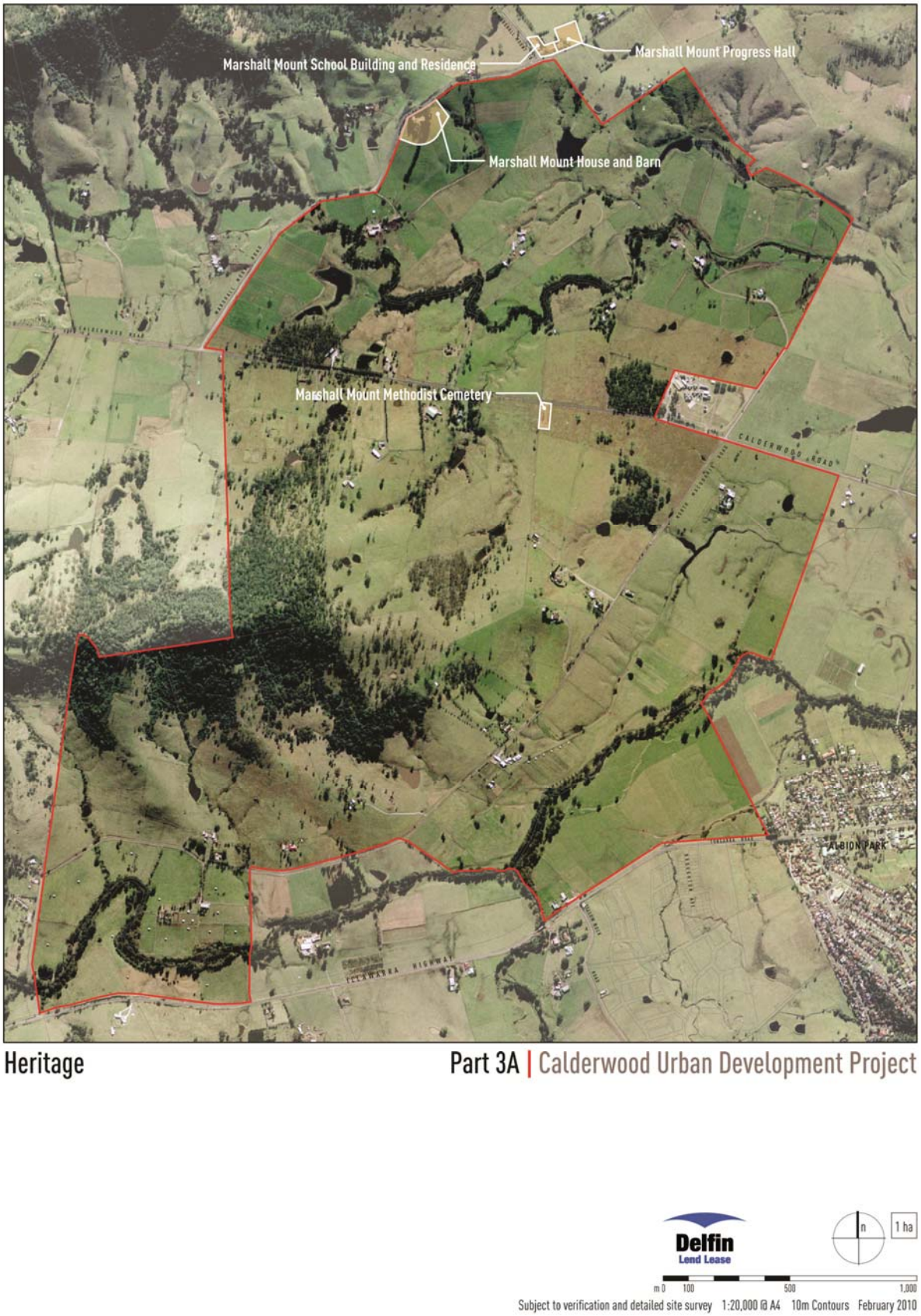

Figure 31 – Location of existing European heritage items

Figure 32 – Marshall Mount House and Barn

Figure 33 – Marshall Mount Methodist Cemetery

European archaeological potential and significance

In addition to potential for significant archaeological remains at Marshall Mount House and Barn, Oak Farm, the former residence of Thomas Armstrong is identified in the Heritage Impact Statement as having potential for archaeological remains. Oak Farm is not a listed heritage item.

There is potential for a limited scattered archaeological resource to remain within the site. The character of the early 19th century development was sparse and consisted of mostly simples structures, other than at Marshall Mount House and Barn, the Cemetery and Thomas Armstrong's Oak Farm. The resource outside of the two homestead sites and the cemetery is likely to consist of the footings or foundations of mostly timber structures including domestic and farm structures, fences etc. The overall significance and research value of the potential archaeological resource is considered to be low.

Adjoining heritage items

The Marshall Mount former Public School (Lot 100 DP 712786), Master's Residence (Lot 398100) and Progress Association Hall (Lot 1 DP 396101), also included as items of heritage significance under the Wollongong LEP 1990, are located in the vicinity of the site, adjacent to its north eastern boundary. The location of these items is also illustrated on **Figure 31**.

The two existing heritage items are to be retained and protected via listing under the SEPP Amendment. A 2 hectare parcel of land encompassing Marshall Mount House and Barn is to be retained in private ownership.

3.16 Aboriginal Cultural Heritage

The Illawarra region, including the site, has a rich Aboriginal archaeological background. An Aboriginal Archaeological and Cultural Heritage Assessment prepared by Austral Archaeology Pty Ltd is included at **Appendix V**.

An Aboriginal archaeological and cultural heritage Phase 1 Desktop Assessment of the site was undertaken in December 2009 and a Phase 2 Field Assessment undertaken between December and January 2010. Representatives from Illawarra Local Aboriginal Land Council (ILALC) and Wollongong Northern Districts Aboriginal Community (WNDAC) were registered as Aboriginal stakeholder groups and consulted with. ILALC representatives participated in the Field Assessment; WNDAC was not able to provide representatives for the Field Assessment but was provided, with ILALC, the opportunity to review a draft of the assessment report and its recommendations. At the time of writing, the assessment is subject to stakeholder comment.

The field assessment identified 34 new Aboriginal archaeological sites, containing at least 188 surface artefacts. 30 of these sites have been assessed as having low or low to moderate archaeological potential and do not warrant further archaeological investigation.

There are four open artefact scatters with associated PAD (PAD 02, 03, 04 and 05) that have been identified on the basis of surface archaeological material and landform as requiring further archaeological testing. The levels of archaeological potential for the site and the location of Aboriginal archaeological sites is shown on **Figure 34**.

In addition to archaeological record, cultural consultation with registered Aboriginal stakeholder organisations ILALC and WNDAC provides an extra level of information to support and in cases stand apart from the archaeological record.

As a result of consultation with ILALC and WNDAC, it was found that the Calderwood Project area is of significance to these organisations. The broader landscape context in which the Calderwood Project area is located, including the Illawarra Escarpment and Lake Illawarra, is also culturally significant – several references were made to past Aboriginal activities and myths taking place on or in relation to the Escarpment. The cultural information provided by ILALC Site Officers during the field assessment illustrated the range of daily activities which would have taken place in the Calderwood Project area, including identification of food sources and landforms which are associated with particular activities. Areas C, D, F and G within the site and as shown at **Figure 34** have been identified for their cultural potential.

3.17 Bushfire

A Bushfire Planning Assessment has been undertaken by Ecological (refer to **Appendix W**). Ecological has identified that existing vegetation within the site that could act as a bushfire hazard includes Johnston's Spur, a number of areas of remnant vegetation cover, the two major riparian corridors of Macquarie Rivulet and Marshall Mount Creek and some scattered minor riparian vegetation.

The predominant vegetation type with potential bushfire hazard is 'Open Forest' (Dry Sclerophyll Forest – Shrub/grass Sub-formation). Narrow formations of 'Forested Wetlands' along the creek channels and flood benches of Macquarie Rivulet and Marshall Mount Creek and small patches of 'Rainforest' along the sheltered southern slopes and gullies of Johnston's Spur have a minor influence on bushfire threat. **Figure 35** shows existing bushfire prone land. The Concept Plan incorporates Bushfire Asset Protection Zones that respond to the identified hazard.

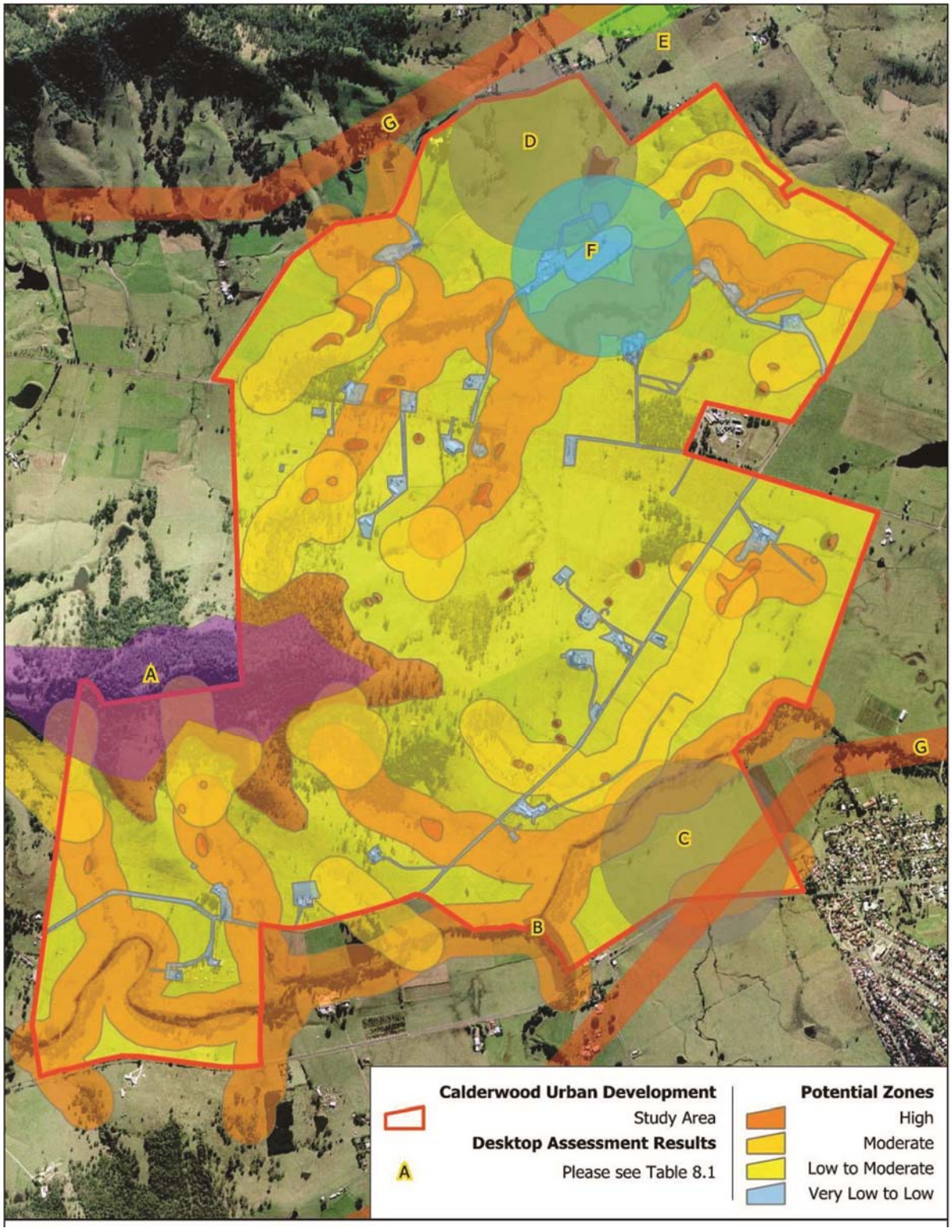

Figure 34 – Levels of archaeological potential (Source: Aboriginal Archaeological and Cultural Heritage Assessment, Austral Archaeology Pty Ltd)

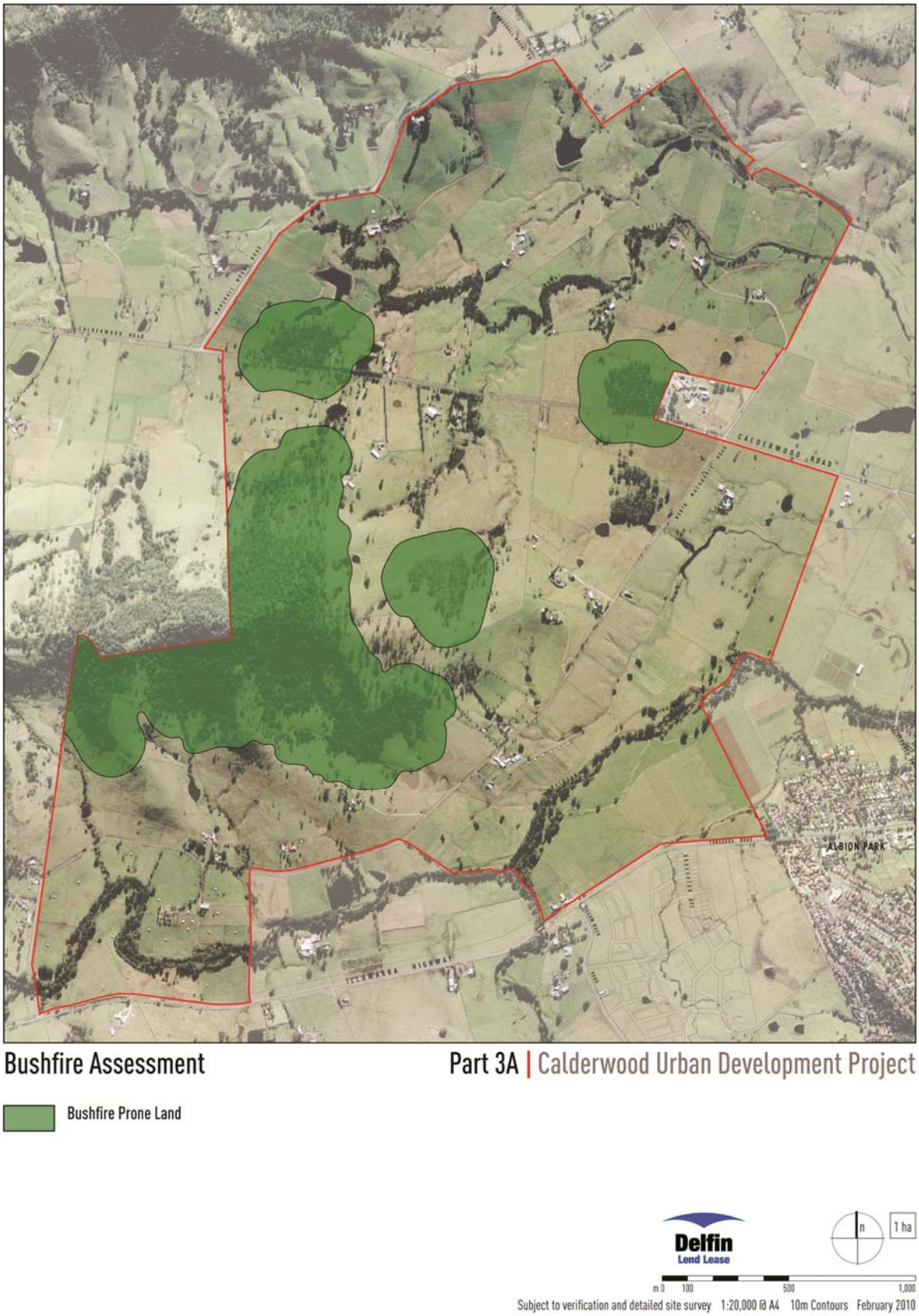

Figure 35 –Bushfire prone land

3.18 Landscape, Visual and Open Space Values

A Visual and Landscape Assessment of the site and its surrounds undertaken by Environmental Partnership is included at **Appendix X**.

Key aspects of the landscape character of the site and its visual context to be considered and addressed in the project are as follows:

- The site is predominantly rural in character having been largely cleared for past agricultural uses.
- The wooded ridgelines are a significant feature of the visual and landscape character and backdrop of the Calderwood Valley. The higher elevations of Johnston's Spur will be visually prominent from a wide range of areas. Lower slopes of Johnston's Spur are visible from the east and south.
- Views of the site from the north are restricted by an adjoining ridgeline. The site is visible from the escarpment to the north west, west and south, however these viewing locations are generally not publicly accessible.
- Retention of Johnston's Spur for open space and conservation purposes, to assist in lessening the visual impact of future development. Potential establishment of streetscape tree canopy and larger lots at the interface of Johnston's Spur to increase potential for landscape tree screening.
- Retention of tree canopy along the main riparian corridors of Marshall Mount Creek and Macquarie Rivulet, and establishment of additional tree canopy cover along main roads, the ridgeline and at the interface of Johnston's Spur to assist in lessening the visual impact of future development.
- Use of a design features such as open space and vegetation along road corridors in the vicinity of Marshall Mount Road to assist in management of the interface to Marshall Mount House and Barn.

The Calderwood site is one of strong individual identity and character. Foremost is the urban development area's:

- Visual relationship to adjoining rural areas,
- Visual enclosure by the Illawarra Escarpment to the north west to south west,
- Traversal by creeklines to the north and south,
- Penetration by a wooded ridgeline called Johnston's Spur.

Figure 36 illustrates the significant elements of the landscape character of the site.

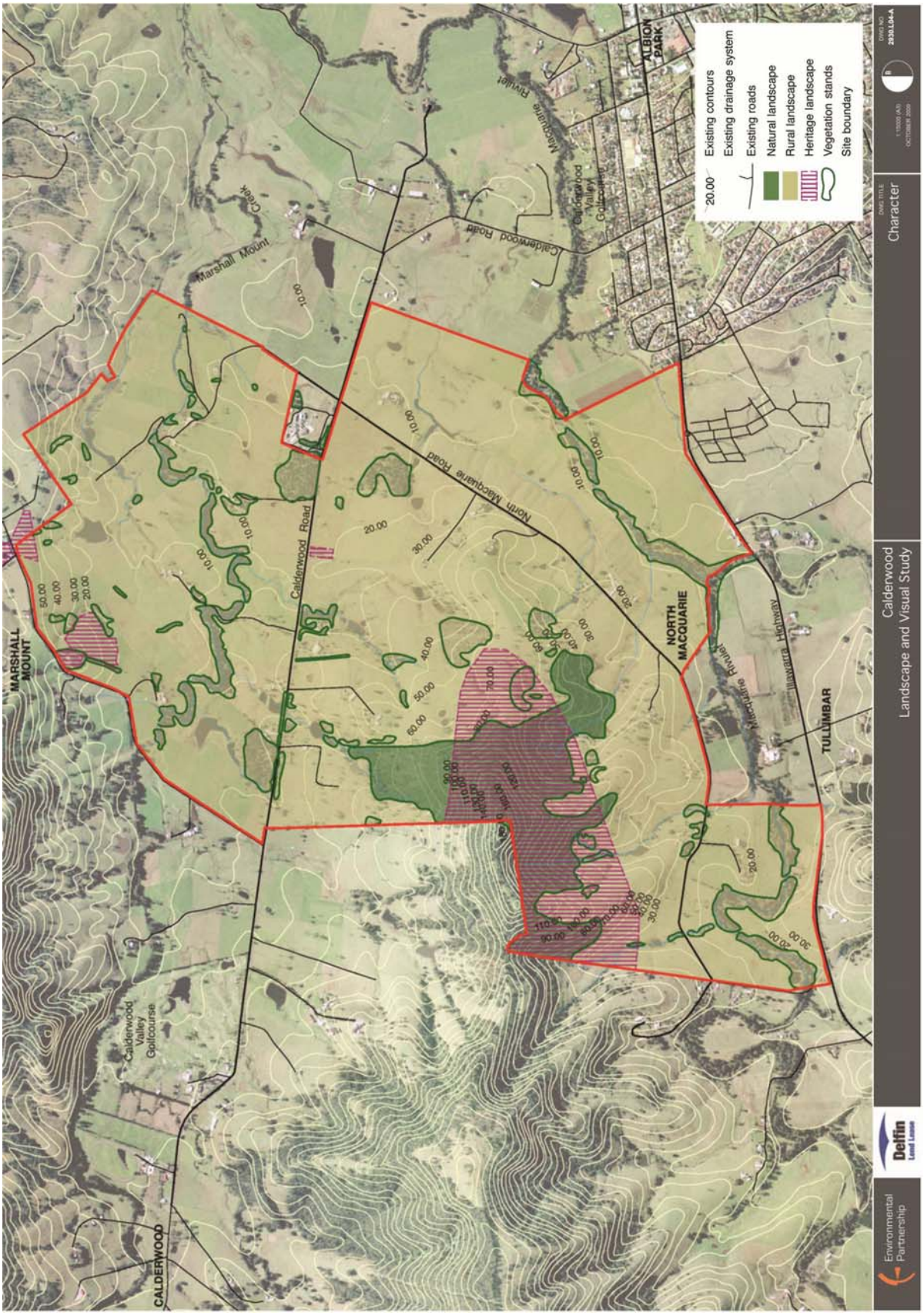

Figure 36 – Landscape character (Source: Landscape and Visual Assessment, Environmental Partnership)

Planning, design, and management strategies should respond to both the physical and cultural values of the Calderwood site.

The following summary values should be addressed in open space planning.

Natural Values

- Biodiversity conservation and enhancement
- Appropriate conservation of natural vegetation
- Water cycle management

Cultural values

- European cultural heritage
- Views from higher ground to coast and rural valleys
- Visual context of rural valley enclosed by Illawarra Escarpment

Connectivity

- Potential for open space corridors serving multiple functions
- Potential for off road cycle and pedestrian linkages
- Potential access to Johnston's Spur and beyond
- Potential for regional connections including to Lake Illawarra and coast

Multi- use facilities

- Potential for linkages between local and district facilities
- Diversity of open space types that respond to rural and escarpment
- setting
- Practical / functional open space
- Adaptability to meet future needs

Responsiveness to needs

- Family recreation in a variety of settings
- Cater for increased participation in organised sports
- Access and fitness trails for informal recreation
- A focus on open space quality and robustness - not just quantity
- Adaptability
- Sustainability

The landscape character and values has been incorporated into the Concept Plan proposal.

3.19 Utility Services Infrastructure

Figure 37 illustrates existing infrastructure and utility services.

The site is currently not connected to the Sydney Water sewerage network. Sewage is treated on site by individual property owners via septic systems.

Sydney Water's nearest trunk service is the 600 mm diameter gravity feed sewer main constructed through the south-eastern corner of the site. This sewer main has been sized by Sydney Water to cater for future development within the area, including the Calderwood Urban Development Project. Sydney Water intends to increase the capacity of the Shellharbour STP to cater for future population growth within the area.

Water reticulation services are not currently available to the site. Property owners rely on the collection of rainwater, drained from roof areas, into on-site water tanks.

Nearby water reservoirs include Mt Terry, Oak Flats, Mt Brown and Wongawilli. Sydney Water has previously planned upgrading of existing water storage reservoirs to accommodate population growth within Wollongong and Shellharbour. These upgrades will provide two new water storage reservoirs at Bong Bong Road, Avondale and Marshall Mount.

There are currently no natural gas reticulation services. Neighbouring suburbs of Albion Park, Dapto and Tullimbar, have a natural gas reticulation service provided by Jemena (the local gas authority).

A combination of traditional and optic fibre telecommunications services is available to the site. Telstra has recently routed 36 fibre optic cables between the Albion Park telephone exchange and the corner of North Macquarie and Calderwood Roads, of which 34 cables are available for future development.

Full mobile network coverage is provided by Telstra and Optus, and internet and data exchange services are available within the area, providing limited performance. AUSTAR provides satellite television services. Cable television is not currently available.

There are four HV overhead transmission lines running near or directly through the proposed development site. The Dapto and Albion Park Zone Substations are within a 10 km radius of the site and supply power to neighbouring suburbs. Power reticulate to existing properties on the site is transmitted from the Albion Park Zone Substation along 11kV overhead power lines (generally within road reserves) to either pole or pad mounted (ground) distribution substations.

Both Shellharbour and Wollongong Council's provide waste services to the site.

Detailed analysis of existing infrastructure and utility services is provided in the Engineering Infrastructure & Utility Services Study prepared by Cardno included at **Appendix Y**.

A detailed analysis has also been undertaken with respect to the relationship between utility servicing for Calderwood and utility infrastructure servicing of the WDRA. The relationship between the two release areas, which is detailed at Sections 2 and 4 of this report, is shown graphically at **Figure 38**.

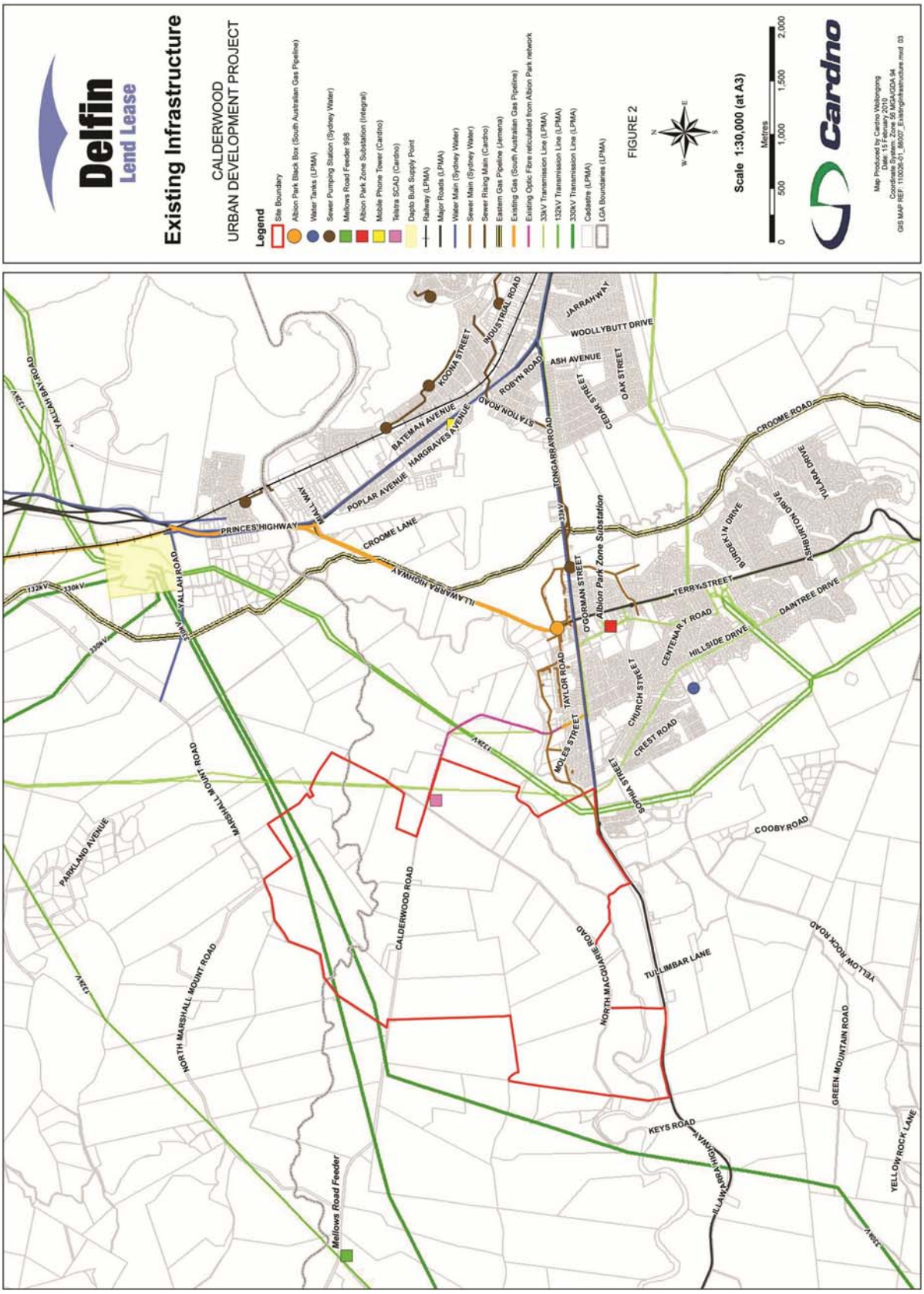

Figure 37 – Existing infrastructure (Source: Infrastructure & Utility Services Report, Cardno 2010)

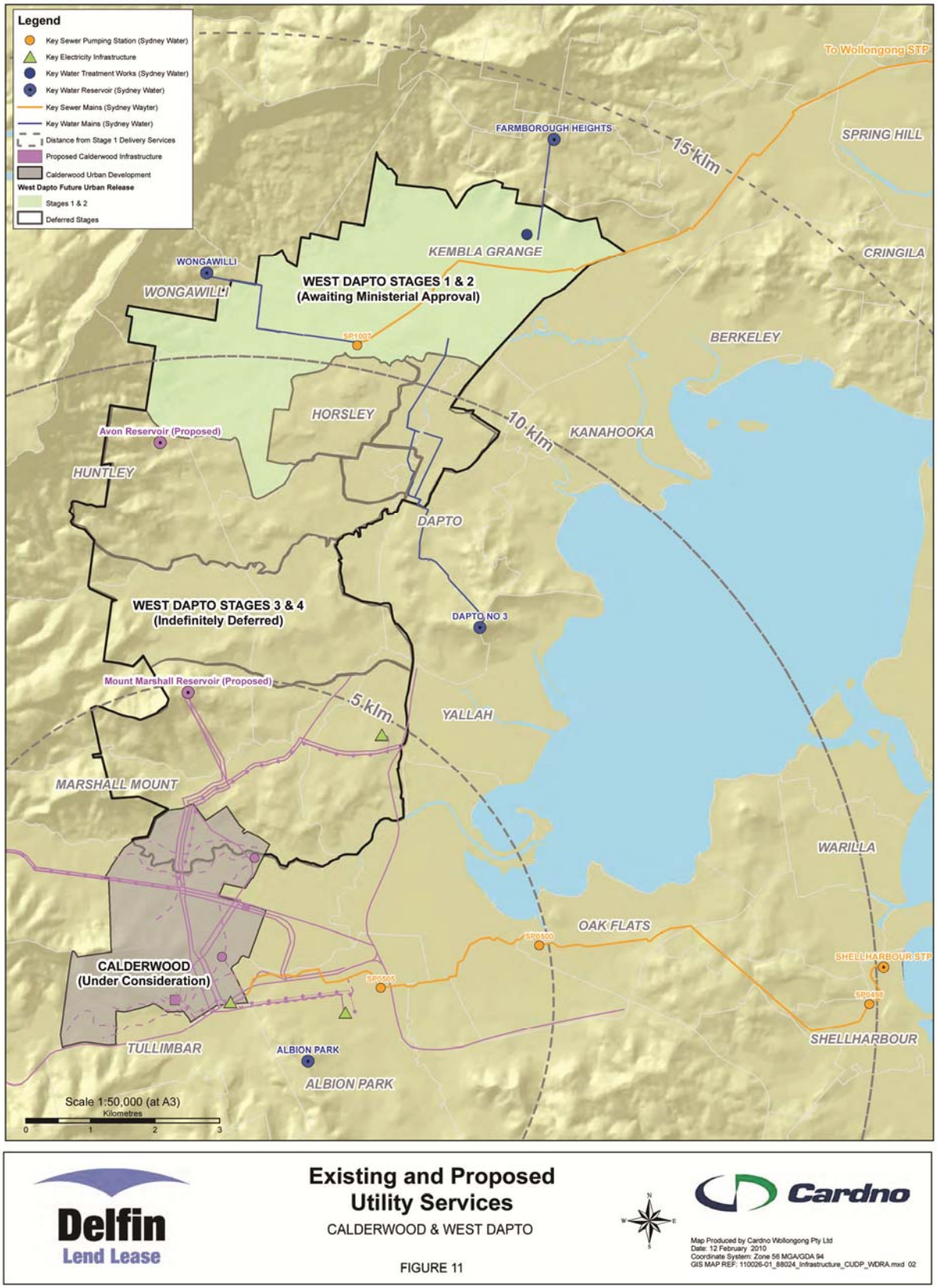

Figure 38 – Relationship between Calderwood and WDRA utility servicing

3.20 Illawarra Regional Airport

Figure 39 shows the ANEF Contours for the Illawarra Regional Airport. The whole of the site is located outside of the ANEF contour and is thus unaffected by potential aircraft noise. The site is acceptable for development of all buildings types without additional noise mitigation. Given the north south orientation of the longer runway, potential longer term expansion of the airport is not considered likely to be a constraint.

A Noise Assessment prepared by Wilkinson Murray is included at **Appendix Z**.

The site is not located within the Obstacle Limitation Surface Area of the airport.

Figure 39 – Illawarra Regional Airport ANEF contours (Source: Assessment of Noise, Wilkinson Murray, 2010)

3.21 Community facilities & human services

A Social and Community Planning Assessment prepared by Elton Consulting is included at **Appendix AA**.

Consistent with its current status as a rural area, the Calderwood Valley currently has little in terms of local community and recreation facilities, human services or open space. The existing local level facilities in adjoining areas will not be readily accessible to the future population of the Calderwood Urban Development Project. This points to a need for a range of new local facilities and services to be established within Calderwood. The lack of existing social infrastructure in the Calderwood area presents an opportunity to provide quality new facilities based on leading practice sustainability principles that are tailored to the needs of the future community.

In the surrounding region, a large variety of district and regional facilities and services exist. There appears to be particular spare capacity the provision of major parks and sporting facilities. There is also emerging spare capacity in nearby primary schools. The existing network of district and regional facilities and services provides a solid foundation to support the community of Calderwood.

The following key social issues within the region will need to be considered in the planning of the Calderwood Urban Development Project:

- A need for diverse and affordable housing.
- Initiatives to address potential physical and social isolation.
- Access to local employment opportunities.
- A need to provide quality social infrastructure to support new development.
- A particular need for activities and support for young people.

The Outline Voluntary Planning Agreements incorporate a comprehensive range of human services infrastructure responding to the identified demands of the incoming population for social infrastructure.

3.22 Urban Capable Land Analysis

As demonstrated throughout this section, the Calderwood Urban Development Project site is relatively free of major physical and environmental constraints.

Figure 40 provides an overall summary of the environmental constraints identified as part of the site analysis.

Figure 41 shows urban capable land having regard to manageable environmental constraints as documented at Section 7. This has been used as the basis from which to develop the Concept Plan presented at Section 4.

The site has relatively a high ratio of urban capable land to non urban capable land.

The constraints that do exist on site can be integrated, managed and /or conserved as part of the proposed development through the adoption of appropriate strategies.

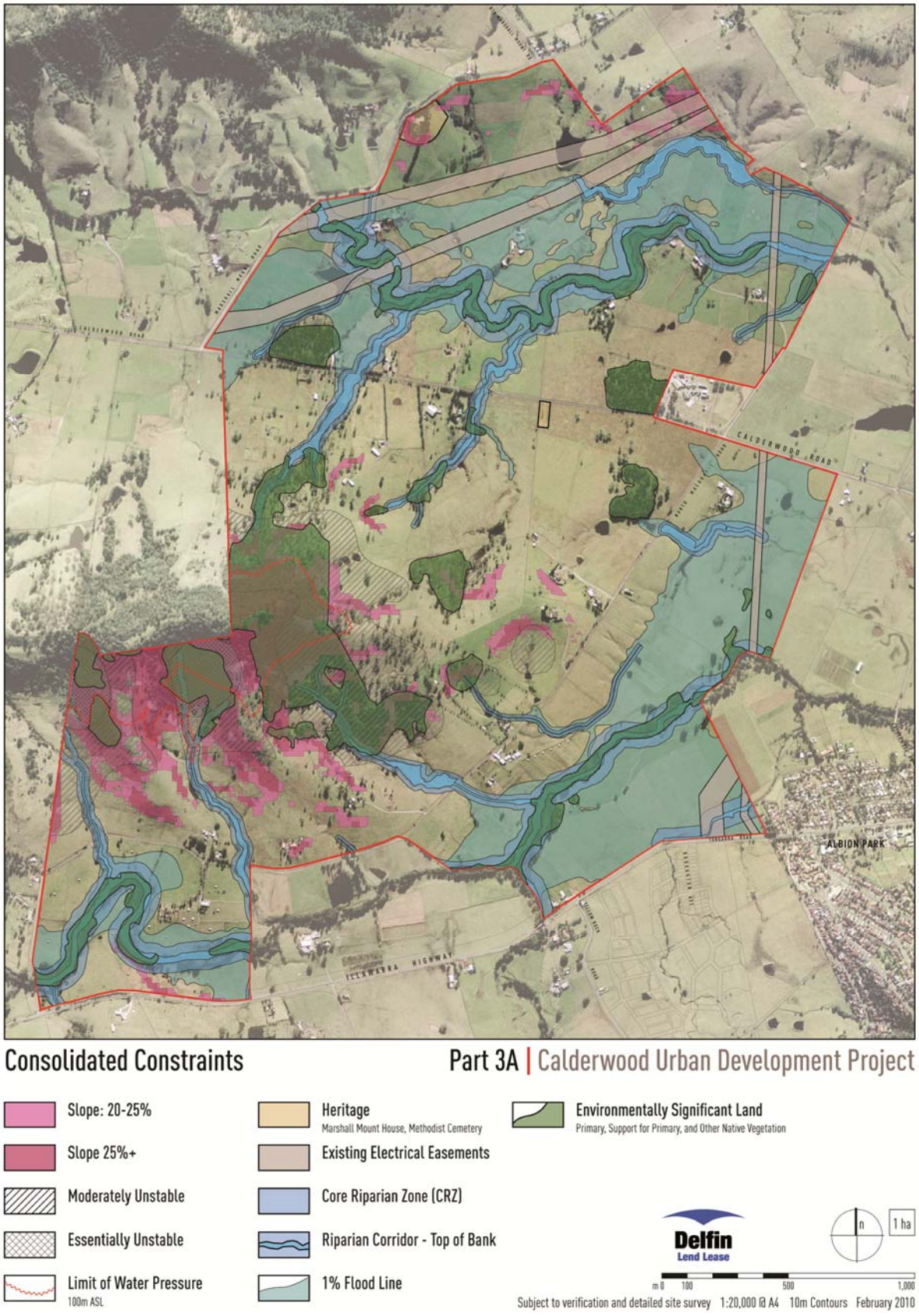

Figure 40 – Consolidated constraints analysis

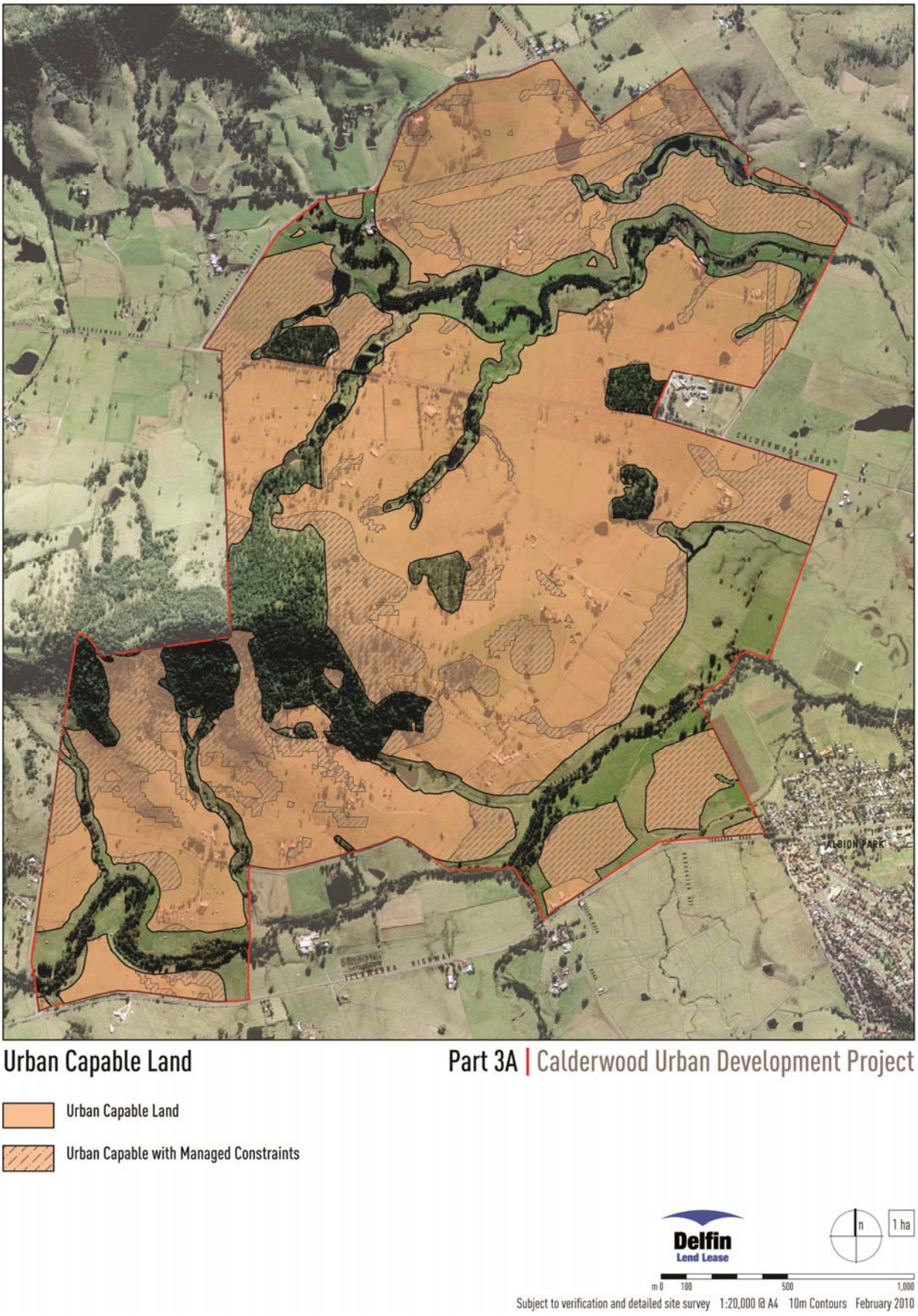

Figure 41 – Urban capable land

4.0 Concept Plan

4.1 Introduction

The 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.

The Concept Plan responds to the Site Analysis at Section 3.

The Calderwood Urban Development Project is proposed to be developed in stages over an approximately 20 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 a 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.

Each of these future applications will be required to be generally consistent with the Concept Plan and Statement of Commitments.

The zoning of the land to allow for implementation of the Concept Plan will be effected through the inclusion of the Calderwood Urban Development site as a SSS under Schedule 3 of the Major Development SEPP. The proposed for the amendment to the Major Development SEPP is included at Section 6.

Voluntary Planning Agreements are proposed to provide for the scope, staging and timing of regional and local infrastructure as detailed at Section 5.

4.2 Proposed Development

The Concept Plan is shown at **Figure 42**.

DLL is seeking Approval for the Concept Plan including:

- Approximately 4,800 dwellings and minimum subdivision lot sizes for a range of dwelling types;
- Approximately 50 hectares of mixed use / employment land to be used for a range of retail, commercial, business 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 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 and Sewer Concept Plan;
- 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 series of drawings illustrating the Concept Plan for which approval is sought are included at **Appendix A**.

In determining the Concept Plan, it is requested that the Minister determine that:

- development for the purpose of subdivision and certain public domain/site infrastructure works (including bulk earthworks) is development to which Part 3A of the EP&A Act applies; and
- that no further environmental assessment is required for subdivision to create the boundaries of land that is to be dedicated to the State government or to Shellharbour City Council or Wollongong City Council for a public purpose, including drainage, open space / environmental reserves and education.

The area within which it is proposed that development remain subject to Part 3A is shown at **Figure 43**.

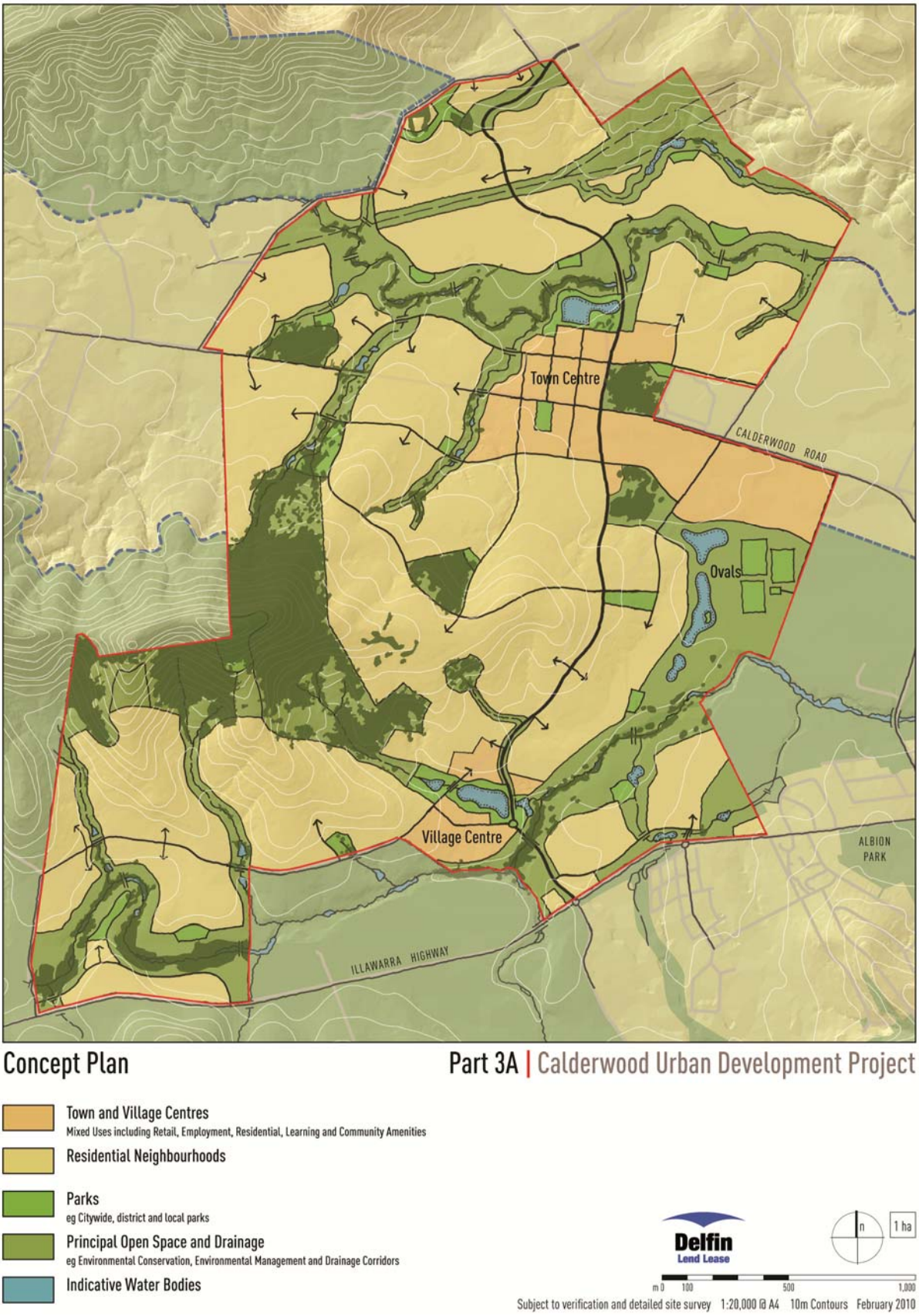

Figure 42 – Proposed Concept Plan

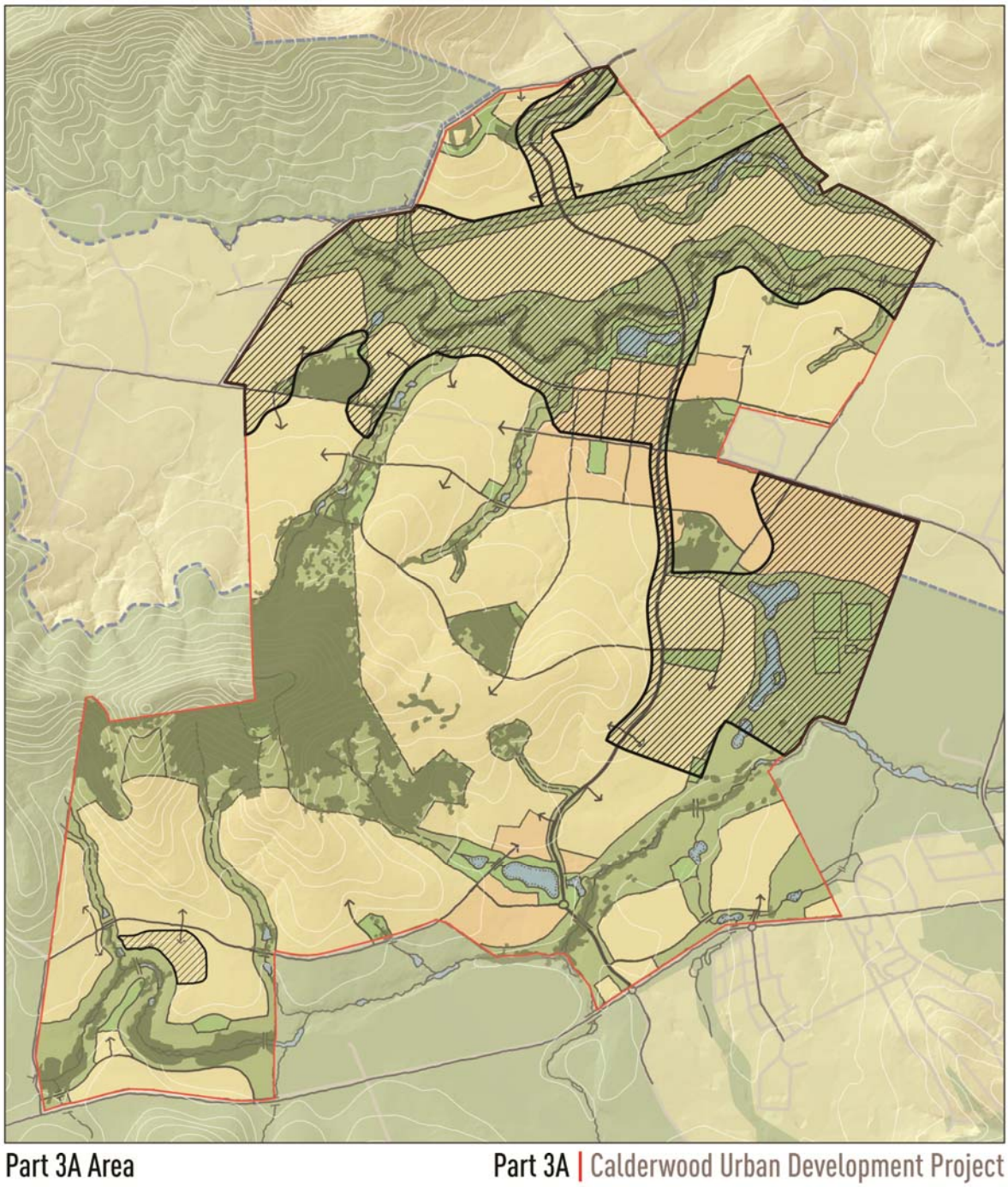

Figure 43 – Part 3A area

4.3 Urban Design Concept

Key features of the 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 the main north-south road and near the principal east-west 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.

4.4 Sustainability

Sustainability is a fundamental element of the proposed 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.

DLL is committed to the development of alternative technologies in its communities. The issues of carbon emissions, renewable energy targets and land tenure solutions will become increasingly relevant to new urban developments. DLL sees potential for both solar farms and co (or tri) generation as part of the Project, particularly for the Town Centre and employment precincts. Such opportunities will continue to be considered throughout the project.

4.5 Land Uses and Distribution

4.5.1 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 44**. 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.
- Parkland nodes – residential character with increased density surrounding nodes (parks and bus stops) incorporating a range of attached and detached dwellings.
- Country residential – residential character with decreased density and generally comprising detached dwellings.
- Bushland edge – a residential character with layout and setting that responds to the bushland interface and generally comprises detached dwellings.

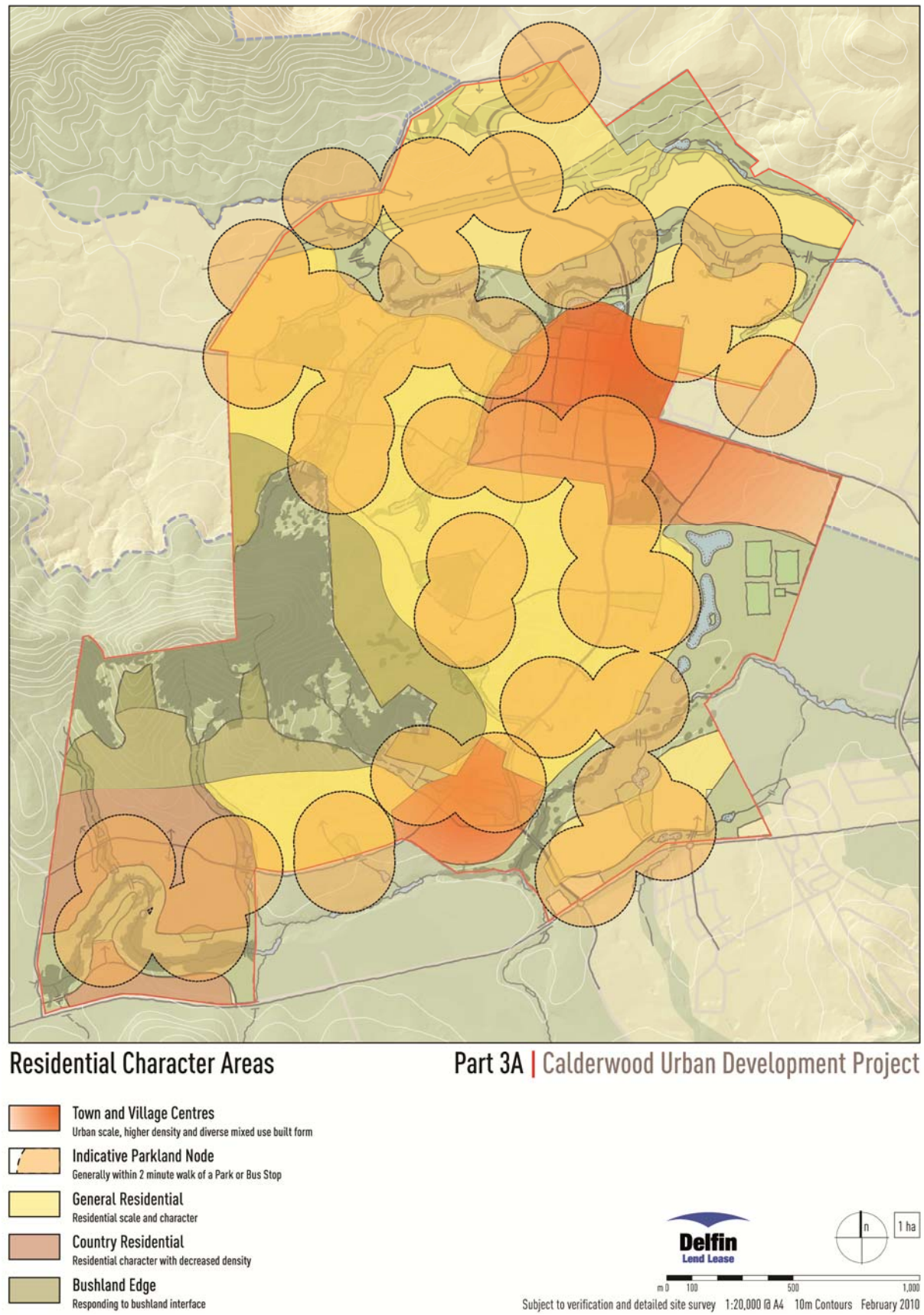

Figure 44 – Residential character areas

4.5.2 Dwelling Yield, Mix and Minimum Lot Sizes

Concept Approval is sought for approximately 4,800 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.

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 900 m2 and 450 m2 detached housing residential lots and a variety of smaller, more affordable detached housing product between 300 m2 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, it is proposed to deliver housing on < 300 m2 lots at 'nodes', including within 200 metres of a bus stop or public open space or of the B4 Mixed Use Zone boundary (ie the Village Centre, Town Centre and mixed use employment lands).

Dwellings to be provided on < 300 m2 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 proposed within the general residential neighbourhoods is 125 m2. This lot size is consistent with that being delivered in other recent Greenfields residential land release areas, including the South West Growth Centre of Sydney.

The range of dwelling types and minimum subdivision lot sizes for which concept approval is sought within the general residential areas are set out below:

Table 13 – Proposed minimum subdivision lot sizes

Dwelling type	Minimum Subdivision Lot Size (R1 General Residential)
Dwelling houses	300 m2 or 180 m2 within 200 m of a bus stop, public open space or the B4 zone boundary
Attached dwellings and semi-detached dwellings	300 m2 or 125 m2 within 200 m of a bus stop, public open space or the B4 zone boundary
Dual occupancies	180 m2
Multi dwelling housing and residential flat buildings	300 m2

There are three areas of land within the site that are proposed to be zoned E3 Environmental Management and retained in private ownership. A minimum lot size is not proposed for the E3 Environmental Management Zone. Rather, it is proposed to establish a maximum density of 10 dwellings per hectare for this land.

No minimum lot sizes are proposed for non residential development.
A Development Control Strategy forms part of the Concept Plan proposal (refer to **Appendix BB**. The Development Control Strategy sets out detailed controls for housing. It includes minimum lot sizes for residential development within the Town Centre and Village Centre.

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 child care.

Secondary dwellings, comprising small dwellings of up to 60 m2 in floor area on the same allotment of land as another principal dwelling are proposed to be included throughout the residential neighbourhoods.

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:

- 60-85% detached dwellings, attached dwellings, semi attached dwellings and dual occupancies; and
- 15-40% 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 Concept Plan specifically does not pre-determine the number of dwellings or mix within each future stage, and does not seek approval for the above indicative mix. Dwelling mix is subject to change over the significant time period for implementation of the development as market requirements change.

4.5.3 Mixed Use Centre and Employment Precincts

Town Centre and adjoining employment lands

Approximately 58 hectares of land is provided for a new Town Centre with adjoining employment lands. The Town Centre is generally located to the west of the new north south collector road, with the employment lands located to the east.

The new Town Centre will comprise a wide range of retail, commercial, business education, entertainment, civic recreation, residential, tourist and visitor accommodation and employment land uses including:

- Approximately 25,000 sqm of retail floor area accommodating approximately:
  - A small discount department store of around 4,000 – 5,000 sq metres.
  - Two full line supermarkets and possibly a discount supermarket comprising around 9,000 -10,000 sqm.
  - 3,000- 4,000 sqm of mini major floorspace.
  - 50-60 speciality stores, or around 7,000 – 8,000 sqm of floor space.
  - 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 commercial office, light industrial, and non-retail service/convenience tenants (eg banks, doctors, post office, real estate etc).
- Community facilities including a large multi purpose community resource centre and co located branch library, and child care.
- 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 proposed 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 4.6 below).

The mixed use employment land to the east of the north south collector road is intended to accommodate a wide range of employment uses including commercial, business, light industrial and bulky goods.

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:

- Approximately 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.
- A Sales and Information Centre.

A residential display village will be established in close proximity to the Village Centre.

A temporary community centre is also to be provided within the Village centre during the initial stages of the development.

4.6 Riparian Corridors

The proposed Riparian Corridor Network is shown on **Figure 45**.

The 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 Concept Plan proposes:

- Retention of any riparian corridors that have a requisite hydrological function.
- A minimum CRZ of 92 metres to Marshall Mount Creek and Macquarie Rivulet.
- A minimum CRZ of 48 metres total width to 2nd Order streams extending from the main valley floor environmental corridors to Johnston's Spur.
- A minimum CRZ of 24 metres total width to first order streams.

A total of approximately 113 hectares of land is to be provided as CRZ.

There are a small number of first order drainage lines (13) that are proposed to be removed. Each of these is small ephemeral first order lines with very small catchment areas.

The first order drainage lines proposed to be removed are Reaches 11-14, 16, 19, 20, 22, 25, 30, 31, 38 and 39. The location of these existing drainage lines is shown on **Figure 19** at Section 3.

With reference to **Figure 19**:

- 16 mapped stream segments (segments 1, 7, 8, 15, 18, 23, 26, 24, 32, 33, 34, 35, 40, 42, 44, 45, 46 and 48) are proposed to be consistent with the RCMS;
- 12 mapped stream segments (2, 17, 27, 28, 29, 36, 37, 43, 47, 49) are proposed to be a higher category than the RCMS; and
- 6 first order drainage lines 3, 5, 6, 9 and 10 and second order stream 4 are proposed to have a lower categorisation than the RCMS.

Concept approval is sought to allow 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 Road Layout and Hierarchy Plan at **Figure 49** below and the Pedestrian and Cycle Initiatives Plan at **Figure 50** below. These crossings may be designed in a variety of forms dependent upon final location, and would not necessarily comprise bridges.

It is proposed to provide a network of pedestrian and cycle pathways within the CRZs. Utility services infrastructure will need to cross the CRZs as required.

The final location of crossings an d 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 45** below.

In addition to the CRZs identified above and at **Figure 45**, significant areas of land located immediately adjacent to riparian corridors, although not part of the riparian corridor network itself, are proposed for the provision of public open space and will contribute to achieving riparian outcomes.

These areas, which are shown on the Open Space Master Plan at **Figure 46** 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.

All retained riparian corridors are proposed to be zoned SP2 Local drainage under the SEPP Amendment (refer to Section 6) and to be transferred into public ownership. Significant existing vegetation within the riparian corridors that is proposed to be retained is shown on **Figure 47**.

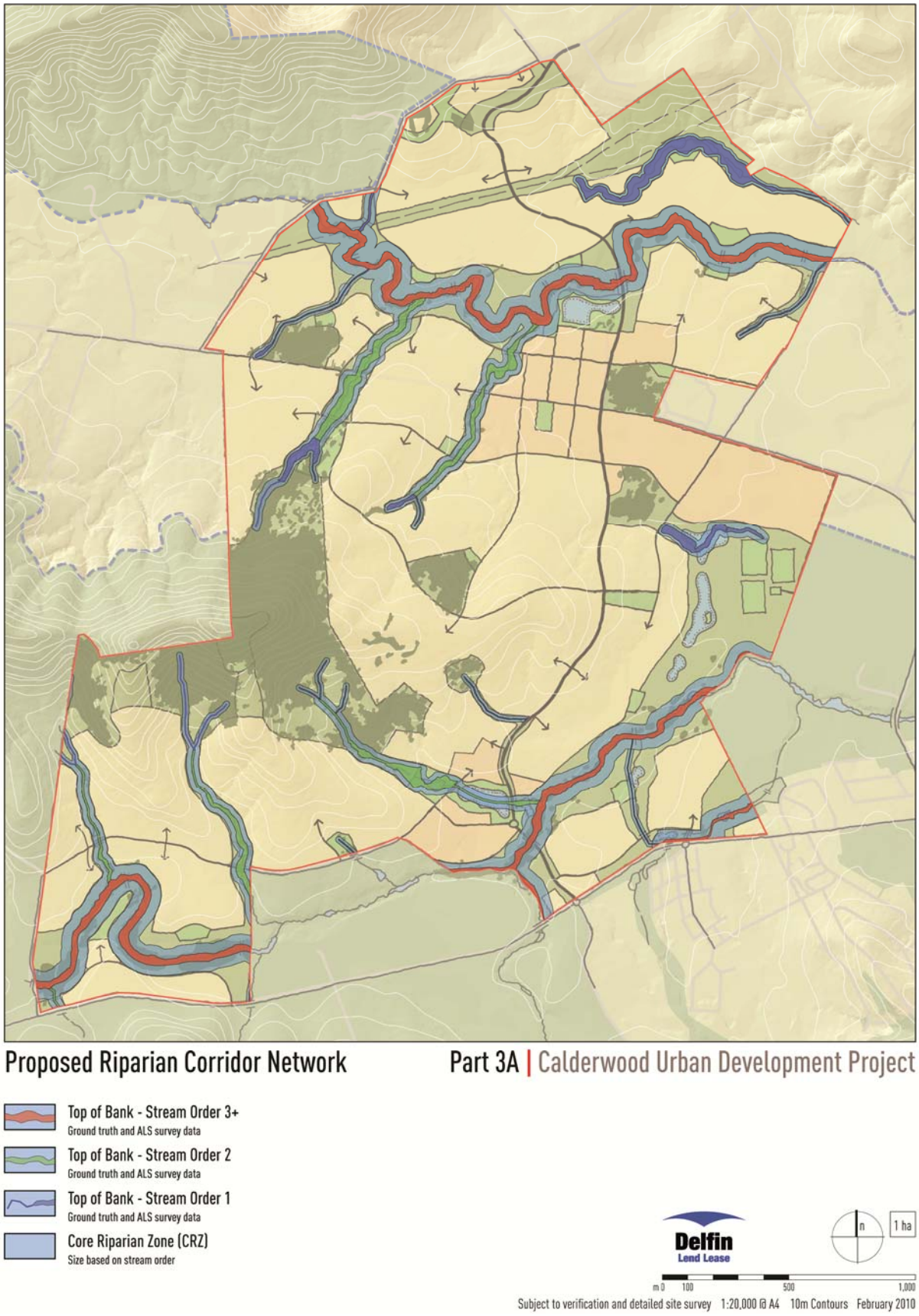

Figure 45 – Proposed Riparian Corridor Network

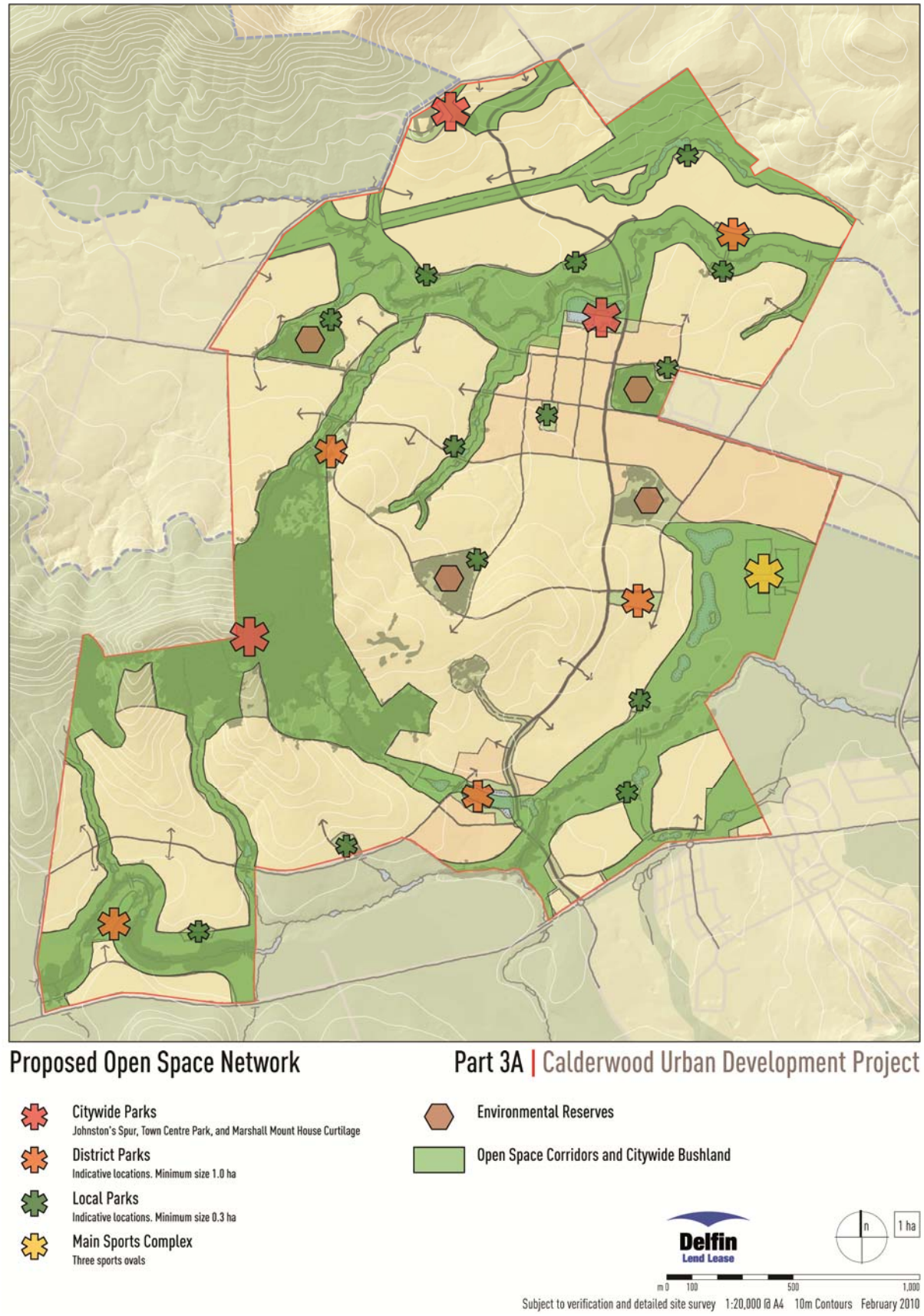

Figure 46 – Open Space Masterplan

4.7 Conservation and Open Space

A Landscape and Open Space Masterplan prepared by Environmental Partnership is included at **Appendix CC**. The Open Space Masterplan is shown at **Figure 46**.

The Open Space Masterplan will deliver a combination of conservation and passive and active recreation. It encompasses the proposed Riparian Corridor Network (refer to Section 4.5) as well as other open space corridors, a number of environmental conservation reserves and bushland conservation areas, and city wide, district and local parks.

4.7.1 Conservation

Land proposed 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.

All of this land is included in the proposed Voluntary Planning Agreements.

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. It is proposed to dedicate Johnston's Spur to Shellharbour Council to be retained in public ownership. It is noted that DECCW has advised that it does not want ownership of Johnston's Spur.

Environmental reserves

There are four environmental reserves proposed:

- Environmental Reserve (ER1) Incorporating a remnant stand of Lowland Woolybutt 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 Woolybutt 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.
- Environmental Reserve (ER4) Incorporating a remnant stand of Lowland Woolybutt 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 Q**).

As with the Johnston's Spur bushland, it is proposed that the four environmental reserves will be dedicated to Council and retained as public open space that is not specifically embellished and managed as parkland or sports grounds, and which may include natural areas or areas that provide an informal landscape setting to adjacent urban development.

It is noted that in addition to the four environmental reserves there are an additional three areas of land that have been identified as being of ecological significance and are also proposed to be retained for a combination of environmental management with appropriate low intensity land use. These areas are to be zoned E3 Environmental Management and retained in private ownership.

Corridors

The Open Space Masterplan incorporates 17open space corridors, primarily relating to site drainage lines. In addition to access and habitat conservation the corridors, these corridors, which incorporate the 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 proposed corridors C1 to C17 is detailed in the Landscape and Open Space Masterplan at **Appendix BB**.
Corridors C1 to C5 are located in the Wollongong LGA, and C6 to C17 in the Shellharbour LGA.

Although not all corridors have been zoned for public open space (as their final boundaries have not been determined), they are all proposed for dedication to the relevant Council as part of the Voluntary Planning Agreements.

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.

4.7.2 Public open space provision

The total of approximately 36.8 ha of open space is proposed. This is in addition to the environmental reserves and conservation lands described above.

Open Space provision includes:

- 13 local parks >0.3 ha each in area totalling 3.9 ha;
- 5 district parks > 1 ha each in area totalling 7.8 ha;
- 3 city wide parks totalling 6.42 ha;
- 1 sporting ground (active recreation) of 15.98 ha in area; and
- Paths in open space corridors (active recreation) of 4.69 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.

It is proposed to dedicate all local parks, district parks, city wide parks, the sporting ground and paths in corridors to the relevant Council.

The 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. 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 BB**.

The indicative provision of open space within each LGA is summarised in **Table 14**.

Table 14 - Concept Plan open space provision (Source: Landscape and Open Space Masterplan, Environmental Partnership, 2010)

Open space provision by LGA					
Item	Shellharbour		Wollongong		Total
	No.	Area	No.	Area	Area
Local parks (>0.3 ha)	10	3 ha	3	0.9 ha	3.9 ha
District Park (>1 ha)	4	6.8 ha	1	1.0 ha	7.8 ha
Citywide Park	2	5.11 ha	1	1.31 ha	6.42 ha
Sporting Grounds	1	15.98ha	-	-	15.98 ha
Paths in open space corridors		3.61 ha		0.82 ha	4.69 ha
Total		32.7 ha		4.08 ha	39.04 ha

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

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.

Marshall Mount Cemetery is to be encompassed within a local park that will provide an appropriate landscape buffer to the surrounding Town Centre.

4.8 Retention of Vegetation

The Concept Plan identifies areas of significant vegetation that are to be retained and appropriately enhanced. Refer to **Figure 47**.

The areas shown on **Figure 47** 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 Flood Mitigation Plan (referbelow).

4.9 Bushfire Asset Protection Zones

The Concept Plan proposes the establishment of maximum Bushfire Asset Protection Zones at known areas of bushland / development interface as illustrated on **Figure 48**. Subject to final land uses and detailed design, the APZs may be reduced in accordance with Planning for Bushfire Protection.

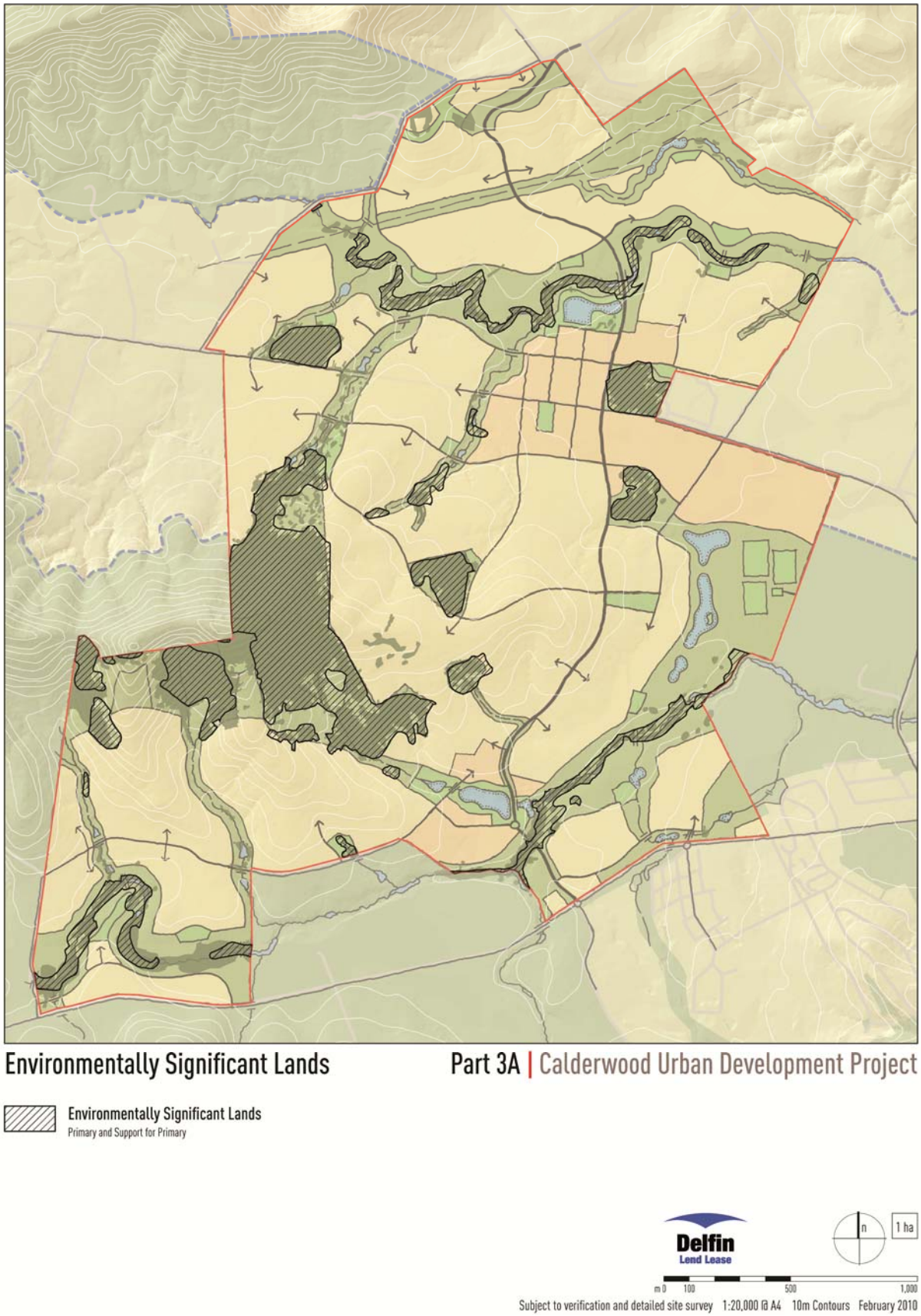

Figure 47 – Environmentally significant lands

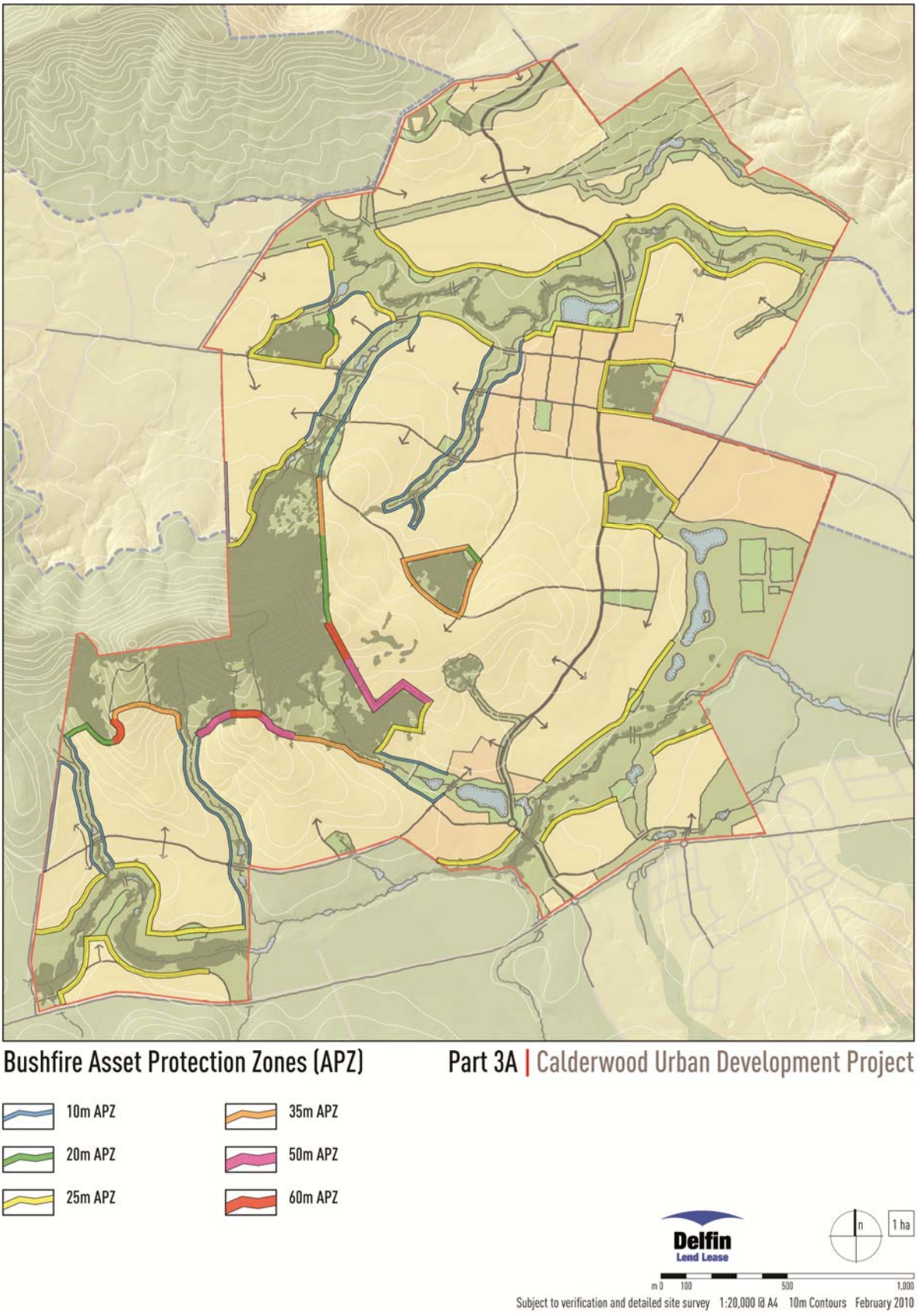

Figure 48 – Maximum Bushfire Asset Protection Zones

4.10 Access and Transport

4.10.1 Internal Road Network

The proposed Concept Plan internal road network hierarchy is illustrated by **Figure 49**.

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 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.

  The spine road 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. The Calderwood Road alignment is retained to the east and west of the site.
- 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 the main north south road 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.
- Connection to the Illawarra Highway at the eastern end of the southern site frontage via a collector road as a fourth (northern arm) to the existing Illawarra Highway / Broughton Avenue roundabout. Secondary connections to the Illawarra Highway to at the western end of the site.

It is proposed to upgrade Calderwood Road from the site boundary to Tripoli way under the proposed Voluntary Planning Agreement. The road will be upgraded to undivided two way two lane carriageway with minimum 3.5 m lane widths and sealed shoulders.

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 as identified in the Outline VPA.

The Macquarie Rivulet Bridge 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 Development Control Strategy included at **Appendix BB**.

4.10.2 Pedestrian and Cycle

Proposed pedestrian and cycle initiatives are shown on **Figure 50**. A network of pedestrian and cycle paths is proposed 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.

Concept Approval is sought to allow for pedestrian and cycle pathways within the 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 50**.

4.10.3 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 51**.

The final design of the bus route network and stop locations will be subject to consideration by NSW Transport & Infrastructure and the relevant service providers.

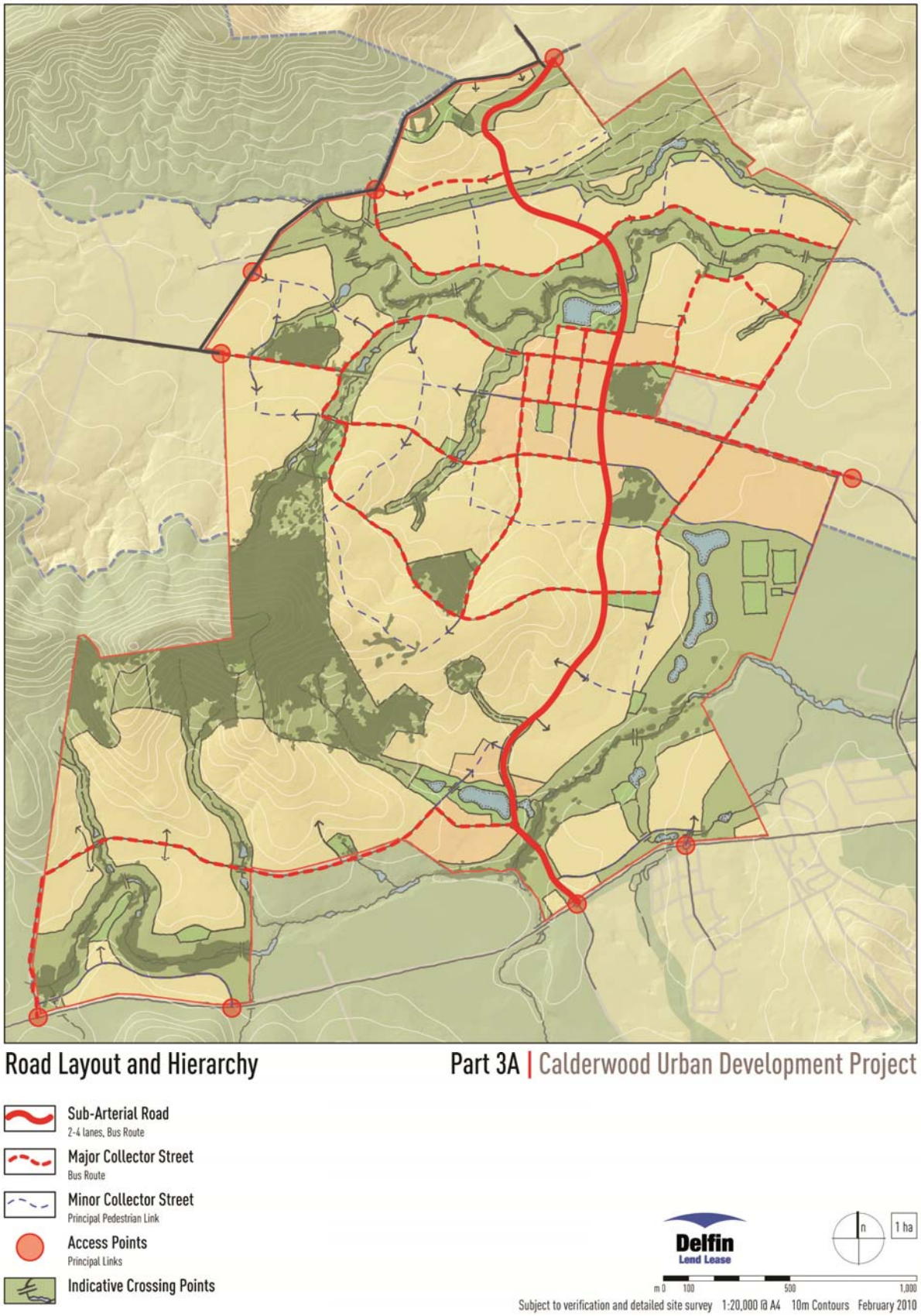

Figure 49 – Proposed road layout and hierarchy

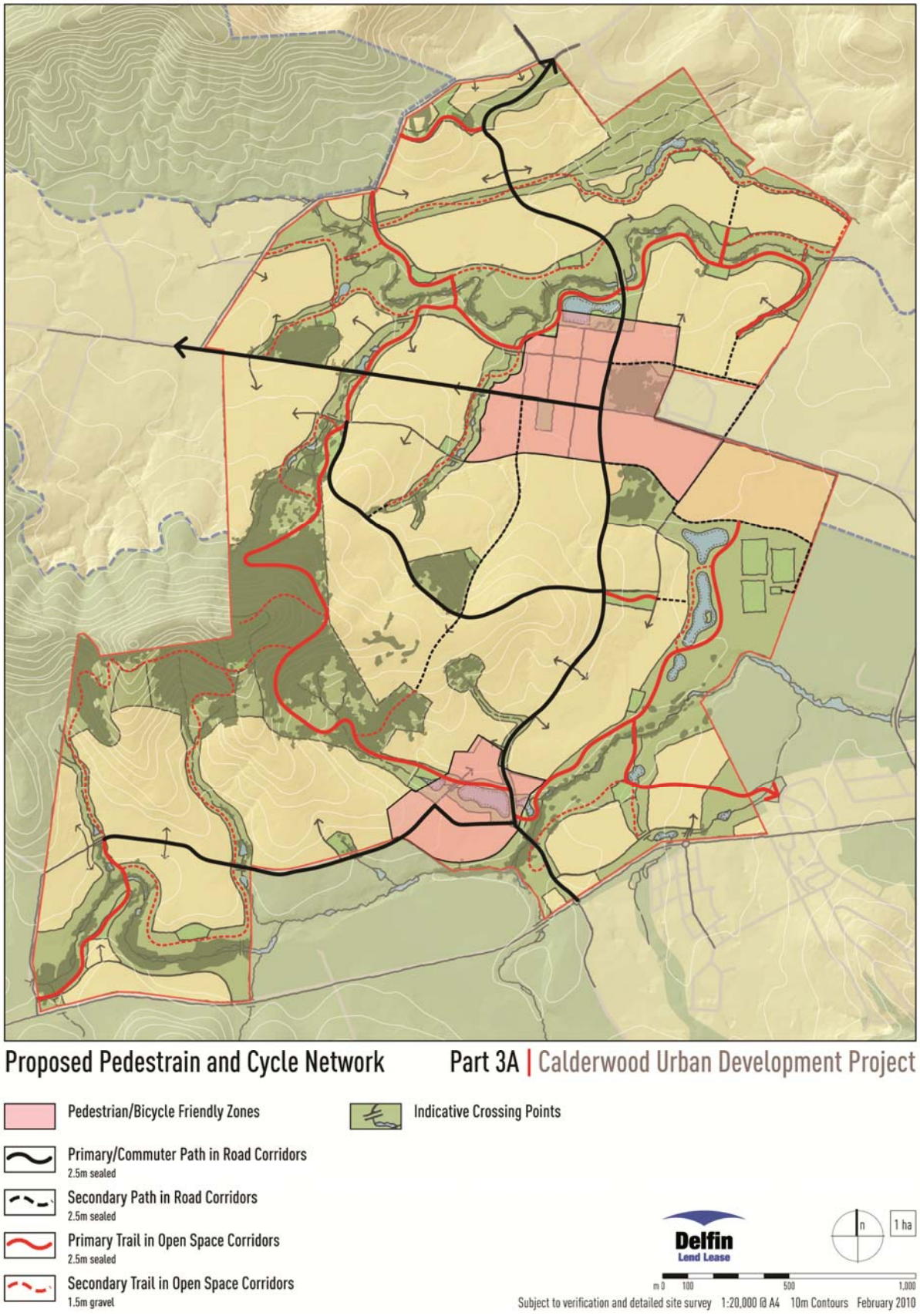

Figure 50 – Proposed pedestrian and cycle initiatives

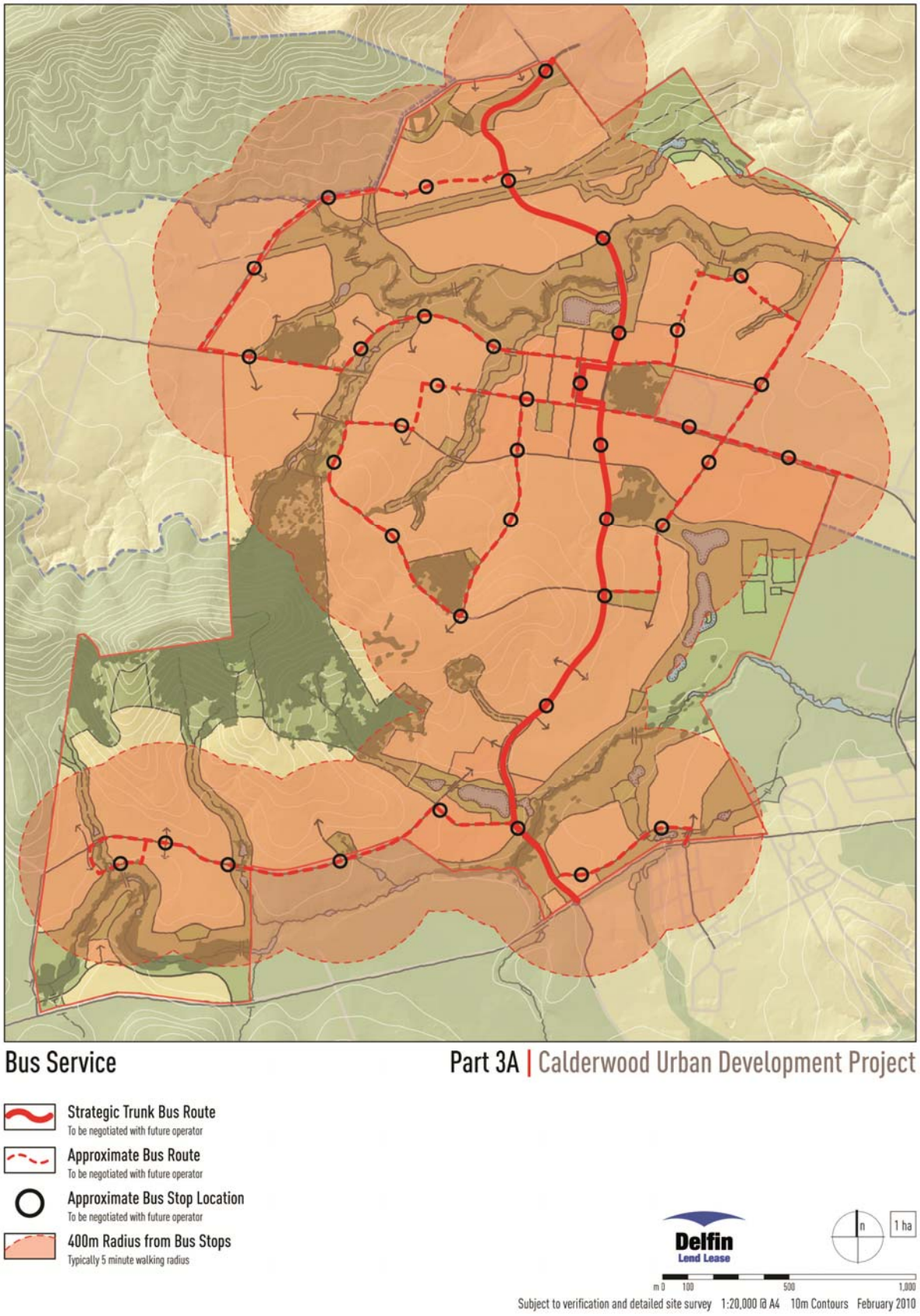

Figure 51 – Bus service

4.11 Water Cycle Management

The Water Cycle Management Concept is illustrated at **Figure 52**.

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 15**.

Table 15 – 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 hysical 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 52**. It is proposed that wetlands will be constructed to service each stage of the development as it is released.

The basic configuration of the proposed wetland system consists of a combination of permanent and intermittently inundated ponds and wetlands, mostly positioned so that the lie within the APZs (refer to Figure . 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.

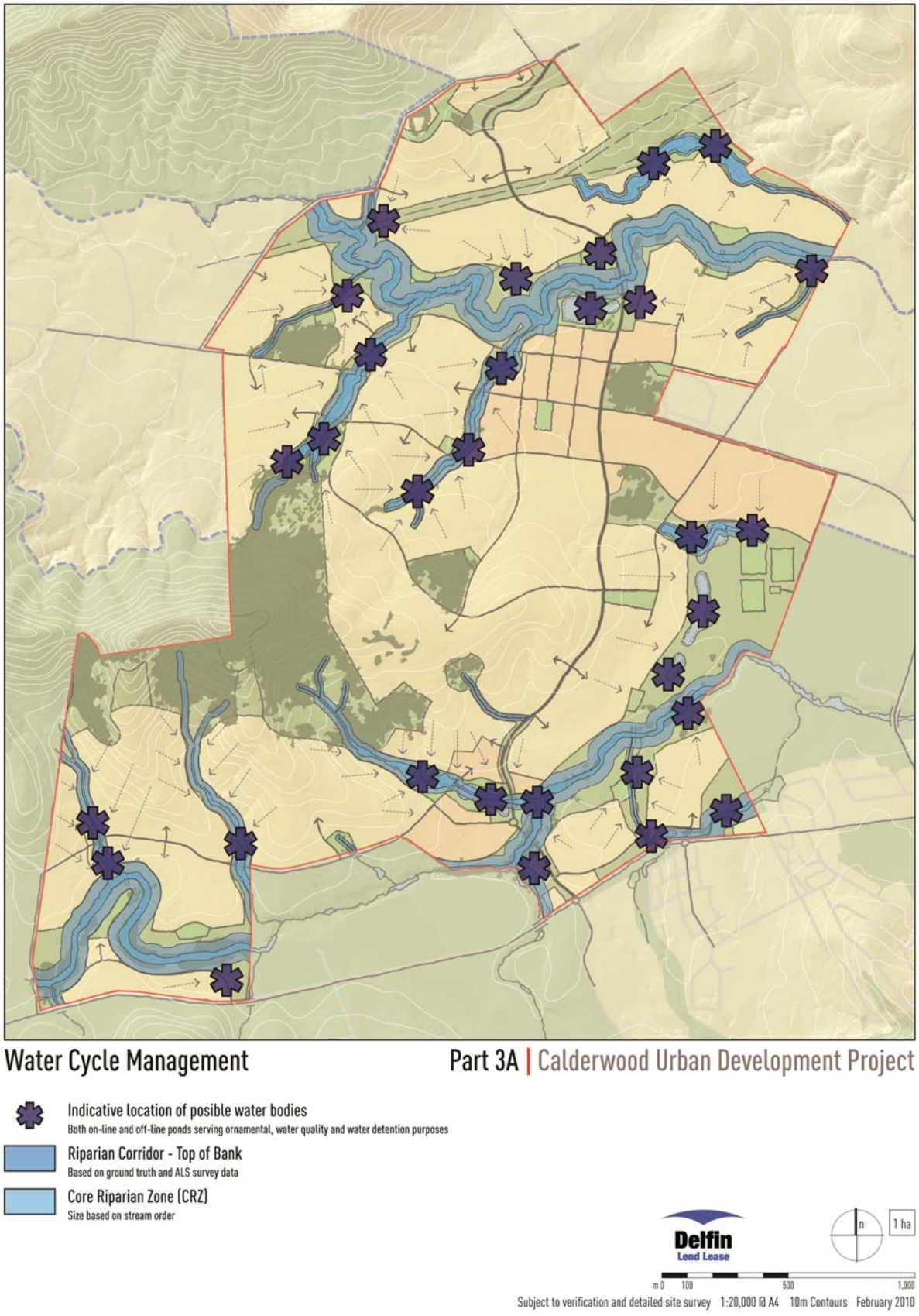

Figure 52 – Water cycle management

4.12 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.

The proposed Flood Mitigation Plan for the project is shown at **Figure 53.**

The 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 53** 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 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 53**. Selective planting of carefully selected vegetation species may occur within the locations identified on **Figure 53** 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 will not be 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 an including the 1% AEP flood.

Approval is sought to allow the import and placement of fill within the areas shown as 'Floodplain Regrade - Increased Elevation' on **Figure 53** over the lifespan of the project as suitable fill becomes available.

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

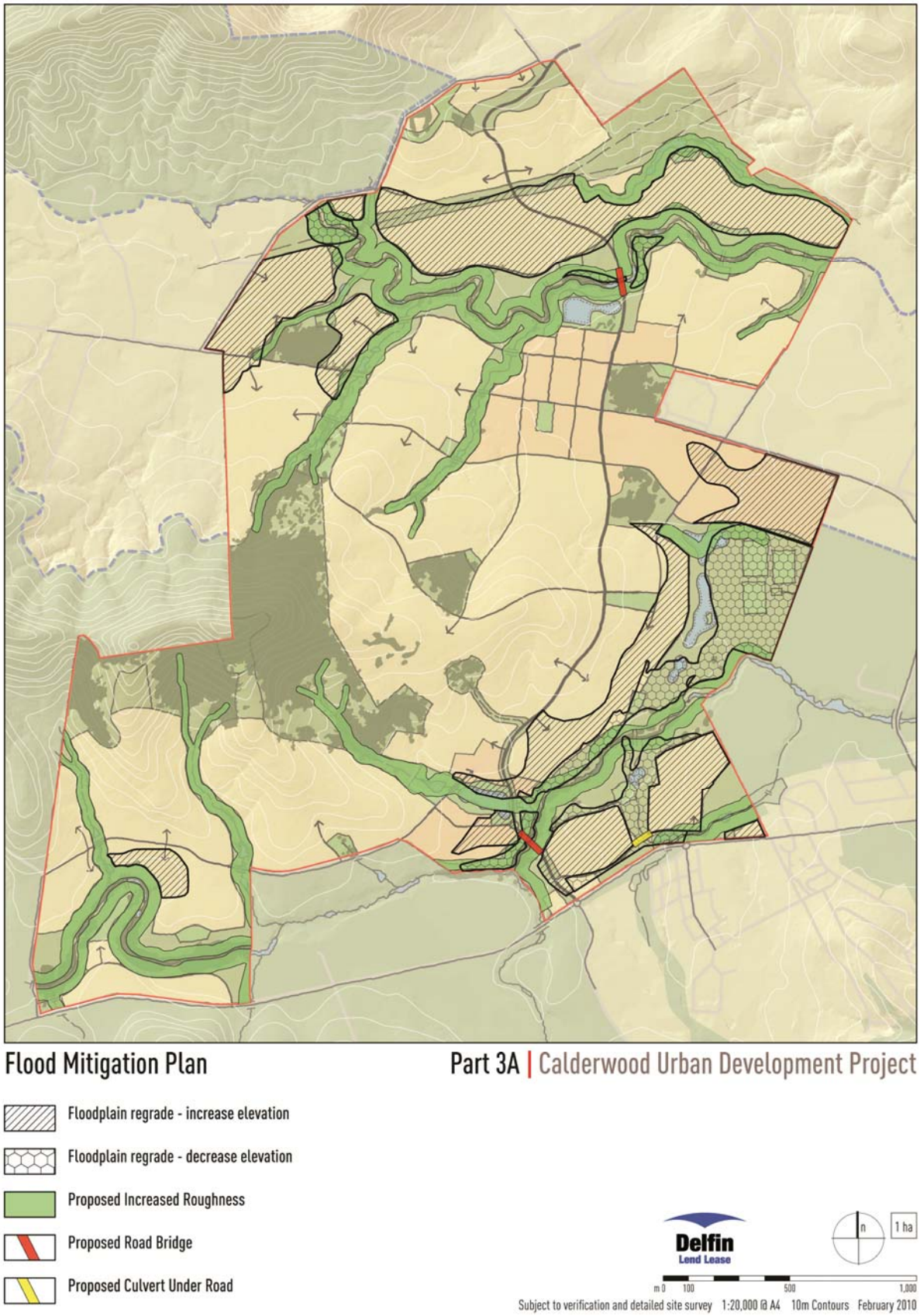

Figure 53 – Flood Mitigation Plan

4.13 Infrastructure Servicing

The overall utility services strategy for the whole of the development is illustrated at **Figure 54**. Utilities infrastructure servicing will require both on and off site works and upgrades in stages over the life of the development.

An Infrastructure Services and Facilities Implementation and Devliery Proposal prepared by DLL is included at **Appendix G**. The proposal provides further detail with respect to the manner in which utilities services infrastructure will be delivered and staged.

Sewer

The proposed Sewer Concept Plan is illustrated by **Figure 55**. 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.

Water

The Concept Plan Potable Water Strategy for the project is illustrated by **Figure 56**.

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.

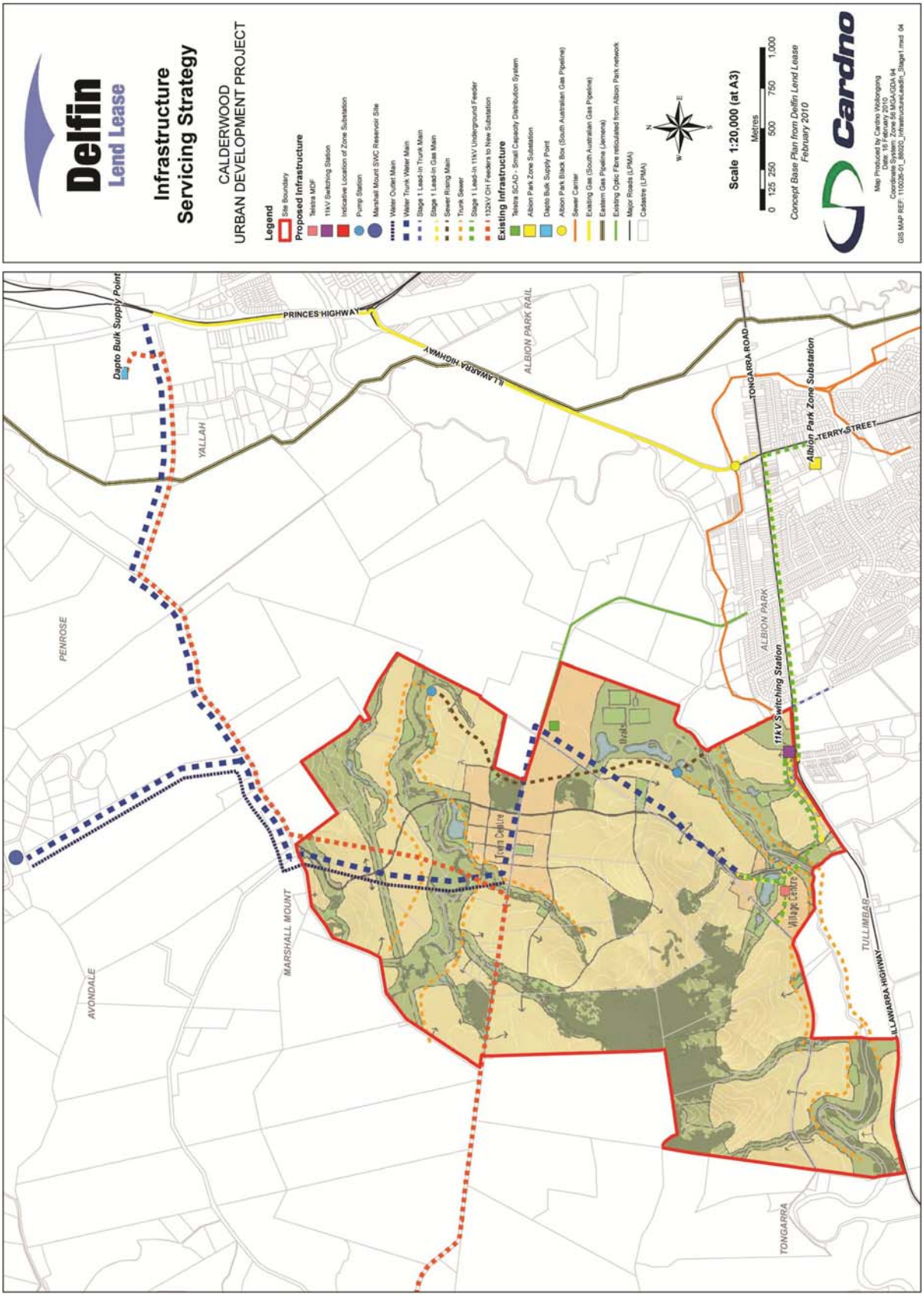

Figure 54 – Infrastructure servicing strategy (Source: Cardno, 2010)

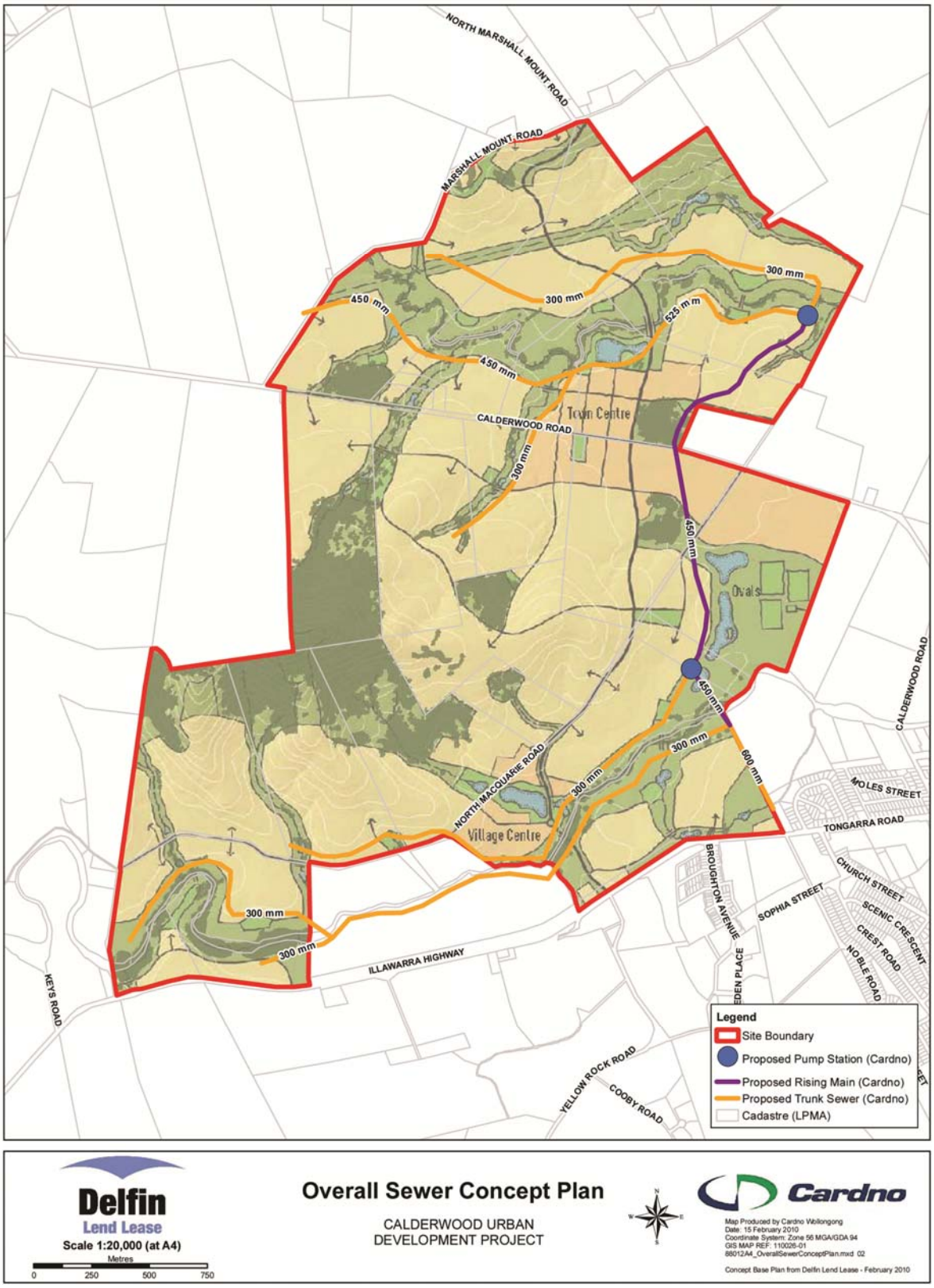

Figure 55 – Overall Sewer Concept Plan (Source: Cardno 2010)

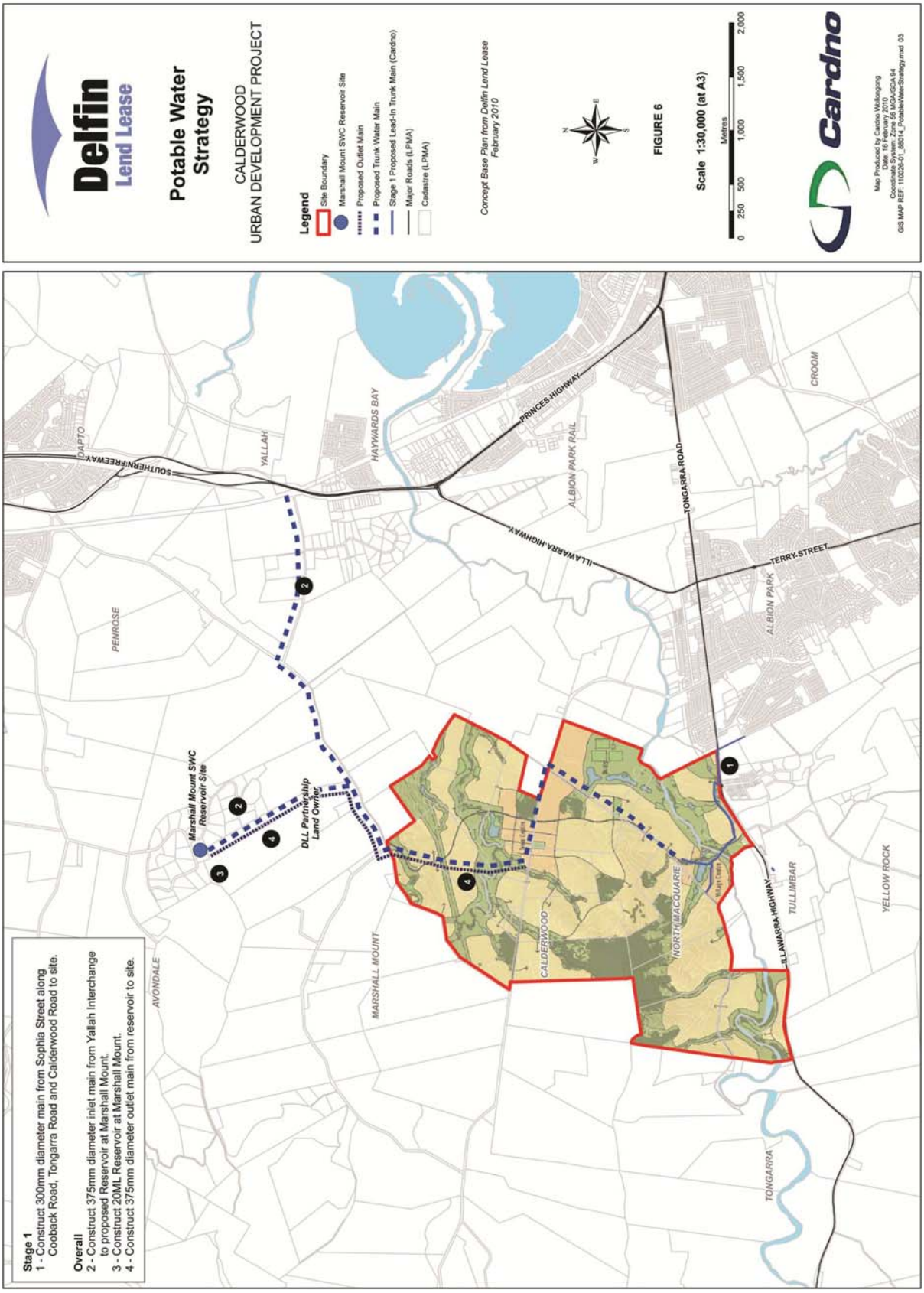

Figure 56 – Concept Plan Potable Water Strategy (Source: Cardno, 2010)

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 is to be provided to Integral Energy for this purpose. Integral Energy will fund the zone substation and incoming feeders.

The location of the parcel of land is subject to final resolution, however Integral Energy has advised that a suitable location for the zone substation site would be on Calderwood Road approximately 1km east of Marshall Mount Road as this is approximately the electrical load centre of the site.

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.

4.14 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.
- Co located branch library.
- Temporary community centre.
- Community development strategy.
- Land for 2 public primary schools, along with a special needs unit.
- Land for 1 public high school.
- One private school (primary / secondary).
- Up to 3 childcare centres.

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

Details of the proposed community infrastructure provision are provided at **Appendix AA** and the proposed Voluntary Planning Agreements and Infrastructure, Services and Facilities Implementation and Delivery Proposal documented at Section 6.

4.15 Project Staging

Commencement of the project is targeted for 2012. Development will continue progressively until 2036, when all dwellings will be completed and occupied, subject to market take up.

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 225 lots is anticipated.

The delivery of transport, infrastructure, utility servicing and community and social infrastructure is detailed at Section 5.

5.0 Development Contributions & Infrastructure and Delivery Proposal

5.1 Proposed Development Contributions

The EP&A Act 1979 provides several mechanisms by which infrastructure can be provided and funded as part of the Part 3A process. Broadly these are:

- Developer contributions under s94
- Fixed development consent levies under s94A
- A Voluntary Planning Agreement under s93F

As the Calderwood Urban Development Project straddles the LGAs of Wollongong and Shellharbour there is potential for governance arrangements to be an issue in terms of the provision of infrastructure and community services, particularly where the community service is being utilised by ratepayers of the adjoining Council. There is clearly a need for a consistent, equitable and streamlined approach.

The use of s94 is not recommended for the proposal given the complexity and size of the project and the fact that the proposal straddles two Council areas. The existing s94 plans prepared by Wollongong and Shellharbour have marked differences in terms of contributions.

VPAs were recognized by the planning legislation in 2005 as a more flexible method of formulating and implementing developer contributions towards the provision of public amenities and services. They are generally used for the larger and more complex proposals, where there are cross boundary issues or where s94 plans are not in place.

The VPA is a legal agreement between a developer and a planning authority or infrastructure agency under which the developer either dedicates land free of cost, pays a monetary contribution, carries out WIK or provides other material public benefits to be used for or applied towards a public purpose. Public purposes can include amenities or services, transport infrastructure, affordable housing and conservation and enhancement of the natural environment.

DLL has held discussions with Shellharbour Council and the DoP in relation to entering into Voluntary Planning Agreements for the provision of local and regional public amenities and services for the Calderwood development.

It has been proposed that with regard to the provision of regional and community infrastructure and services, a Voluntary Planning Agreement framework would provide the flexibility to incorporate equitable future governance arrangements across the site.

In the case of the Calderwood Urban Development Project, entering into VPAs for the delivery of regional and local infrastructure offers the following community benefits:

- Integrated planning and delivery of community facilities and services, passive / active open space and recreation facilities.
- A staged, incremental and uncomplicated implementation strategy with timely delivery of facilities and infrastructure.

- Implementation by a proponent with the skills and resources to deliver the Project that can leverage on experience with many other master planned communities across Australia.
- Certainty to the Government by a proponent that can meet Government's prudential, funding and governance requirements.

The scope of the proposed VPAs is identified below. Outlines of the Proposal Planning Agreements between the Minister and DLL, and Shellharbour Council and DLL describing the intended approach to the delivery of infrastructure are included at **Appendix DD**.

Following public exhibition of the Concept Plan and SEPP Amendment proposals, the proposed VPAs will be prepared and publicly exhibited under the relevant provisions of the EP&A Act. The publicly exhibited VPAs will provide full detail of the scope, timing and delivery of contributions and relevant governance arrangements.

It is proposed that the VPAs will operate to the exclusion of any further s.94, s.94A and s94EF contributions.

Regional Planning Agreement

Funding and delivery of the following regional infrastructure is proposed to be negotiated between DLL and the Minister for Planning:

- Regional transport works;
- Land for education.

The VPA is not intended to include contributions to upgrading of existing infrastructure for water and sewer, which are currently the subject of discussion with Sydney Water. This contribution will be via a service agreement with Sydney Water.

Local Planning Agreement

Local VPAs will be entered into between DLL and both Shellharbour and Wollongong Councils for the funding and delivery of the following community infrastructure:

- Local transport works;
- Drainage, including Riparian Corridors;
- Bushland conservation areas, open space and recreation facilities;
- Water cycle management

5.1.1 Existing Local Section 94 Contributions

The following existing local Section 94 Contributions regime applying to the site is noted.

Shellharbour

That part of the site located within the Shellharbour LGS is included in Precinct 8 Rural West under Shellharbour Council's Section 94 Contributions Plan 2005.

The Contributions Plan requires contributions from new development towards city wide facilities and services, precinct facilities and services, and special purpose benefit area facilities and services.

City wide facilities included in the plan are:

- Lake and foreshore parks
- Regional cycleways
- Regional sporting facilities (Croom sporting complex and City Stadium)
- City Performance Theatre
- Multi Function Arts Centre
- Central Library
- Sessional services facilities
- Council administrative offices
- Civic Auditorium
- Youth accommodation facility

The Contributions Plan does not envisage any significant precinct growth within Precinct 8 Rural West. No specific facilities or services are identified under the Plan for provision in this area.

The Shellharbour Contributions Plan is subject to review as part of the State Government's current reforms to the development contributions system.

Wollongong

Wollongong Section 94A Contribution Plan 2008 is applicable to land throughout the Wollongong LGA. Under the Plan contributions towards public amenities and services are required to be paid at the rate of 1% of the proposed cost of carrying out development. Contributions can be pooled and applied by the Council progressively towards the public facilities identified as needed.

Under the Wollongong Plan, no new public amenities or services have been identified for provision within the Calderwood site or its immediately surrounding area. Funding is predominantly directed to landscaping and upgrades in relating to strategic city planning for West Dapto, CBD upgrades, tourism and economic.

Development contributions with the Wollongong LGA are under review, particularly with respect to the implementation of the WDRA.

5.2 Implementation and Delivery Proposal

An Infrastructure, Services and Facilities Implementation and Delivery Proposal prepared by DLL is included at **Appendix G**.

It coordinates information from a number of technical supporting documents and DLLs delivery expertise and presents a comprehensive proposal for the implementation and delivery of infrastructure, services and facilities for the Calderwood Urban Development Project.

The Calderwood Urban Development Project has sufficient scale and diversity to justify the provision of a range of new facilities and services and to be reasonably self contained in terms of local and district social infrastructure.

DLL has undertaken a significant investigation into how the site can be serviced. The infrastructure and servicing strategy aims to:

- Demonstrate a viable implementation strategy with timely provision of facilities and services;
- Control of land required for infrastructure delivery;
- Leverage ready access to existing infrastructure capacity, provision of structural enhancements to the Regional infrastructure base and potential synergies with other release areas;
- Minimise implementation risk and cost to Government;
- Utilise DLL delivery experience and skill base to ensure innovation and flexibility in design and use of facilities; and
- Enhance existing services and contribute to a wider regional network of community resources.

The need for new services and infrastructure presents an opportunity to:

- Provide infrastructure and high quality new facilities in a timely manner based on leading practice sustainability principles that are tailored to the needs of the future community;
- Delivery sustainable infrastructure solutions such as the Fibre to the Home/Premise and sustainable funding, management and maintenance arrangements; and
- Guide the provision of integrated service delivery, efficient use of resources and equitable access through shared or co-located facilities, joint use arrangements and convenient locations.

The Proposal at **Appendix G** has been prepared following ongoing and formal consultation with Shellharbour and Wollongong Councils, Department of Education and Training, Ministry of Transport, Roads and Traffic Authority, Human Services Agencies, and each of the servicing authorities including Sydney Water, Telstra, Integral Energy and Jemena.

Staging sequences have been created to demonstrate that the area can be developed logically and economically with the full suite of utility services.

They also demonstrate the manner in which the site can be serviced independently of the WDRA.

The Proposal at **Appendix G** contains delivery methodologies with estimates of timeframes. The delivery schedules are reproduced on the following pages.

Calderwood Urban Development Project
Infrastructure, Service and Facilities Delivery Program

Type of Facility/Service/Infrastructure	Details	Delivery Responsibility	Method of Delivery	Land	Preliminaries		Calderwood Urban Development Project (4,800 lots) DLL landholdings												
					2011	2012	2013	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
Dwelling No. (Cumulative)							50	180	600	1000	1500	2000	2400	2800	3300	3700	4200	4600	4800
KEY INITIAL MILESTONES																			
Site Works Commence	Note Key Milestone	NA	NA	NA															
Commence engagement with local services providers	Note Key Milestone	NA	NA	NA															
First Resident	Note Key Milestone	NA	NA	NA															
Public transport commences	Operator/ NSW Transport and Infrastructure Agreement	Operator	NA	NA															
1. COMMUNITY AND EDUCATION																			
1a. Community Facilities and Initiatives																			
Shellharbour City Council																			
Temporary community centre	Located in village centre.	DLL VPA	WIK																
Community Centre (incorporating branch library)	Located town centre; land, building approx. 900 m2, furniture and fittings	DLL WIK VPA	WIK	0.4 ha															
Branch library	Located town centre; co-located Community Centre land, building approx 625 m2, furniture and fittings.	DLL WIK VPA	WIK	0.2 ha															
Community Development Worker	5 year full time equivalent	DLL WIK VPA	WIK	NA															
Resident Information Kit	Information kit for new households.	DLL WIK VPA	WIK	NA															
Community Initiatives Fund	To support new community.	DLL WIK VPA	WIK	NA															
1b. Education																			
Public Primary School (1)	Land dedication by DLL; Buildings by Government.	DLL VPA	WIK	3 ha															
Public Primary School (2) and Special Needs	Land dedication by DLL; Buildings by Government.	DLL VPA	WIK	4 ha															
Public High School	Land dedication by DLL; Buildings by Government.	DLL VPA	WIK	6 ha															
Private School opens (Primary / High)	Commercial agreement DLL/Operator	DLL Commercial Agreement	NA	NA															
1c. Integrated Children's Services Centre/Childcare Centres																			
Childcare Centre (1) opens	Commercial agreement DLL/Operator	DLL Commercial Agreement	NA	NA															
Childcare Centre (2) opens	Commercial agreement DLL/Operator	DLL Commercial Agreement	NA	NA															
Childcare Centre (3) opens	Commercial agreement DLL/Operator	DLL Commercial Agreement	NA	NA															
2. RETAIL / COMMERCIAL CENTRES																			
Stage 1 Village Centre	Commercial agreement DLL/Operators	DLL Commercial Agreements	NA	NA															
Stage 1 Town Centre	Commercial agreement DLL/Operators	DLL Commercial Agreements	NA	NA															
Stage 2 Town Centre	Commercial agreement DLL/Operators	DLL Commercial Agreements	NA	NA															
3. OPEN SPACE AND PUBLIC DOMAIN																			
3a. Shellharbour LGA Open Space																			
L4 – L13 Local Parks (10 @ 0.30 ha each)	Embellishment standards to Council's local park standards and include	DLL VPA	WIK	3.0 ha															

Type of Facility/Service/Infrastructure	Details	Delivery Responsibility	Method of Delivery	Land	Preliminaries		Calderwood Urban Development Project (4,800 lots) DLL landholdings												
					2011	2012	2013	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
Dwelling No. (Cumulative)							50	180	600	1000	1500	2000	2400	2800	3300	3700	4200	4600	4800
D2 District Park (1 ha)	pedestrian/cycle pathways, play space, seating/tables/bins, signage, landscape. Embellishment standards to Council's district park standards and include pedestrian/cycle pathways, playground, seating/tables/bins, shade structure, signage, enhanced landscape standard.	DLL VPA	WIK	1.0 ha															
D3 District Park (1 ha)	As above.	DLL VPA	WIK	1.0 ha															
D4 District Park (3.80 ha)	As above.	DLL VPA	WIK	3.80 ha															
D5 District Park (1 ha)	As above.	DLL VPA	WIK	1.0 ha															
CW2 Citywide Park (Urban) (2.47 ha)	Lakeside urban park level of embellishment to district park plus outdoor artworks.	DLL VPA	WIK	2.47ha															
CW3 Citywide Park (Johnston's Spur) (2.64 ha)	As above.	DLL VPA	WIK	2.64 ha															
S1 Sports Fields (15.98 ha)	Sporting grounds, amenities building, training facilities, lighting, vehicular access and parking.	DLL VPA	WIK	15.98 ha															
Paths in Open Space (Primary and Secondary)	Linear metres to suit design.	DLL VPA	WIK	3.61 ha															
C6 – C17 Corridors	Mix of passive recreation, open grassed areas, some regeneration.	DLL VPA	WIK	105 ha															
ER1 Environmental Reserve (3.39 ha)	Mix of regeneration, weed control, possible fencing, pathways.	DLL VPA	WIK	3.39 ha															
ER2 Environmental Reserve (4.20 ha)	Mix of regeneration, weed control, possible fencing, pathways.	DLL VPA	WIK	4.20 ha															
ER3 Environmental Reserve (4.20 ha)	Mix of regeneration, weed control, possible fencing, pathways.	DLL VPA	WIK	4.24 ha															
ER4 Environmental Reserve (4.95 ha)	Mix of regeneration, weed control, possible fencing, pathways.	DLL VPA	WIK	4.75 ha															
CB1 Citywide Bushland Zones (44.98 ha)	Mix of regeneration, weed control, possible fencing, pathways.	DLL VPA	WIK	44.98 ha															
CB2 Citywide Bushland Zones (16.13 ha)	Mix of regeneration, weed control, possible fencing, pathways.	DLL VPA	WIK	16.13 ha															
PR3 Paths in Road Corridors (Primary and Secondary)	Linear metres to suit design.	DLL VPA	WIK	2.77 ha															
3b. Wollongong LGA Open Space																			
L1 – L3 Local Parks (3 @ 0.30 ha each)	Embellishment standards to Council's standards and include pedestrian/cycle pathways, play space, seating/tables/bins, signage, landscape.	DLL VPA	WIK	0.9 ha															
D1 District Park (1 ha)	Embellishment standards to Council's district park standards and include pedestrian/cycle pathways, playground, seating/tables/bins, shade structure, signage, enhanced landscape standard.	DLL VPA	WIK	1.0 ha															
CW1 Citywide Park (Heritage) (1.72ha)	Parkland with focus on natural environment and cultural heritage elements. Embellishment as above with potential for viewing decks and environment/heritage interpretation.	DLL VPA	WIK	1.31ha															
PO1 Paths in Open Space (Primary and Secondary)	Linear metres to suit design.	DLL VPA	WIK	0.82 ha															
C1 – C5 Corridors	Mix of passive recreation, open grassed areas, some regeneration.	DLL VPA	WIK	49.04 ha															
PR1 Paths in Road Corridors (Primary and Secondary)	Linear metres to suit design.	DLL VPA	WIK	0.32 ha															
3c. Public Domain and Landscaping																			
Public domain and streetscape	DLL through sub-division process	DLL	WIK																
4. TELECOMMUNICATIONS																			
Lead-in network design	DLL/Operator	DLL	Commercial Agreement																
Extend off existing Telstra SCAD	Commercial agreement DLL/Operator	DLL	Commercial Agreement																
Construct MDF in dedicated structure	Commercial agreement DLL/Operator	DLL	Commercial																

Type of Facility/Service/Infrastructure	Details	Delivery Responsibility	Method of Delivery	Land	Preliminaries 2011	Preliminaries 2012	Calderwood Urban Development Project (4,800 lots) DLL landholdings 2013	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
Dwelling No. (Cumulative)							50	180	600	1000	1500	2000	2400	2800	3300	3700	4200	4600	4800
			Agreement																
Reticulation of fibre to the home/premise	Commercial agreement DLL/Operator	DLL	Commercial Agreement																
Reticulation of telecommunications	DLL through sub-division process	DLL	Commercial Agreement																
5. ELECTRICITY																			
Substation site identified	DLL/Integral	DLL/Integral	NA																
Lead-in and network design	DLL/Integral network planning group.	DLL/Integral	NA																
Stage 1 Albion Park Zone Substation and construct 11kV lead-in conductor	Integral	DLL/Integral	DLL/Integral																
Stage 2 Co-ordinate transfer of Calderwood Zone Substation land to Integral Energy	DLL	DLL/Integral	Commercial Agreement																
Order materials, design and construction Calderwood Zone Substation	Integral	Integral	Integral																
Construct 132kV feeder connection to Calderwood Zone Substation	Integral	Integral	Integral																
Reticulation of electricity	DLL through sub-division process	DLL	Commercial Agreement																
6. NATURAL GAS																			
Extend secondary gas main	Jemena	Jemena	Jemena																
Lead-in and network design	DLL/Jemena network planning group	Jemena	Jemena																
Natural gas reticulation	DLL through sub-division process	DLL	Commercial Agreement																
7. POTABLE WATER																			
Lead-in and network design	DLL/Sydney Water network planning.	DLL/SW	NA																
Design for water trunk system	DLL/Sydney Water network planning.	DLL/SW	NA																
Stage 1 - Construct temporary 300mm diameter water main from Sophia Street	DLL/Sydney Water network planning	SW	SW																
Construct Marshall Mount reservoir and inlet / outlet mains from Southern Towns Trunk Main	DLL/Sydney Water network planning	DLL/SW	DLL/SW																
Potable water reticulation	DLL through sub-division process	DLL	Commercial Agreement																
8. WATER CYCLE MANAGEMENT																			
Shellharbour City Council																			
Drainage infrastructure design and delivery	DLL through sub-division process	DLL	Commercial Agreement																
Wetlands/detention basins design and delivery	DLL through sub-division process	DLL	Commercial Agreement																
Initial maintenance period	Obligation through Planning Agreement.	DLL VPA	WIK																
Wollongong City Council																			
Drainage infrastructure design and delivery	DLL through sub-division process	DLL	Commercial Agreement																
Wetlands/detention basins design and delivery	DLL through sub-division process	DLL	Commercial Agreement																
Initial maintenance period	Obligation through Planning Agreement.	DLL VPA	WIK																
9. SEWER																			
Lead-in and network design	DLL/Sydney Water network planning.	DLL/SW	DLL/SW																
Stage 1 – Connection to existing carrier main	DLL/Sydney Water network planning.	DLL/SW	DLL/SW																
Stage 2 – Upgrade pumps stations, duplicate rising main for SPS 505, 500 and 498	DLL/Sydney Water network planning	SW	SW																
Stage 3 – northern catchment assessment, detailed design and needs specification for pump station and rising main	DLL/Sydney Water network planning	DLL/SW	DLL																
Construct on site pump station and rising main	DLL/Sydney Water network planning.	SW	SW																

Type of Facility/Service/Infrastructure	Details	Delivery Responsibility	Method of Delivery	Land	Preliminaries		Calderwood Urban Development Project (4,800 lots) DLL landholdings															
					2011	2012	2013	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036			
Dwelling No. (Cumulative)							50	180	600	1000	1500	2000	2400	2800	3300	3700	4200	4600	4800			
Reticulation	DLL through sub-division process	DLL	Commercial Agreement																			
10. TRANSPORT																						
9a. State/Regional																						
Per lot contribution to 14 road and intersection upgrades as per TMAP	State/Regional upgrades as per TMAP	DLL VPA	Monetary or WIK																			
TMAP Upgrade 37	Illawarra Highway/Yellow Rock Road	DLL VPA	WIK																			
TMAP Upgrade 29	Illawarra Highway/Broughton Avenue	DLL VPA	Monetary or WIK																			
9b. Shellharbour City Council																						
Per lot contribution to 4 road and intersection upgrades as per TMAP	Council roads as per TMAP	DLL WIK VPA	Monetary or WIK																			
TMAP Upgrade 32	Calderwood Road from Project to Tripoli Way	DLL VPA	Monetary or WIK																			
TMAP Upgrade 33	Calderwood Project North-South Road southern section	DLL VPA	WIK																			
TMAP Upgrade 34	Calderwood Project North-South Road central section	DLL VPA	WIK																			
TMAP Upgrade 35	Calderwood Project North-South Road northern section	DLLVPA	WIK																			
Transport infrastructure within development	DLL through sub-division process	DLL	Commercial Agreement																			
9c. Wollongong City Council																						
Per lot contribution to 4 road and intersection upgrades as per TMAP	Council roads as per TMAP	DLL VPA	Monetary or WIK																			
Transport infrastructure within development	DLL through sub-division process	DLL	Commercial Agreement																			

6.0 Major Development SEPP Amendment Proposal

6.1 Introduction

The proposed listing of the Calderwood Urban Development Project site as a State Significant Site within Schedule 3 of the Major Development SEPP will establish a new planning regime for the site.

The Schedule 3 amendment will replace the current local environmental planning instruments applying to the land. It is proposed that the amendment to Schedule 3(the Amendment) will rezone the land to R1 General Residential, B4 Mixed Use, E2 Environmental Conservation, E3 Environmental Management, RE1 Public Recreation and SP2 Infrastructure generally in accordance with the provisions of the Standard Instrument (Local Environmental Plans) Order 2006 (the Standard LEP Template).

The following sections identify the new zonings and planning provisions that are proposed.

6.2 Land to which SEPP Amendment Will Apply

A proposed Land Application Map is provided at **Figure 57**. The proposed Land Application Map illustrates the land that is to be included in the SEPP Amendment.

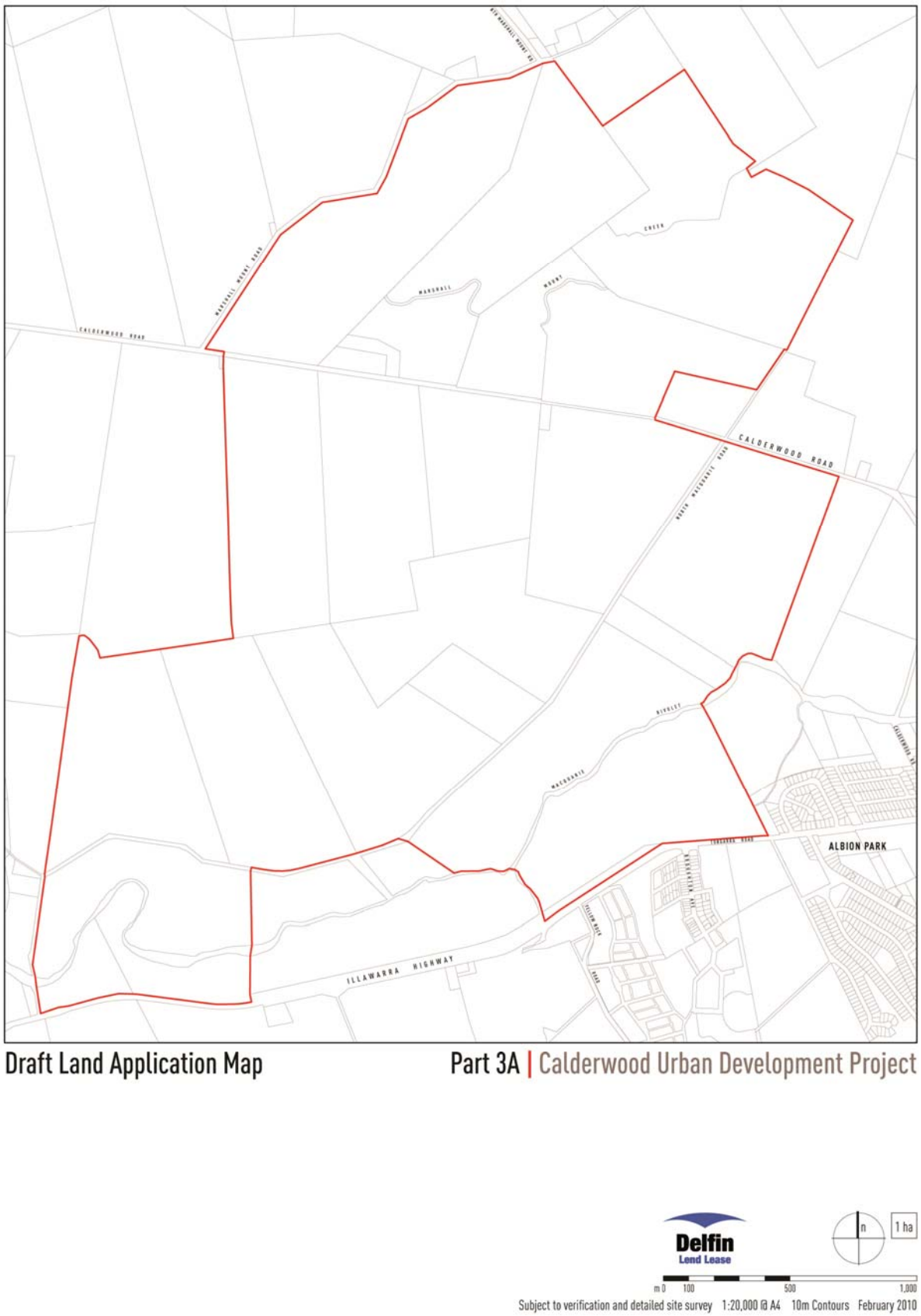

Figure 57 - Draft Land Application Map

6.3 Relationship to other EPIs

It is proposed that Shellharbour Rural LEP 2004 and Wollongong LEP 1990, which are the existing local environmental planning instruments applying to the land to which the proposed SEPP Amendment will apply, will cease to apply once the SEPP Amendment is gazetted.

It is proposed to include *Clause 1.8 Repeal of other local planning instruments applying to land* from the Standard LEP Template in this regard. It is also proposed that the Illawarra Regional Environmental Plan No.1, which is a deemed SEPP, will cease to apply.

It is proposed that all other existing SEPPs will apply to the site, except for:

- *State Environmental Planning Policy No 1 – Development Standards*;
- *State Environmental Planning Policy No 4 – Development Without Consent and Other Miscellaneous Exempt and Complying Development;* and
- *State Environmental Planning Policy No 60 – Exempt and Complying Development*;
- *Illawarra REP 1 (a deemed SEPP)*.

Accordingly, the following key SEPPs will apply to future proposals within the development, with detailed consideration of the objectives and provision of these policies required to be addressed in future applications:

- SEPP 55 – Remediation of Land
- SEPP No. 64 - Advertising and Signage
- SEPP 65 – Design Quality of Residential Flat Development
- SEPP (Infrastructure) 2007
- SEPP (Housing for Seniors or People with a Disability) 2004
- SEPP (BASIX) 2004
- SEPP (Temporary Structures) 2007
- SEPP (Exempt and Complying Development Codes) 2008
- SEPP (Affordable Rental Housing) 2009

It is proposed to apply Standard LEP Template *Clause 1.9 Application of SEPPs and REPs* in this regard.

It is proposed to adopt the Standard LEP Template Dictionary in its entirety. It is also proposed to include a number of additional definitions as follows:

Table 16 – Proposed additional definitions

Eco-tourism facilities	New definition consistent with SEPP Major Development: *a building or place used for tourist and visitor accommodation, function centres or environmental facilities, that is located in a natural environment and is primarily used for activities involving education about, or the interpretation, cultural understanding or appreciation of, the natural environment*
Electricity transmission or distribution networks	New definition consistent with ISEPP to ensure that electricity transmission or distribution networks undertaken by any person are permissible with consent: (a) *above or below ground electricity transmission or distribution lines (and related bridges, cables, conductors, conduits, poles, towers, trenches, tunnels, ventilation and access structures),* *(b) above or below ground electricity kiosks or electricity substations, feeder pillars or transformer housing, substation yards or substation buildings.*
Stormwater management systems	New definition consistent with ISEPP to ensure that stormwater management systems (in addition to 'drainage' which is already included in the Standard Template) undertaken by any person are permissible with consent: (a*) works for the collection, detention, distribution or discharge of stormwater (such as channels, aqueducts, pipes, drainage works, embankments, detention basins and pumping stations), and* *(b) stormwater quality control devices (such as waste entrapment facilities, artificial wetlands, sediment ponds and riparian management), and* *(c) stormwater reuse schemes.*
Waterway or foreshore management activities	New definition consistent with ISEPP to ensure that waterway or foreshore management activities undertaken by any person are permissible with consent: *(a) riparian corridor and bank management, including erosion control, bank stabilisation, resnagging, weed management, revegetation and the creation of foreshore access ways, and* *(b) instream management or dredging to rehabilitate aquatic habitat or to maintain or restore environmental flows or tidal flows for ecological purposes, and* *(c) coastal management and beach nourishment, including erosion control, dune or foreshore stabilisation works, headland management, weed management, revegetation activities and foreshore access ways.*

6.4 Future Approvals and Environmental Assessment Requirements

It is proposed that the SEPP Amendment determine the future assessment and approvals regime for subsequent stages of the Calderwood Urban Development Project as follows:

- Part 3A approval (Minister as consent authority):
  - Subdivision/public domain/site infrastructure/ bulk excavation works, other than works that would otherwise be exempt/complying under the ISEPP or Clause 26 of the Standard Template within the area of land shown on **Figure 58**.
- Part 4 development consent (Council as consent authority):
  - All other development, other than works that would otherwise be exempt/complying.

The Part 3A assessment and approval regime is proposed for the area of land shown on **Figure 58** on the basis of:

- Development within this land area will generate implications of having cross boundary consent authorities – The implementation of key elements of the site infrastructure servicing strategy, floodplain mitigation plan and riparian management strategy for the project may require the lodgment of single applications that straddle the LGA boundary between Wollongong and Shellharbour, specifically with respect to subdivision and the delivery of key elements of infrastructure and public domain including roads, riparian corridors, public open space, drainage and other site services.

It is also proposed that a provision be included in the SEPP Amendment to permit the issue of subdivision certificates for the project by an accredited certifier, generally in accordance with the following:

- Subject to section 75S of the Act, a subdivision certificate may be issued by an accredited certifier for a subdivision in accordance with section 109D (1) (d) (iv) of the Act.

6.5 Proposed Land Use Zones

It is proposed that the following Standard LEP Template land use zones be applied to the land:

- R1 General Residential;
- B4 Mixed Use;
- E2 Environmental Conservation;
- E3 Environmental Management;
- RE1 Public Recreation; and
- SP2 Infrastructure (Local drainage) and (electricity).

A Draft Land Zoning Map illustrating the intended location of each proposed land use zone is provided at **Figure 59**.

The proposed E2 Environmental Conservation Zone incorporates areas within the site that have been identified as significant in terms of biodiversity function. This includes the majority Johnston's Spur and two significant smaller reserves (Environmental Reserves ER1 and ER2). This zone is intended to protect land that has high conservation value. A number of land uses considered to be inappropriate for this zone have been mandated as prohibited uses.

The E3 Environmental Management zone has been placed over native vegetation which has been found to be of lesser conservation value than E2 land, but warrants protection from edge effects. This includes cleared areas within Johnston's Spur, Environmental Reserves E3 and E4 and a small area in the centre of the site. The mandatory zone objectives focus on protecting, managing and restoring areas with special ecological, scientific, cultural or aesthetic values and to provide for a limited range of development that does not have an adverse effect on those values.

The proposed SP2 Infrastructure Zone (Local drainage) incorporates land within the site that has been identified to have a critical drainage or flood mitigation function. This includes all of the riparian corridors that are proposed to be retained under the Concept Plan under the Riparian Corridor Network.

RE1 Public Recreation land is generally located immediately adjacent to the riparian corridors that are to be zone SP2 Infrastructure. Although the RE1 Public Recreation land does not form part of the riparian corridor itself, and does not perform a critical drainage or flood mitigation function, it will contribute to achieving riparian outcomes The Town Centre, Village Centre and mixed use employment areas are proposed to be zoned B4Mixed Uses.

The proposed development that is intended to be permissible without consent, with consent or prohibited in each zone is shown in **Table 17**. The relevant zone objectives are also shown. The provisions of **Table 17** are consistent with the Standard LEP Template.

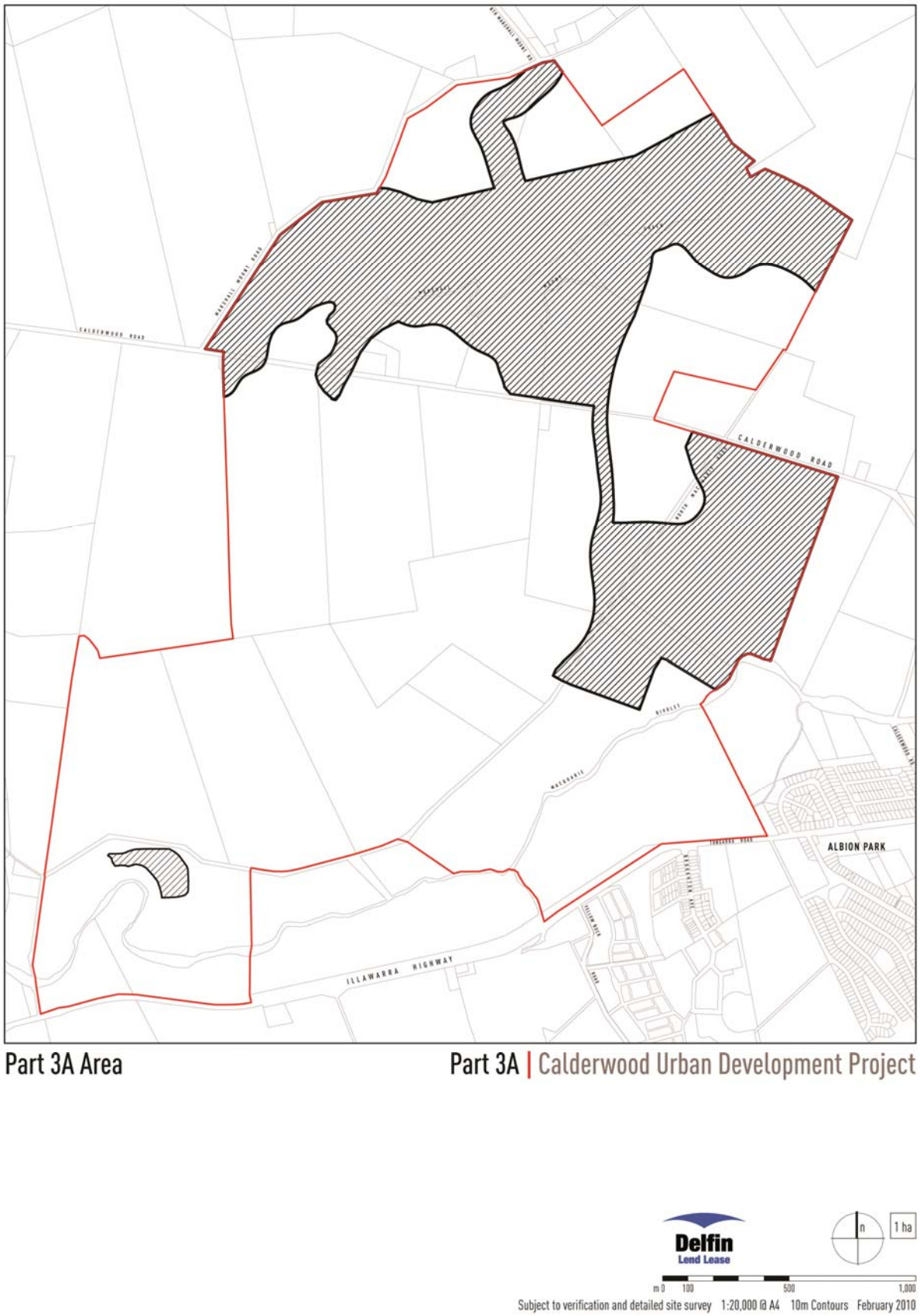

Figure 58 – Part 3A area