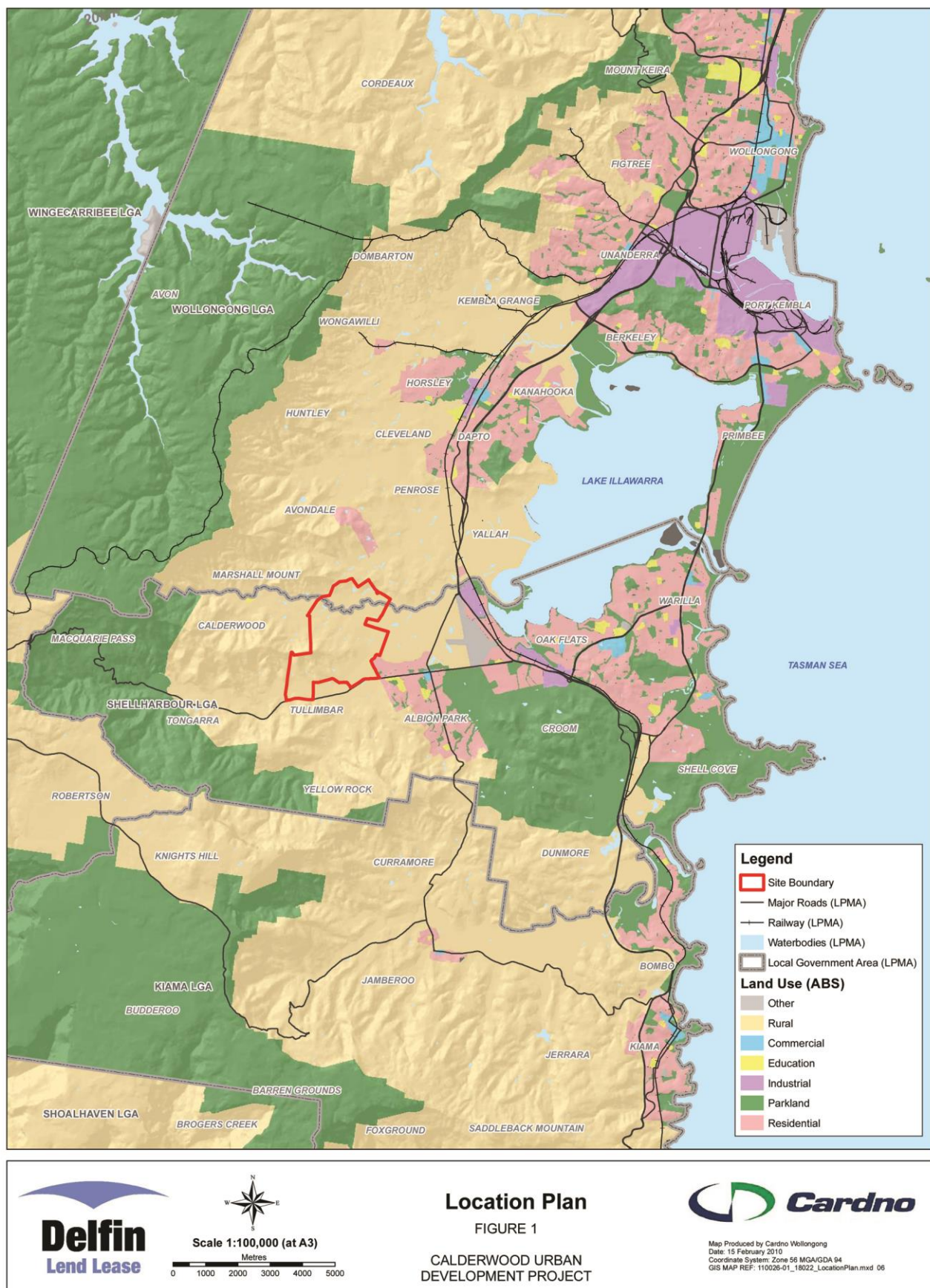


Figure 1 Site local – regional context



Figure 2 The project boundary

Table 2 Stages of Calderwood Development Approved or Subject to a Development Application

Stage	DA Reference	Description	Status
Stage 1	MP 09_0083	The first stage of subdivision within the area of land generally known as the CUDP. Allowed for site preparation works, internal and external road works, landscaping, a sales and information centre, temporary community centre, signage and subdivision to create 231 residential allotments, 9 mixed use lots, 4 residue lots, 1 allotment for a future substation, road, drainage and open space reserves, across four separate sub-stages (1A, 1B, 1C and 1D).	Approved on 23 September 2013 (by the NSW Land & Environment Court under section 75J(1) of the EP&A Act)
	MP 09_0083 (MOD 1)	Included a temporary sales and information centre, a temporary display village, increased and reconfigured lot layouts, additional signage, delayed construction of the Macquarie Rivulet Bridge and amendments to the Voluntary Planning Agreement.	Approved on 8 April 2015 by the Department of Planning & Environment
	MP 09_0083 (MOD 2)	An increase in the number of residential lots to be used for a display village from 35 to 37.	Approved on 2 July 2015 by the Department of Planning & Environment
	MP 09_0083 (MOD 3)	A modification to the length and width of the approved Macquarie Rivulet Bridge.	Approved on 13 January 2016 by the Department of Planning & Environment
	MP 09_0083 (MOD 4)	Minor alterations and additions to the temporary sales and information centre, a new temporary community facility, additional signage and associated landscaping works.	Approved on 4 July 2016 by the Department of Planning & Environment
	MP 09_0083 (MOD 5)	A reduction in the size of the zone substation allotment and its relocation further east on Calderwood Road.	Approved on 12 August 2016 by the Department of Planning & Environment
Stage 2A	DA0149/2015	Residential Subdivision of 234 Torrens Title lots	Approved on 24 September 2015
Stage 2B	DA0663/2015	Residential Subdivision Comprising of 279 Allotments	Approved on 9 December 2016
Stage 2C	DA0300/2016	Nominated Integrated Residential Subdivision Comprising of 157 Torrens Title Allotments And Associated Works	Approved on 4 December 2017
Stage 3A	DA0205/2016	Subdivision (Stage 3A) to Create 248 Residential Lots, 5 Super Lots, Roads, Drainage, Storm Water Infrastructure and Landscape Works	Approved on 10 February 2017
Stage 3B1	DA0536/2016	Torrens Title subdivision of 102 Residential Lots, 3 Superlots, 1 Trunk Drainage Lot, Roads and Landscaping	Approved on 21 December 2016
Stage 3C	DA0167/2017	411 Lot Residential Subdivision, 2 Superlots, 2 Residual Lots, 2 Drainage Reserves, 1 Local Park & Associated Works	Withdrawn (superseded by Stage 3C1 and 3C2)
Sports fields and Education	DA0586/2017	Bulk Earthworks for the Education and Sports Precincts Within Calderwood Valley	Currently under assessment by Council.
Stage 3C1	DA0701/2018	158 Lot Residential Subdivision, 9 Residue/Super Lots, and Associated Civil And Infrastructure Works	Approved on 5 December 2019
	DA0350/2021	Landscaping and embellishment of the L12 Local Park area including new recreational structures, public amenities and various all age play spaces and exercise facilities.	Currently under assessment by Council.
Stage 2C2	DA0231/2019	Subdivision to create lots for future schools and associated civil and infrastructure works.	Approved on 21 April 2020
Stage 3C2	DA0503/2019	197 Lot Torrens Title Subdivision & Associated Road Networks, Civil Works & Associated Landscaping (Stage 3C2)	Currently under assessment by Council
Stage 3A Lots 3005, 3077 & 3201	DA0221/2019	12 lot Torrens Title subdivision	Approved on 20 August 2019
Lot 1201	DA0228/2020	Construction of Three Townhouses with Detached Garages and Four Townhouses with Detached Garages and Studios (Multi Unit Dwelling)	Currently under assessment by Council

Stage	DA Reference	Description	Status
Lot 1222	DA0229/2020	Construction Of Four Two Storey Dwellings And 13 Single Storey Dwellings And 17 Lot Torrens Title Subdivision	Currently under assessment by Council
Town Centre South	DA0506/2021	Subdivision to create 204 Torrents Title lots, 2 super lots, 1 basin/stormwater infrastructure lot, 1 public park lot, road lots and 1 riparian corridor lot for Town Centre South	Currently under assessment by Council

3.0 Approved Modified Concept Plan

The approved Calderwood Concept Plan is the planning and development framework to be used by consent and approval authorities to assess all future development proposals within the Calderwood Urban Development Project site. It identifies the parameters and outcomes for future development and describes key elements of the environmental strategies that are to be implemented.

The Calderwood Urban Development Project is proposed to be developed in stages over an approximately 30 year period. This long term horizon requires a planning and assessment framework that can provide the certainty of a workable urban structure at the outset, supported and drawing upon an appropriate level of environmental assessment, whilst allowing for detailed neighbourhood design to occur as part of a staged framework over time, consistent with the parameters and outcomes for development identified in the Concept Plan.

The Concept Plan provides an approved structure plan that addresses the manner in which site-wide environmental issues and relationships including conservation, use and management of riparian corridors, flood management, infrastructure servicing heritage protection, have been resolved.

Detailed planning and design for urban development will be addressed as part of a series of future applications for subdivision, open space, conservation and infrastructure works that will be submitted as part of a staged process over time.

In accordance with Section 75P(2)(a) of the Environmental Planning & Assessment Act, and Concept Plan Term of Approval A2(3), each of these future applications will be required to be generally consistent with the terms of approval of the Concept Plan as described in this Section and with the Statement of Commitments set out at **Appendix B**.

3.1 Approved Development

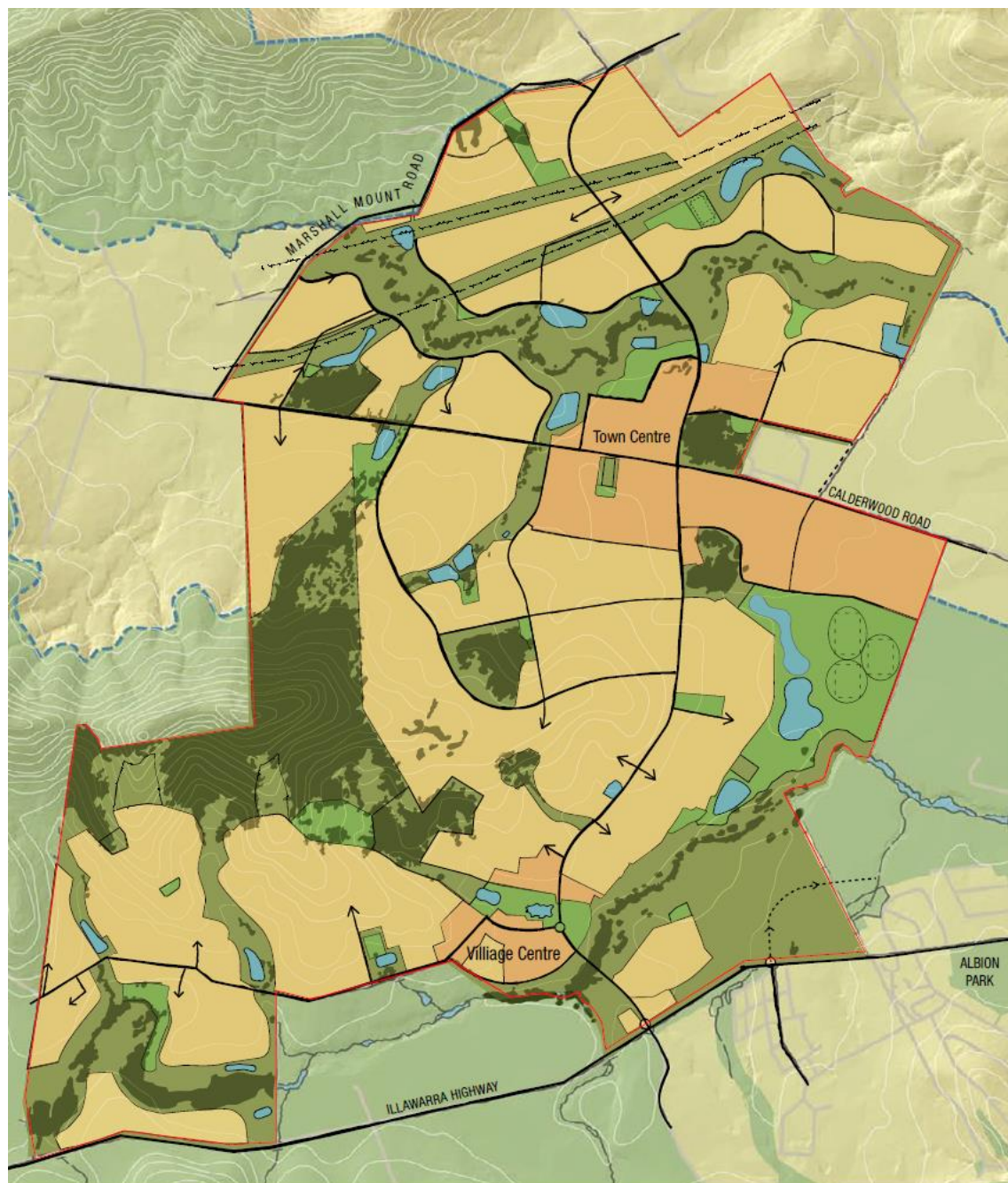
The approved Calderwood Concept Plan, as modified, provides for:

- Approximately 6,000 dwellings and minimum subdivision lot sizes for a range of dwelling types;
- Approximately 50 hectares of mixed use land to be used for a range of uses including residential, retail, commercial, community, education and light industrial uses;
- A new Town Centre and Village Centre incorporating a range of retail, commercial, business, light industrial, education, entertainment, civic, community, recreation, residential, tourist and visitor accommodation and mixed use employment;
- An Open Space Masterplan (indicative) for the development, including the general location and function of passive and active open space areas to serve the future population;
- The retention, future use and management of riparian corridors that perform a significant drainage and flooding function in accordance with a Riparian Corridor Network;
- The retention and protection of land with identified significant or contributory biodiversity for environmental conservation and / or environmental management purposes;
- The Road Network Layout and Hierarchy for the site;
- Provision of associated infrastructure including a Utilities Infrastructure Strategy, Potable Water Strategy (indicative) and Sewer Concept Plan (indicative);
- A Flood Mitigation Plan for integrated management of the floodplain across the site as a whole, including finished levels for re-shaping of the floodplain and importation of fill;
- A Water Cycle Management Plan for the development; and
- The location and dimension of Bushfire Asset Protection Zones.

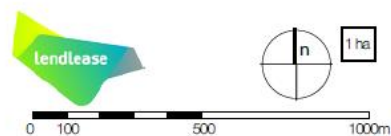
The overall development will accommodate about 15,480 people. It will deliver \$2.9 billion in direct expenditure into the local economy during the construction period and create an additional \$6.3 billion in net value for the

Shellharbour economy over the life of the project. It will create 8,000 full time equivalent jobs, with around 5,260 (approximately 60%) of these located in the Shellharbour LGA. A significant market entry level housing component will help reduce housing stress and encourage economic activity by attracting and retaining a skilled and younger labour force and increasing disposable incomes of residents.

The full series of drawings illustrating the approved Concept Plan (as modified) are included at **Appendix C**. The approved Concept Plan drawings reflect the requirements of the modifications of the Concept Plan Notice of Determination (refer to **Appendix B**).



Concept Plan (MOD 4 PPR)



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours May 2019

Figure 3 **Approved Concept Plan**

3.2 Urban Design Concept

Key features of the approved Concept Plan urban design concept are:

- Delivery of a sustainable community in terms of community, environmental outcomes and integrated land use and transport planning.
- A range of densities, lot sizes and dwelling types providing housing choice to satisfy the needs of a wide spectrum of households, at different life stages and from varying socio-economic circumstances and lifestyle preferences. Housing solutions to support the creation of a diverse community will range from the more traditional detached homes to smaller attached houses, including studio homes, villas, townhouses, live-work, apartments and retirement units.
- A Town Centre located adjacent to Escarpment Drive, the main north-south road and near the intersection with Calderwood Road, connecting the balance of the Calderwood Valley with Albion Park. The Town Centre is located to maximise walkable access for residents and is to be integrated via strong pedestrian and cycle linkages to the balance of the development. The Town Centre will be the key built identity and focal point for the whole of the Calderwood community, both visually and physically central to many of the neighbourhoods.
- A second smaller centre in the form of a Village Centre located in an early stage of the project to provide a ready supply of local retail and basic temporary community needs.
- A community made up of a series of distinct residential neighbourhoods, each deriving its character from particular features of its natural context and landscape character and each incorporating a range of housing types to ensure diversity and choice. An identifiable heart will be established for each neighbourhood, typically as an element of open space; a natural site characteristic or through leveraging specific views and vistas.
- A modified grid street hierarchy and engaging and active streets that promote permeable connections and accessibility, trip containment, walking, cycling and use of public transport.
- Walking and cycling networks designed to provide for both commuter and recreation users linking key amenities within the project as well as providing access to existing neighbouring facilities.
- Provision of an extensive passive and active open space and landscape / vegetation network that shapes a identity and character responsive to the rural valley and escarpment setting and integrates a liveable, robust network of parks, reserves, corridors and streetscapes. Open space and landscape celebrate the special qualities of a diversity of landform and views, providing continuity and connectivity through a combination of blue (creek/water) and green (bushland) links that optimise the community's mobility and interaction.
- Use of water bodies, performing both an aesthetic and functional (water sensitive urban design) purpose, as a contributing element of the public domain.

A copy of the Mod 4 Urban Design Report is provided at **Appendix Z** and the Calderwood Development Control Strategy is included at **Appendix F**. The detailed design of all relevant future development including the design of streets, subdivision and built form will be generally in accordance with the Consolidated Development Control Strategy.

Refer also to Statements of Commitment 18 to 22 at **Appendix B**.

3.3 Sustainability

Sustainability is a fundamental element of the development. Sustainability initiatives include:

- Integrated planning and design that coordinates social, physical, transport and economic outcomes.
- Delivery of a range of densities, lot sizes and dwelling types as a key social sustainability outcome to create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place.
- Special provision for home based businesses and working from home facilitated by access to high speed broadband. Combined with employment lands and a new Town Centre and Village centre, this will reduce car dependency and trip generation rates.

- The Project adopts a mode share target of 80% car based journey to work by 2031. This represents a 10% modal shift away from private vehicle use. A series of comprehensive measures are in place to assist in achieving this, including:
 - Timely Provision of Facilities and Services.
 - Fibre to the Home (FttH) and National Broadband Network.
 - Website/Community Portal.
 - Resident Kits.
 - Promotions.
 - Public transport incentives.
 - Land Use/Transport Interaction including:
 - Provision of walking and cycling networks.
 - A diversity of land uses and housing types across the project to accommodate a diverse population.
 - Engaging and active streets that provide a positive experience for the users particularly along primary pedestrian and cycle corridors.
 - Crime Prevention Through Environmental Design (CPTED) principles applied to provide a greater sense of safety through passive surveillance of streets, parks and other areas of open space.
 - Establish a sub network of lit paths to provide for safer walking and cycling after dark.
 - Locate key amenities to maximise walkable access.
 - Holistic approach to the design of the street network, carefully balancing the needs for vehicle movement with the needs of pedestrians and cyclists.
 - Local Access Street Design.
 - Pedestrian and Cycle Hierarchy.
 - Way-finding Signage.
 - Parking Strategies.
 - Safety Elements for Network.
 - Bicycle parking at key destinations within CUDP.
 - Bus Network Provision
 - Bus Service levels that meet and exceed NSWTI's Outer Metropolitan Service Planning Guidelines
 - Early bus service provision
 - Branding and Publicity
 - Bus Stop Infrastructure
 - Bus Network Infrastructure
- Retention of core biodiversity areas within the site and incorporation of both east west and north south regional habitat connectivity with a long term ownership and management regime.
- Floodplain management and water sensitive urban design measures and design features that respond to an analysis of potential climate change impacts.
- Water sensitive urban design measures that will result in a net improvement in water quality in Marshall Mount Creek, Macquarie Rivulet and as a consequence Lake Illawarra. Water cycle management integrates with urban design, salinity risk and riparian corridor protection measures.
- Energy sustainability for the Project focuses on reducing the demand for energy through the efficient design of the urban form to capitalise on the natural features of the site. Demand will also be mitigated through consumer demand initiatives including BASIX requirements for dwelling design.

- The Project adopts potable water supply conservation targets and identifies sustainable integrated options for water supply, wastewater and stormwater servicing.

The development has been awarded a 6 Star Green Star Communities Rating by the Green Building Council of Australia which further cements Lendlease's commitment to deliver a sustainable development and community on the site.

Refer also to Statements of Commitment 23 to 26 at **Appendix B**.

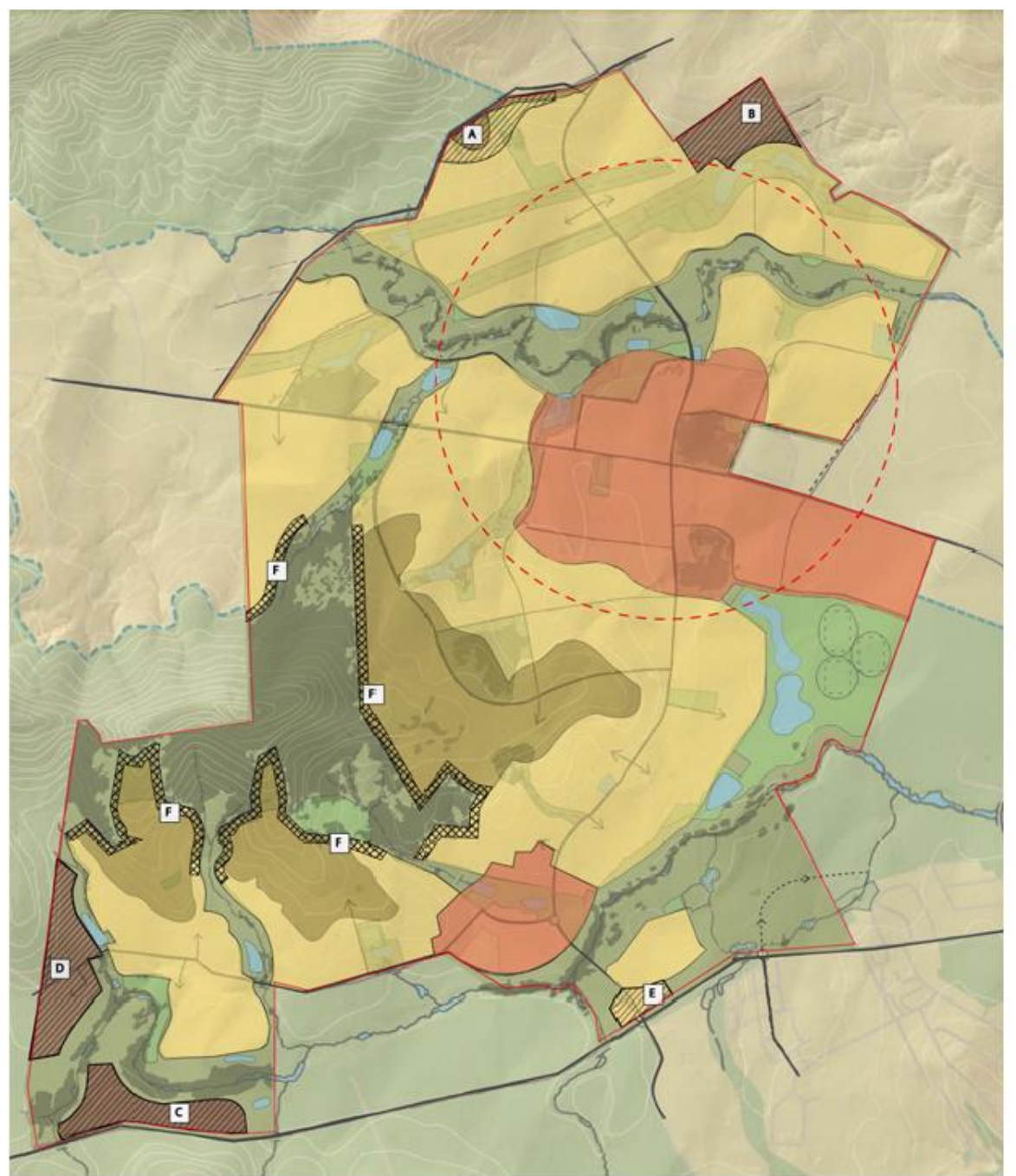
3.4 Land Uses and Distribution

3.4.1 Residential character areas

The detailed design of the individual residential neighbourhoods and mixed use residential areas within the future development will reflect the particular environmental features and landscape character of its surrounds.

A general distribution of the residential character areas is shown on **Figure 4** and is further detailed in the Urban Design Report at **Appendix Z**. These include:

- General residential neighbourhoods – residential scale and character, incorporating a range of attached and detached dwellings of 1 to 2 storeys.
- Town and Village Centres – urban scale, higher density and diverse built form resulting from pattern of use. Mixed use with residential, retail, commercial, community and education uses and incorporating a range of attached and detached dwellings, shop housing, axis and urban sleeve dwellings, apartments and multi unit dwellings.
- Country residential – residential character with decreased density and comprising detached dwellings.
- Bushland edge/ RL 50 m AHD – a residential character with layout and setting that responds to the bushland interface and elevation and generally comprises detached dwellings.



Residential Character Area (MOD 4 PPR)



Figure 4 Approved Concept Plan Residential Character Areas

3.4.2 Dwelling Yield, Mix and Minimum Lot Sizes

Concept Approval has been granted for approximately 6,000 dwellings and for minimum subdivision lot sizes for a range of dwelling types. The overall Project will deliver lot sizes and dwelling types that ensure diversity in housing mix.

Each future residential neighbourhood within the overall development will contain a range of lot sizes and a variety of housing types to cater for the life cycle of residents and choice in housing affordability.

Under the State Significant Precincts SEPP, the following minimum lot sizes generally apply:

- 0 m² for development within the B4 Mixed Use Zone;
- 300 m² for development within the R1 General Residential Zone;
- 2,000 m² for development within the R5 Large Lot Residential Zone ; and
- 100,000 m² – 400,000 m² for development within the E3 Environmental Management and RU2 Rural Landscape Zones.

Within the general residential neighbourhoods, residential lot sizes will generally range from 300 m² to 1,500+m². The proposed lot sizes will accommodate a wide range of detached housing product, including larger parkland lots, traditional 900m² and 450m² detached housing residential lots and a variety of smaller, more affordable detached housing product between 300m² and 450 m². It will also accommodate a variety of attached and semi-detached housing types.

In order to allow for, and to encourage, the provision of the broad range of dwelling product type within each neighbourhood, housing on less than 300 m² lots is also permitted to be delivered.

Modification to condition B6 of the approved Concept Plan permits residential lots less than 300m² in area within the General Residential Area (as outlined in the controls for 'Integrated Housing' in the Residential Development Controls table in the Development Control Strategy) but only where the following requirements are met:

- (a) Dwellings are located:
 - i. directly adjoining or directly opposite public parks of at least 0.3 ha in size, and where the gradient is less than 1 in 10, [or]
 - ii. directly adjoining or directly opposite the B4 Mixed Use zone, or
 - iii. within the 800m walking catchment of the Town Centre as depicted in Figure 3 of the Development Control Strategy.
- (b) the adjoining road reserve would deliver pedestrian footpaths on each side of the road that proposes to include smaller lots,
- (c) the road reserve would provide at least a 3.5 metre wide landscaped verge (including concrete footpath) which will provide a continuous street tree canopy cover along the length of the street
- (d) should the number and extent of driveway crossings be likely to result in the required continuous canopy cover or future health of street trees being compromised, the subdivision must include rear lane access to the proposed lots.
- (e) subdivision of these lots occurs after the construction of dwellings.

Dwellings to be provided on > 300m² lots include a wide range of detached, attached, semi-detached and dual occupancy product. The delivery of a range of smaller lot housing will support diversity and choice and underpins the housing affordability of the project.

The smallest lot size to be provided within the general residential neighbourhoods is 125m² consistent with condition B6 of the Concept Plan and the Development Control Strategy (which has been updated to reflect this, noting the DCS update required under Condition C9 for the Town Centre Core masterplan is in progress).

The range of dwelling types and minimum subdivision lot sizes for which concept approval has been given within the general residential areas are set out in **Table 3** below:

Table 3 Approved Concept Plan minimum subdivision lot sizes for R1 General Residential Zone in DCS

Dwelling type	Minimum Subdivision Lot Size (R1 General Residential)
Dwelling houses	300 m ² or 125 m ² in accordance with Modification B6
Attached dwellings and semi-detached dwellings	300 m ² or 125 m ² in accordance with Modification B6
Dual occupancies	125 m ² in accordance with Modification B6
Multi dwelling housing and residential flat buildings	300 m ²

Note: In the R1 residential zone smaller lot sizes may be permitted if the criteria set out in condition B6 can be complied with

A Consolidated Development Control Strategy forms part of the approved Concept Plan (refer to **Appendix F**). The DCS has been updated to include the Condition B6 amendments noted above.

The Consolidated Development Control Strategy sets out detailed controls for housing. It includes minimum lot sizes for residential development within the Town Centre and Village Centre. The detailed design of future relevant development, including the design of streets, subdivision and built form, is to be generally in accordance with the Consolidated Development Control Strategy.

A proportion of housing types will make special provision for home based businesses and others who wish to work from home. This includes home occupations, home businesses, home industries, and home based childcare.

Secondary dwellings, comprising small dwellings of up to 60m² in floor area on the same allotment of land as another principal dwelling are to be included throughout the residential neighbourhoods. Design controls for secondary dwellings are to be in accordance with *State Environmental Planning Policy (Affordable Rental Housing) 2009*.

Opportunities to provide purpose-designed self-care housing to meet the needs of older people, in association with retirement housing providers, will be explored in the delivery phases of the project.

An indicative mix of housing may be:

- -85-90% detached dwellings, attached dwellings, semi attached dwellings and dual occupancies; and
- 10-15% other, including multi dwelling housing and residential flat buildings.

The actual dwelling mix and yield for each dwelling type will be determined as part of the future detailed applications for each stage.

The approved Concept Plan specifically does not pre-determine the number of dwellings or mix within each future stage, and does not approve the above indicative mix. Dwelling mix is subject to change over the significant time period for implementation of the development as market requirements change.

Refer also to Statements of Commitment 18 to 22 at **Appendix B**.

3.4.3 Mixed Use Centre and Employment Precincts

Town Centre and adjoining employment lands

Approximately 50 hectares of land is zoned as B4 Mixed Use to provide for new mixed use Town and Village Centres. The Town Centre is generally located within and to the north west of the B4 Mixed Use zone, west of Escarpment Drive and north of Calderwood Road, with education and higher density residential uses located to the south and south-east.

The new Town Centre is proposed to accommodate a wide range of uses including retail, commercial, business, education, community, entertainment, civic recreation, residential, tourist and visitor accommodation and employment land uses including (in accordance with Modification C8 of the Concept Plan approval):

- A maximum of 20,000 sqm of retail floor area that may accommodate development within the following ranges:

- A small discount department store or non-food major retailer;
- Full line supermarket(s)
- Discount supermarket(s)
- mini major retailers
- speciality retail and stores,
- Some limited freestanding facilities such as fast food and small bulky goods stores.
- Approximately 20,000 sqm of mixed use employment floor area including a wide range of uses such as commercial, office, light industrial, and non-retail service/convenience tenants (eg banks, doctors, post office, real estate, gyms etc).
- Community facilities including a large multi purpose community resource centre and potentially a child care centre.
- Public primary school and high school.
- Residential mixed use dwellings including a range of higher density dwelling types including terraces, small lot detached homes, apartments, live work dwellings, shop top housing and retirement living (attached, semi detached, multi dwelling housing, residential flat buildings etc).

Marshall Mount Methodist Cemetery is to be retained within the new Town Centre. The site will be used and retained in private ownership and is to be encompassed within a park setting to ensure an appropriate buffer (refer to section 3.6 below).

In accordance with Modification C9 of the Concept Plan approval, prior to the approval of the first application for development within the B4 Mixed Use zone identified as being part of the Town Centre and excluding the education precinct as approved, the Development Control Strategy is to be updated in consultation with Shellharbour City Council and submitted to the Department of Planning for approval, to include a masterplan for the development of the Town Centre Core. An updated version of the strategy is provided at **Appendix F** which addresses the following items as required by Condition C9 (noting that the Town Centre Master Plan has not been provided as part of the Development Control Strategy at **Append F**, as it is undergoing revision in consultation with Council for approval by the Department):

- Provision of retail floor space being delivered within the Town Centre Core to achieve the requirements of Condition C8
- Approximately 20,000m² of other commercial floor space
- Approximately 1,120m² community floor space
- The proposed location of residential uses within the Town Centre Core
- Associated car parking necessary to support all land uses
- Key pedestrian areas, including plaza and open space and active street frontages, including a key plaza or private open space area that is at least 1,000m² in area
- Vehicle and pedestrian circulation arrangements, including public transport infrastructure such as location of bus stops and car share spaces, and consideration of the 'Movement and Place framework' to ensure the needs of different customer groups (pedestrians, cyclists, public transport users and private vehicle drivers) are appropriately prioritized
- Appropriate staging of the Town Centre Core to ensure delivery of retail and commercial services to the Calderwood population as it grows
- Built form controls that would ensure high quality built form outcomes, appropriate ground floor uses, active street frontages and weather protection along all key pedestrian routes, and high quality public domain outcomes
- Suitable interface treatments between the Town Centre Core and Town Centre residential areas and the cemetery.

Village Centre

In addition to the Town Centre, a new Village Centre is proposed towards the southern boundary of the site. The Village Centre will be delivered as part of the initial stages of the development to assist in place creation and to provide for the local day to day convenience retail needs of future residents.

The Village Centre will include (in accordance with Modification C8 of the approved Concept Plan):

- A maximum of 5,000 sqm of retail floor area.
- Approximately 1,000 sqm of mixed use employment floor area including a range of commercial, business and light industrial uses.
- Residential mixed use dwellings including a range of higher density dwelling types including terraces, small lot detached homes, apartments, live work dwellings, shop top housing and retirement living.

Condition C8 of the consolidated Concept Plan outlines that a maximum retail floorspace for the Town and Village Centre shall be as follows:

- Village Centre – 5,000m²
- Town Centre – 20,000m²

The minimum retail floor space to be provided in the Town and Village Centres combined is 21,400 m².

3.5 Riparian Corridors

The approved Concept Plan Riparian Corridor Network is shown on **Figure 5**.

The approved riparian strategy for the Concept Plan is:

- Provision of regional linkages from the ocean to the escarpment via the principal riparian corridors of Marshall Mount Creek and Macquarie Rivulet.
- Identification of a series of secondary corridors from the regional linkages to Johnston's Spur reflecting their relative importance as riparian corridors. Secondary corridors will support the primary corridors.
- Provision of a sufficient Core Riparian Zone (CRZ) for remaining riparian corridors to provide for bed and bank stability. The CRZ is the total width of the corridor.

The approved Concept Plan requires:

- Retention of the riparian corridors that have been assessed and determined to have a requisite hydrological function generally in accordance with **Figure 5**.
- A riparian corridor of 92 metres total width to be provided to Marshall Mount Creek and Macquarie Rivulet in accordance with **Figure 5**.
- A riparian corridor of 48 metres total width to streams extended from the main valley floor environmental corridors to Johnston's Spur in accordance with **Figure 5**.

Refer also to Statements of Commitment 28 to 30 at **Appendix B**.

There are a small number of first order drainage lines (13) that are approved under the Concept Plan to be removed. Each of these is a small ephemeral first order line with very small catchment area.

The first order drainage lines approved to be removed are Reaches 11-16, 19, 20, 22, 25, 30, 31, 38 and 39. The location of these existing drainage lines is shown on **Figure 6** below.

With reference to **Figure 6**, the approved Concept Plan provides for:

- 16 mapped stream segments (segments 1, 7, 8, 18, 23, 26, 24, 32, 33, 34, 35, 40, 42, 44, 45, 46 and 48) consistent with the RCMS;
- 12 mapped stream segments (2, 17, 27, 28, 29, 36, 37, 43, 47, 49) with a higher category than the RCMS; and
- 6 first order drainage lines 3, 5, 6, 9 and 10 and second order stream 4 with a lower categorisation than the RCMS.

CRZ and Vegetated Buffer Widths

The approved Concept Plan provides for CRZ and Vegetated Buffer (VB) widths as identified in **Table 4** below.

For information purposes only, Table 4 also states the CRZ and Vegetated Buffer (VB) widths previously suggested by NOW and requirements under the most recent Guidelines published by DECCW under the Water Management Act (February 2008). Where differing to the NOW and / or DECCW guidelines, the approved Concept Plan provisions prevail.

Table 4 CRZ and Vegetated buffer widths

Stream	NSW Office of Water (submission 2010)	DECCW 2008 Guidelines	Concept Plan
Marshall Mount Creek, Macquarie Rivulet and Hazleton Creek (Category 1 / 3 rd + Order Streams)	40 m CRZ + 10m VB either side	20 – 40 m CRZ + 10m VB dependent upon merit issues	46 m CRZ either side Significant additional open space and drainage land is provided immediately adjacent to CRZs resulting in an average of well in excess of 10 m of VB either side
Category 2 / 2 nd Order Streams	20 m CRZ + 10m VB either side	20 m CRZ + 10 m VB dependent on merit issues	24 m CRZ either side A 4 m wider CRZ is provided, with additional open space and drainage land forming an additional VB where considered appropriate
Category 3 / 1 st Order Streams	10-20 m CRZ + 10 m VB either side	10m CRZ (intermittent flow) + 10 m VB dependent on merit issues (RCMS 10 m CRZ only)	12 m CRZ either side The minimum CRZ width is met, with open space and drainage land forming an additional VB where considered appropriate.

Under the Concept Plan approval a blanket 10 metre wide VB has not been applied in addition to the CRZs for the entire length of each 1st, 2nd and 3rd Order stream.

The CRZs and any associated additional VBs adopted at the detailed design stages of the Project will be considered based on analysis of the management objectives of the riparian corridors and applied flexibly depending on their locations and the objectives to be applied.

In addition to the CRZs identified above and at **Figure 7**, significant areas of land located immediately adjacent to riparian corridors, although not part of the riparian corridor network itself, will contribute to achieving riparian outcomes.

These areas, which are shown on the approved Open Space Master Plan at **Figure 7** below, will incorporate a suite of ancillary functions as part of an integrated urban environment and will substantially increase the environmental outcomes beyond that afforded through the riparian strategy alone.

The areas of open space and drainage land immediately adjoining the Riparian Corridor Network will incorporate a suite of ancillary functions as part of an integrated urban environment private / public open space provided immediately adjacent to CRZs substantially increases the capacity of environmental outcomes beyond the area afforded through the riparian strategy alone. The Landscape Open Space Masterplan for the Project (refer to **Appendix G**) provides clear details as to how this land will be designed and landscaped so that it contributes a “VB” to riparian corridors.

Refer also to Statements of Commitment 33 to 36 at **Appendix B**.

Uses and development within riparian lands

The approved Concept Plan allows for a limited number of vehicular crossings, and pedestrian and cycle pathway crossings of riparian corridors generally in accordance with the principles shown on the approved Road Layout and Hierarchy Plan at **Figure 11** and the approved Pedestrian and Cycle Initiatives Plan at **Figure 12**. These crossings may be designed in a variety of forms dependent upon final location and would not necessarily comprise bridges. The identified roads provide egress during the 1:100 yr flood event.

A network of pedestrian and cycle pathways within the CRZs is permitted. Utility services infrastructure will need to cross the CRZs as required and may be located within CRZs where dual location within pathways makes sense.

The final location of crossings and pedestrian and cycle pathways, and utility services infrastructure, will take into consideration vegetation that is proposed to be retained and protected as shown on the Environmentally Significant Land map at **Figure 8**.

Refer also to Statements of Commitment 31 and 32 at **Appendix B**.

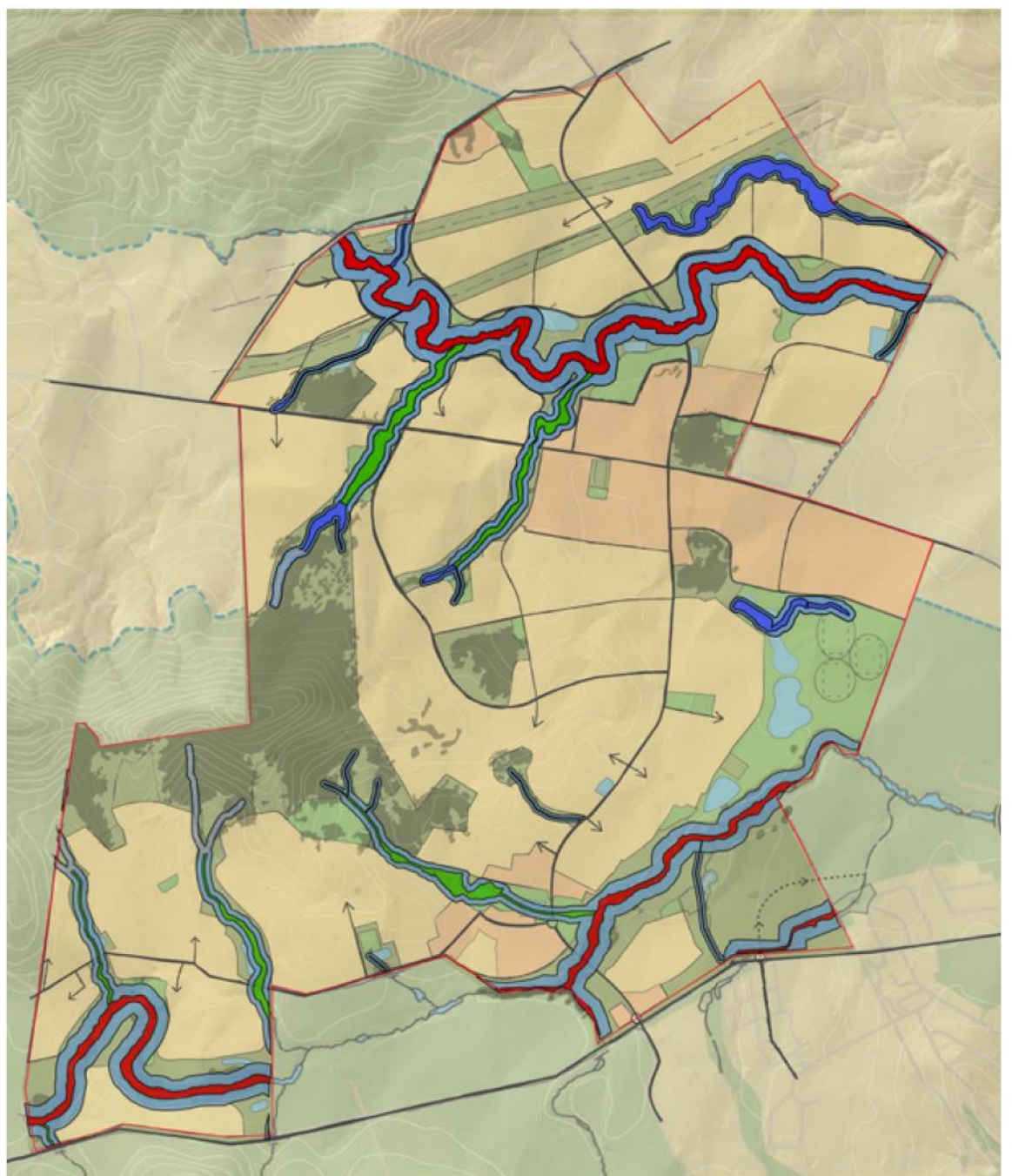
Recreation and drainage uses within riparian lands are to be sensitively designed and managed and existing native riparian vegetation should not be unnecessarily removed to accommodate these uses. Wetlands and ponds will be located and designed to be sympathetic to complement the environment.

The basic configuration of the proposed wetland system consists of a combination of permanent and intermittently inundated ponds and wetlands, shaped and interlinked with bioswales to retain mature trees where possible.

Where any spill ways / outlets are proposed from stormwater detention basins / wetlands directly into the main arms of Marshall Mount Creek and Macquarie Rivulet, their design is to have regard to facilitating colonisation by native fish species.

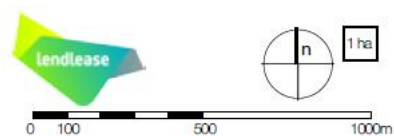
Wherever feasible in the installation of services such as water, sewerage and gas pipeline across Marshall Mount Creek and Macquarie Rivulet are to be combined with vehicular crossings to minimise potential impact on fish passage and or by trenching.

Refer also to Statements of Commitment 39 and 40 at **Appendix B**.



Proposed Riparian Corridor Network (MOD 4 PPR)

-  **Top of Bank - Stream Order 3+**
Ground truth and ALS survey data
-  **Top of Bank -Stream Order 2**
Ground truth and ALS survey data
-  **Top of Bank -Stream Order 1**
Ground truth and ALS survey data
-  **Core Riparian Zone (CRZ)**
Size based on stream order



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours May 2019

Figure 5 Approved Concept Plan Riparian Corridor Network



Figure 6 Approved Riparian classifications including reaches approved to be removed

Source: Riparian Consistency Report, Ecological March 2010

3.6 Conservation and Open Space

A Landscape and Open Space Masterplan & Public Domain Report prepared by Taylor Brammer is included at **Appendix G**. The approved Concept Plan Indicative Open Space Network is shown at **Figure 7**.

The approved Open Space Masterplan will deliver a combination of conservation and passive and active recreation. It encompasses the approved Riparian Corridor Network (refer to Section 3.5) as well as other open space corridors, a number of environmental conservation reserves and bushland conservation areas, and city wide, district and local parks.

In accordance with Modification B5 of the approved Concept Plan the location of parks and public open space in the Landscape Open Space Masterplan at **Appendix G** is to be considered to be indicative locations only, and will be subject to further agreement with the relevant Council or other agency regarding the specific location of parks and open space, as part of each staging application.

3.6.1 Conservation

Land approved to be retained for environmental conservation purposes, includes:

- Open space corridors, incorporating the Riparian Corridor Network (these corridors perform a dual conservation and critical drainage function) – approximately 154 hectares (approximately 113 hectares of the total open space corridor area comprises riparian corridors);
- Environmental reserves – approximately 16.6 hectares in four separate reserves; and
- Johnston's Spur (city wide bushland) – approximately 61.1 hectares of bushland and 2.6 hectares of parkland.

Johnston's Spur

It is proposed to retain Johnston's Spur as city wide park and bushland to provide a combination of conservation and passive recreation outcomes.

Environmental reserves

There are four approved environmental reserves:

- Environmental Reserve (ER1) Incorporating a remnant stand of Lowland Woollybutt Melaleuca Forest and linking to the Marshall Mount Creek corridor. Proposed to adjoin an access corridor link to the Marshall Mount Creek corridor.
- Environmental Reserve (ER2) Incorporating a remnant stand of Lowland Woollybutt Melaleuca Forest to be conserved as a nodal "stepping stone" habitat adjoining the existing school site.
- Environmental Reserve (ER3) Incorporating a remnant stand of Coastal Grassy Red Gum Forest to be conserved as a nodal "stepping stone" habitat. Proposed to incorporate an area of Local Park to the north eastern side and a stand of remnant trees in the Clover Hill Development.
- Environmental Reserve (ER4) Incorporating a remnant stand of Lowland Woollybutt Melaleuca Forest and potentially linking to the Macquarie Rivulet corridor. Proposed to incorporate an area of District Park to the northern side.

The four reserves comprise areas identified as being of Primary Conservation Significance in the Flora and Fauna Assessment (refer **Appendix M**).

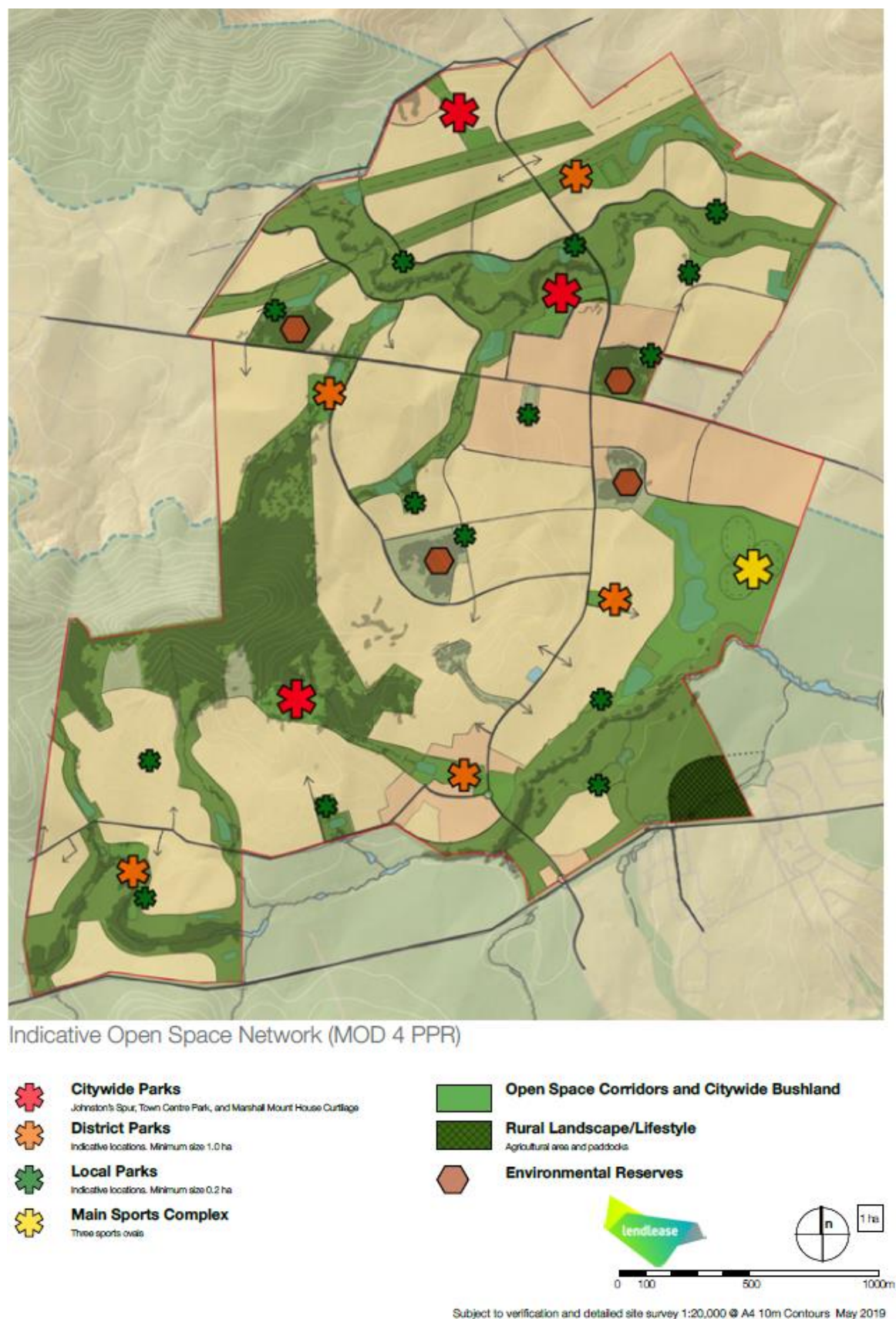


Figure 7 Approved Concept Plan Indicative Open Space Network

Corridors

The approved Open Space Masterplan incorporates 17 open space corridors, primarily relating to site drainage lines. In addition to access and habitat conservation corridors, these corridors, which incorporate the approved Riparian Corridor Network, perform a key role in the proposed water cycle management strategy for the site. The corridors will offer passive recreation and comprise generally open grassed areas, with some regeneration.

In most cases additional areas of public open space (local and district parks – refer below) is provided immediately adjoining the corridor. The majority of the corridors provide potential for provision of off road cycle/ pedestrian linkages.

The individual function and purpose of the approved corridors C1 to C17 is detailed in the Landscape and Open Space Masterplan at **Appendix G**. Approved Corridors C1 to C5 are located in the Wollongong LGA, and approved corridors C6 to C17 in the Shellharbour LGA.

Consistent with the recommendation made by the Department of Agriculture, cleared land on the floodplain is retained within the corridors to allow potential opportunities for suitable future agricultural uses.

Vegetation management plans

Modification C3(1) of the approved Concept Plan requires management plans for the Environmentally Significant Lands and/or the Habitat Enhancement Link / Special Riparian / Environmental Corridor Subdivision Area identified in the Special Subdivision Plan (SSA Plan) to be prepared and submitted with each relevant application.

The management plans are to include the ownership arrangements for these lands, and how these ownership arrangements will ensure the management regimes will be implemented and be on-going.

Modification C3(2) of the approved Concept Plan requires that Vegetation Management Plans are submitted with each development application proposing the subdivision of the Environmental Reserve Lands and/or the Habitat Enhancement Link or the Special Riparian/Environmental Corridor Subdivision Area lands identified in the Special Subdivision Area Plan (see **Appendix C**). Each VMP shall:

- a) Demonstrate how an improvement to aquatic habitat will be achieved (for Marshall Mount Creek and Macquarie Rivulet);
- b) Demonstrate how an improvement to water quality will be achieved;
- c) Identify the rehabilitation/revegetation works required to maintain the ecological integrity of the Environmental Reserve Lands, the Environmentally Significant Lands and/or the Habitat Enhancement Link or the Special Riparian/Environmental Corridor Subdivision Area lands. Where such works are required, the Vegetation Management Plan must identify:
 - a. The methodology for undertaking the rehabilitation/revegetation works;
 - b. Monitoring and performance criteria to measure the success of the rehabilitation/revegetation works;
 - c. Completion criteria for the rehabilitation/revegetation works; and
 - d. Any ongoing monitoring and management measures required to maintain the ecological integrity of the Environmental Reserve Lands, the Environmental Significant Lands and/or the Habitat Enhancement Link or the Special Riparian/Environmental Corridor Lands Subdivision Area lands;
- d) Demonstrate how the proposal will contribute to fauna habitat connectivity;
- e) Provide passive recreation with a low environmental impact, where it is available for a public use; and
- f) Demonstrate the consistency with the provisions of the relevant Management Plan(s) prepared to satisfy the requirements of condition C3(1).

Where a Vegetation Management Plan is approved by a consent authority, it is to be implemented in perpetuity by the owner(s) of each lot within the Open Space Corridors and Citywide Bushland or any Environmental Reserve(s) on the 'Proposed Open Space Network' map in Appendix L of the PPR submitted with Mod 2 to the Concept Plan.

Refer also to Statement of Commitment 35 at **Appendix B**.

3.6.2 Public Open Space Provision

The approved Concept Plan Open Space provision includes the following indicative open space provision:

- 13 local parks >0.3 ha each in area totalling 5.1054 ha;
- 5 district parks > 1 ha each in area totalling 9.2095 ha;
- 3 city wide parks totalling 7.53 ha;
- 1 Town Centre Town Square/Public Plaza 1,000sqm; and
- 1 sporting ground (active recreation) of 21.9631 ha in area.

The baseline requirement for each category of open space is consistent with the Shellharbour City Council 2009 Draft Open Space and Recreation Plan.

All local parks, district parks, city wide parks, and the sporting ground are to be dedicated to the relevant Council.

As identified above, Modification B5 of the Concept Plan approval requires the location of parks and public open space to be considered as indicative locations only, with the specific location of parks and open space to be the subject of further agreement with the relevant Council or agency as part of each staging application.

Notwithstanding the above, Modification C12 of the approved Concept Plan further identifies that local open space areas are to be provided generally in accordance with the following principles as part of the requirements for local infrastructure:

- A total of approximately 21.84 ha of open space (made up of local parks, district parks and city wide parks); and
- Sports fields of approximately 21.96 hectares.

Condition C12 (b) outlines that all additional open space to be provided as a result of MOD 4 is to be provided on the core lands, unless otherwise agreed with the relevant Council.

The approved Open Space Master Plan develops the following principles in locating open space:

- Local or District Park accessible to each neighbourhood as recreational, civic, and landscape focus.
- The majority of the residents within walking distance (5-10 minutes) of quality open space.
- Focal active recreational parkland that provides for clustering of sports facilities and relates to the Village Centre community and educational facilities.
- Locate parklands to take advantage of existing landscape features where possible.
- Provide access to recreational and environmental amenity of Johnston's Spur ridge top via corridor path system to complement local open space provision
- Integrate parklands where possible with the internal network of open space corridors to enhance continuity of pedestrian / cycle and environmental links
- Supplement open space corridor connectivity with off road pedestrian / cycle access to "parkway" style road corridors with tree lined verges.
- Provide adequate buffer zones between creek lines and the recreational open space where parklands adjoin corridors.
- Balance quantum of open space for residential population against quality of open space settings, experiences, diversity and the range of recreation and lifestyle opportunities available.
- Optimise the effective use of specific site characteristics and values in provision of open space - that is, the site has high potential to provide quality passive recreational spaces such as to Johnston's Spur – but less potential to provide large scale multi-facility sports fields due to undulating landform and extent of floodplains.

- Provide a sustainable quantum of open space that does not place undue demand on Council's maintenance resources without tangible benefit for the community.

The final location of open space is subject to resolution at the detailed design stage however indicative locations, as proposed in Mod 4 are provided in the Public Domain Report at **Appendix G**. Principles to be used to determine the final location of each identified open space area are provided in the Landscape and Open Space Masterplan included at **Appendix G**.

The indicative provision of open space within each LGA is summarised in **Table 5**. The indicative open space provision is subject to Modification C12.

Table 5 Concept Plan open space provision

Open space provision by LGA					
Item	Shellharbour		Wollongong		Total
	No.	Area (Ha)	No.	Area (Ha)	Area (Ha)
Local parks (>0.2 ha)	11	3.9448	3	1.1606	5.1054
District Park (>1.0 ha)	4	8.2095	1	1	9.2095
Citywide Park	2	5.43	1	2.1	7.53
Sporting Grounds	1	21.0592	1	0.9039	21.9631
Total		38.6435		5.1645	43.808

Source: Taylor Brammer, Calderwood Public Domain Report 2019

The landscape character and embellishments proposed for each of the open space areas is detailed in the Landscape and Open Space Masterplan prepared by Taylor Brammer included at **Appendix G**.

A city wide park is to be located adjacent to Marshall Mount House to assist in retaining the view from Marshall Mount Road to the house, including the Oak Tree.

Marshall Mount Cemetery is to be adjacent to a local park that will provide an appropriate landscape buffer to the surrounding development.

3.6.3 Future Land Ownership Options

A Land Ownership Option matrix, and a Land Ownership Options Plan relating to the approved Concept Plan are included at **Appendix H**.

The Land Ownership Option matrix and Land Ownership Options Plan provide a detailed analysis of each area of land that forms a part of the approved Concept Plan Open Space Network including:

- Environmental reserves;
- City Wide Parks;
- District Parks;
- Local Parks;
- Open Space Corridors and,
- Citywide Bushland.

All riparian land is included in the analysis. The Land Ownership Option matrix and Plan identify, for each area of land:

- Location;

- Land use (purpose), including multiple uses as relevant;
- Ownership options, including existing ownership of adjoining lands; and
- Logical future maintenance responsibility – preferred ownership.

Proposed Local Development Contributions Schedules reflecting the terms of Modification C12 of the Concept Plan Approval are included at **Appendix I**.

The Proponent is committed to ongoing negotiations with State and local government to achieve the preferred ownership outcomes for the identified land.

However, if the preferred ownership outcome is not ultimately agreed, the Proponent will identify an alternative ownership arrangement at the relevant subdivision stage.

Refer also to Statements of Commitment 2 to 12 at **Appendix B**.

3.7 Retention of Vegetation

The approved Concept Plan identifies the areas of significant vegetation that are to be retained and appropriately enhanced. Refer to **Figure 8**.

The areas shown on **Figure 8** comprise the majority of areas of vegetation in good condition that has been identified as Primary, Support for Primary or Other Native Vegetation significance (refer to Section 2).

These core ecological (values) include Johnston's Spur, Marshall Mount Creek and Macquarie Rivulet as well as smaller pockets of good quality remnant native vegetation.

Within riparian corridors, enhancement of existing native vegetation is to be balanced as part of the approved Flood Mitigation Plan (refer below).

Vegetation Management Plans (VMPs) are to be prepared for all works within land identified as Environmentally Significant Land and within the Core Riparian Zones shown on the approved Concept Plan Riparian Corridor Network in accordance with the principles of the Landscape and Open Space Masterplan at **Appendix G**.

The approved Concept Plan Statement of Commitment 37 requires a detailed survey to be carried out in an appropriate season for *Pterostylis gibbosa* (Illawarra Greenwood) prior to any works commencing within potential habitat for that species. Potential habitat for the species is the Moist Box-Red Gum Foothills Forest and Coastal Grassy Red Gum Forest Wollybutt-Melaleuca. Following the further detailed survey work, any specific mitigation measures determined as required are to be addressed in the relevant detailed application(s). Refer to **Figure 9**. It is noted that Eco Logical has undertaken this work and this commitment has been fully adhered to.

The approved Concept Plan Statement of Commitment 38 requires that mature remnant habitat trees will be individually assessed prior to detailed design in the area identified on **Figure 10** (this Figure is referenced in the March 2010 EAR as Figure 7 of the Flora and Fauna Assessment prepared by Ecological Australia). Individual trees considered to provide significant habitat will be retained and incorporated into the design wherever practicable.

Modification C2 of the approved Concept Plan requires the following in relation to development on land identified on the Environmentally Significant Lands Layer on **Figure 8**:

Before granting consent, the consent authority must be satisfied that the development:

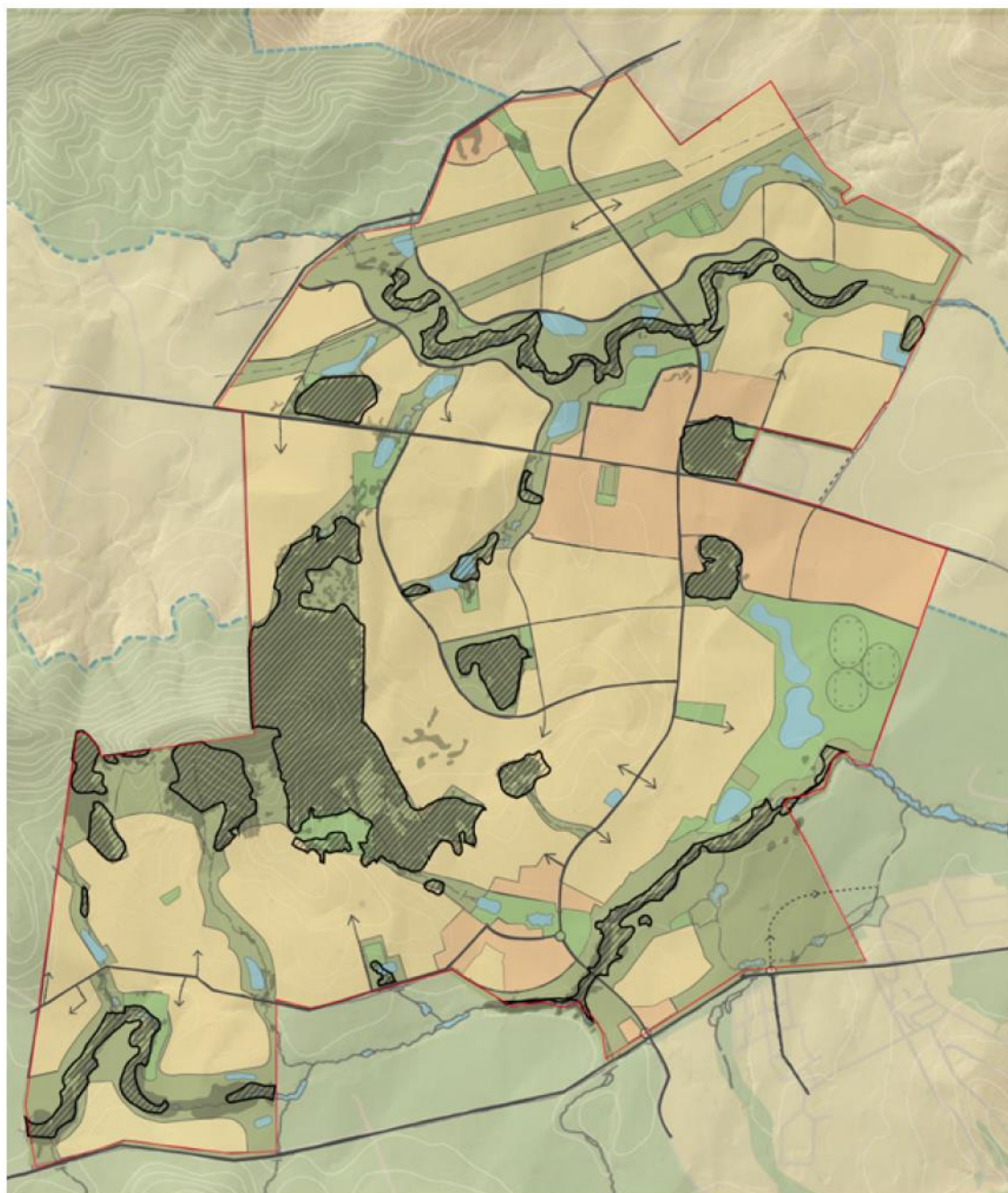
- would substantially retain existing native vegetation, and
- would not adversely affect to a significant extent:
 - the ecological value of the existing vegetation, or
 - native fauna

Before granting consent, the consent authority must consider whether;

- the locality has high biological diversity
- the locality contains:
 - a disjunct population of native species or a species that is near the limit of its geographical range, or
 - riparian vegetation, or
 - vegetation associated with wetlands, and
- the land has connective importance as, or as part of, a corridor of native vegetation forming a connection that allows for the potential passage of species of flora or fauna between two or more areas of native vegetation, and
- the vegetation is adequately represented on land in the general locality, and
- the land is important as a site along a migratory route for wildlife, and
- the land functions as an important drought refuge for wildlife, and
- clearing of the land would be likely to contribute significantly to:
 - soil erosion, or
 - salinisation of soil or water, or
 - acidification of soil, or
 - landslip, or
 - deterioration in the quality of surface or ground water, or
 - increased flooding, or
- there is any need to conserve all or some of the native vegetation because:
 - of its unusually good condition or its significance as a sample of its type, or
 - the development will increase the perimeter of the native vegetation, and so the ratio of the boundary to the area of the native vegetation, making it more vulnerable to negative impacts, or
 - there is an archaeological site that has Aboriginal heritage significance on the land.

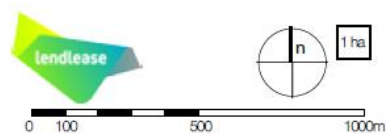
Modification C4 of the approved Concept Plan also requires an arborist to be engaged when works may affect significant trees on the heritage sites (Marshall Mount Cemetery and Marshall Mount House).

Refer also to Statements of Commitment 34 to 38 at **Appendix B**.



Environmentally Significant Lands (MOD 4 PPR)

 **Environmentally Significant Lands**
Primary and Support for Primary



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Figure 8 Approved Concept Plan Environmentally Significant Lands

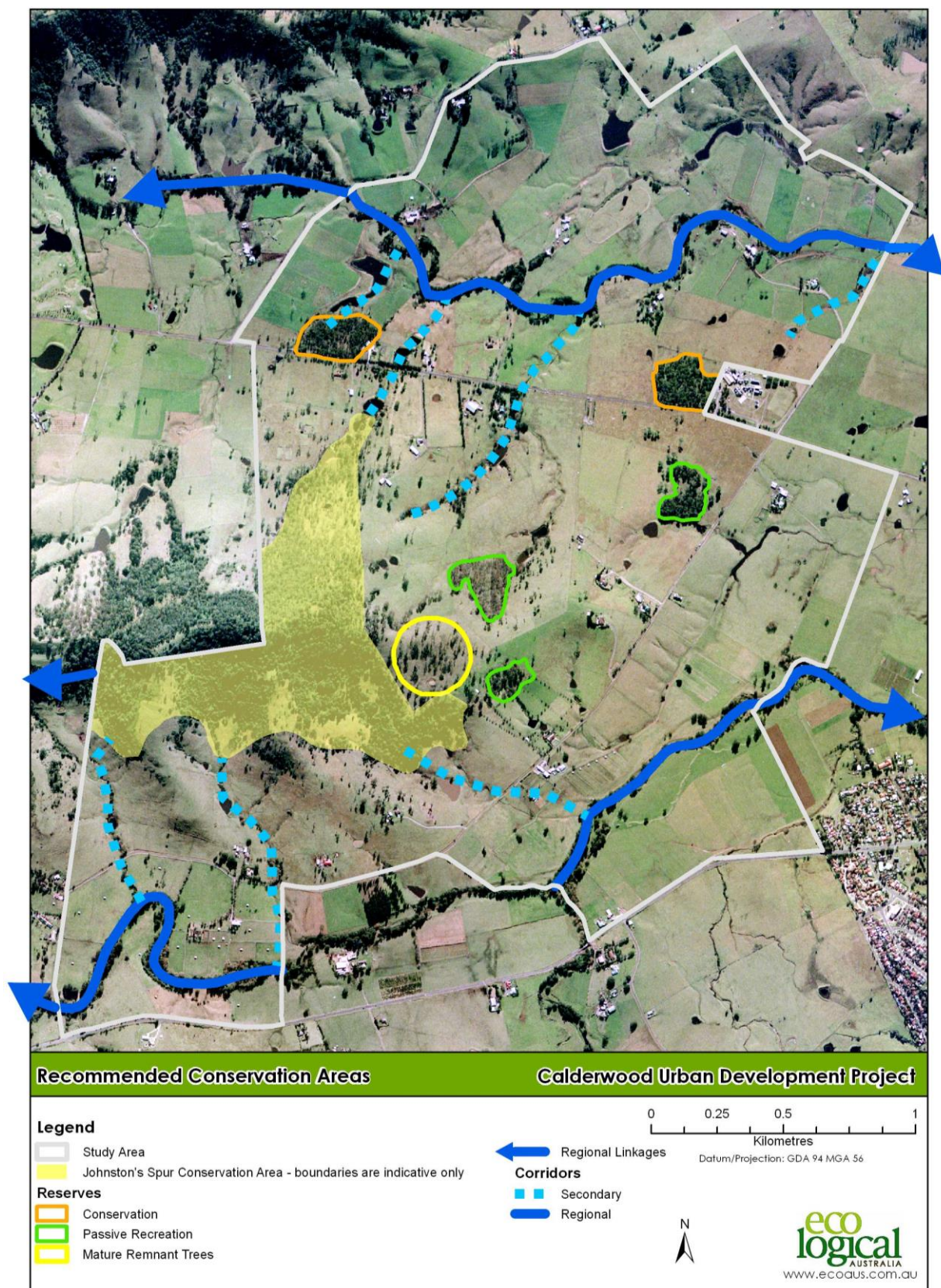
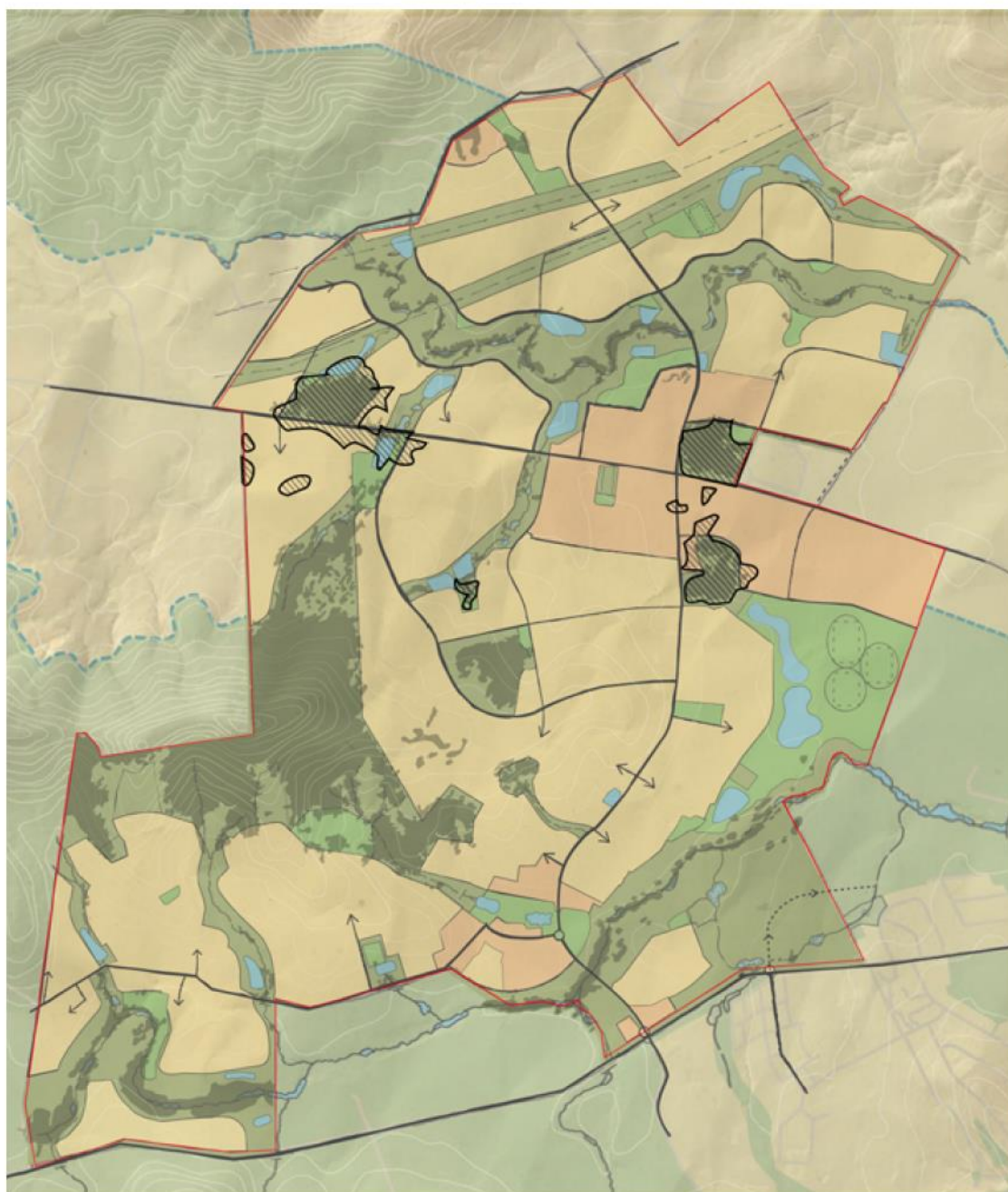
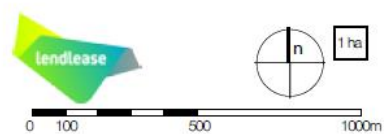


Figure 9 Area requiring individual assessment of remnant mature trees at relevant detailed application stage (shown outlined in yellow)



Statement of commitment #37 (MOD 4 PPR)

 **Lowland Woollybutt-Melaleuca**
Refer to Ecological Flora and Fauna Assessment March 2010



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Figure 10 Area referenced in Statement of Commitment 37

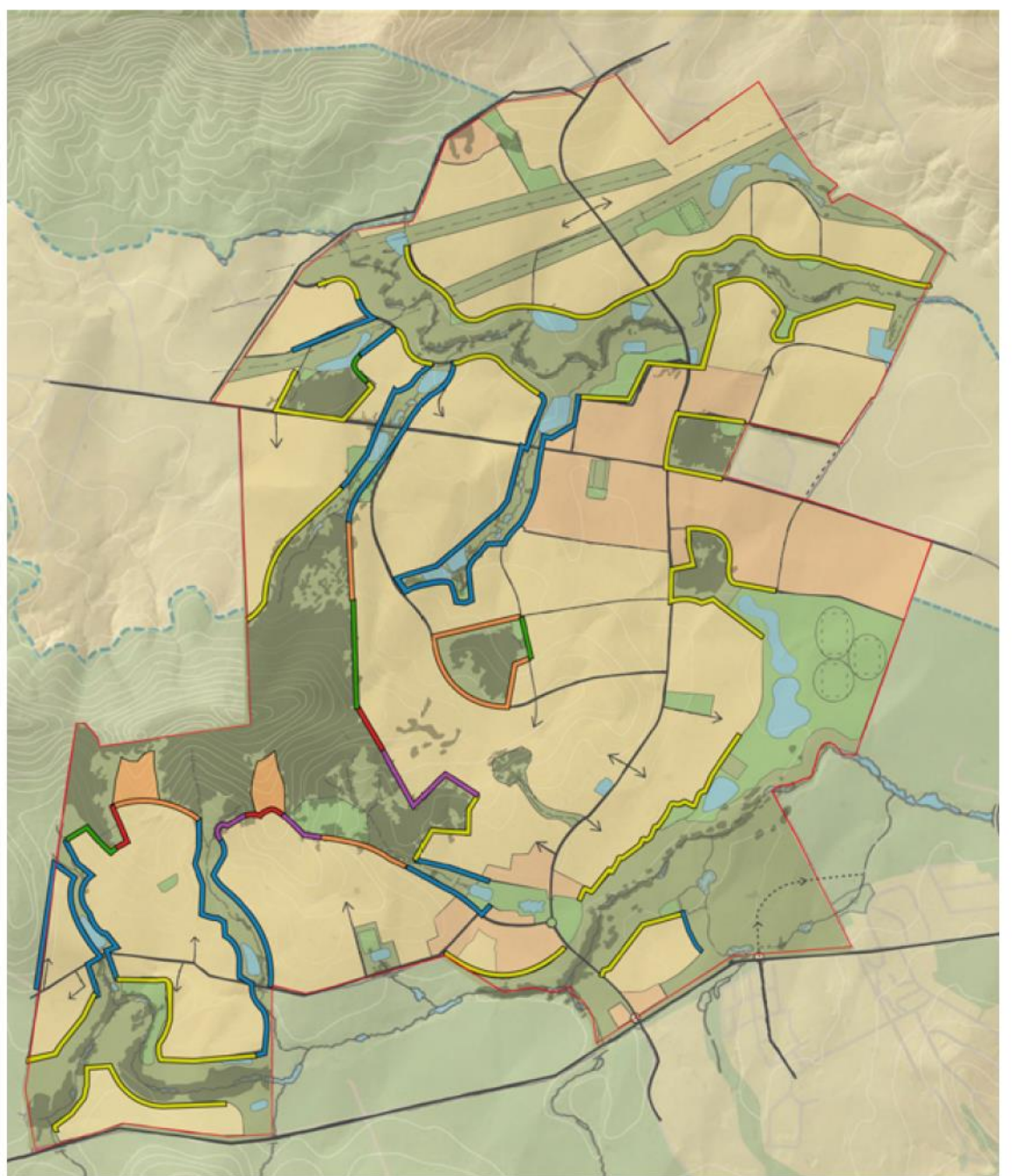
3.8 Bushfire Asset Protection Zones

The approved Concept Plan includes the establishment of maximum Bushfire Asset Protection Zones at known areas of bushland / development interface as illustrated on **Figure 11**.

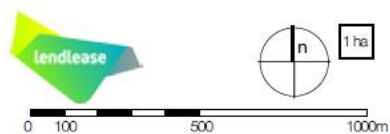
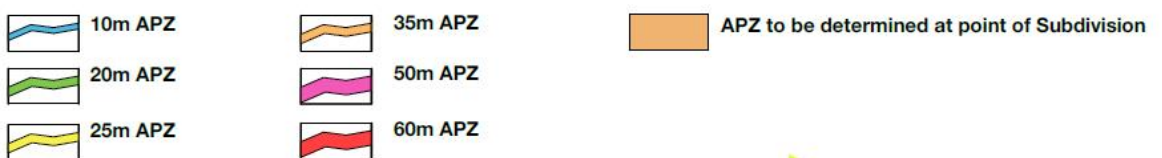
Subject to final land uses and detailed design, the APZs may be reduced in accordance with Planning for Bushfire Protection.

Modification C10 of the approved Concept Plan requires specified matters to be addressed for future applications for development.

Refer also to Statement of Commitment 74 at **Appendix B**.



Bushfire Asset Protection Zones (APZ)(MOD 4 PPR)



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Figure 11 Approved Concept Plan Bushfire Asset Protection Zones

3.9 Access and Transport

3.9.1 Internal Road Network

The approved Concept Plan internal road network hierarchy is illustrated by **Figure 12**.

The internal road hierarchy comprises a sub-arterial boulevard, major collector streets and minor collector streets. A network of local roads will service the residential areas within the site.

Key features of the proposed internal road network are:

- A north-south sub arterial spine road (Escarpment Drive) that connects to:
 - the Illawarra Highway in the south opposite Yellow Rock Road; and
 - Marshall Mount Road in the north near North Marshall Mount Road.
- Escarpment Drive will provide one traffic lane in each direction. It will accommodate bus movements. Due to its sub-arterial function, direct access to the spine road will be limited to permit the free flow of traffic.
- Realignment of Calderwood Road (in part) through the development site. Calderwood Road will also be upgraded east of the site as per Condition C12 of the modified Concept Plan.
- Major collector roads serving each residential neighbourhood and providing links between sub arterial roads and minor collector roads. These roads will provide one traffic lane in each direction and accommodate bus movements. They will be designed to a lower speed limit (50 kph or lower) with a lower speed environment reinforced through design features and the use of roundabouts at four way intersections.
- Minor collector roads servicing sections of each residential neighbourhood, designed as principal pedestrian links.
- A network of local roads.
- A bridge across Macquarie Rivulet accommodating vehicular, pedestrian and cycle movement. The Macquarie Rivulet Bridge is a key element of the internal movement network and will provide flood free access to the site in the 1:100 ARI event.
- A bridge across Marshall Mount Creek in the location where Escarpment Drive crosses the corridor.
- A culvert crossing at North Macquarie Road.
- A culvert crossing on the new north south road north of Macquarie Rivulet.
- Connection to the external road network via a four arm round about at the location of the existing Illawarra Highway / Yellow Rock Road priority controlled intersection.

The Macquarie Rivulet Bridge approved site has been selected based on a combination of engineering, urban design and environmental issues:

- It is located at the narrowest portion of flood affected land, and will have the least impact on flooding off site on adjoining property.
- It crosses the Rivulet at a natural 'knoll' in the landform and as such is well suited to an approach road on either side of the Rivulet, being naturally elevated with good sight distances.
- The location uses the Yellow Rock Road intersection, rather than other locations along the Illawarra Highway that are much more flood prone than the Yellow Rock Road intersection. This assists in the provision of flood free access across the bridge.
- It is located opposite Yellow Rock Road intersection, where the installation of a roundabout and associated works will provide a safe access to the Illawarra Highway with site distances consistent with RTA standards.

The design standards, including reservation widths, carriageway widths, verge widths and parking bay allowance, for each proposed street type are provided in the approved Consolidated Development Control Strategy included at **Appendix F**.

Modification C12(d) of the approved Concept Plan requires the following external road works to be provided as part of future relevant subdivision approvals:

- The upgrade of Calderwood Road from the site boundary to Tripoli Way extension (referred to in the TMAP as 32 and condition C12d(i)); and
- Upgrade of the intersection of the Illawarra Highway and Yellow Rock Road to provide site access (referred to in the TMAP as 37).

Further external road network improvements are required to address future network deficiencies that will result from the cumulative traffic impact of all future development that is likely to occur within the surrounding locality to 2031, including the proposed development. The proponent will make a contribution towards these required road network improvements.

A copy of the Concept Plan Transport and Accessibility Study & Transport Management and Accessibility Plan (TMAP) is included at **Appendix K**. A copy of the updated traffic assessment for Mod 4 is also provided at **Appendix K**.

Modification C5(1) of the approved Concept Plan requires a detailed traffic assessment to be submitted with the relevant application for subdivision and infrastructure works for each future stage of the project, with regard to:

- (a) Identification of the traffic generated by that particular stage of the development, having regard to the most recent version of the WOLSH Tracks model including the revised development yield and corresponding Aimsun microsimulation model (incorporating transport demands extracted from Tracks) for the 2036 traffic design year.
- (b) Existing capacity of surrounding road network and its ability to accommodate the development proposed within the Stage, including consideration of timing of the construction of the F6 extension and Tripoli Way Bypass.
- (c) Identification of upgrades to the local roads required to accommodate that stage.

Modification C5(2) also requires detailed design plans for the proposed road works to be undertaken as part of each Stage to be submitted with the relevant application for subdivision and infrastructure works, including:

- (a) Plans for the upgrades to be undertaken as works in kind including details of proposed timing / staging for the completion of the works.
- (b) Plans for proposed internal road and parking arrangements, including number of parking spaces, and details of bicycle and pedestrian facilities.

3.9.2 Pedestrian and Cycle

Approved pedestrian and cycle initiatives are shown on **Figure 13**. A network of pedestrian and cycle paths is to be provided within open space / riparian corridors and through bushland as well as along the street network providing a high level of connectivity within and between the future residential neighbourhoods and linking the Town Centre and Village Centre.

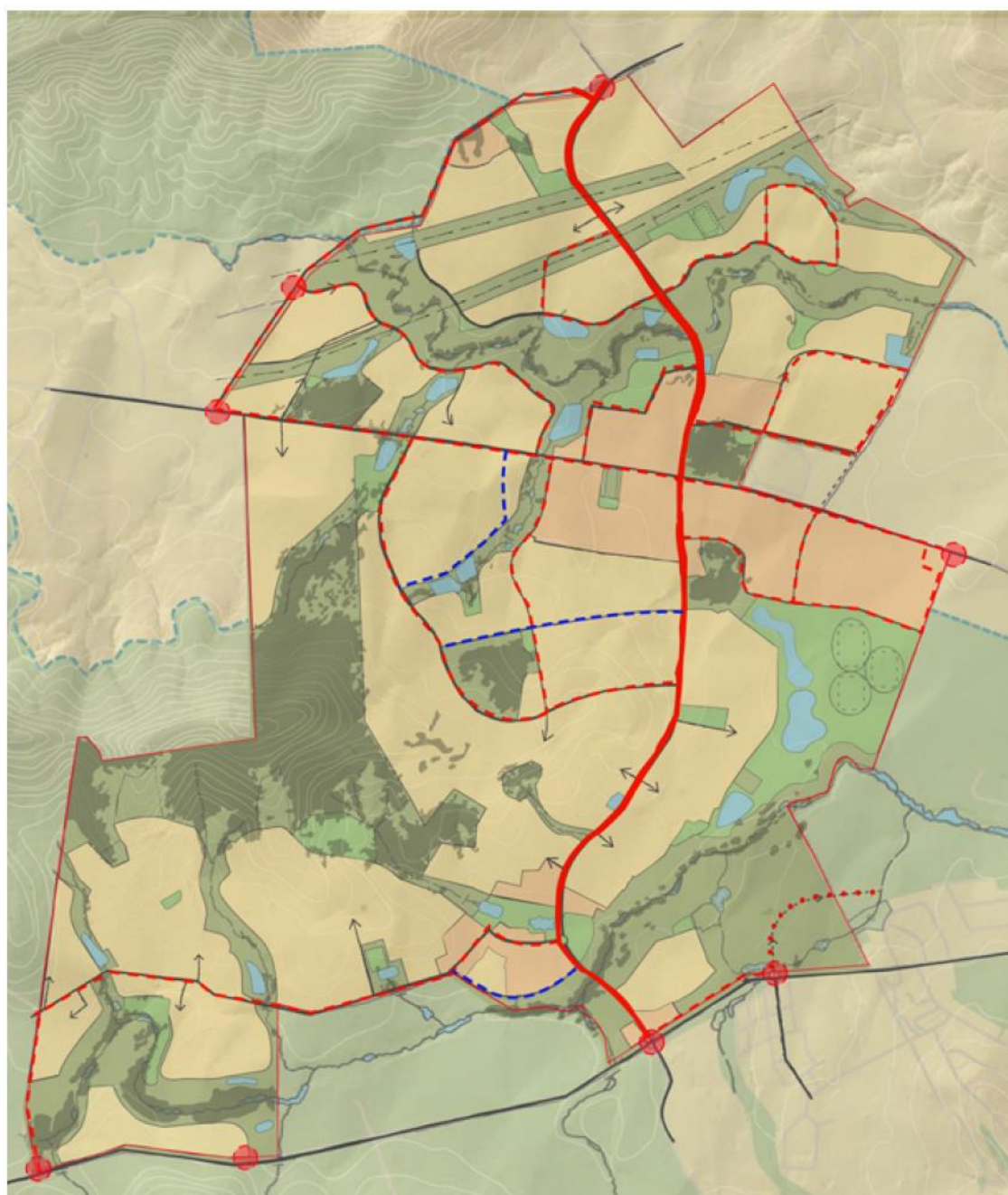
The approved Concept Plan allows for pedestrian and cycle pathways within the approved Riparian Corridor Network, and for these pathways to cross the riparian corridors in places. The final number and location of pathways and corridor crossings is subject to refinement in at the detailed design stages, however will be generally in accordance with the principles illustrated at **Figure 13**.

Refer also to Statements of Commitment 31 and 32 at Section 5.0.

3.9.3 Public Transport

It is proposed to service the development via a network of bus services. Indicative routes, stop locations and 400 m walking catchments are illustrated on **Figure 14**.

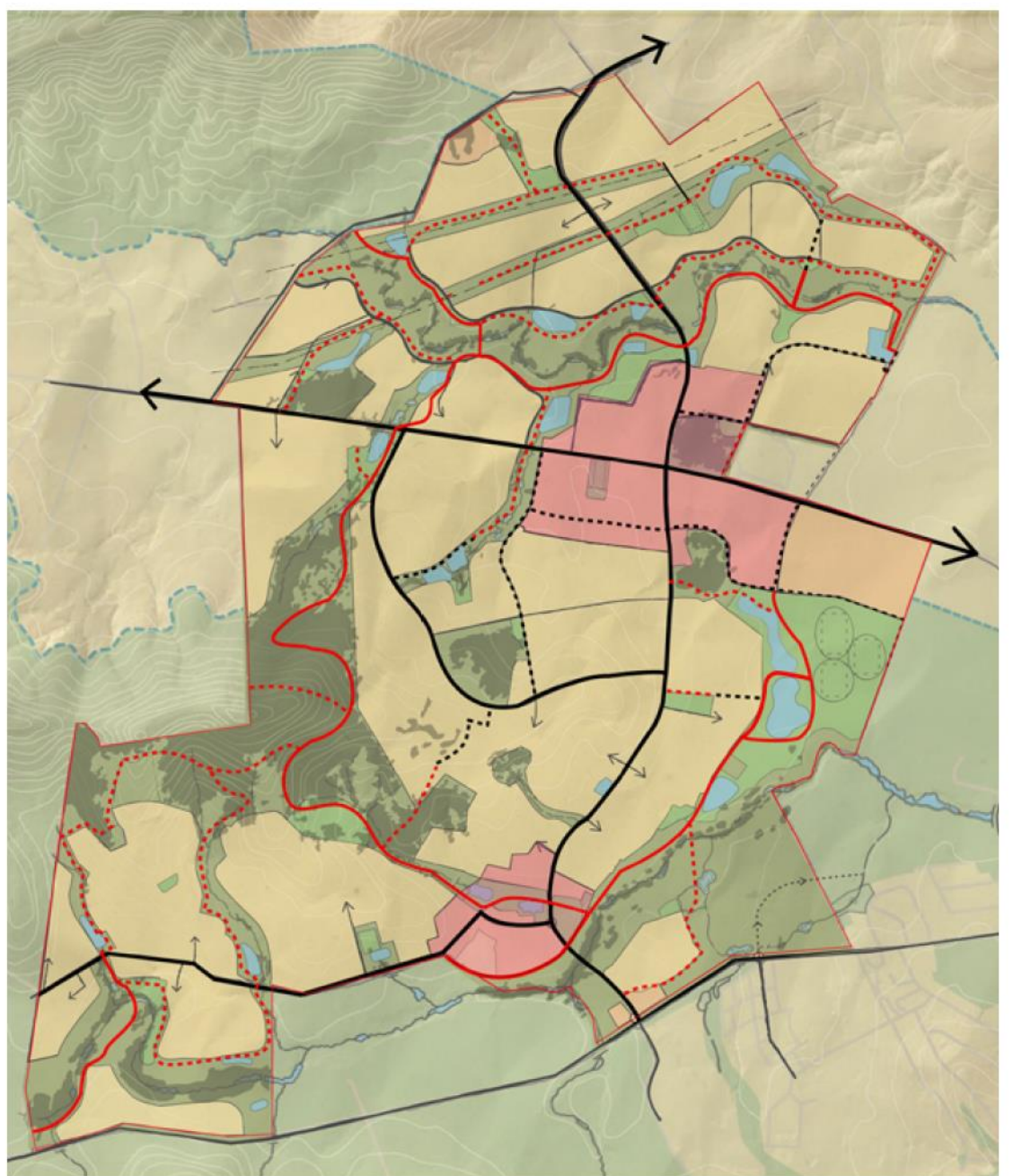
In accordance with Modification C6 of the approved Concept Plan, the bus service map is indicative only. The final design of the bus route network and stop locations will be determined in consultation with Transport NSW and bus service providers.



Road Layout and Hierarchy (MOD 4 PPR)



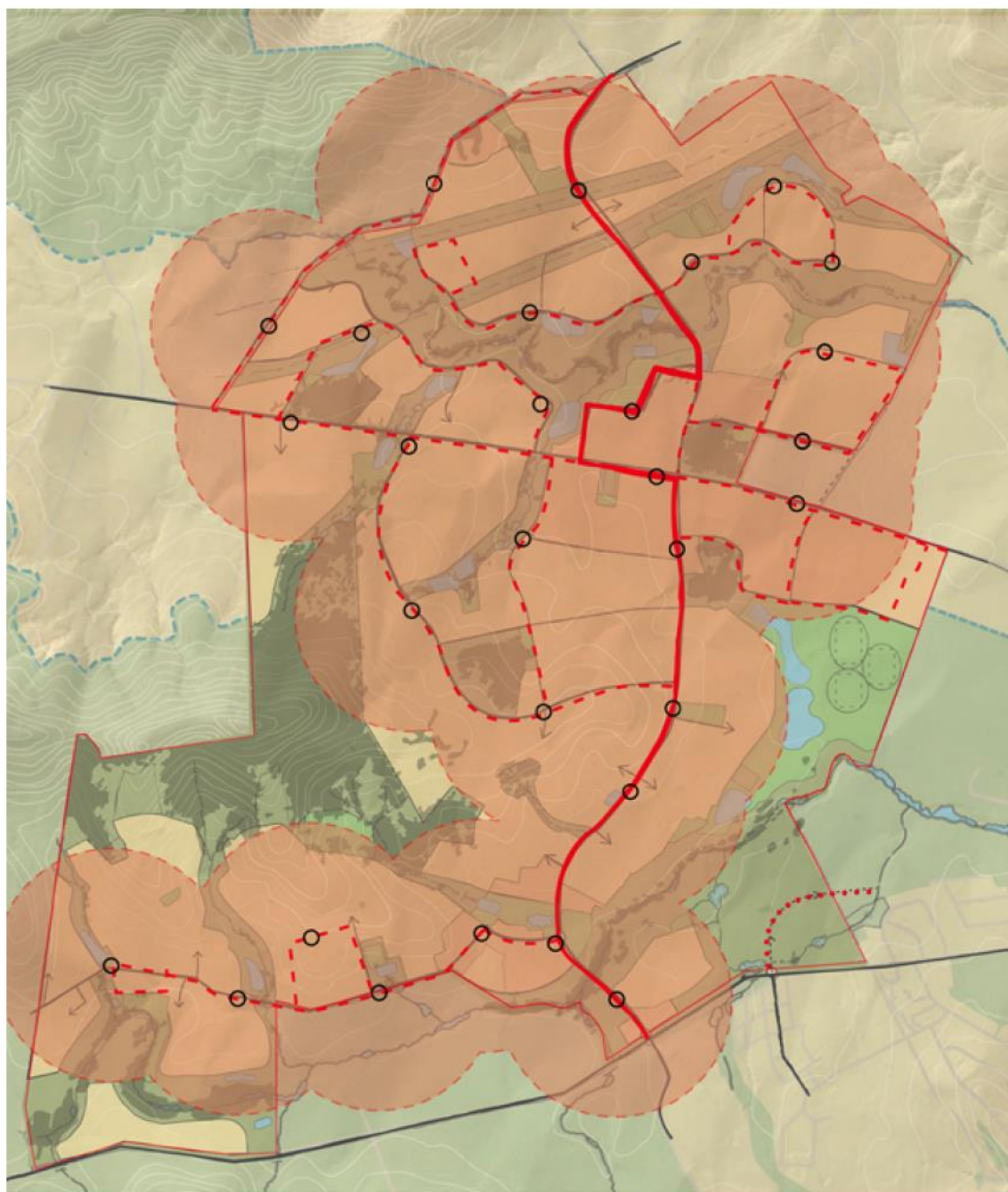
Figure 12 Approved Concept Plan Road Layout and Hierarchy



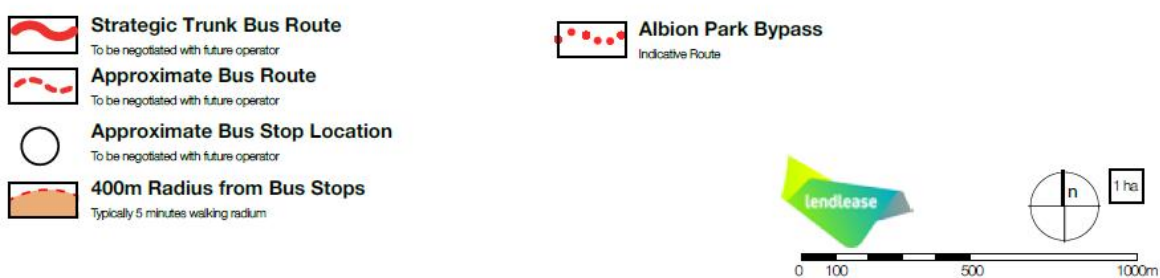
Proposed Pedestrian & Cycle Network (MOD 4 PPR)



Figure 13 Approved Concept Plan Pedestrian and Cycle Network



Indicative Bus Service (MOD 4 PPR)



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours May 2019

Figure 14 Indicative Bus Service

3.10 Water Cycle Management

The approved Concept Plan Water Cycle Management Concept is illustrated at **Figure 15**. Statement of Commitment 44 requires future relevant detailed applications to demonstrate consistency with the approved Concept Plan Water Cycle Management Strategy prepared by JWP. A copy of the updated Concept Plan Water Cycle Management Strategy is included at **Appendix L**.

On site detention will be incorporated into the development to ensure that post-development peak flows do not exceed pre-development peak flows. This will be achieved by the dual use ponds serving detention purposes as well as enhanced water quality functionality.

For stormwater quality management, a combination of proprietary litter/sediment traps, bio-retention swales and water quality control ponds / artificial wetlands is proposed. Strategic use of gross pollutant traps will be required to decrease loadings of coarse particulates and improve the amenity of wetlands and ponds.

Water Sensitive Urban Design measures to be incorporated into the development are summarised in **Table 6**.

Table 6 Water Sensitive Urban Design Measures

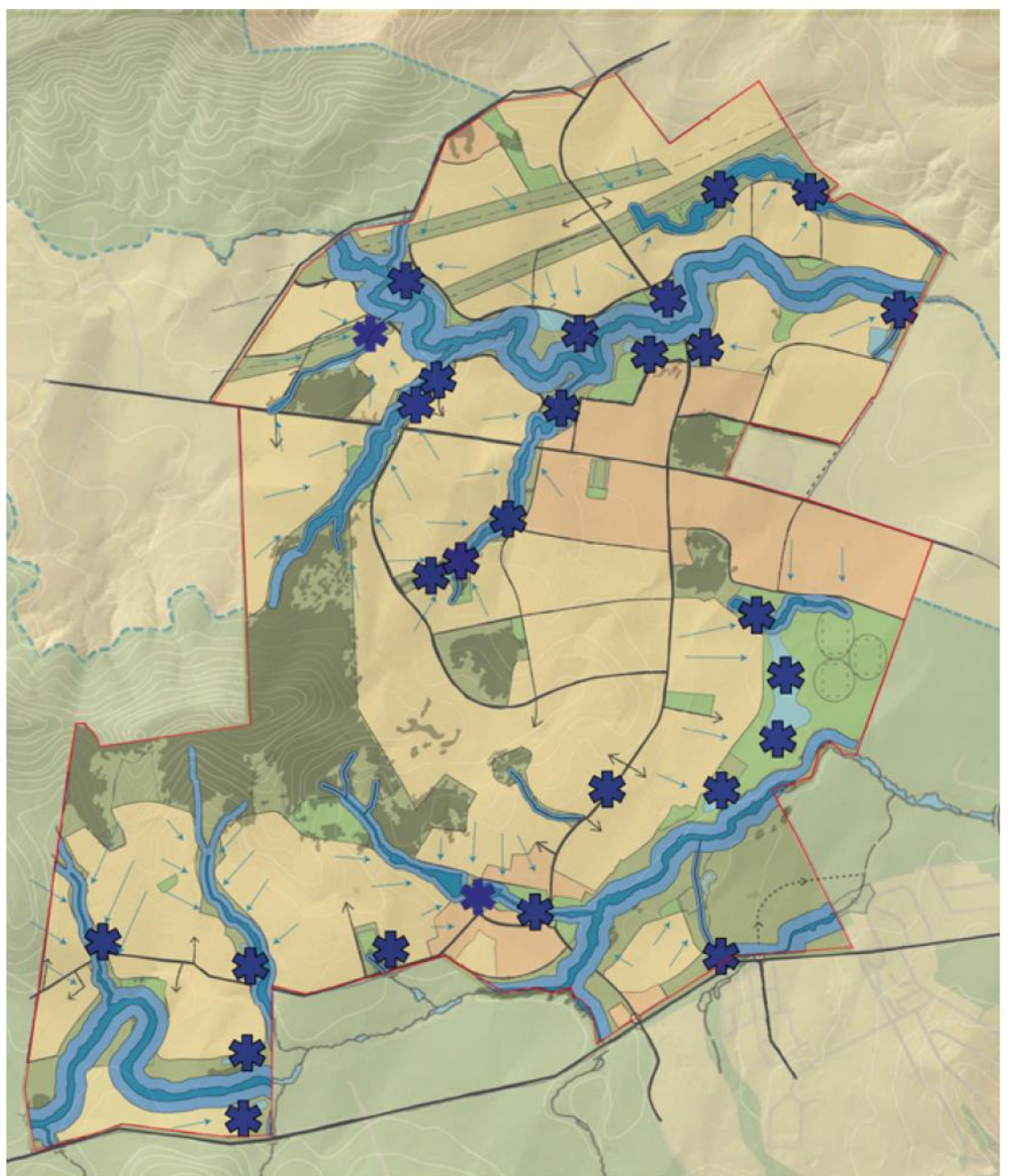
Stormwater volume reduction	Stormwater quality
The use of rainwater tanks on residential lots to provide water for toilet flushing / garden use.	Gross pollutant traps for removal of coarse pollutants and litter
Re-use of water from large roof areas in the commercial area to provide top-up water from ornamental ponds and for toilet flushing.	Wetlands / ponds (deep water zone) for sedimentation and storage of sediments
Use of buffer swales and small wetlands with pervious substrates to enable maintenance of groundwater levels,	Wetlands (macrophyte zone) for physical filtration and capture of fine sediments. Enhanced sedimentation and storage of fine sediments. Biological uptake.
Provision of suitably located large ornamental ponds.	

Wetlands and ponds are located to be sympathetic to the existing environment, and to compliment the proposed urban environment. The conceptual locations of ponds and wetlands are shown on **Figure 15**. Wetlands will be constructed to service each stage of the development as it is released.




The basic configuration of the wetland system consists of a combination of permanent and intermittently inundated ponds and wetlands, mostly positioned so that they lie within the APZs (refer to **Figure 15**). The shape of the wetlands and interlinking bio-swales will be varied to retain mature trees where possible. Aesthetic considerations have also influenced the preferred wetland location. The wetlands have been placed to maximise viewing from the development site and shaped to create visual interest for residents.

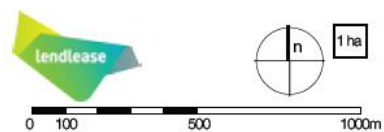
The proposed wetlands and ponds will be designed to treat all urban runoff typically up to the 3 month ARI where the proposed topography permits. In some instances, the wetlands and ponds may be required to treat some non-urban areas that are located upstream of urban areas due to topographic limitations. GPTs are proposed for the outlet of each major stormwater discharge point. The primary purpose of these will be to reduce the amount of large particles (principally litter) reaching the creek and wetlands. These units will also however assist (to varying degrees) with improving water quality through removal of sediment.

Refer also to Statements of Commitments 45 to 48 at **Appendix B**.



Water Cycle Management (MOD 4 PPR)

-  **Indicative location of possible water bodies**
Both on-line and off-line ponds serving ornamental, water quality and water detention purposes
-  **Riparian Corridor - Top of Bank**
Based on ground truth and ALS survey data
-  **Core Riparian Zone (CRZ)**
Size based on stream order



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours May 2019

Figure 15 Approved Concept Plan Water Cycle Management Concept

3.11 Flood Management

The Floodplain Mitigation Strategy for the project is centred around a holistic merit-based assessment of floodplain mitigation options in accordance with the Flood Plain Development Manual 2005. In accordance with Modification B2 of the Concept Plan approval, this Consolidated Concept Plan includes an updated Flood Study and Floodplain Risk Management Study incorporating the matters detailed at Modification B2(1) to (6), as modified in the Mod 4 application. Refer to **Appendix L** for the updated strategy.

The approved Flood Mitigation Plan for the project is shown at **Figure 16**.

The approved Flood Mitigation Plan incorporates a number of measures to mitigate flood impact. Specifically it is proposed to:

- Optimise floodplain hydraulics by reshaping areas of the existing floodplain in the areas nominated on **Figure 16** as 'increase elevation' and 'decrease elevation'.
- Construct two new vehicular bridges providing flood free access during the 1:100 AEP event, one across Marshall Mount Creek and one across Macquarie Rivulet.

The approved Flood Mitigation Plan has been developed based on modelling that assumes potential revegetation may occur within the existing riparian corridors within nominated locations as shown on **Figure 16**. Selective planting of carefully selected vegetation species may occur within the locations identified on **Figure 16** subject to demonstration that no adverse impact on flood levels results.

In accordance with the Floodplain Development Manual and s.117 Direction 4.3 the 1% AEP flood level (incorporating climate change) plus 500 mm freeboard has been adopted as the Flood Planning Level for the project.

The majority of land within the development site will be located on land above the PMF and as such is not subject to flood related planning controls or located on flood prone land.

All new bridge decks will be located above the 1% AEP flood level and will allow uninterrupted road traffic throughout the development (and beyond) during events up to and including the 1% AEP flood.

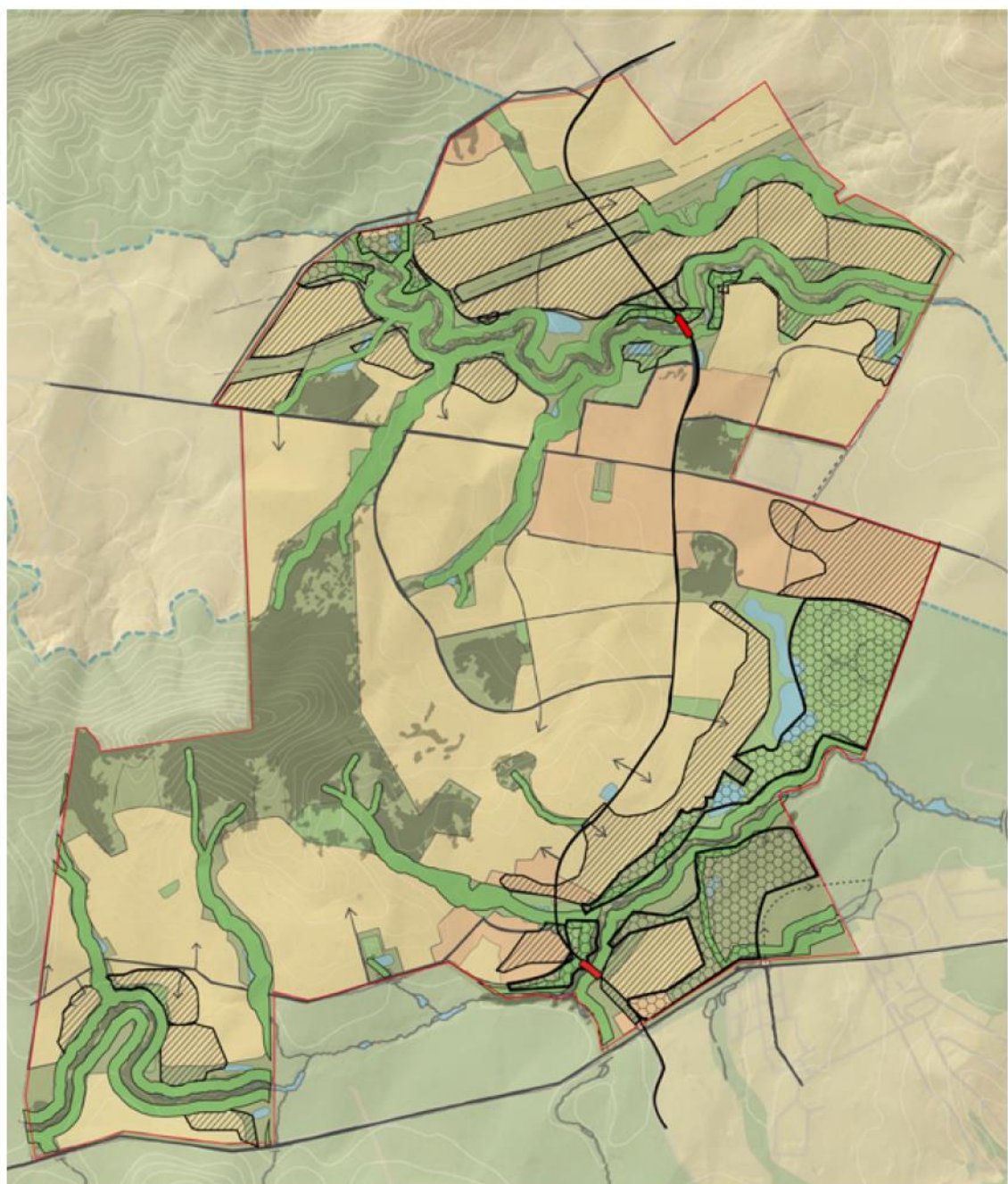
The approved Concept Plan allows for the import and placement of fill within the areas shown as 'Floodplain Regrade - Increased Elevation' on **Figure 16** over the lifespan of the project as suitable fill becomes available.

Note: physical works are not approved under the Concept Plan and further development approvals may be required.

Any staging of earthworks within the approved earthworks strategy will demonstrate no unacceptable interim flooding impacts external to the site boundary.

Modification C7 of the Concept Plan Approval requires a flood impact statement to be submitted for any future applications proposing development on flood liable land.

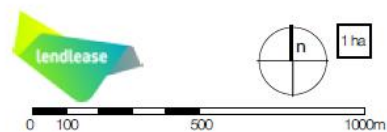
Refer also to Statements of Commitment 41 to 44 at **Appendix B**.



Flood Mitigation Plan (MOD 4 PPR)

-  Floodplain regrade - increase elevation*
-  Floodplain regrade - decrease elevation
-  Proposed Increased Roughness
-  Proposed Road Bridge

*Works associated with flood mitigation purposes only



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours May 2019

Figure 16 Approved Concept Plan Flood Mitigation Plan

3.12 Infrastructure Servicing

The overall utility services strategy for the whole of the development is illustrated at **Figure 17**. Utilities infrastructure servicing will require both on and off site works and upgrades in stages over the life of the development.

Statement of Commitment 27 requires proposals in respect of the supply of water, sewerage, stormwater, gas, electricity and telephone services within the site, including the adoption of technologies to reduce the demand or need for servicing and the supply of sustainable services, to be generally in accordance with the Utility Services Review prepared by Cardno refer to **Appendix J**.

Sewer

The Sewer Concept Plan is illustrated by **Figure 18**. The Sewer Concept Plan details the location and sizing of proposed sewer pump stations, rising mains and gravity mains.

All sewer reticulation from the development will be connected to the existing 600 diameter gravity feed sewer main (Albion Park low-level carrier main) that runs across the south eastern corner of the site. The carrier main will convey sewage flows through to the existing Shellharbour STP.

After connection of the first 500 lots various off site system amplifications will be required to cater for subsequent stages of the development. Sydney Water will fund the upgrade and duplication of the external sewer reticulation infrastructure to service the project including:

- Upgrade of existing sewer pump stations SPS 505, 500 and 498;
- Duplication of rising mains 505, 500 and 498.

Sydney Water planned upgrades to the Shellharbour STP will accommodate the proposed development.

In accordance with Modification C11 of the approved Concept Plan the Overall Sewer Concept Plan map is indicative only. The sewer requirements for each future stage are to be determined in consultation with the relevant authority as part of each application for subdivision works.

Water

The Concept Plan Potable Water Strategy for the project is illustrated by **Figure 19**.

The Albion Park WS0296 water reservoir is to provide a temporary supply of potable water to the development for up to the first 500 lots or equivalent demand. An extension from the existing water main located in Sophia Street, Albion Park is to be constructed to connect into the subject site.

For long term water supply, construction of a 20ML reservoir at Marshall Mount is required. SWC owns a site off Mountainview Terrace, which has been identified for this reservoir.

A new 375mm diameter trunk main will be constructed from the existing Southern Towns Trunk Main at Yallah to the new reservoir site. The new Marshall Mount reservoir will be reticulated to the development site along Marshall Mount Road.

Sydney Water will fund the construction of the lead-in watermain works and the proposed Marshall Mount reservoir.

In accordance with Modification C11 of the approved Concept Plan the Potable Water Strategy map is indicative only. The water requirements for each future stage are to be determined in consultation with the relevant authority as part of each application for subdivision works.

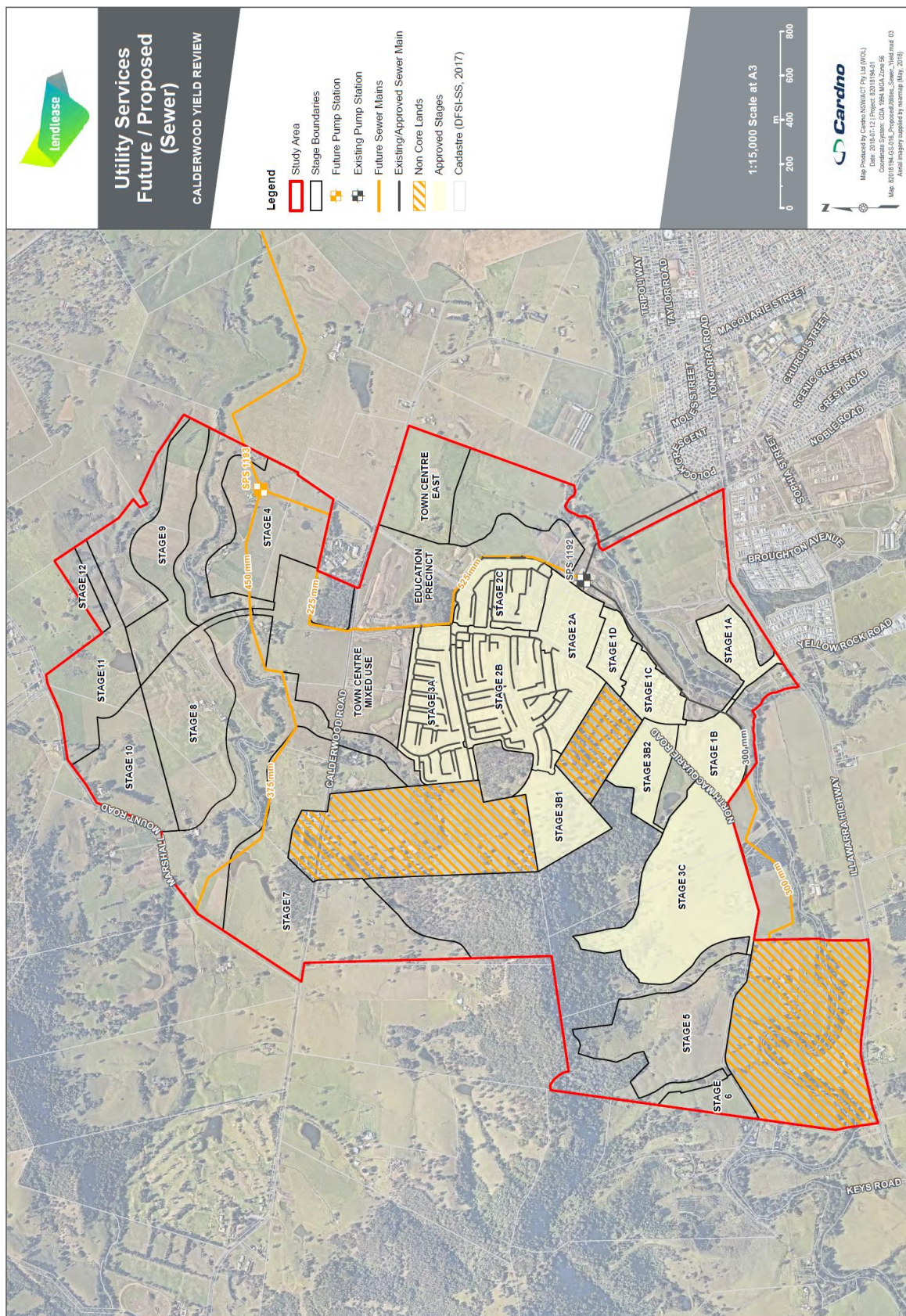


Figure 17 Overall Sewer Concept Plan

Source: Cardno 2020

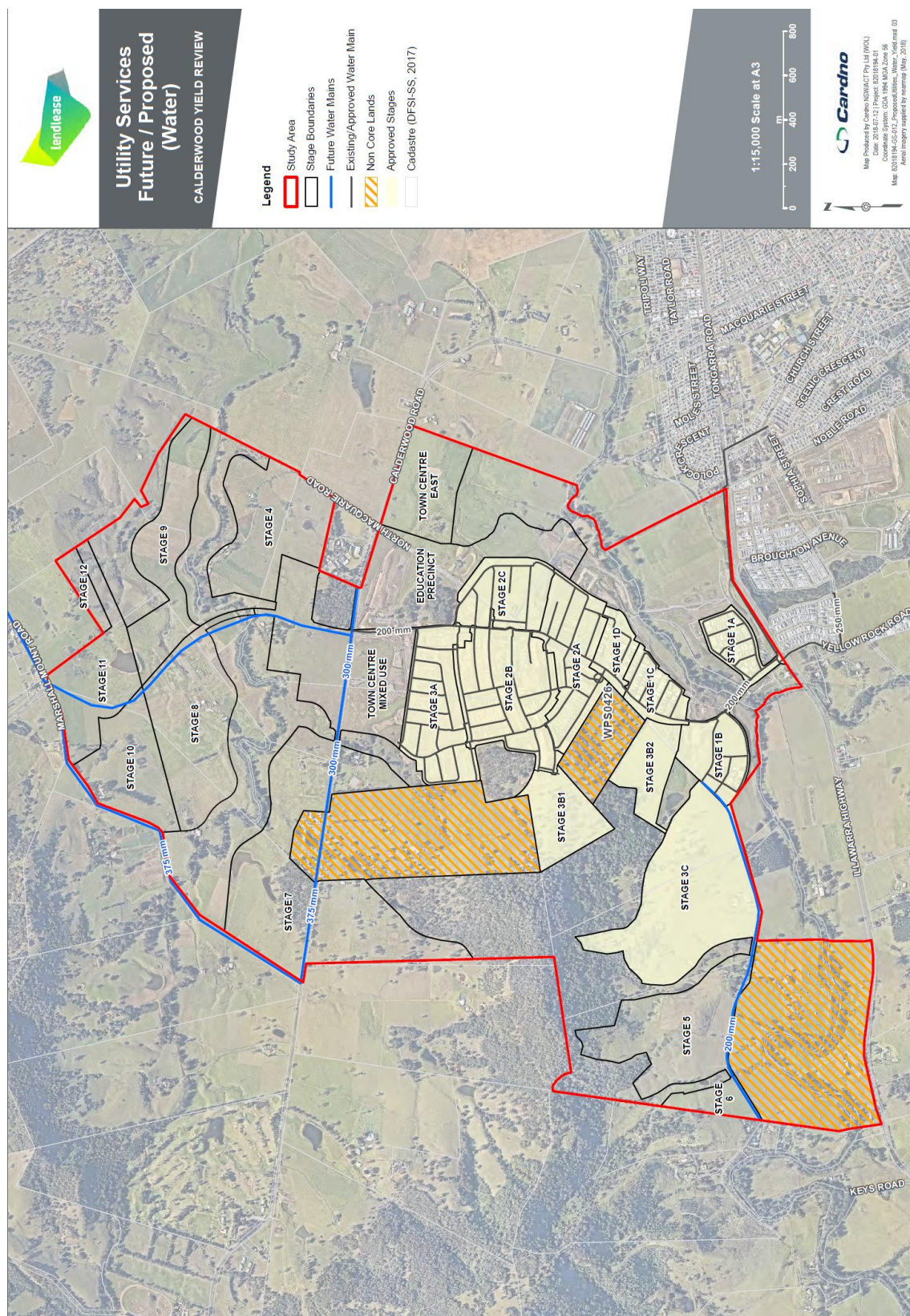


Figure 18 Concept Plan Potable Water Strategy

Source: Cardno 2020

Electricity

The initial stages of the development will be supplied from the existing DS at Albion Park. An 11kV underground feeder will be established to the site from the existing DS at Albion Park (located on Russell Street approximately 100 metres from Terry Street).

A new zone substation is to be provided for electricity supply. A parcel of land approximately 100m x 100m on the eastern boundary of the site, just south of Calderwood Road has been subdivided and dedicated to Endeavour Energy for this purpose. Endeavour Energy will fund the zone substation and incoming feeders.

From the zone substation, a distribution network will be established to service the site. The network will include padmount substations strategically positioned throughout the network to reduce the electricity load down to residential and commercial usage.

Waste

Shellharbour and Wollongong Councils will extend existing waste removal/recycling services to the site.

Natural gas

Initial gas supply provision to the first stage of the development will be obtained by reticulating a gas main to the site from the Albion Park 'black box' located on the corner of Taylor Road and the Illawarra Highway (1.7 km east of the site). The provision of gas supply to the development progressively in stages is being investigated by Jemena.

Gas reticulation will be underground in a shared trench arrangement with electricity and communication reticulation.

Telecommunications

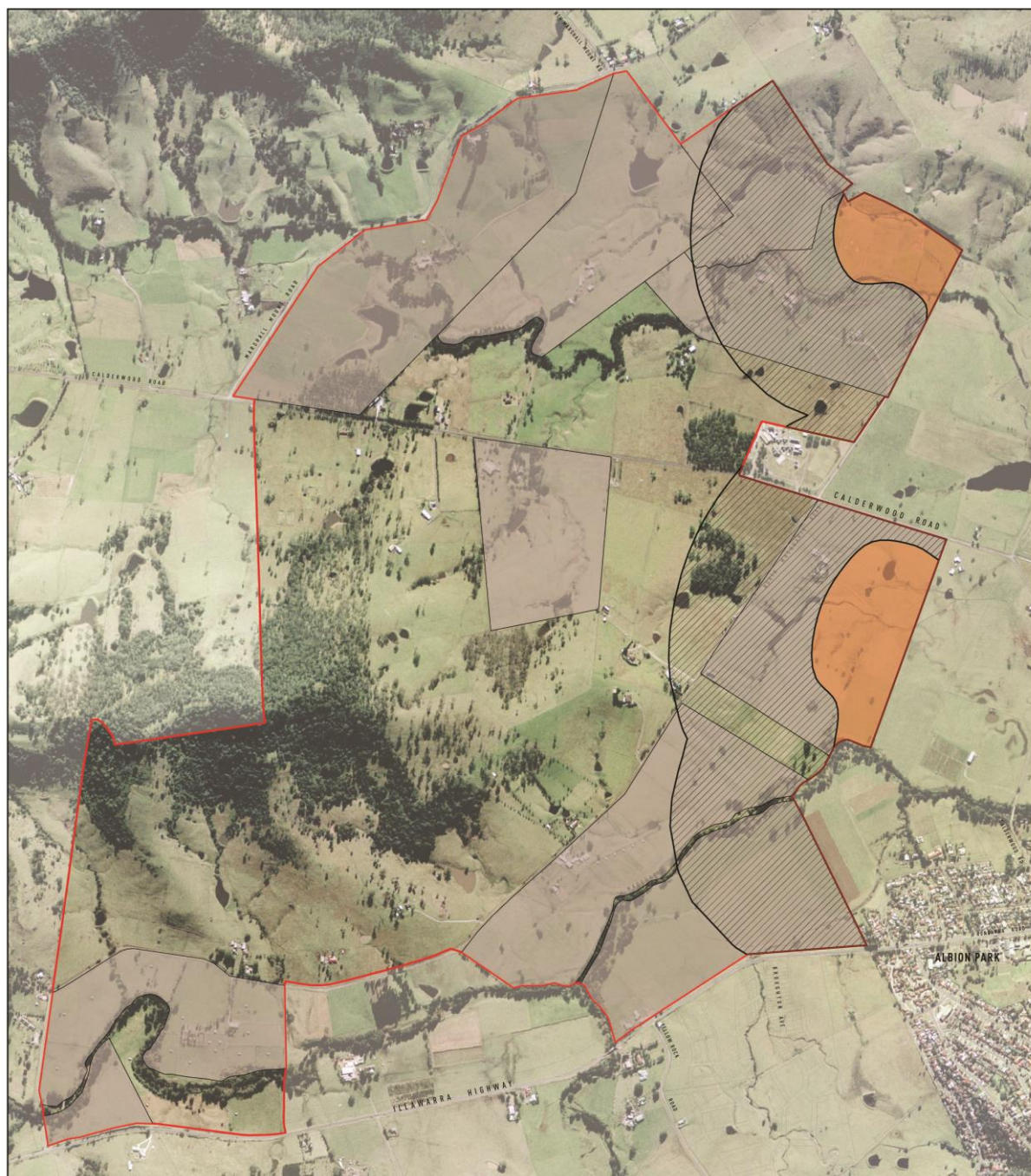
Consistent with the National broadband network FTTP will be reticulated into the site from the Small Capacity Distribution System located at the corner of North Macquarie and Calderwood Roads.

The future Village Centre is to accommodate a Telstra Mains Distribution Frame to be utilised as a hub for all lines infiltrating into the centre to distribute back and out to the external Telstra system.

3.13 Acid Sulfate Soils

At the time of any relevant detailed application, maximum excavation depths are to be identified (for any development involving excavation) within the land shown on **Figure 20** (refer to Statement of Commitment 66 at **Appendix B**).

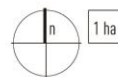
During the detailed design process, potential conflict with Potential Acid Sulphate Soils is to be avoided wherever possible by adoption of the site specific management strategies identified at Statement of Commitment 67 at **Appendix B**.



Acid Sulphate Soils Map

Part 3A | Calderwood Urban Development Project

- Class 4 Acid Sulphate Soils
- Class 5 Acid Sulphate Soils
- Land Parcel Requiring Further Investigation



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours February 2010

Figure 19 Areas of potential acid sulphate soils

3.14 Geotechnical

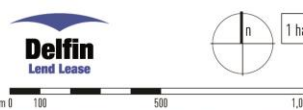
In accordance with Statement of Commitment 68 development within the areas shown as 'Less Stable Land' and 'Moderately Unstable Land' on **Figure 21** is to demonstrate good engineering practice for hillside slopes. Refer to Statement of Commitment 68 at Section 5.0.



Ground Stability

Part 3A | Calderwood Urban Development Project

- Essentially Unstable Land
- Moderately Unstable Land
- Less Stable Land
- Stable Land - Minor Area of Slope Instability



Subject to verification and detailed site survey 1:20,000 (A4) 10m Contours February 2010

Figure 20 Ground stability

3.15 Contamination

Field investigation is to be undertaken at the time of any future application relation to land within an 'Area of Concern' identified on **Figure 22**. Refer to Statement of Commitments 71 to 73 at **Appendix B**.

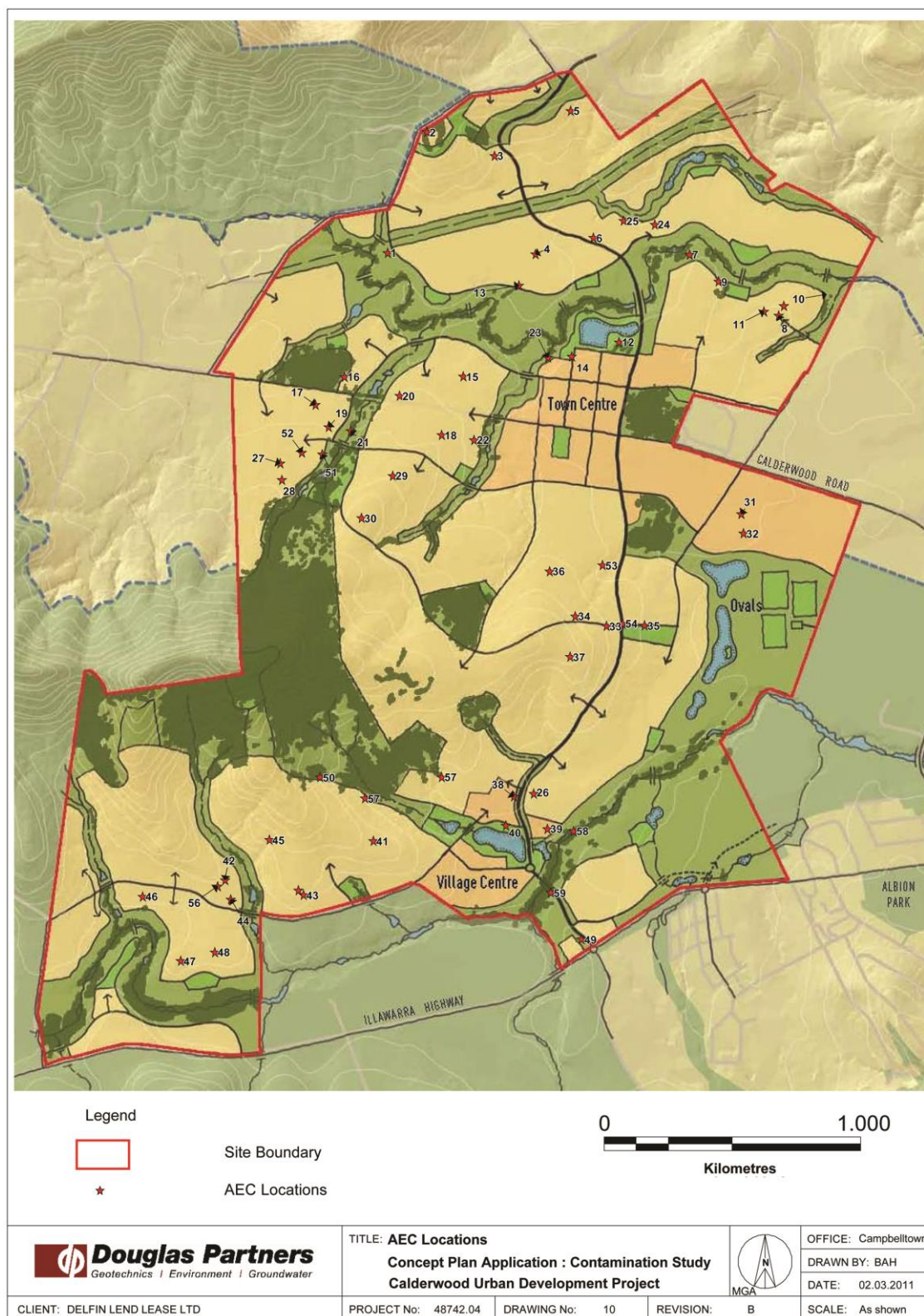


Figure 21 Identified 'Areas of Concern'

3.16 Heritage

European Heritage

The approved Concept Plan provides for the retention of Marshall Mount House and Barn and the Marshall Mount Methodist Cemetery. No other buildings, structures or features on the site have been determined to be of European heritage significance. Accordingly, the approved Concept Plan allows for the removal of all structures etc other than Marshall Mount House and Barn and the Marshall Mount Methodist Cemetery.

Note: physical works are not approved under the Concept Plan and further development approvals may be required.

Statements of Commitments 57 to 67 set out the approved Concept Plan requirements with respect to European Heritage.

Indigenous Heritage

Statements of Commitments 49 to 51 at **Appendix B** identify the requirements for the relevant future detailed stages of the project in relation to Indigenous Heritage. The areas referenced at Statements of Commitment 49 to 51 are shown in the Aboriginal Archaeological and Cultural Heritage Assessment included at **Appendix R**.

Refer also to Statements of Commitment 52 to 56.

3.17 Community Infrastructure

It is proposed to provide the following community infrastructure within the development:

- Land and building (fit out) for a large multi purpose community resource centre.
- Temporary community centre (already constructed and operational).
- Community development strategy.
- Land for 2 public primary schools (development consent obtained for subdivision and earthworks of the first primary school within the B4 zone).
- Land for 1 public high school (development consent obtained for subdivision and earthworks of the high school within the B4 zone).
- childcare centres.

No specific requirements have been identified by relevant agencies for health, emergency services or Police services.

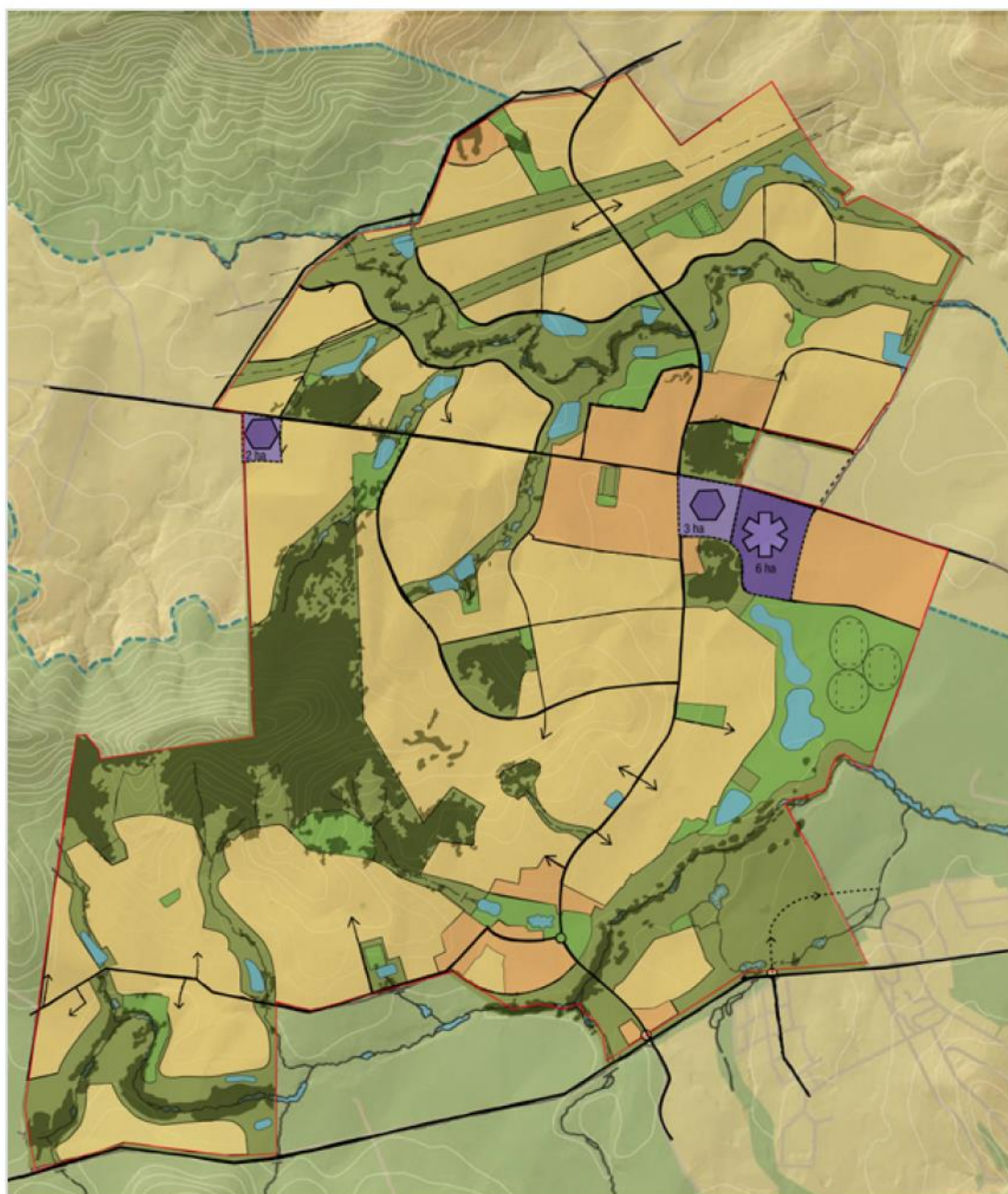
Modification C12 of the Concept Plan approval provides that requirements for local community infrastructure facilities are to be generally in accordance with the following principles:

- A temporary community centre (approximately 120 – 150 m²) (already constructed and operational);
- A permanent community centre (approximately 1,120 m²), including the dedication of 4,000 m² land; and
- Monetary Contributions towards library facilities, equivalent to 780m² floorspace.

The State Voluntary Planning Agreement (refer to copy at **Appendix D**) requires the provision of a total of 11 hectares of land to the Department of Education and Training to accommodate 1 high school site of 6 hectares and 2 primary school sites one being 3 hectares and the other 2 hectares, and a special needs unit of 1 hectare co-located with one of the primary schools.

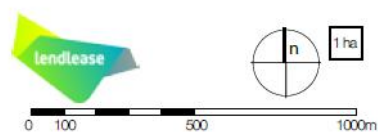
The preferred location of school sites, consistent with the proposed State contributions for education lands is shown on **Figure 23**. Details of the proposed community infrastructure provision are provided at **Appendix I**.

Refer also to Statements of Commitments 75 to 77 at **Appendix B**.



Possible School Sites (MOD 4 PPR)

-  **Preferred High School Location**
6 ha allocation
-  **Preferred Primary School Location**
2ha & 3 ha allocation



Subject to verification and detailed site survey 1:20,000 @ A4 10m Contours May 2019

Figure 22 Possible school sites

3.18 Project Staging

The development is expected to be constructed over a 20-30 year timeframe.

The actual annual and cumulative yield figures will be subject to market take up and may change over the course of the project. An average annual lot production of approximately 200 lots is anticipated.

The delivery of transport, infrastructure, utility servicing and community and social infrastructure is detailed below.

Modification C1 of the approved Concept Plan requires a detailed staging plan to be submitted to the relevant consent authority with each Stage application for subdivision and infrastructure works.

The staging plan is to demonstrate with each application that the proposed stage or precinct represents orderly and coordinated development such that:

- It may be serviced by existing infrastructure, or is capable of being serviced;
- Access for vehicles and pedestrians is available and can be made available; and
- An update of likely timing of future stages and infrastructure required to support future stages.

Condition C1(3) specifically outlines that the staging and delivery of development on non-core lands sites is not to be tied to any infrastructure required to be delivered outside of the non-core lands sites, or any requirements for satisfactory arrangements arising from Modification 4.

Any contributions or infrastructure to be provided on the non-core lands is to be provided in conjunction with the development of those sites and is not required to be provided any earlier.

4.0 Future Approvals Regime

In determining to approve the Calderwood Concept Plan, the Minister determined that under section 75P(1)(b) of the Environmental Planning and Assessment Act 1979, approval to carry out the project or any particular stage of the project is to be subject to the provisions of Part 4 of the Act.

Stage 1 of the Calderwood Urban Project has been declared to be development that is subject to assessment and determination under Part 3A. The Stage 1 Project Application site is shown in **Figure 25**.

In accordance with Term of Approval A2(3) of the approved Concept Plan (and clause (2)(d) of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*), where there is an approved Concept Plan, any approval given under Part 4 of the Act by Council must be consistent with the Concept Plan.

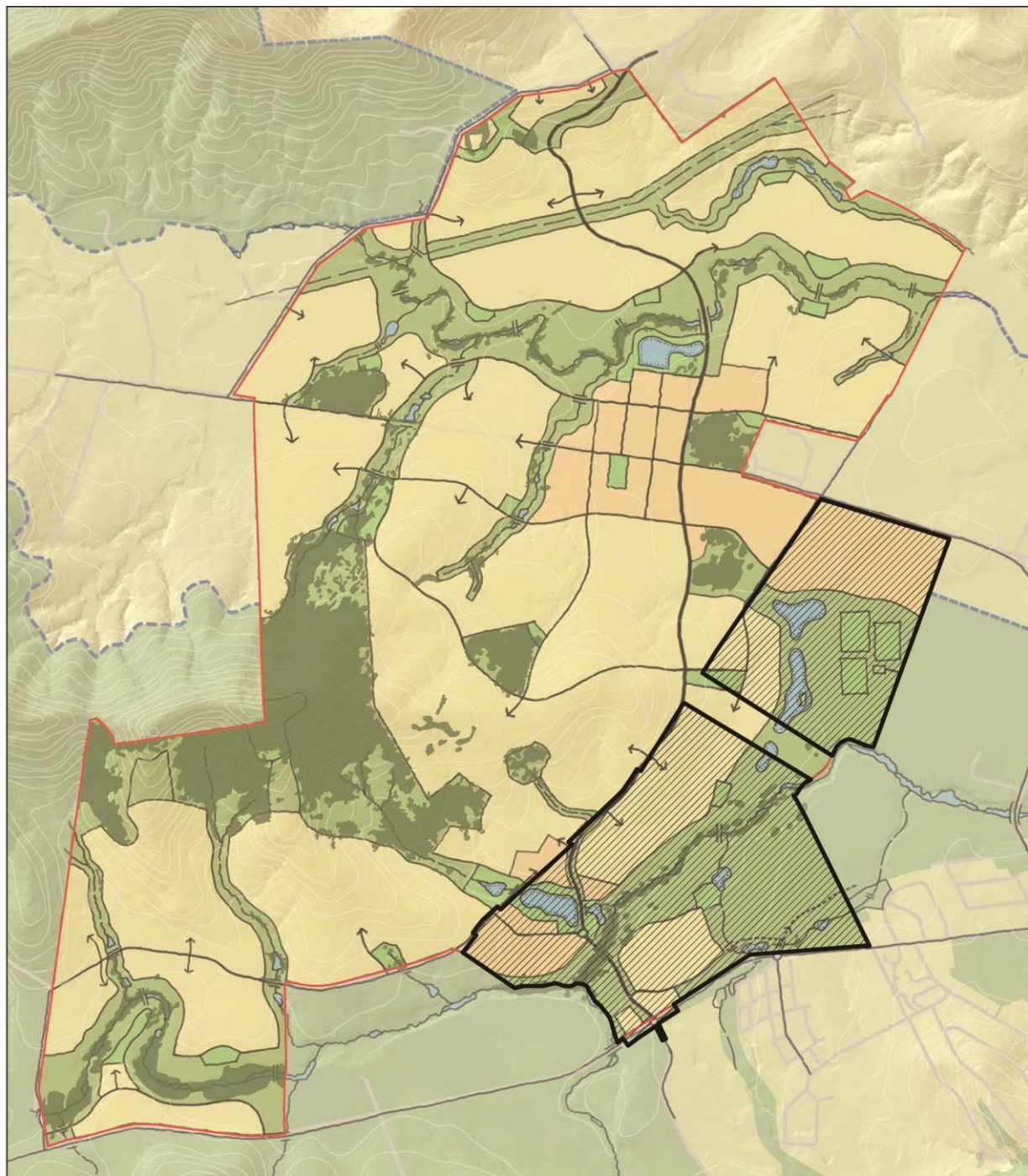
Term of Approval A5 of the approved Concept Plan provides that in the event that the Council is the consent authority for any future applications on the site, any reports specified in the Statement of Commitments to be submitted to the Director General for approval, shall be instead be required to be approved by the Council.

Term of Approval A6 of the approved Concept Plan provides that if any of the terms of approval specify that an agreement is to be made between the proponent and a government agency or council, all parties to the agreement are to act reasonably. If no agreement is reached within 3 months of the commencement of negotiations, the issue can be referred to the Director General for a decision. Full details of the discussions and the dispute are to be provide in order for the Director General to make a full decision.

3B Provisions applying with respect to approval of concept plans

- 1) *This clause applies to development (other than an approved project) for which a concept plan has been approved under Part 3A, before or after the repeal of Part 3A, and so applies whether or not the project or any stage of the project is or was a transitional Part 3A project.*
- 2) *After the repeal of Part 3A, the following provisions apply to any such development (whether or not a determination was made under section 75P(1)(b) when the concept plan was approved)—*
 - a. *if Part 4 applies to the carrying out of the development, the development is taken to be development that may be carried out with development consent under Part 4 (despite anything to the contrary in an environmental planning instrument),*
 - b. *if Part 5 applies to the carrying out of the development, the development is taken to be development that may be carried out without development consent under Part 4 (despite anything to the contrary in an environmental planning instrument),*
 - c. *any development standard that is within the terms of the approval of the concept plan has effect,*
 - d. *a consent authority must not grant consent under Part 4 for the development unless it is satisfied that the development is generally consistent with the terms of the approval of the concept plan,*
 - e. *a consent authority may grant consent under Part 4 for the development without complying with any requirement under any environmental planning instrument relating to a master plan,*
 - f. *the provisions of any environmental planning instrument or any development control plan do not have effect to the extent to which they are inconsistent with the terms of the approval of the concept plan,*
 - g. *this clause applies instead of section 75P(2), but any direction, order or determination made under section 75P(2) in connection with the concept plan continues to have effect.*
- 3) *If a determination was not made under section 75P(1)(b) in relation to the project (or any stage of the project) when any such concept plan was approved and the project (or that stage) can no longer be approved under Part 3A, Part 4 is taken to apply to the carrying out of the development in relation to the project (or that stage) for the purposes of subclause (2) (unless an environmental planning instrument provides that it is development that may be carried out without development consent or it is exempt development).*
- 4) *For the purposes of determining whether development to which Part 4 applies is State significant development, a provision of this clause that permits the development to be carried out with development consent under Part 4 is taken to be a provision of an environmental planning instrument.*
- 5) *This clause does not apply to development that is State significant infrastructure.*

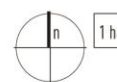
- 6) The amendments made to this Schedule by the Environmental Planning and Assessment Amendment (Transitional) Regulation 2016 extend to things done before the commencement of those amendments.



Part 3A Area

Part 3A | Calderwood Urban Development Project

 Area Subject to Part 3A
(Stage 1 Project Application Area)



m 0 100 500 1,000

Subject to verification and detailed site survey 1:20,000 IG A4 10m Contours February 2011

Figure 23 Existing Part 3A Area (Stage 1)

5.0 Statement of Commitments

Appendix B is the Statement of Commitments that apply to the future stages of the development as approved as part of the Concept Plan.

The recommendations of the various consultants reports submitted with the March 2010 EAR and the August 2010 PPR are incorporated into the approved Statement of Commitments. These have been updated as relevant as part of the Mod 2 and Mod 4 applications.

This includes the full recommendations of all specialist sub consultants studies that were documented at Section 7.0 of the March 2010 EAR. Specifically, a number of recommendations made in relation to the following technical disciplines are included:

- Transport and accessibility
- European heritage
- Landscape and visual impact
- Bushfire protection
- Social and community initiatives
- Sustainability initiatives.
- Water cycle management
- Contamination
- Ecological and riparian
- Flood mitigation
- Indigenous heritage

It is noted that the majority of mitigation measures identified by the various technical supporting documents, and the recommendations made with respect to appropriate management of the environmental impacts of the proposed development have either been incorporated as a fundamental component of the approved Concept Plan, or are reflected in the land use zoning and development controls that have been incorporated into the State Significant Precincts SEPP.

