3.2 LICENCE ACTIVITIES

3.2.5

- Appendix 3.2.5(a) Huntlee Development Location
- Appendix 3.2.5(b) Huntlee Preliminary Masterplan
- Appendix 3.2.5(c) Part 3A Stage 1 Approval Area
- Appendix 3.2.5(f) LWC and FBT Site Location

Location, location, location

Huntlee will be a comfortable two-hour drive from Sydney city centre via the new Hunter Expressway and less than 45 minutes from Newcastle.

The Expressway runs adjacent to the Huntlee Town Centre which is also supported by the main railway to Newcastle.

With excellent connections in all directions, Huntlee has also been carefully designed around Wine Country Drive which will undergo a significant upgrade. The new dual carriageway will be the main boulevard running adjacent to the magnificent lake and recreational parks.

Upfront planning

The four neighbourhoods (or villages) in Huntlee's master-plan surrounding the 200 hectare Town Centre, provide the perfect canvas for the creation of a truly connected community.

Prior to completion of the master-planning, a comprehensive assessment of the likely needs of a new 20,000 person town was undertaken and its results incorporated into the planning of Huntlee. This assessment also recognised the needs of the existing communities of Branxton, Greta and North Rothbury, and facilities and services currently available.

Major facilities

It is expected the following major facilities will be incorporated into Huntlee:

Primary schools (public and private)	5 – 6
Secondary schools (public and private)	2 – 3
Pre-schools	6
Health centres	2
Library	1
TAFE college	1
Aged care (nursing home)	1 – 2
Youth centres	2
Neighbourhood centres	4
Regional and district sports grounds	15ha
Parks and open space	160ha

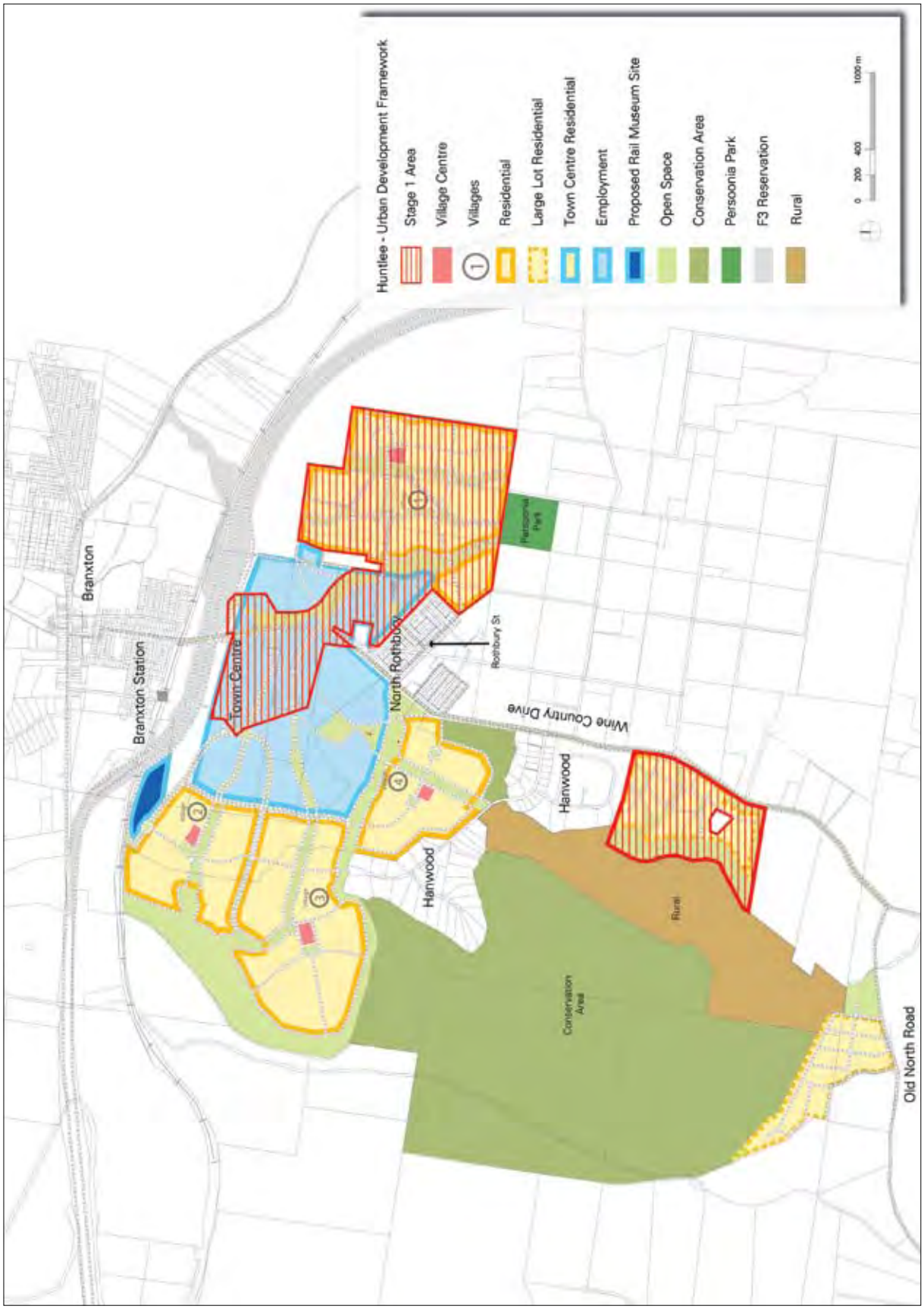
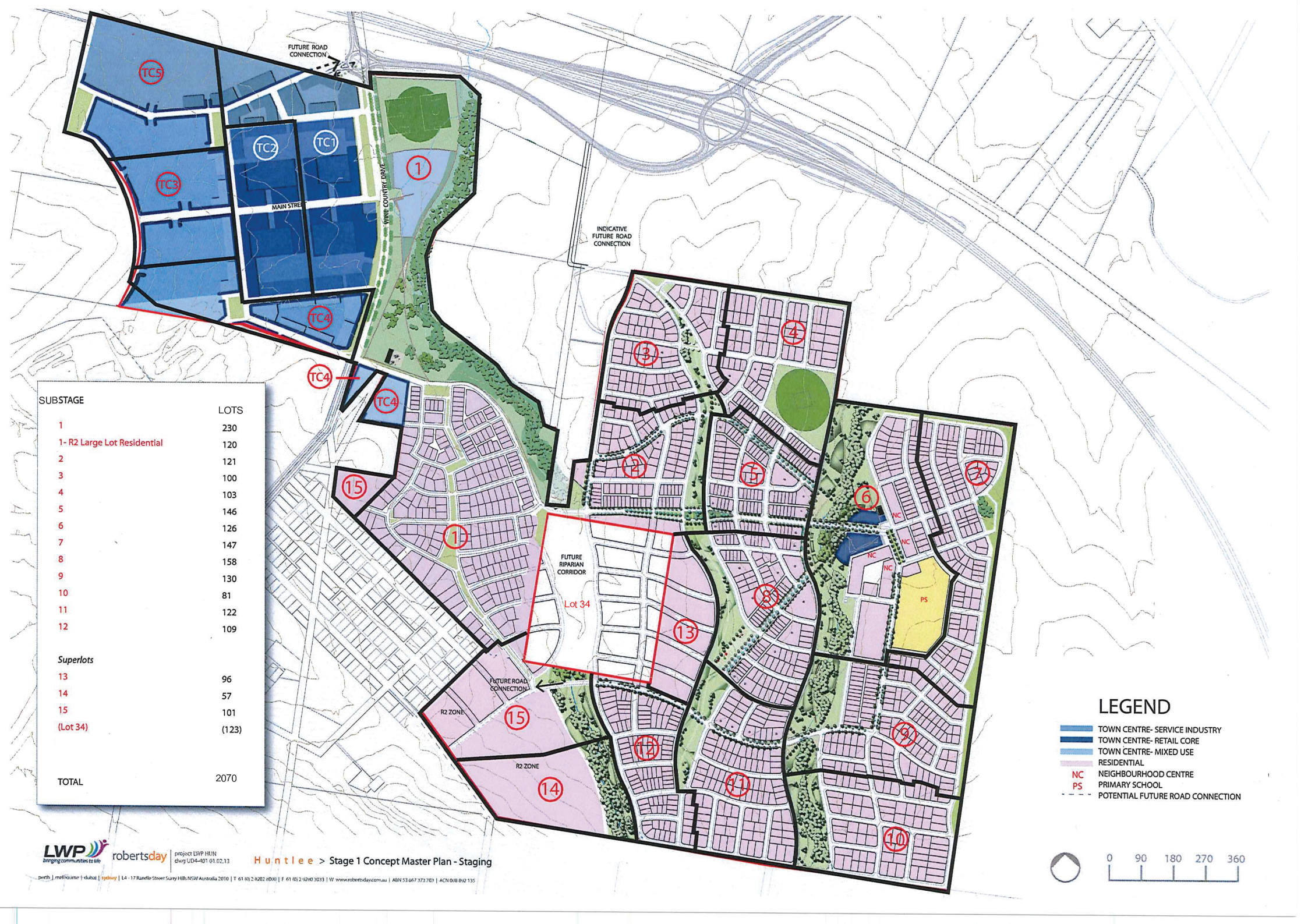


Figure 2 – Stage 1 Project Application areas

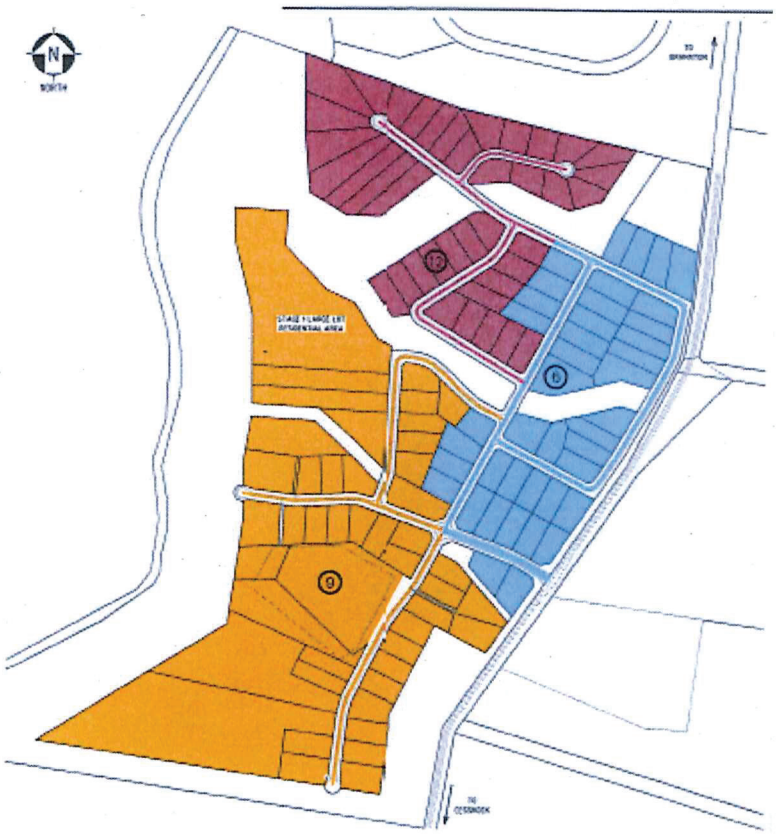


SUBSTAGE	LOTS
1	230
1- R2 Large Lot Residential	120
2	121
3	100
4	103
5	146
6	126
7	147
8	158
9	130
10	81
11	122
12	109
Superlots	
13	96
14	57
15	101
(Lot 34)	(123)
TOTAL	2070

LWP bringing communities to life | robertsday | project LWP HUN dwg UD4-401 01.02.13

Huntlee > Stage 1 Concept Master Plan - Staging

perth | melbourne | dubai | sydney | L4 - 17 Randle Street Surry Hills NSW Australia 2010 | T 61 (0) 2 8202 8000 | F 61 (0) 2 9280 3033 | W www.robertsday.com.au | ABN 53 667 373 703 | ACN 008 892 135

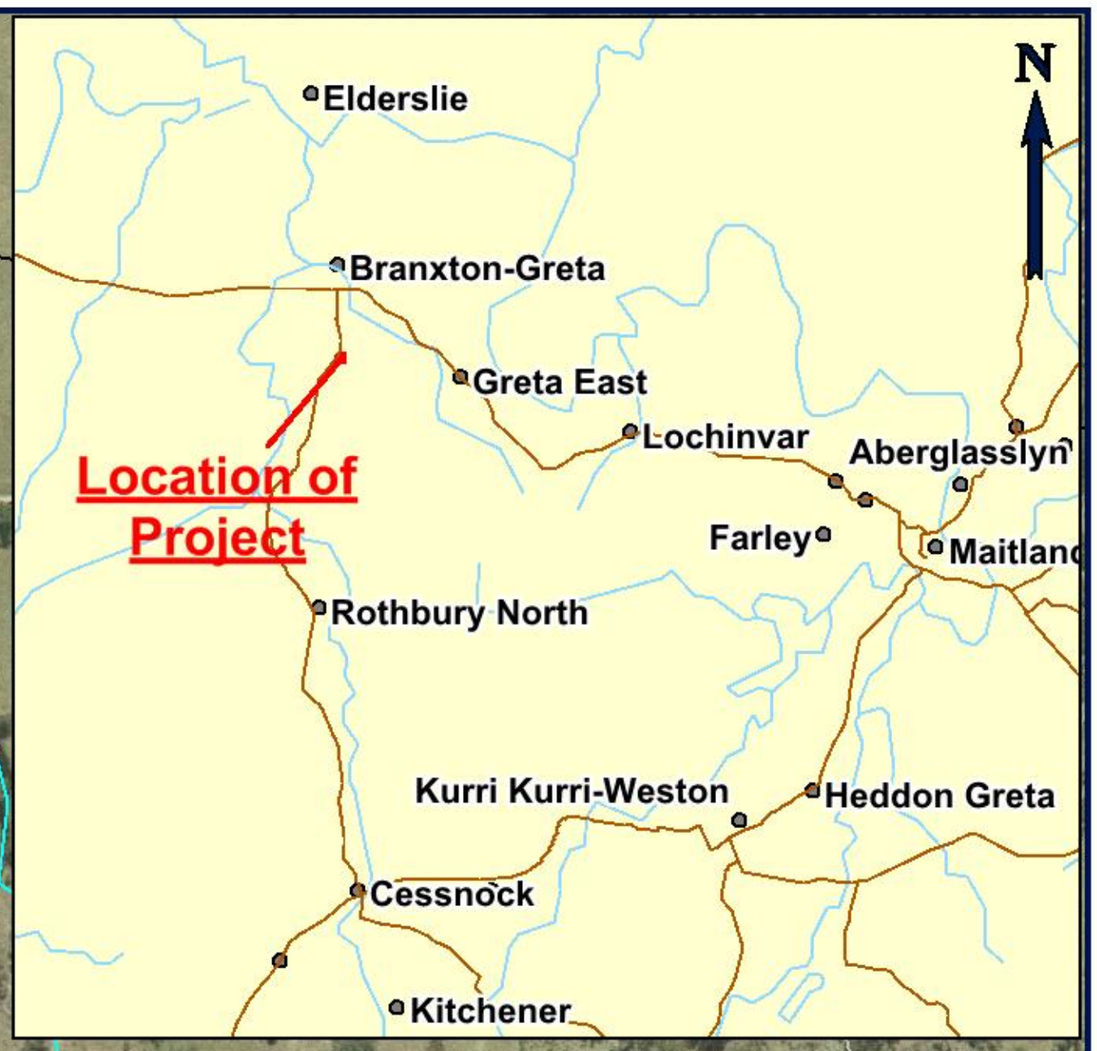


This is the area highlighted as yellow in and identified as “Large Lot Residential” in the drawing per Appendix 3.2.5(a) and forms part of the approved Stage 1 area under Part 3 A

Legend

- Project Area
- Roads & Tracks
- Drainage
- 10m Contour
- Cadastre

WARNING
No part of this plan should be used for critical design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.



MAIN RD
60
Lot 211
DP828787
THOMAS ST
MITCHELL ST
0
100
metres
Scale: 1:4,000

TITLE: FIGURE 1: LOCATION MAP	LOCATION: ROTHBURY	DATUM: (GDA 94) PROJECTION: MGA ZONE 56	DATE: 28/02/2014 PURPOSE: HERITAGE	LAYOUT REF: J:\JOBS\120K\120826 Rothbury\10. Drafting \MapInfo Workspaces VERSION (PLAN BY): A A4 (JH-NW)

CLIENT: FLOW SYSTEMS
JOB REF: 120826-2

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

RPS

PUBLIC VERSION

3.5 OTHER REGULATORY APPROVALS

3.5.1

- Appendix 3.5.1(a) Part 3A PAC Approval

- Appendix 3.5.1(b) Huntlee Stage 1 Environmental Assessment Report

- Appendix 3.5.1(c) Huntlee DCP 2013

- Appendix 3.5.1(d) Huntlee LWC Review of Environmental Factors Executive Summary

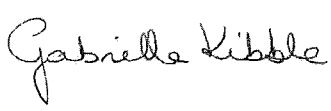
Project Approval

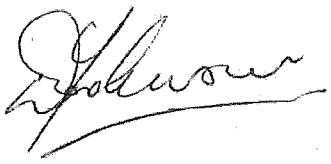
Section 75J of the *Environmental Planning & Assessment Act 1979*

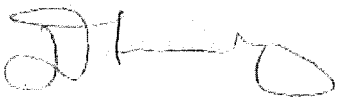
Under delegation of the Minister for Planning and Infrastructure executed on 14 September 2011, the Planning Assessment Commission determines to give approval to the project application referred to in Schedule 1, pursuant to section 75J of the *Environmental Planning and Assessment Act 1979*, subject to the conditions referred to in Schedule 2 and the proponent's Statement of Commitments in Schedule 3.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance; and
- provide for the ongoing environmental management of the project.







Gabrielle Kibble AO
Member of the Commission

David Johnson
Member of the Commission

David Furlong
Member of the Commission

Sydney, 24 April 2013

SCHEDULE 1

PART A – PROJECT

Application made by:	Huntlee Pty Ltd
Application made to:	Minister for Planning and Infrastructure
Major Project Number:	10_0137
On land comprising:	Lot 200 (Part) DP 828486 Lot 201 DP 828486 Lot 230 (Part) DP 879198 Lot 231 DP 879198 Lot 33 DP 755211 Lot 36 DP 755211 Lot 37 DP 755211 Lot 38 DP 755211 Lot 39 DP 755211 Lot 43 DP 755211 Lot 211 (Part) DP 828787 Lot 241 (Part) DP 1105591 Lot 2 DP 729973 Lot 3 DP 729973 Lot 4 DP 729973 Lot 5 (Part) DP 729973 Lot 6 DP 729973 Lot 7 DP 729973 Lot 8 DP 729973 Lot 9 DP 729973 Lot 10 DP 729973 Lot 11 DP 729973 Lot 12 (Part) DP 729973 Lot 21 (Part) DP 1050597 Lot 221 (Part) DP 1064738 Lot 10 DP 1105639
Local Government Area	Cessnock Council
For the carrying out of:	Stage 1 of Huntlee – including site preparation works, internal and external road works, subdivision to create 1473 residential allotments, 14 super lots, 1 allotment for a primary school, drainage and open space reserves.
Capital Investment Value	$ 230 million
Type of development:	Project approval under Part 3A of the EP&A Act (transitional Part 3A)
Determination made on:	24 April 2013
Determination:	Project approval is granted subject to the conditions in the attached Schedule 2.
Date of commencement of approval:	This approval commences on the date of the approval.
Date approval is liable to lapse	5 years from the date of determination unless specified action has been taken in accordance with Section 75Y of the EP&A Act.

PART B - DEFINITIONS

In this approval the following definitions apply:

Act means the *Environmental Planning and Assessment Act, 1979* (as amended).

APZ means Asset Protection Zone

BCA means the Building Code of Australia.

Certifying Authority has the same meaning as in Part 4A of the Act.

Commission means the Planning Assessment Commission or its successors.

Council means Cessnock Council

DCP means Development Control Plan

Department means the Department of Planning and Infrastructure or its successors.

Director General means the Director General of the Department of Planning and Infrastructure

EA / EAR – Environmental Assessment Report

Environmental Assessment means the document titled 'Project Application – Environmental Assessment Report – Huntlee Stage 1 Subdivision and Infrastructure Works' (by JBA March 2011).

Minister means the Minister for Planning and Infrastructure.

OEH means Office of Environment and Heritage

PPR means Preferred Project Report

Preferred Project Report means the document titled 'Project Application – Preferred Project Report – Huntlee Stage 1 Subdivision and Works' (by JBA September 2012)

Project means development that is declared under Section 75B of the Act to be a project to which Part 3A of the Act applies.

Proponent means the person proposing the carry out of development comprising all or any part of the project, and includes persons certified by the Minister to be the proponent.

Regulations means the *Environmental Planning and Assessment Regulations, 2000* (as amended).

RFS means Rural Fire Service

RMS means the Roads and Maritime Services.

SEPP MD means the State Environmental Planning Policy (Major Development) 2005

Statement of Commitments means the Statement of Commitments (as they apply to this project) made by the Proponent in section 6 of the PPR.

SCHEDULE 2

CONDITIONS OF APPROVAL FOR HUNTLEE STAGE 1 PROJECT APPLICATION

PROJECT APPLICATION NO MP10_0137

PART A- ADMINISTRATIVE CONDITIONS

A1. Development Description

Approval is granted only to carrying out the development described in detail below:

Subdivision of Stage 1 of the Huntlee New Town site including:

- subdivision to create 1473 residential allotments, 14 super lots, 1 allotment for a primary school; landscaped areas, drainage, public open space and recreation areas;
- associated bulk earthworks; and
- infrastructure including roads, drainage works and utility services provision.

A2. Development in Accordance with Plans and Documentation

The development will be undertaken in accordance with the following documentation:

- Project Application – Environmental Assessment Report – Huntlee Stage 1 Subdivision and Infrastructure Works (by JBA March 2011) and associated appendices as amended by:
- Project Application – Preferred Project Report – Huntlee Stage 1 Subdivision and Works (by JBA September 2012) and its associated appendices
- Statement of Commitments in aforementioned Preferred Project Report (by JBA Planning 2012)
- Amended subdivision plan "121129 Overall Lot Plan_1 to 3000" (Roberts Day Dec 2012) as to be amended in line with the additional amended subdivision concept plan "Huntlee – Stage 1 Concept Master Plan dwg UD4-401 01.02.13" (Roberts Day Feb 2013)

Except as modified by the conditions of this approval

A3. Inconsistencies between Document

In the event of any inconsistency between conditions of this approval and the drawings / documents referred to above, the conditions of this approval prevail.

A4. Lapsing of Approval

The project approval will lapse 5 years after the approval date in Part A of Schedule 1 of this project approval unless specified action has been taken in accordance with Section 75Y of the Act.

A5. Compliance with Relevant Legislation and Australian Standards

The proponent shall comply with all relevant Australian Standards and Codes (including Building Code of Australia) and obtain all necessary approvals required by State and Commonwealth legislation in undertaking the project described in Condition A1, Part A, Schedule 2 of this approval.

A6. Staging Plan

a) Development should be carried out in accordance with the Staging Plan shown in Figure 15 of the Preferred Project Report (JBA September 2012).

b) The Staging Plan can be varied with written consent of the Director General of the Department of Planning and Infrastructure, or his nominee.

PART B- MODIFICATIONS

B1. Subdivision Design Modifications – Approval

a) Details outlined in condition B2 below, shall be submitted to the Director General of the Department of Planning and Infrastructure, or his nominee, for approval prior to any works occurring on site.

b) The subdivision plan shall include lot numbers, dimensions and areas.

B2. Subdivision Design Modifications – Asset Protection Zones

The subdivision design (shown on Plan "121129 Overall Lot Plan_1 to 3000" (Roberts Day Dec 2012) as to be amended in line with "Huntlee – Stage 1 Concept Master Plan dwg UD4-401 01.02.13" (Roberts Day Feb 2013) shall be amended as follows:

(i) All Asset Protection Zones (APZs) shall be generally within the road reserve and boundary roads should be expanded to encompass more of the APZ and allow space for battering.

(ii) The APZs may encroach on private property lots up to a maximum of 1/3 the length of the lot.

(iii) The amended subdivision plans should clearly annotate the extent of the APZ along each boundary and riparian corridor.

(iv) The plan of subdivision and Section 88B instrument shall establish a restrictive covenant on all residential lots requiring the maintenance of the designated Asset Protection Zone in accordance with the requirements of *Planning for Bushfire Protection 2006*, with the Rural Fire Service having the benefit of this covenant and having sole authority to release vary or modify the covenant.

PART C - PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE

C1. Site Contamination Remediation

a) The site shall be made suitable for the approved development in accordance with the recommendations identified in the 'Huntlee Development Preliminary Stage 1 Site Investigation report', prepared by AECOM and dated 31 July 2012, to the satisfaction of the Certifying Authority. In particular:

i) Areas of TPH and lead impacts shall be excavated and disposed of offsite in general accordance with *Waste Classification Guidelines* (2008) to the satisfaction of the Certifying Authority prior to issue of a construction certificate.

ii) Remove bonded asbestos exposed at the site to the satisfaction of the Certifying Authority prior to issue of a construction certificate. If there is substantial delay in removing the asbestos impacted material, cover the area in plastic to prevent weathering/fragments/fibres becoming airborne and prepare an Asbestos Management Plan.

iii) Ensure areas used for metal scraps storage are cleared and remediated prior to issue of a construction certificate.

iv) Prepare a Hazardous Materials Study to assess potential presence of hazardous materials such as lead paint or asbestos and submit for approval by the Certifying Authority prior to first construction certificate.

v) Prepare an Environmental Management Plan (EMP) for development works and submit for approval by the Department of Planning and Infrastructure prior to first construction certificate – with procedures to follow in the event that evidence of contamination is encountered, and include an unexpected find protocol to stop works and contact environmental professional to undertake risk assessment.

vi) All investigation, reporting and identified remediation works must be in accordance with the protocols of the NSW EPA's (now OEH) 'Guidelines for Consultants Reporting on Contaminated Sites' and 'SEPP 55 – Contaminated Land'

vii) An accredited site auditor under the *Contaminated Land Management Act 1997* shall certify the suitability of the site for the proposed uses. The certification may be issued in stages and shall be submitted to the Certifying Authority prior to the issue of the relevant construction certificate.

C2. Construction Management Plan

A Construction Management Plan (CMP) shall be prepared as outlined in the Proponent's 'Physical Infrastructure Report' Nov 2012 by Worley Parsons (Appendix D of PPR) and is to be approved by the Certifying Authority prior to the issue of the first construction certificate. The CMP must also:

a) outline a plan of management for site preparation works including dust controls during bulk earthworks and strategies/clearing protocols that will be implemented on-site to manage vegetation clearance and the impact on local flora and fauna,

b) identify trees, including species, condition and remedial works, that will be retained on-site and protected during construction work,

c) detail the type and quantities of construction waste and include an estimate of the waste materials that will be re-used or recycled,

d) document the strategies used to ensure efficient use of building material and to minimise waste,

e) outline a plan of management for the transportation and disposal of soil and ensure the road, kerb, gutter and footpath area adjacent to and nearby the subject site are kept clear of soil and debris,

f) document the soil and water management plan (SWMP) to manage stormwater and surface water runoff during the course of construction in accordance with the NSW Department of Housing "Managing Urban Stormwater Soils and Construction" (Blue Book),

g) detail the type of plant and construction vehicles that will access the subject site (during earthworks, road works, utility services and building works), identify and number of construction vehicles trips generated by the development and detail strategies to mitigate impacts on the local road network. The traffic management plan shall be in accordance with the RMS (RTA) manual – 'Traffic Control at Worksites',

h) assess construction noise impacts against the relevant criteria contained within the Environmental Noise Control Manual and identify strategies to mitigate noise impacts on surrounding sensitive receivers, and

i) include the mitigation measures outlined in the '*Ecological Assessment Report*' by RPS (September 2010 – Appendix I of the EAR) and ensure they are implemented to the satisfaction of the Certifying Authority, prior to commencement of works.

The proponent shall submit a copy of the approved plan to the RMS and Council if Council is not the Certifying Authority.

C3. Aboriginal Cultural Heritage

a) The proponent shall prepare, as a component of the Construction Management Plan (CMP), procedures for managing the Aboriginal cultural heritage values associated with the project area. These procedures shall be implemented in consultation with the registered Aboriginal parties and the process must be undertaken prior to commencing any ground disturbance or development works subject to the development. The plan shall include the following:

   i) Detail the involvement and responsibilities of the Aboriginal stakeholders in the implementation of all cultural heritage management actions;

   ii) details of the responsibilities of all other stakeholders;

   iii) details of all mitigation and management strategies;

   iv) procedures for the identification and management of previously unrecorded sites (including human remains);

   v) details of the Aboriginal Cultural Heritage Education Induction Program for all contractors and personnel associated with construction activities; and

   vi) compliance procedures in the unlikely event that non-compliance with this component of the CMP is identified.

b) An Aboriginal Cultural Education Induction Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the registered Aboriginal parties.

C4. Subsidence

a) A Subsidence Management Plan (SMP) shall be prepared prior to development for areas with less than 50m cover (including areas within town centre super lots 4, 5, 6, 7 and 8 and Village 1 lots adjacent to Main Roads 2 and 11) and submitted to and approved by the Mine Subsidence Board (MSB) prior to issue of the relevant construction certificate.

b) Remediation (such as excavation and backfill) is to be undertaken prior to development in areas with less than 25m cover in the town centre and eastern edge of the site and in accordance with the Subsidence Management Plan (SMP) approved under Condition C4(a) to the satisfaction of the Certifying Authority.

C5. Utility Services

a) The agreements of all relevant Authorities to extend and connect utility services noting any necessary easements or other approved methods for provision of essential utilities shall be provided to the Certifying Authority prior to the issue of any construction certificate.

b) Revised developer servicing strategies for water and wastewater (and recycled water if proposed) shall be submitted to and approved by Hunter Water prior to issue of any construction certificate. The applicant is to negotiate relevant servicing arrangements with Hunter Water and seek Hunter Water prior approval for any connections to Hunter Water systems. A Section 50 Compliance Certificate under the Hunter Water Act 1991, should be obtained prior to the issue of the relevant subdivision certificate. Should on site wastewater treatment

and/or recycled water systems be proposed on site in lieu of connecting to Hunter Water infrastructure, these would need to be licensed through the Water Industry Competition Act (2006).

c) All internal site utilities, including electricity and telecommunications, shall be undergrounded, where possible. It is noted that high voltage lead in cables to the proposed zone substation may be overhead.

d) The method of electricity connection of the development is to be in line with Ausgrid's ES10 document – 'Requirements for Electricity Connection to Developments' to the satisfaction of Ausgrid.

e) The location of the Zone Substation, and Ausgrid's agreement of the location, shall be submitted to the relevant Council for information purposes prior to issue of the Subdivision Certificate for the 500th lot.

f) The location of the proposed water reservoir shall be confirmed with Hunter Water. Evidence of consultation with Hunter Water shall be submitted to the Certifying Authority prior to the issue of the subdivision certificate for the 1050th lot.

g) Appropriate easements are to be implemented over any substations and associated underground/overhead cables located on private property to the satisfaction of the Certifying Authority.

h) Prior to the subdivision certificate for 1201st dwelling, a 200 x 200m (4ha) parcel of land, or a size of land otherwise agreed with Ausgrid, shall be dedicated to Ausgrid or the relevant electricity provider for the zone substation. Evidence of consultation with Hunter Water shall be submitted to the Certifying Authority.

i) In regard to the connection to, relocation and/or adjustment of the services affected by the construction and proposed works, any costs in the relocation, adjustment or support of services shall be the responsibility of the proponent.

j) Consideration shall be given to measures to ameliorate the potential impacts on the residential development in Substage 1 arising from any existing stormwater or effluent run-off occurring from the adjoining properties in North Rothbury.

C6. Salinity

a) Further salinity investigations shall be undertaken to categorise the level of salinity across the site prior to the detailed design of infrastructure and servicing. A report on findings shall be submitted to the Certifying Authority prior to the issue of a construction certificate.

b) Mitigation and precautionary measures shall be undertaken to reduce the potential for salinity and erosion problems, as identified in Worley Parsons' '*Trunk Stormwater and Flooding Assessment*' report (Aug 2012) and confirmed in the findings of the aforementioned salinity investigations report when complete.

C7. Acid Sulphate Soils

An 'Acid Sulphate Soil Management Plan' shall be prepared by a suitably qualified person in accordance with the Acid Sulphate Soil Assessment Guidelines (Acid Sulphate Soil Management Advisory Committee, 1998). The Management Plan shall be submitted to and approved by the Certifying Authority prior to the issue of a Construction Certificate. Management measures recommended in this report are to be incorporated into the Construction Management Plan.

C8. Plans to be provided

a) All infrastructure, engineering, earthworks, longitudinal, road cross section, intersection general arrangement, road classification, line marking and signage, landscape and open space embellishment and lot detail plans are to be amended, or provided for the first time, and reflect the updated amended subdivision plan (required in condition B2) to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate for each sub stage of the development.

b) Plans should be prepared showing proposed public domain embellishment including proposed street lighting, footpaths, street trees etc to the satisfaction of the Certifying Authority.

c) Plans provided under C8(a) and C8(b) that relate to local open space, landscaping and embellished local open space, drainage infrastructure and local road reserves that are to be dedicated to Council in accordance with Condition E3 shall be designed to meet published Council standards to the satisfaction of the Certifying Authority.

C9. Landscape Plan modifications

a) Detailed landscape plans are to be prepared in consultation with Cessnock Council prior to the issue of the first construction certificate for each sub stage, and are to be generally in accordance with the "Huntlee Landscape Concept Report" Hassell August 2012 subject to the following amendments:

(i) Provide details of car parking for each recreation area, including a sealed car park with a minimum of 35 car spaces and 10 bicycle spaces at each of the two main sports field areas

(ii) Ensure the additional 2.8 ha of active open space is shown consistent with the approved subdivision layout plan.

(iii) Ensure the area between Wine Country Drive road reserve and the internal road of the large lot subdivision that runs alongside the Wine Country Drive road reserve is landscaped to provide a visual and noise buffer to residential lots

b) The detailed landscape plans should provide details regarding proposed landscaping and embellishment of the open space, recreation facilities, drainage and riparian areas for the sub stage.

c) The Landscape plans should clearly outline the proposed open space in the north east corner of the large lot area and consider the appropriate conservation of the existing Persoonia pauciflora plants in consultation with OEH and taking into account the recovery plan for the species prepared by OEH, outlining measures to protect the endangered species, including the required 30m buffer and habitat protection.

C10. Large Lot Area Northern Open Space

a) The open space area in the north east corner of the large lot residential area is to be fully fenced to ensure access is restricted to this area prior to works occurring within the large lot residential area.

b) Appropriate measures should be implemented to protect the Persoonia pauciflora plants on the lot, including the required 30m buffer and habitat protection to ensure that the 30m buffer areas around the Persoonia pauciflora plants remain as Persoonia pauciflora habitat even after the mature plant dies, to allow for potential future new plants to grow there in consultation with OEH and to the satisfaction of the Certifying Authority.

C11. Engineering Plans

A detailed engineering design plan of the earthworks, roads and infrastructure must be submitted to and approved by the Certifying Authority prior to the release of the relevant Construction Certificate for each sub stage. Except where varied by the terms of this approval, the engineering design shall be generally in accordance with Cessnock City Council's *Engineering Requirements for Development*. The plan must include detailed design of all proposed infrastructure in accordance with the plans and documents subject of this approval.

C12. Earthworks

Detailed bulk earthworks plans must be submitted to and approved by the Certifying Authority prior to the issue of a construction certificate for civil works for each sub stage.

C13. Stormwater Detention

a) Mitigation measures shall be undertaken in accordance with the 'Trunk Stormwater and Flooding Assessment' report (Worley Parsons August 2012) and the Statement of Commitments, prior to the issue of a construction certificate at each sub stage, including:
   i) bio-retention gardens,
   ii) swales,
   iii) on-line detention basins,
   iv) rainwater tanks on each lot,
   v) CRZs, APZs and other measures as required under Water Management Act 2000,
   vi) vegetation buffers,
   vii) decommission existing farm dams, and
   viii) rehabilitation of any degraded riparian corridors which are proposed to be retained on site,

   to the satisfaction of the Certifying Authority.

b) Prior to construction of any online stormwater detention structures, detailed designs should be prepared to the satisfaction of the NSW Office of Water (NOW). These designs should demonstrate consistency with the NOW guidelines for controlled activities.

c) The vegetated riparian zone (VRZ) setbacks should comply with the 'Guidelines for Riparian Corridors on Waterfront land' (NSW Office of Water, 2012)

d) Permanent Waterbody 1 shall be primarily for stormwater detention and shall be designed so as not to capture any runoff from the third order watercourse during low flow events, environmental flows to be maintained. Detailed design of Permanent Waterbody 1 shall be prepared for and endorsed by the NSW Office of Water prior to construction commencing. The design should demonstrate that the diversion results in a stream that remains hydrologically and geomorphically stable and ensures:

   i) the stream grade through the diversion is consistent with the existing stream grade;

   ii) the ongoing stability of the stream bed and banks;

   iii) the introduction of appropriate riparian vegetation along the diversion;

   iv) design structures so that they retain 2 year recurrence interval criteria to ensure low to medium flows are not impeded by flood detention structures; and

   v) new detention structures should achieve no increase in peak flows from design floods.

e) The proposed design of the drainage areas to be dedicated to Council shall be in accordance with Council's published standards or as otherwise agreed with Council prior to the issue of the Construction Certificate for the relevant substage. If no agreement has been reached within 3 months after submission of information to the Council, any dispute may be decided by the Director General of the Department of Planning and Infrastructure.

f) On completion of the construction of permanent water bodies and or stormwater detention basins, the applicant must provide "as constructed" surveys to the Department of Planning and Infrastructure, NSW Office of Water and the Council.

C14. Soil and Water Management Plan

a) A detailed Soil and Water Management Plan shall be prepared for each stage of development in accordance with the NSW Department of Housing / Landcom "Managing Urban Stormwater – Soils and Construction" (Blue Book) to the satisfaction of the Certifying Authority prior to the construction certificate for each sub stage.

b) The Soil and Water Management Plan should include management and mitigation measures outlined in the "Trunk Stormwater and Flooding Assessment – Stage 1 Project Application" by Worley Parsons August 2012 (Appendix F of the PPR) and the "Ecological Assessment Report – Huntlee" by RPS September 2010 (Appendix I of the EAR).

C15. Bushfire Protection

The proponent shall comply with the following requirements of the NSW Rural Fire Service:

a) During construction of each sub-stage and until the next sub-stage has begun, temporary concentric APZs shall be required to be provided around each release area where they face a fire hazard. Details of temporary APZs to be provided to the satisfaction of the Certifying Authority prior to issue of each sub stage construction certificate.

b) Public road access, provision of services, landscaping and open space and future development are to comply with the Rural Fire Service's "Planning for Bushfire Protection 2006."

PART D – DURING CONSTRUCTION

D1 Construction Certificate

The relevant Construction Certificate is to be issued by the Certifying Authority prior to commencement of any works. The application for this Certificate is to satisfy all of the requirements of the Environmental Planning and Assessment Regulation 2000.

D2 Construction Management

Construction shall be carried out in compliance with the Construction Management Plan approved under Condition C2.

D3 Sediment and Erosion Control

During construction, sediment and erosion control structures shall be designed and installed in accordance with the NSW Department of Housing / Landcom "Managing Urban Stormwater – Soils and Construction" (Blue Book) to the satisfaction of the Certifying Authority.

D4 Construction Hours

a) All construction work shall be restricted to between 7:00am and 6:00pm Mondays to Fridays, and between 8:00am and 3:00pm Saturdays. No construction work shall take place on Sundays or public holidays.

b) Construction outside the hours stipulated above is permitted only where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental damage and the Certifying Authority has been notified.

D5 Approved Plans to be On Site

A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the site at all times and shall be readily available for review by the Certifying Authority

D6 Erosion and Sediment Control

All erosion and sediment control measures are to be effectively maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as source of sediment.

D7 Dust Control Measures

The proponent shall ensure that dust suppression is undertaken in the form of constant water spraying or other natural based proprietary dust suppressant to ensure that dust caused by vehicles moving along the road and/or within the site does not cause a nuisance to surrounding properties to the satisfaction of the Certifying Authority.

D8 Waste Management

All waste generated by the development shall be disposed to a facility to receive such waste. Hazardous materials including asbestos and lead shall be disposed of in accordance with WorkCover requirements and relevant Australian Standards. Any asbestos waste generated by the development must be disposed of in accordance with the requirements of Clause 42 of the Protection of the Environmental Operations (Waste) Regulation 2005.

D9 Aboriginal Relics

a) In the event that surface disturbance identifies a new Aboriginal object, engraving or relic, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeological specialist and representatives of the local Aboriginal community must be contacted to determine the significance of the object(s) and the National Parks and Wildlife Service must be notified. The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by OEH) and the management outcome for the site included in the information provided to the AHIMS. The proponent will consult with representatives of the local Aboriginal community, and the archaeological specialist to develop and implement management strategies for all objects/sites. If impacts are unavoidable, mitigation measures are to be undertaken in accordance with the Heritage component of the Construction Management Plan. All sites impacted must have an Aboriginal Site Impact Recording form completed and be submitted to the AHIMS Registrar within three (3) months of completion of these works. Works may only recommence following endorsement for such from the Office of Environment and Heritage.

b) If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police shall be contacted immediately. No action shall be undertaken until the NSW Police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact the Environment Line on 131 555 and representatives of the local Aboriginal community. No works shall continue until the OEH provides written notification to the proponent.

D10 Vegetation to be retained

Trees and native vegetation proposed for retention are to be clearly identified on all the final approved engineering plans. All construction contractors and personnel are to be advised of the importance of conserving these No Go Areas as part of their site and OH&S induction program. No clearing of trees or vegetation or storage or vehicles, fill or materials or access is to occur within retained areas.

PART E - PRIOR TO ISSUE OF SUBDIVISION CERTIFICATE

E1. Works As Executed Plans

Prior to issue of each Subdivision Certificate, one (1) full set of works as executed plans, and other supporting documentation including further studies and revised plans required by this approval, shall be submitted to Cessnock Council for information purposes only.

E2. Subdivision Certificate

a) An application for a Subdivision Certificate must be submitted to and approved by the Council or Certifying Authority prior to endorsement of the plan of subdivision.

b) The submission to the Certifying Authority of documentation to demonstrate full compliance with all approval conditions in accordance with Section 157 Clause 2 (f) of the Environmental Planning and Assessment Regulations 2000 prior to issue of the relevant Subdivision Certificate.

E3. Dedication of Local Open Space, Roads and Drainage Allotments

Prior to the issue of the Subdivision Certificate for each substage:

a) The areas of local open space shown as local and district parks within the relevant substage and as shown on 'Public Realm Open Space Provision' plan within the 'Huntlee Landscape Concept Report' (Hassell Aug 2012) as to be amended in line with "Huntlee – Stage 1 Concept Master Plan dwg UD4-401 01.02.13" (Roberts Day Feb 2013) are to be dedicated to Council, free of cost.

b) The areas of land required for drainage within the relevant substage and as shown on the shown in relevant plans within Appendix A of the PPR as to be amended in line with "Huntlee – Stage 1 Concept Master Plan dwg UD4-401 01.02.13" (Roberts Day Feb 2013 are to be dedicated to Council, free of cost.

c) The areas of land required for local roads within the relevant substage and as shown on the shown on Plan "121129 Overall Lot Plan_1 to 3000" (Roberts Day Dec 2012) as to be amended in line with "Huntlee – Stage 1 Concept Master Plan dwg UD4-401 01.02.13" (Roberts Day Feb 2013 are to be dedicated to Council, free of cost.

d) All landscaping and embellishment of local open space within the relevant substage shall be completed prior to dedication to Council and maintained to the satisfaction of Council by the proponent for a period of 5 years after dedication.

e) All proposed works and construction of drainage infrastructure, and local road reserves within the relevant substage shall be completed prior to dedication to Council and maintained to the satisfaction of Council by the proponent for a period of 5 years after dedication.

E4. Local Contributions

In addition to the dedication of roads, open space and drainage, the following contributions set out in the following list must be paid to the relevant Council, or provided as works in kind, in accordance with the provisions of Section 94 of the Environmental Planning & Assessment Act, 1979:

- 0.5 ha of land for a Neighbourhood Centre.
- Provision of a Neighbourhood Centre Building, or a cash contribution of $1,250,000
- 0.9 ha of land for a Multi Function Centre
- Provision of Stage 1 of the Multi Function Centre, or a cash contribution of $5,000,000
- Cash contribution of $66,000 towards a Cemetery Wall and the Braxton Swimming Pool at Miller Park.

E5. Alternative Local Contributions Arrangements

Should the Applicant and Council agree to alternative local developer contributions arrangements or items (e.g. through a Voluntary Planning Agreement), these may replace the contributions specified in conditions E3 and E4 only with the agreement of the Director-General of the Department of Planning and Infrastructure, prior to the issue of a subdivision certificate.

E6. State Infrastructure Contributions

The proponent must enter into a Planning Agreement for contributions towards designated State Infrastructure in accordance with the terms of the agreed form of the Voluntary Planning Agreement and the letter of offer dated February 2013.

E7. Road Network

a) Road Infrastructure Requirements

The following road infrastructure shall be provided by the proponent during the development of Stage 1 Huntlee.

i) The interim Wine Country Drive / Village 1 intersection on the existing Wine Country Drive alignment shall be designed and constructed as an Austroads Type CHR / CHL intersection or seagull, as determined by RMS. (Required prior to any subdivision certificate)

ii) Wine Country Drive shall be upgraded to 4 through lanes (2 lanes in each direction with central median) on the proposed new alignment, through the town centre from the HEx Link Road to the Village 1 Access as a minimum. The left and right turn auxiliary lanes shall be separate to the though lanes (Prior to 500 dwellings for which a subdivision certificate has been issued)

iii) The Wine Country Drive / HEx Link Road (A-1) intersection shall be upgraded, concurrently with the upgrade of Wine Country Drive to 4 through lanes, to a 2 lane circulating roundabout. (Prior to 500 dwellings for which a subdivision certificate has been issued)

iv) RMS requires that the proponent undertake a further traffic impact assessment prior to the subdivision certificate of more than 1500 lots (dwellings), based on actual counts at the time and 10 year projections, to the satisfaction of RMS.

v) The Wine Country Drive / Main Street (A-3) intersection shall be traffic signal controlled, generally in accordance with the layout shown in the Addendum report dated August 2012. (Prior to the construction of any development west of Wine Country Drive, with the exception of any sales office and associated works).

Note: The design and construction of an Austroads Urban Type BAR / BAL intersection to be used as an interim access to the proposed sales office only until the ultimate intersection is constructed.

vi) The Wine Country Drive / Anvil Creek Regional Park intersection shall be a Type CHR / CHL intersection (protected right and left turn bay) and shall be restricted to left in / left out / right in movements. (Prior to opening of the park).

vii) The Wine Country Drive / Village Access 1 (A-5) shall be traffic signal controlled.. This intersection would be required prior to any development occurring on either side of Wine Country Drive for Stage 1. (Prior to 500 dwellings for which a subdivision certificate has been issued)

viii) The Wine Country Drive / Large Lot access (A-9) shall be upgraded to an Austroads Type CHR / CHL intersection or seagull (Prior to any dwelling in R5 zone west of Wine Country Drive)

ix) HEx Link Road / Village 1 North access (A-6) intersection and link road shall be constructed during Stage 1. The intersection shall be a 2 lane circulating roundabout or traffic signals (intersection type to be determined by RMS). Further modelling will be required to provide the best outcome for the future operation of this intersection. The link road shall be one lane in each direction, allowing for a future additional one lane in each direction. (Required prior to the subdivision certificate of more than 1500 lots in Village 1).

x) The HEx Branxton interchange (A-11) shall be upgraded to include:

- A continuous left turn slip lane / ramp from the northbound off ramp onto HEx Link Road.
- A continuous left turn slip lane / ramp from the New England Highway extension to the Hex southbound on ramp.
- Extension of the HEx southbound off ramp to cater for expected queuing.

- Adjustments to line marking are also likely in stages to ensure appropriate operation of the interchange.

(Prior to 1900 dwellings for which a subdivision certificate has been issued.)

xi) The HEx Link Road shall be upgraded to 4 lanes (2 in each direction) between Wine Country Drive and the HEx interchange. (Prior to 1500 dwellings for which a subdivision certificate has been issued).

b) General Requirements

i) All intersections and road works shall be designed and constructed in accordance with the Austroads Guide to Road Design 2009 (with RMS supplements), RMS Traffic Signal Design 2008 and the relevant Australian Standards, to the satisfaction of RMS.

ii) All traffic signal controlled intersections shall be designed and constructed to accommodate on-road cyclists unless specified otherwise by RMS. If cyclists cannot be accommodated on road due to site constraints, and subject to agreement by RMS, adequate provision shall be made off-road.

iii) All traffic lanes on State roads and at traffic signal controlled intersections shall be 3.5 metres in width or as determined by RMS.

iv) Coordination and linking of all traffic control signals is required at full cost to the developer to RMS requirements. Appropriate pedestrian and cyclist facilities, foot/cycle paths and ramps, connecting to traffic signal controlled intersections shall be provided to the satisfaction of RMS and Council.

v) Pedestrian fencing may be required in certain areas. This will be identified as part of the design review process. Street lighting shall be provided at all intersections and pedestrian crossings to the relevant Australian Standards, or as determined by RMS.

vi) The proponent shall ensure that there is sufficient road reserve width provided along Wine Country Drive to accommodate the ultimate cross section and intersection auxiliary lanes.

vii) As road works are required on State roads and traffic signals, RMS will require the developer to enter into a Works Authorisation Deed (WAD) with RMS.

viii) Prior to the Certifying Authority issuing a construction certificate for each element(s) of the Road Improvement Works set out in condition E6(a), the developer shall enter into a WAD with RMS. The proponent shall achieve practical completion of all works under the WAD in accordance with the timing referred to in condition E8 and the WAD.

ix) A Construction Traffic Management Plan (CTMP) shall be prepared and include a Vehicle Movement Plan and Traffic Control Plans. It shall be prepared with the intention of having minimal impact to the operation of the road network during the construction of the proposed development. The CTMP shall be submitted to RMS and the Department of Planning and Infrastructure for review and approval prior to any construction activities occurring on-site.

x) All works associated with the proposed development shall be at full cost to the developer and at no cost to RMS or Council, to RMS requirements.

xi) All local roads that are to be dedicated to Council shall be designed to meet published Council standards.

E8. Access for adjoining land owners

Suitable, all weather, continuous access shall be provided to Lot 34 DP75211 and 1764 Wine Country Drive, and any other properties affected, throughout construction and formal access shall be in place at the completion of works to the satisfaction of the Certifying Authority.

E9. Restriction on title

a) Lots within the large lot area shall contain a restriction on title pursuant to Section 88B of the Conveyancing Act 1919 informing new residents that the lots may be subject to noise and odour from the nearby existing commercial vineyard and other agricultural operations at all hours.

b) Lots affected within the large lot area shall have a positive covenant applied to all titles restricting building within the flood prone areas of each lot pursuant to Section 88B of the Conveyancing Act 1919 prior to issue of the relevant subdivision certificate.

PART F – POST CONSTRUCTION

F1 Stormwater Detention and Water Quality Monitoring

a) Post construction, a monitoring program should be implemented to monitor the effectiveness of stormwater detention facilities and the performance of water quality improvement structures for a period of 5 years.

b) Within 6 months of completion, the proponent should provide an as-executed report regarding stormwater detention facilities, certified by a practising engineer, to the NSW Office of Water.

c) Yearly reports (for 5 years from completion of each sub stage) outlining the results of water quality monitoring and compliance with relevant water quality criteria (and if non-compliance mitigation measures to rectify non-compliance) are to be submitted to Cessnock Council for information purposes

ADVISORY NOTES

AN1 Ecological Information

Copies of all threatened species records for the entire site and offset areas currently held by the proponent and/or its ecological consultants and used as part of the assessment within the documents listed in condition A2 shall be provided to the Office of Environment and Heritage and the Council. The data shall be provided in a format suitable for addition to the Atlas of NSW Wildlife and be of GPS survey accuracy (where available). This shall occur prior to the release of the first plan of subdivision or construction certificate, whichever occurs first.

AN2 Land adjacent to conservation land

Development that adjoins conservation land managed by the Office of Environment and Heritage (OEH) should address the relevant requirements within the 'Guidelines for developments adjoining land and water managed by Department of Environment, Climate Change and Water' (DECCW 2010).

AN3 Roads Act, 1993

A separate application for approval under Section 138 of the Roads Act, 1993 shall be made to undertake any of the following:

(1) erect a structure or carry out a work in, on or over a public road, or

(2) dig up or disturb the surface of a public road, or

(3) remove or interfere with a structure, work or tree on a public road, or

(4) pump water into a public road from any land adjoining the road, or

(5) connect a road (whether public or private) to a classified road.

AN4 Stormwater Drainage Works or Effluent Systems

Works that involve water supply, sewerage and stormwater drainage work or management of waste as defined by Section 68 of the Local Government Act, 1993 require separate approval by Council under Section 68 of that Act. Applications for these works must be submitted on Council's standard Section 68 application form accompanied by the required attachments and the prescribed fees or where licensed under the Water Industry Competition Act 2006, involving on-site wastewater treatment / recycled water systems.

AN5 Water Licensing

An authorisation under the Water Act 1912 or the Water Management Act 2000 is to be obtained from the NSW Office of Water (NOW) with the appropriate purpose identified should any activity relating to the taking of or interception of groundwater be proposed.

SCHEDULE 3

STATEMENT OF COMMITMENTS

6.0 Final Statement of Commitments

After a consideration of the submissions received during the public exhibition period and during a further refinement of the proposed design of Stage 1, an updated Statement of Commitments has been development. The Statement of Commitments now sought for approval is provided below.

Subject	Commitments	Responsibility	Approved by Whom	Timing
General	Huntlee Pty Ltd will carry out the development in accordance with this Project Application, the Environmental Assessment Report (EAR) prepared by JBA Urban Planning Consultants and dated January 2011, the Preferred Project Report, dated August 2012, and associated plans and supporting reports.	Huntlee Pty Ltd	Various	Duration of the subdivision and infrastructure works
Regional Developer Contributions	A Voluntary Planning Agreement for Stage 1 will be executed between Huntlee Pty Ltd and the Minister for Planning to provide for the timely delivery of regional infrastructure.	Huntlee Pty Ltd	Minister for Planning and Infrastructure	The Voluntary Planning Agreement will be executed at the time the Project Application is determined or thereafter.
Local Developer Contributions	Local developer contributions will be provided as works-in-kind in accordance with the Schedule at Appendix M of the Preferred Project Report Contributions shall be provided by means of a Local Voluntary Planning Agreement or other Section 94 mechanism specified in the Stage 1 Project Approval.	Huntlee Pty Ltd and Cessnock City Council	Minister for Planning and Infrastructure.	In Accordance with the Schedule for Stage 1 works in Appendix M to the PPR
Road Works	Prior to the issue of a Subdivision Certificate in respect of land upon which the 1200th residential dwelling is to be developed within Stage 1, Huntlee Pty Ltd will enter into a Roadworks Agreement with the RMS, or such other legally binding agreement as approved by the Minister at his discretion, and achieve Practical Completion of the following Road Improvement Works to Main Road 220 (Wine Country Drive):	Huntlee Pty Ltd	RMS	
	1. Wine Country Drive shall be upgraded to 4 through lanes (2 lanes in each direction with central median) on the proposed new alignment, through the town centre from the HEx Link Road to the Village 1 Access, as a minimum. The left and right turn auxiliary lanes shall be separate to the through lanes;			Prior to the issue of a Subdivision Certificate for the 501st Lot
	2. The Wine Country Drive / HEx Link Road (A-1) intersection shall be upgraded, concurrently with the upgrade of Wine Country Drive to 4 through lanes, to a 2 lane circulating roundabout;			Required prior to the issue of a Subdivision Certificate for the 501st Lot
	3. Further upgrade HEx Link Road with Wine Country Drive dual roundabout to traffic signal controlled, generally in accordance with the layout shown in the Intersection A1 diagram below;			RMS requires that the proponent undertake a further traffic impact assessment prior to the issue of a Subdivision Certificate for the 1501st Lot, based on actual counts at the time and 10 year projections, to the satisfaction of RMS.
	4. The Wine Country Drive / Main Street (A-3) intersection shall be traffic signal controlled;			Required prior to the upgrade of Wine Country Drive to 4 through lanes (as per item 1) or any

				development occurring to the west of Wine Country Drive, whichever is the first, unless otherwise agreed with RMS in writing. RMS would concur with the design and construction of an Austroads Urban Type BAR / BAL intersection on the Wine Country Drive with Main Street for the proposed sales office only.
	5. The interim Wine Country Drive / Village 1 intersection on the existing Wine Country Drive alignment shall be designed and constructed as an Austroads Type CHR / CHL intersection or seagull, as determined by RMS;			Required prior to the issue of the first Subdivision Certificate.
	6. The Wine Country Drive / Village Access 1 (A-5) shall be traffic signal controlled;			Required prior to the issue of a subdivision Certificate for the 501st Lot and prior to any development occurring either side of Wine Country Drive for Stage 1, unless otherwise agreed with RMS in writing.
	7. The Wine Country Drive / Anvil Creek Regional Park intersection shall be a Type CHR/ CHL intersection (protected right and left turn bay) and shall be restricted to left in, left out and right in movements.			Required prior to opening of the Anvil Creek Regional Park.
	8. The Wine Country Drive / Large Lot access (A-9) shall be upgraded to an Austroads Type CHR/ CHL intersection (protected right and left turn bay), as determined by RMS.			Prior to the issue of a Subdivision Certificate for any large lot subdivision west of Wine Country Drive.
	9. HEx Link Road / Village 1 North access (A-6) intersection and link road shall be constructed during Stage 1. The intersection shall be a 2 lane circulating roundabout or traffic signals (intersection type to be determined by RMS). The link road shall be one lane in each direction, allowing for a future additional one lane in each direction.			Required prior to the issue of a Subdivision Certificate for the 1501st Lot. RMS requires that the proponent undertake a further traffic impact assessment prior to the issue of a Subdivision Certificate for the 1501st Lot, based on actual counts at the time and 10 year projections, to the satisfaction of RMS.
	10. The HEx Link Road shall be upgraded to 4 lanes (2 in each direction) between Wine Country Drive and the HEx interchange. The timing for the upgrade will be determined and agreed with RMS. It will be required during Stage 1 and in conjunction with the connection/upgrade of intersections A6 and A11 or earlier.			RMS requires that the proponent undertake a further traffic impact assessment prior to the issue of a Subdivision Certificate for the 1501st Lot, based on actual counts at the time and 10 year projections, to the satisfaction of RMS.
	11. The HEx Branxton interchange (A-11) shall be upgraded to include, as a minimum:			Required prior to the issue of a Subdivision Certificate

	1. A continuous left turn slip lane/ramp from the northbound off ramp onto HEx Link Road. 2. A continuous left turn slip lane/ramp from the New England Highway extension to the HEx southbound on ramp. 3. Extension of the HEx southbound off ramp to cater for expected queuing. Adjustments to line marking are also likely to be required in stages to ensure appropriate operation of the interchange			for the 1901st Lot - subject to further traffic impact assessment. RMS requires that the proponent undertake a further traffic impact assessment prior to the issue of a Subdivision Certificate for the 1501st Lot, based on actual counts at the time and 10 year projections, to the satisfaction of RMS.
	12. Interim emergency access for Village 1 prior to northern access. Shall be implemented through to North Rothbury. The connections are proposed via Scott and Dai Streets and are currently road reserves. For Village 1 Huntlee development, it is proposed that they serve as open space linkages for pedestrian and cyclists and would not be open for regular traffic. They should be designed to be able to be used in an emergency if the access to Wine Country Drive is not available.			Gates to be installed to allow emergency vehicle use only prior to the issue of the first Subdivision Certificate for land east of Wine Country Drive.
	13. The existing intersections on Wine Country Drive at North Rothbury shall be reviewed and where necessary upgraded to RMS requirements.			RMS requires that the proponent undertake a further traffic impact assessment prior to the issue of a Subdivision Certificate for the 1501st Lot, based on actual counts at the time and 10 year projections, to the satisfaction of RMS.
Legislative Controls and Approvals	Huntlee Pty Ltd will obtain and maintain the following licences, permits and approvals for the residential subdivision: – Relevant Construction Certificates for engineering works for each stage of the subdivision. The application for Construction Certificates will contain Design Drawings submitted containing, where relevant, detailed designs relating to earthworks, drainage, Soil erosion and Sediment Control and site rehabilitation, tree clearing and site stability, roadworks, footpaths/cycleways, water supply (both potable and use of reclaimed water) and sewerage works, and landscaping; – Relevant Council - Road Opening Permit from Cessnock City Council as required; – Relevant Council - Section 138 Consent for roadworks (Roads Act 1993); – Energy Australia - Design Certification; – Energy Australia - Notification of Arrangement; – Telstra - Compliance Certificate; – Hunter Water Corporation - Compliance Certificate; and, – Relevant Council – Subdivision Certificates for each stage.	Huntlee Pty Ltd	Various	Duration of subdivision
Staging Plans	Prior to the issue of a subdivision certificate for each	Huntlee Pty Ltd	Department of	Prior to the issue of each

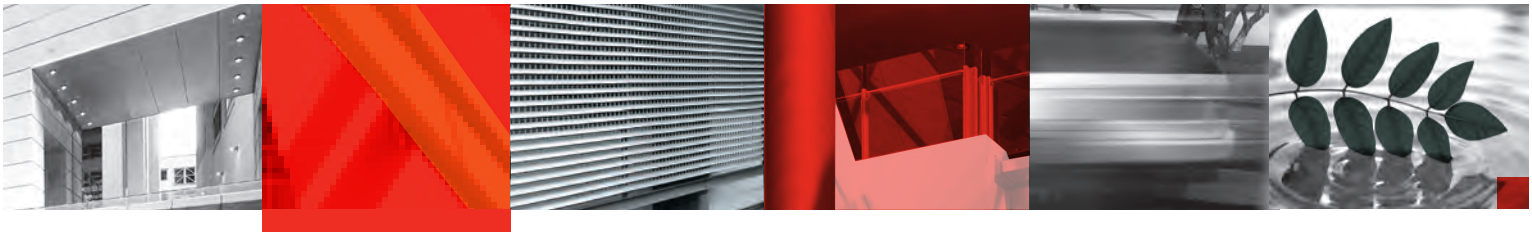
	sub-stage of the development, an up-dated staging plan shall be submitted showing at a minimum the next five sub-stages of the development.		Planning and Infrastructure	Subdivision Certificate
Detailed Engineering and Subdivision Plans	Huntlee Pty Ltd will prepare and submit detailed engineering and subdivision plans for each sub-stage of the development prior to the issue of the relevant Construction Certificate or Subdivision Certificate. The detailed plans shall include the following: – Lot areas – Lot dimensions – Road cross sections and long sections – Cut/fill and finished levels – Bulk earthworks plan	Huntlee Pty Ltd	Department of Planning and Infrastructure	Prior to issue of relevant Construction or Subdivision Certificate
Final Plans of Subdivision	Huntlee Pty Ltd will prepare a final plan of subdivision and Section 88B instrument for each sub-stage of the development in accordance with the recommendations of the Environmental Assessment and requirements of the relevant Council.	Huntlee Pty Ltd	Cessnock Council	Prior to the issue of Subdivision Certificates
Access to Lot 34 DP 755211	The final plan of subdivision and Section 88B instrument for any sub-stage of the development that affects the current Right of Way from Lot 34 DP 755211 to Scott Street, North Rothbury will include alternative arrangements for access to that Lot.	Huntlee Pty Ltd	Cessnock Council	Prior to the issue of a Subdivision Certificate for the relevant sub-stage.
Construction Management Plan	Prior to the issue of a Construction Certificate, a Construction Management Plan shall be submitted to and approved by the relevant Council. The Plan shall address, but not be limited to, the following matters where relevant: – hours of work, – contact details of site manager, – construction traffic management, – noise and vibration management, – waste management, – erosion and sediment control – asbestos management, – protocols to manage previously unidentified contamination sources, – Vegetation management. The CMP shall be consistent with the Construction Management Plan Framework outlined in Huntlee Project Stage 1 - Physical Infrastructure Report prepared by Worley Parsons dated August 2012 (**Appendix D** of the PPR)	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Vegetation Management Plan	Prior to the commencement of works, a Vegetation Management Plan must be prepared and submitted to and approved by the relevant Council. The Plan must address protective measures during the construction phase, potential impacts of the adjoining residential development and means of control, weed removal, revegetation, threatened species protection (especially Hunter Lowland Redgum Forest). The VMP shall address the mitigation measures outlined in Section 6 of the Ecological Assessment Report - Huntlee prepared by RPS dated September 2010 (**Appendix I** of the EAR)	Huntlee Pty Ltd	Council	Prior to commencement of works
Erosion and Sedimentation Control	– Soil erosion and sediment control measures shall be designed in accordance with the document Managing Urban Stormwater–Soils & Construction	Huntlee Pty Ltd	Council	Prior to issue of construction certificate

	Volume 1 (2004) by Landcom. – Details are to be submitted of a Soil and Water Management Plan to the satisfaction of the Council prior to the issue of the Construction Certificate. – All erosion and sediment control measures are to be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as a source of sediment. – Salinity investigations will be undertaken to categorise the level of salinity across the site prior to the detailed design of infrastructure and servicing. – The Soil and Water Management Plan shall include the management and mitigation measures contained in: a) Huntlee Project Trunk Stormwater and Flooding Assessment - Stage 1 Project Application prepared by Worley Parsons and dated August 2012 (Appendix X of the PPR) b) Ecological Assessment Report - Huntlee prepared by RPS dated September 2010 (**Appendix I** of the EAR)			
Permanent Waterbody 1	The detailed design of the Permanent Waterbody 1 must be submitted to and endorsed by the NSW Office of Water prior to the commencement of construction. This design must demonstrate the diversion results in a stream which remains hydrologically and geomorphically stable. The design must ensure: – The stream grade through the diversion is consistent with the existing stream grade; – The ongoing stability of the stream bed and banks; and – The introduction of appropriate riparian vegetation along the diversion.	Huntlee Pty Ltd	NSW Office of Water	Prior to issue of construction certificate for the proposed Permanent Waterbody No. works
Traffic & Pedestrian Management	Prior to the issue of a Construction Certificate, a Traffic and Pedestrian Management Plan prepared by a suitably qualified person shall be submitted to and approved by the Council. The Plan shall address, but not be limited to, the following matters: – ingress and egress of vehicles to the site, – loading and unloading, including construction zones, – predicted traffic volumes, types and routes, and, – pedestrian and traffic management methods. – The Transport Management and Accessibility Plan prepared by Better Transport Futures dated December 2010 (**Appendix E** of the EAR)	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Bus Servicing Strategy	Prior to the issue of a Construction Certificate, a Bus Servicing Strategy shall be prepared by Huntlee Pty Ltd in consultation with, and for the approval of, Transport for NSW. The strategy shall address the provision of bus services for the development including staged expansion of those services in line with the growth of Huntlee. The Strategy shall address how services build on existing local and regional connections including access to Branxton Station and key regional centres including Cessnock,	Huntlee Pty Ltd	Transport for NSW	Prior to issue of construction certificate

	Maitland and Singleton.			
Noise and Vibration Management Plan	Prior to the issue of a Construction Certificate, a Noise and Vibration Management Plan prepared by a suitably qualified person shall be submitted to and approved by the Council. The Plan shall address, but not be limited to, the following matters: – Identification of the specific activities that will be carried out and associated noise sources, – Identification of all potentially affected sensitive receivers including residences, schools, and properties containing noise sensitive equipment, – The construction noise objective, – The construction vibration criteria, – Determination of appropriate noise and vibration objectives for each identified sensitive receiver, – Noise and vibration monitoring, reporting and response procedures, – Assessment of potential noise and vibration from the proposed construction activities including noise from construction vehicles and any traffic diversions, – Description of specific mitigation treatments, management methods, and procedures that will be implemented to control noise and vibration during construction, – Construction timetabling to minimise noise impacts including time and duration restrictions, respite periods, and frequency, – Procedures for notifying residents of construction activities that are likely to affect their amenity through noise and vibration, and – Contingency plans to be implemented in the event of non-compliances and/or noise complaints.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Bushfire Management Plan	Prior to the issue of a Construction Certificate, a Bushfire Management Plan shall be submitted to and approved by Council. This Plan should be prepared in accordance with the NSW Rural Fire Service document Planning for Bush Fire Protection 2006.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Mine Subsidence Management Plan	Prior to the issue of a Construction Certificate for structures within in any areas identified in Figure 9 of the Draft Huntlee development Control Plan, a Mine Subsidence Management Plan shall be submitted to and approved by the Mine Subsidence Board.	Huntlee Pty Ltd	Mine Subsidence Board	Prior to issue of construction certificate
Construction Waste Management Plan	Prior to the issue of a Construction Certificate, the Proponent shall submit to the satisfaction of the Council a Waste Management Plan prepared by a suitably qualified person in accordance with Council requirements.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Stormwater and Drainage Works Design	Final design plans of the stormwater drainage systems within the proposed subdivision, consistent with the stormwater management objectives and controls in Section 5.4 of the Environmental Assessment and prepared by a qualified practicing Civil Engineer and in accordance with the requirements of Council shall be submitted to and approved prior to issue of a Construction Certificate.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Road Design	All roads shall be designed in consultation with Council and with the relevant requirements of Council and / or Roads and Traffic Authority as appropriate.	Huntlee Pty Ltd	Council and / or RMS where works occur	Prior to issue of construction certificate

	Final road design plans shall be prepared by a qualified practising Civil Engineer and submitted to the Council prior to the issue of a Construction Certificate.			
Electricity Zone Sub-station	Prior to the issue of a Subdivision Certificate for the 500th lot, Huntlee Pty Ltd will demonstrate agreement with Ausgrid on the location of the proposed Sub-station and 132kV power line routes.	Huntlee Pty Ltd	Ausgrid	Prior to issue of Subdivision Certificate for 500th Lot.
Compliance	Prior to the issue of a Construction Certificate, the Proponent, or any party acting upon this approval, shall submit to the Department of Planning a report addressing compliance with all relevant conditions of this Part.	Huntlee Pty Ltd	Department of Planning and Infrastructure	Prior to issue of construction certificate

Project Application
Environmental Assessment Report



Huntlee
Stage 1 Subdivision and Infrastructure Works

Submitted to Minister for Planning
On Behalf of Huntlee Pty Ltd

March 2011 ▪ 09516

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JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Gordon Kirkby

Signature Date 14/03/11

Statement of Validity

This Environmental Assessment has been prepared and submitted under Part 3A of the *Environmental Planning and Assessment Act* 1979 (as amended) by:

Environmental Assessment prepared by

Name	Gordon Kirkby
Qualifications	BEc Dip URP
Company	JBA Urban Planning Consultants Pty Ltd
Address	Level 7, 77 Berry Street North Sydney NSW 2060
In respect of	Study and Development framework Application

Development Framework

Applicant	Huntlee Pty Ltd
Address	PO Box 199, Branxton NSW 2335
Land to be developed	See Section 2.2 of Report
Proposed development	Huntlee New Town Stage 1 Subdivision and Infrastructure Works.
Environmental Assessment	An Environmental Assessment (EA) is attached
Certificate	I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge: ▪ It is in accordance with the Environmental Planning and Assessment Act and Regulation. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature	
Name	Gordon Kirkby
Date	14 March 2011

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Purpose of this Report

To seek the approval of the Minister for Planning under Part 3A of the Environmental Planning and Assessment Act 1979 (the Act) of a Project Application for subdivision and Infrastructure works for Stage 1 of Huntlee, near Branxton in the Hunter Valley. This project application is within the overall planning framework put forward in the Huntlee State Significant Site Study and is consistent with the zoning and development control provisions contained in Schedule 3 of *State Environmental Planning Policy (Major Development) 2005* (the Major Development SEPP) and the *draft Huntlee Development Control Plan 2011*(Huntlee DCP).

This report also responds to the Director- General's Environmental Assessment Requirements which were issued on 19 November 2010.

Project Outline

This application seeks approval for:

- Subdivision for the first residential village to accommodate up to 1700 dwellings, open space and community facilities;
- Superlot subdivision for the first component of the mixed use employment lands (50.5ha);
- Subdivision for the first Town Centre residential development including up to 190 lots to accommodate up to 222 dwellings;
- Subdivision for up to 120 large lot residential lots; and
- Construction of associated community infrastructure including landscaping, open space and recreation areas; and
- Construction of associated physical infrastructure (both on & off site) including:
  - road works and associated intersections;
  - stormwater management; and
  - water supply and sewerage.

The Proponent

The proponent of the development is Huntlee Pty Ltd.

Planning Context

The application represents Stage 1 of the implementation of Huntlee, that was Gazetted as a State Significant Site (SSS) with an amendment to Schedule 3 of *State Environmental Planning Policy (Major Development) 2005* (Major Development SEPP) on 31st December 2010. This document should be read in the context of the SSS Study and the zoning and development controls in the Major Development SEPP.

The SSS Study for Huntlee established the vision, planning and development framework which will be used to assess future development proposals. It articulates what Huntlee Pty Ltd is seeking to achieve for future development and sets the broad parameters for such development. The key parameters of the overall Huntlee SSS development framework are:

- Up to 5600 dwellings in residential zones of varying sizes covering up to 612 hectares;
- Employment lands totalling up to 200 hectares including a mixed use town centre with up to 1,700 residential dwellings;

- Large lot residential development covering up to 93 hectares to achieve 200 lots;
- The provision of associated infrastructure including upgrades to roads, sewerage and water infrastructure and the dedication of land for education, health services, community facilities and utilities;
- Dedication of 780 hectares of conservation land within Huntlee;
- Dedication of Persoonia Park (17 hectares); and
- Dedication of up to 4988 hectares of conservation land elsewhere within the Lower Hunter Region.

Compliance with Statutory Instruments

Huntlee was rezoned as a State Significant Site by way of an amendment to Schedule 3 of the Major Development SEPP on 31st December 2010. The SEPP amendment established land use zoning and development controls for Huntlee and required the preparation of a Development Control Plan (DCP) to further articulate design, landscape and infrastructure principles and controls. The draft DCP has been submitted concurrently with this project application. The proposed Stage 1 land uses are consistent with the Major Development SEPP and Huntlee DCP provisions.

The Site

Huntlee is located to the south of the town of Branxton in the Hunter Valley of NSW. The site straddles Wine Country Drive (MR 220) linking Cessnock with the New England Highway. Within the overall site, the proposed urban area is bounded to the north and east by the Main North Railway and the Hunter Expressway corridor, to the south by the village of North Rothbury and to the west by the Black Creek floodplain.

This Project Application relates to Stage 1 of Huntlee. The first stage residential village located to the east and north of the existing village of North Rothbury. The first stages of the employment lands are located between North Rothbury and Branxton, straddling Wine Country Drive. The 120 large lot residential area is located to the south of the site on Wine Country Drive some 1.5km south of the village of North Rothbury.

Existing Use & Development

All Stage 1 areas are currently subject to agricultural activities, predominantly grazing, and associated farm infrastructure including fences and farm dams etc. There are a small number of individual dwellings. A company currently operates a tourist activity (Bed and Breakfast) from a site wholly surrounded by, but not included in the Large Lot residential development area on Wine Country Drive. Stage 1 does not contain areas associated with former mining and landfill activities. These areas will be remediated and developed as part of future stages.

Design Philosophy & Description of Proposal

The design philosophy behind the Stage 1 subdivision for Huntlee is consistent with that of the overall Huntlee development framework: to create a new Hunter Valley town that retains the character of the place including its natural attributes and rich Aboriginal and European past, and establishes an active and memorable urban core, surrounded by well connected neighbourhoods, each with a community heart that is in easy and safe walking and cycling distance from the homes in that neighbourhood.

Within this philosophy, the project application seeks approval for subdivision and infrastructure works to facilitate the development of the first residential neighbourhood (including a village centre), the first of the large lot residential areas located to the south of the proposed urban area and the creation of super lots to facilitate the first stages of the town centre employment lands.

Infrastructure

There is currently little or no infrastructure within the proposed development areas. The environmental assessment however, puts in place detailed planning for the provision of utility services, roadworks and stormwater management infrastructure, building on the preliminary investigations that underpinned the SSS development framework. While the assessments conclude that the required infrastructure can be put in place for the Stage 1 areas, key issues that need to be addressed during the implementation phase of the project include the timing of upgrades to regional water and wastewater infrastructure and the implications for local and regional traffic management. These issues are examined in the environmental assessment. Staging of the development in line with infrastructure provision is provided for in the Statement of Commitments.

Environmental Impacts

The key environmental impacts identified for the Stage 1 subdivision and works are:

- Urban design and landscaping;
- Local traffic management;
- Public transport provision;
- Stormwater management;
- Utility services;
- Biodiversity;
- Bushfire management; and
- Sustainability.

The assessment concludes that these issues are all able to be managed and mitigated.

Conclusion

Huntlee provides the opportunity to create a new community for the Lower Hunter Region and in doing so implement the key objectives and outcomes of the Lower Hunter Regional Strategy associated with accommodating population and employment growth and environmental conservation outcomes.

Huntlee Pty Ltd is seeking approval for a Project Application for subdivision and infrastructure works associated with the first stage of the development. The information contained in this project application demonstrates that the proposed Stage 1 development is consistent with the sustainable implementation of the overall Huntlee SSS development framework.

1.0 Introduction

This report is submitted to the Department of Planning (DoP) under *Part 3A* of the *Environmental Planning and Assessment Act 1979* (The Act) to support a Project Application for Stage 1 subdivision and infrastructure works for Huntlee.

This application seeks approval for:

- Subdivision for the first residential village to accommodate up to 1700 dwellings, open space and community facilities;
- Superlot subdivision for the first component of the mixed use employment lands (50ha);
- Subdivision for the first Town Centre residential development including up to 190 lots to accommodate up to 222 dwellings;
- Subdivision for up to 120 large lot residential lots; and
- Construction of associated community infrastructure including landscaping, open space and recreation areas; and
- Construction of associated physical infrastructure (both on and off site) including:
  - road works and associated intersections;
  - stormwater management; and
  - water supply and sewerage.

The total capital investment value of the project is $230 million.

The application represents the first stage of the implementation of Huntlee. This document should read in conjunction with the Huntlee State Significant Site Study (SSS Study) which supported the rezoning of the development under in Schedule 3 of the Major Development SEPP.

The application has been prepared on behalf of the applicant Huntlee Pty Ltd. JBA Urban Planning Consultants Pty Ltd has prepared this report based on plans and information provided by Huntlee Pty Ltd and its team of technical specialists.

This report describes the site and its environs, the proposed development and includes an assessment of the proposal in the context of the SSS development framework and the Director-General's Environmental Assessment Requirements issued for the project on 19 November 2010. It should be read in conjunction with the supporting information and plans appended to this report (refer to Table of Contents).

The report is structured as follows:

Section 1: Introduction to the project.

Section 2: Site Analysis

Section 3: Planning framework and context applying to the site.

Section 4:Consultation

Section 5: Description of the development project.

Section 5: Environmental Assessment of Project Application.

Section 6: Draft Statement of Commitments

Section 7: Conclusion.

1.1 Background and Context

On 31st December 2010, the Minister for Planning gazetted the State Significant site amendment for Huntlee. The amendment to Schedule 3 of the Major Development SEPP provided zoning and land use controls for the following:

- Up to 5600 dwellings in residential zones of varying sizes covering up to 612 hectares;
- Employment lands totalling up to 200 hectares including a mixed use town centre with up to 1,700 residential dwellings;
- Large lot residential development covering up to 93 hectares to achieve 200 lots;
- The provision of associated infrastructure including upgrades to roads, sewerage and water infrastructure and the dedication of land for education, health services, community facilities and utilities;
- Dedication of 780 hectares of conservation land within Huntlee;
- Dedication of Persoonia Park (17 hectares); and
- Dedication of up to 4988 hectares of conservation land elsewhere within the Lower Hunter Region.

This project application represents the first stage of the Huntlee development and is consistent with the strategic planning and environmental assessment undertaken for the rezoning.

1.2 Proponent and Project Team

Huntlee Pty Ltd is the proponent for the proposal.

The preparation of the project has involved contribution from a range of expert specialist consultants, including those in the fields of urban design, ecology, landscape, engineering, traffic, sustainability and bushfire management. The expert project team formed to deliver the project includes the following consultants:

Table 1 – Project Team

Consultant	Specialty
Project / Development Manager	LWP Property Group
Urban Planning	JBA Planning
Urban Design	Roberts Day Cox Richardson Architects
Site Infrastructure	Worley Parsons HDB Town Planning & Design
Quantity Surveyors	Altus Page Kirkland
Landscape	Hassell
Utility Services	Worley Parsons
Stormwater and Flooding Engineers	Worley Parsons
Sustainable Strategy	Sustainable Built Environments
Biodiversity	RPS
Traffic and Transport	Better Transport Futures
Bushfire Management	HDB Town Planning & Design

Submitted as appendices to this report are various supporting technical reports that investigate the environmental implications and determine suitable mitigation and management measures for the project (see Appendices of report).

2.0 Site Analysis

2.1 Site Location and Context

Huntlee, in its regional context is shown in **Figure 1** and is located to the south of the town of Branxton in the Hunter Valley of NSW. The Huntlee site straddles Wine Country Drive, which links Cessnock with the New England Highway. Within the overall Huntlee site, the proposed urban area is bounded to the north and east by the Main North Railway and Hunter Expressway corridor, to the south by the village of North Rothbury and to the west by the Black Creek floodplain. Other adjoining uses include vineyards, rural residential development and general agriculture.

This Project Application relates to the first residential Village (1922 lots) located to the east and north of the existing village of North Rothbury and includes the first 50.5 ha of the Town Centre area and the Wine Country Drive large lot residential area (120 lots). The Stage 1 area in the context of the overall Huntlee development framework is shown in **Figure 2** below.

The first stage of the residential Village will commence on the eastern side of the existing village of North Rothbury.

Figure 1 – Huntlee Regional Context

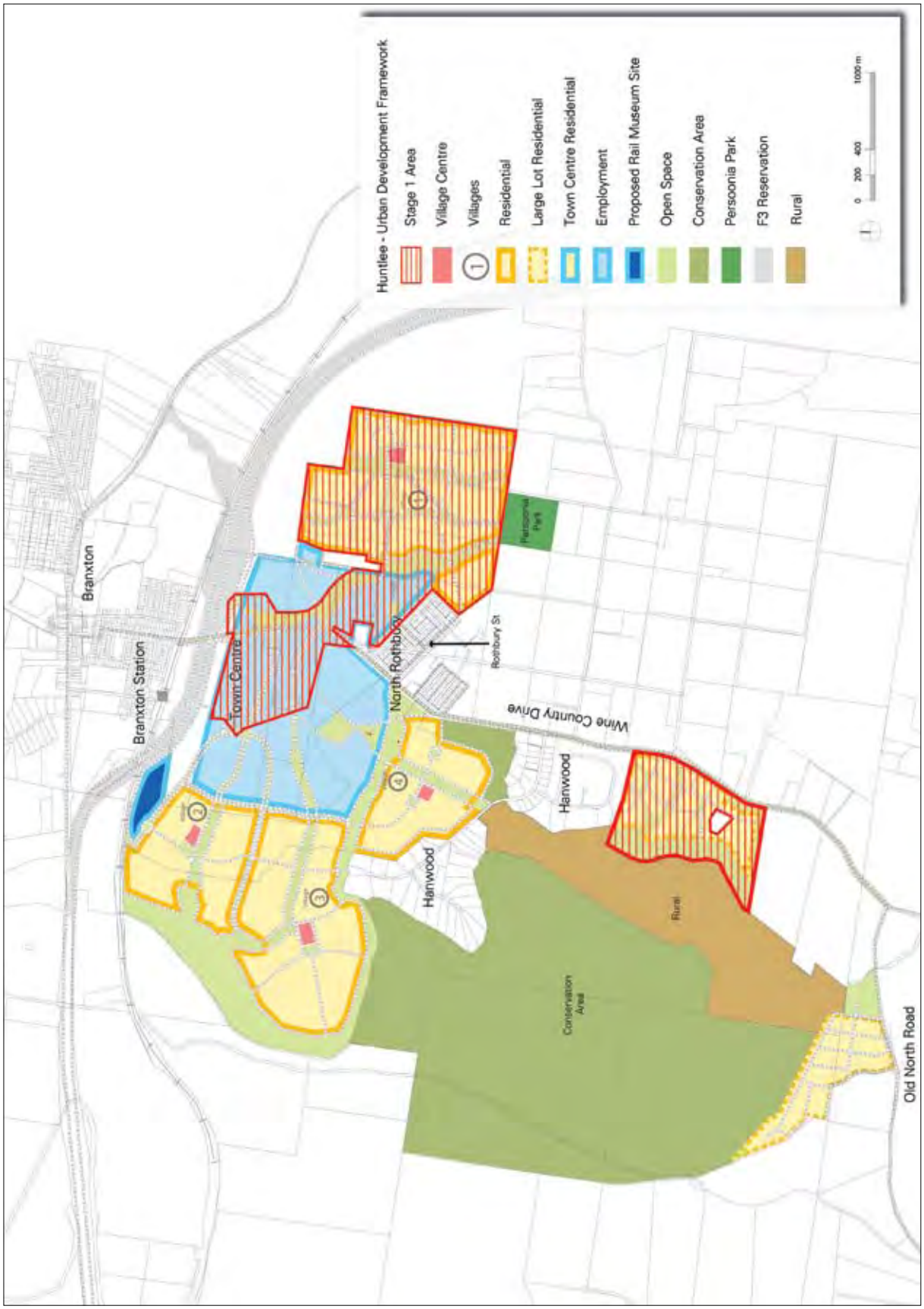


Figure 2 – Stage 1 Project Application areas

2.2 Land Ownership and Legal Description

The legal title description of the Stage 1 areas is in **Table 2** below. All land is owned by Huntlee Pty Ltd.

Table 2 – Stage 1 Land Title Details

Lot	DP
200 (Part)	828486
201	828406
230 (Part)	879198
231	879198
33	755211
34	755211
36	755211
37	755211
38	755211
39	755211
43	755211
211 (Part)	828787
6	729973
7	729973
8	729973
9	729973
10	729973
11	729973
12	729973
1	745450
21 (Part)	1050597
221 (Part)	1064738
10	1105639

2.3 Existing Development

All Stage 1 areas are currently subject to agricultural activities, predominantly grazing, and associated farm infrastructure including fences and farm dams etc. There are a small number of individual dwellings. A company currently operates a tourist activity (Bed and Breakfast) from a site wholly surrounded by, but not included in the large lot residential development area on Wine Country Drive.

2.4 Summary of Site Opportunities and Constraints

The Stage 1 development is generally located outside of the areas identified as being constrained in the Huntlee State Significant Site study. The Stage 1 areas are not affected by mine subsidence, quarrying activities or contamination associated with previous mining and landfill activities. The Stage 1 residential areas are located over 450 metres from the Main Northern Railway line.

Key issues that require consideration in the design and layout of the Stage 1 Project Application area are:

- Urban design and landscaping
- Local traffic management;
- Public transport provision;
- Stormwater management;
- Utility services;
- Biodiversity;
- Bushfire management; and
- Sustainability.

These issues are addressed in detail in Section 6 of this report.

3.0 Planning Framework and Context

The Project Application for Stage 1 of Huntlee is submitted under Part 3A of the EP&A Act. The relevant environmental legislation, strategies and planning controls pertaining to the Huntlee are summarised below insofar as they relate to Stage 1.

3.1 Commonwealth Legislation

3.1.1 Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act)

Under the EPBC Act, it is necessary to obtain an approval from the Federal Minister for the Environment and Heritage to carry out a 'controlled action' where it is likely to have a significant impact on a 'matter of national environmental significance'. Under the Act, matters of National Environmental Significance include listed threatened species, ecological communities and migratory species.

The Ecological Constraints Master Plan (ECMP) prepared by RPS that accompanied the State Significant Site Study (see **Appendix I**) identifies various species that are listed under the EPBC Act that have been identified on the site. Therefore future project and development applications to facilitate development at Huntlee will be subject to the provisions of the EPBC Act. In terms of flora, the species identified as listed threatened species under the EPBC Act include:

- *Acacia bynoeana* - Bynoe's Wattle (vulnerable)
- *Eucalyptus glaucina* – Slatey Red Gum (vulnerable)
- *Eucalyptus parramattensis* subsp. *decadens* – Drooping Red Gum (vulnerable)
- *Persoonia pauciflora* - North Rothbury Persoonia (critically endangered)

In terms of fauna, the following EPBC listed species have been recorded within or in the vicinity of the site include:

- *Xanthomyza phrygia* - Regent Honeyeater (endangered)
- *Lthamus discolor* - Swift Parrot (endangered)
- *Pteropus poliocephalus* - Grey-headed Flying-fox (vulnerable)

Targeted surveys by RPS have also identified that the *Xanthomyza phrygia* (Regent Honeyeater) as being within the site. This species is a listed migratory species under the EPBC Act.

The Department of Sustainability, Environment, Water, Population and Communities has advised Huntlee Pty Ltd that its preference is to consider development at Huntlee in one process (ie. all stages) rather than on a stage by stage basis. A referral has been made to the Commonwealth Government on this basis.

The nature and extent of likely impacts of the proposed development on listed threatened species and communities is considered in Section 6.6 of this report.

3.2 Strategic Framework

3.2.1 Lower Hunter Regional Strategy 2006

The Lower Hunter Regional Strategy 2006 (LHRS) was released in October 2006 by DoP with the purpose of ensuring that adequate land is available and appropriately located to sustainably accommodate the projected housing and employment needs of the region's population over the next 25 years. The Huntlee proposal is specifically identified in the Strategy as a major urban release area able to accommodate up to 7,200 residential dwellings. This represents 6.1% of the total new dwellings required under the Strategy and 10.4% of all new dwellings in new release areas across the Region. In addition, Huntlee will contribute up to 200 hectares of employment land to the region, which is capable of generating in excess of 3000 jobs.

This is consistent with the Regional Strategy objective of ensuring the availability of sufficient employment lands and maintaining or improving the employment self sufficiency of the region. The Stage 1 development areas are within the parameters of the Development framework and consistent with its outcomes.

3.2.2 Lower Hunter Regional Conservation Plan

This plan sets out a 25-year program to direct and drive conservation efforts in the Lower Hunter Valley. It is a partner document to the NSW Government's Lower Hunter Regional Strategy. The proposed conservation offsets that will be dedicated as part of the Huntlee SSS rezoning process and associated Voluntary Planning Agreement (VPA) are identified in the Strategy. These conservation offsets support the development of the urban footprint for the Huntlee New Town including the proposed Stage 1 development areas.

3.2.3 Local Strategies

The current Cessnock City Wide Settlement Strategy (CWSS) dates from 2003 and does not take into account the settlement and economic development outcomes proposed in the 2006 Lower Hunter Regional Strategy. Cessnock City Council is currently in the process of revising its CWSS to incorporate and accommodate the residential and employment targets set by the Regional Strategy. The draft Revised CWSS 2009 has been publicly exhibited but has yet to be finalised and endorsed. The draft CWSS 2009 identifies Huntlee as a major urban release area accommodating up to 6840 residential dwellings and 225 rural residential dwellings within Cessnock LGA.

The Singleton Land Use Strategy was endorsed by Council in April 2008. The draft Strategy acknowledges the Huntlee New Town site as being part of the Regional Strategy and does not propose to rezone any additional residential land in the Branxton locality. No Stage 1 development areas are within Singleton LGA.

3.3 Statutory Framework

This section summarises the relevant state, regional and local environmental planning instruments and policies that apply to the site. The following planning instruments and planning policy documents are of key relevance to the proposed development:

- State Environmental Planning Policy (Major Development) 2005 (Major Development SEPP);
- State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP);
- State Environmental Planning Policy No.55 - Remediation of Land (SEPP 55);

3.3.1 Major Development SEPP

Schedule 1 – Part 3A Projects

The Major Development SEPP identifies certain categories of development and certain specified sites that are subject to assessment and determination under Part 3A of the EP&A Act. The Minister for Planning is the approval authority for Part 3A projects.

Pursuant to Clause 6 of the Major Project SEPP, The Minister for Planning formed the opinion that Stage 1 of the Huntlee development is a project to which Part 3A applies on the basis that the project meets the criteria in Clause 13 of Schedule 1 of the SEPP as a development for the purposes of residential, commercial or retail with a capital investment value greater than $50 million that is important in achieving State and regional objectives. The Project Applications the subject of this Environmental Assessment both fall within the Minister's declaration.

Schedule 3 – Huntlee Development Controls

Schedule 3 of the Major Development SEPP identifies a number of sites in NSW that are determined to be State Significant Sites. This schedule rezones these sites and determines appropriate development controls to take forward development. On 31st December 2010 an amendment to Schedule 3 was listed on the NSW Government Legislation Website to include land use zoning and development control provisions to the entire Huntlee development. The Huntlee Stage 1 development has been designed to be consistent with the Schedule 3 provisions.

The Schedule 3 provisions require the preparation of a Development Control Plan (DCP) for Huntlee to further refine the development principles and controls that will be applied to all future development. Draft Huntlee DCP has been prepared and is submitted with this Project Application for approval (**Appendix C**). Stage 1 of the Huntlee Development has been assessed against the principles and controls contained in the DCP. A schedule of compliance with the draft DCP is at **Appendix D.**

Table 3 shows the current zoning provisions for the various components of Stage 1. The proposed zoning under the Major Development SEPP is shown in **Figure 3**.

Table 3 – Zoning Controls

Stage 1 Areas	Major Development SEPP Zoning
Stage 1 Residential Neighbourhood	R1 General Residential
Stage 1 Town Centre including Town Centre residential development (Entry Village)	B4 Mixed Use
Residential Village Centre	R1 General Residential
Rural Residential Areas	R5 Large Lot Residential

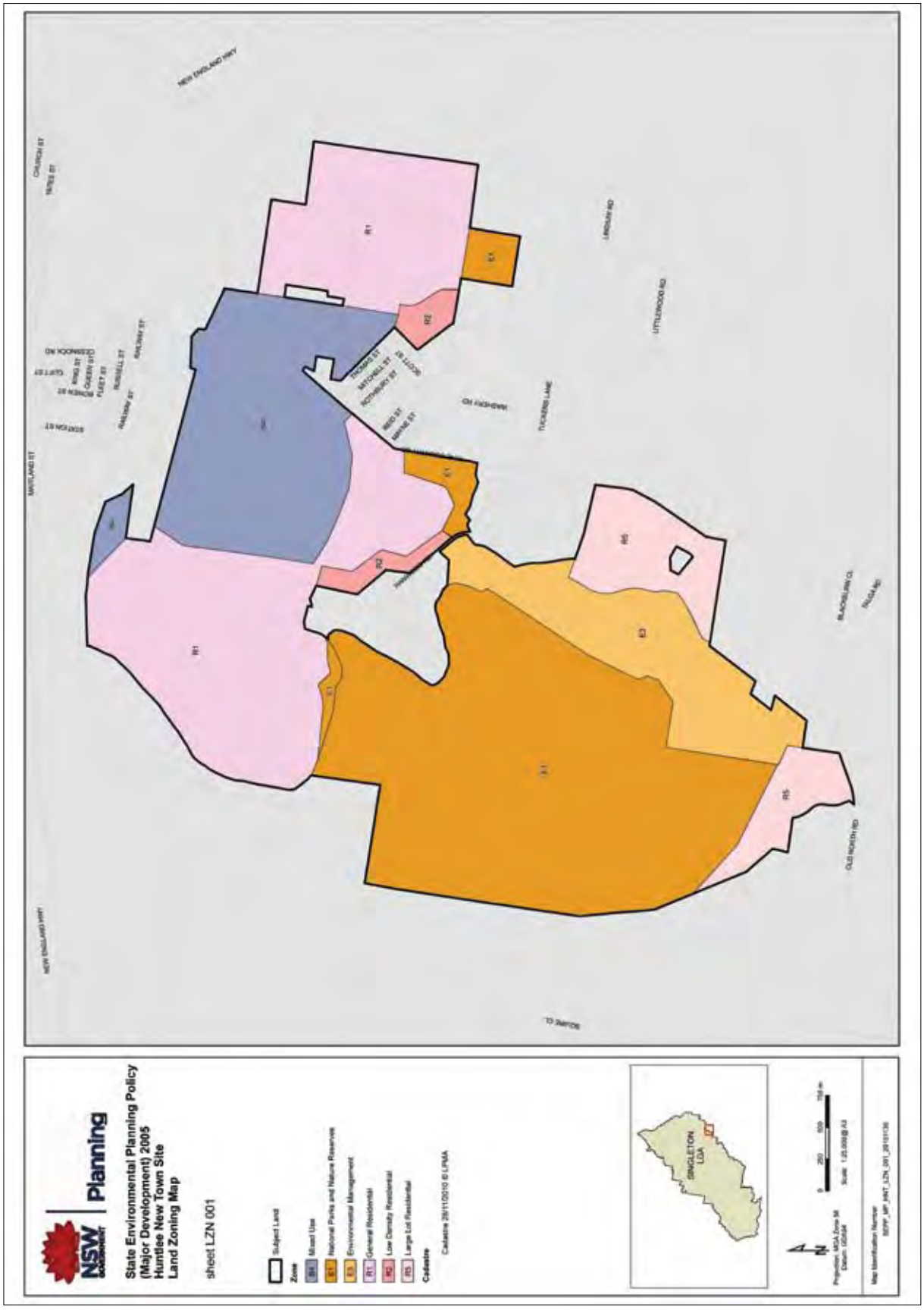


Figure 3 – Major Development SEPP zoning

Source: Department of Planning

3.3.2 Infrastructure SEPP

This policy ensures amongst other things that applications for specific types of development are referred to the relevant Traffic Authority for its comments prior to determination. Under the provisions of this SEPP, these Project Applications under Part 3A of the Act will be referred to the RTA for comment based on the size and quantum of residential and employment lands proposed.

The Traffic Authority for the site is the NSW Roads and Traffic Authority (RTA). The traffic impacts of the proposed development for Huntlee have been considered and are detailed in the Huntlee Transport Management and Accessibility Plan (TMAP) prepared by Better Transport Futures at **Appendix E**. The specific impacts of the Stage 1 Project Application proposals are addressed in Section 6.2 of this report.

3.3.3 SEPP 55 – Remediation of Land

The aim of SEPP 55 is to promote the remediation of contaminated land for the purpose of reducing risk of harm to human health or any other part of the environment. The policy specifies considerations that are relevant to consent and approval authorities in the rezoning of land and in determining development applications.

In accordance with this policy, the Minister in considering whether to approve development must be satisfied that the land is suitable for its proposed use or the land will be remediated before it is used for that purpose.

A Phase 1 Environmental Assessment of the Huntlee Stage 1 development area has been undertaken and is addressed in Section 6.10.

4.0 Consultation

Extensive consultation has been undertaken with the community, Councils and Government agencies during the formulation of development proposals for Huntlee New Town since July 2010. All issues raised during this period to 2011 have informed the current planning application for Huntlee Stage 1.

The State Significant Site Study for Huntlee was publicly exhibited between 29 September and 17 November 2010. 77 submissions were received (68 from the public) and this issues raised in those submissions were considered by Huntlee Pty Ltd both for the SSS process as well as in the preparation of this Project Application.

During the public exhibition period the Huntlee office received the public enquiries and also provided detailed copies of information for display at the offices of Cessnock City Council and Singleton Council.

In summary, since mid 2007 Huntlee has worked collaboratively and proactively with:

Department of Environment Climate Change and Water

Key issues discussed with DECCW are:

- Conservation lands at the Huntlee site and management process moving forward.
- The draft "Recovery Plan" for the Persoonia pauciflora including protection and collection of Persoonia pauciflora seeds for propagation
- Aboriginal Cultural Heritage
- Remediation and Rehabilitation programs for the Ayrfield Colliery No.3. This included monitoring of dust, leachates and methane generation from an existing landfill site.
- Stormwater Management including stormwater detention design and riparian corridor management (NSW Office of Water).

Some of the above issues such as the remediation programs at the former Ayrfield Colliery do not directly relate to Stage 1 and are on-going. The outcomes of the discussions with DECCW are reflected in the specialist studies and addressed in Section 6.

Hunter Water Corporation

Discussions with the HWC related to the establishment of Water and Wastewater Servicing Agreements. These discussions are addressed in Section 6.5 and **Appendix G**.

Roads and Traffic Authority

There has been on-going consultation with the RTA regarding the appropriate scope of traffic modelling for the development. Following on from these discussions, Huntlee Pty Ltd commissioned Colin Buchanan (China) to undertake a review of the RTA's TransCAD model inputting the Huntlee development parameters. The modelling was then compared to the Paramics modelling undertaken. The results of the modelling are discussed in Section 6.2.

Discussions have also been held with the RTA regarding Hunter Expressway corridor which will traverse adjacent to the Huntlee site.

Department of Education and Training

Discussions have been held with the Department of Education and Training, TAFE, University of Newcastle, Anglican Schools, Catholic Diocese, Singleton and Rutherford High Schools, Branxton and Greta Primary Schools to establish the Huntlee Education Panel that looked at synergies and opportunities for an integrated education strategy in the region.

Cessnock Council

Cessnock Council staff were briefed on the Stage 1 development on 18 January 2011. Key issue s raised by Council include:

- Biodiversity offsets (Section 6.6)
- Traffic (Section 6.2)
- Utility services (Section 6.5)
- Size of the town centre (Section 5)
- Residential amenity of future stages along the Hunter Expressway / Railway corridor (not relevant to Stage 1)
- Contamination (Section 6.10)
- Local governance and contributions (Section 6.12)

Other Groups

- The indigenous communities of, Lower Wonnarua Council, Upper Wonnarua Council, Wonnarua Elders Council and Mindaribba Local Aboriginal Land Council, through the establishment of the Huntlee Aboriginal Reference Group, to guide opportunities for the indigenous communities in training, employment and business development.
- The Business Chambers of Hunter, Maitland, Singleton, Cessnock, Mindaribba, Kurri Kurri and Branxton Greta.
- The Economic Business Development Managers of Cessnock and Singleton in aligning their economic strategies and the importance of affordable land supply in their LGA's.

Huntlee will continue to have on-going consultation strategy that encompasses Councils, Government agencies and the community.

Aboriginal Consultation

There has been on-going consultation with the local Aboriginal community through the the indigenous communities of, Lower Wonnarua Council, Upper Wonnarua Council, Wonnarua Elders Council and Mindaribba Local Aboriginal Land Council, through the establishment of the Huntlee Aboriginal Reference Group (HARG) in 2007. This guided opportunities for the indigenous communities in training, employment and business development. As Huntlee has been rezoned as a State Significant Site, the HARG will continue its function once the Stage 1 Projects Approvals are in place.

Huntlee Pty Ltd is committed to achieving strong and sustainable outcomes for indigenous communities in the Hunter Valley.

Huntlee Pty Ltd supports the future involvement of the Mindaribba Local Aboriginal Land Council in the possible future management of the proposed Huntlee site specific conservation lands. A sum of $1million has been allocated through the Regional Voluntary Planning Agreement to the management of the 5,812 hectares of conservation lands, which includes the Huntlee site specific lands.

5.0 Description of Huntlee Stage 1 Project Application

The Project Application for Stage 1 of Huntlee seeks to facilitate the initial roll out of the Huntlee Concept Plan application and State Significant Site listing.

Stage 1 seeks project approval for:

- Subdivision for the first residential village to accommodate up to 1700 dwellings, open space and community facilities;
- Superlot subdivision for the first component of the mixed use employment lands (50.5ha);
- Subdivision for the first stage Town Centre residential development including up to 190 lots to accommodate up to 222 dwellings;
- Subdivision for up to 120 large lot residential lots; and
- Construction of associated community infrastructure including landscaping, open space and recreation areas; and
- Construction of associated physical infrastructure (both on and off site) including:
  - road works and associated intersections;
  - stormwater management; and
  - water supply and sewerage.

Relevant plans of the proposed subdivision and infrastructure works for this Project Application are included at **Appendix A** with more detailed plans included for the first sub-stage of the development being the 190 residential lots in the Entry Village (see Section 5.3).

It should be noted that throughout the document there will be references to "lots" and "dwellings" with apparent differences in numbers for each. The discrepancy comes about through the presence of lots designated for medium density development which will ultimately contain multiple dwellings. Therefore, for example, subdivision for the first stage Town Centre Residential development will be for 190 lots however up to 22 dwelling will be accommodated.

The draft Huntlee Development Control Plan which establishes detailed planning principles and controls for future development within Huntlee is included at **Appendix C** and a Landscape Concept Report is at **Appendix F**.

5.1 Overall Huntlee Vision

As outlined in the State Significant Site Study, the vision for Huntlee is to create a new Hunter Valley town that:

- retains the character of the place including its natural attributes and rich Aboriginal and European past; and
- establishes an active and memorable urban core, surrounded by well connected neighbourhoods, each with a community heart that is in easy and safe walking and cycling distance from the homes in that neighbourhood; and,
- is united by its high quality public domain of connected streets, parks, and recreational open space links ensuring that Huntlee is an attractive urban environment.

The natural attributes of the site include an undulating topography affording panoramic views, extensive areas of vegetation and future environmental conservation areas. The man made heritage of the site includes pre-European remnants as well as the memory of the site's very significant industrial past – an important part of the Hunter's development as an industrial mining centre in New South Wales. While parts of the site's topography have been significantly altered by mining activity, these areas offer the opportunity to create interesting places.

The vision for the Huntlee Town Centre is to create an exciting township in the Hunter Valley combining community, commercial, local shopping and educational facilities around a Town Park that is connected to the neighbouring towns of Branxton and North Rothbury. Supporting this will be four (4) villages each with strong links to the Huntlee Town Centre. Each village will be distinctive in character, being located within a different landscape within the larger site. Some villages will be on ridge tops, others along watercourses and areas of vegetation. The Huntlee Urban Development Framework is shown in **Figure 4**.

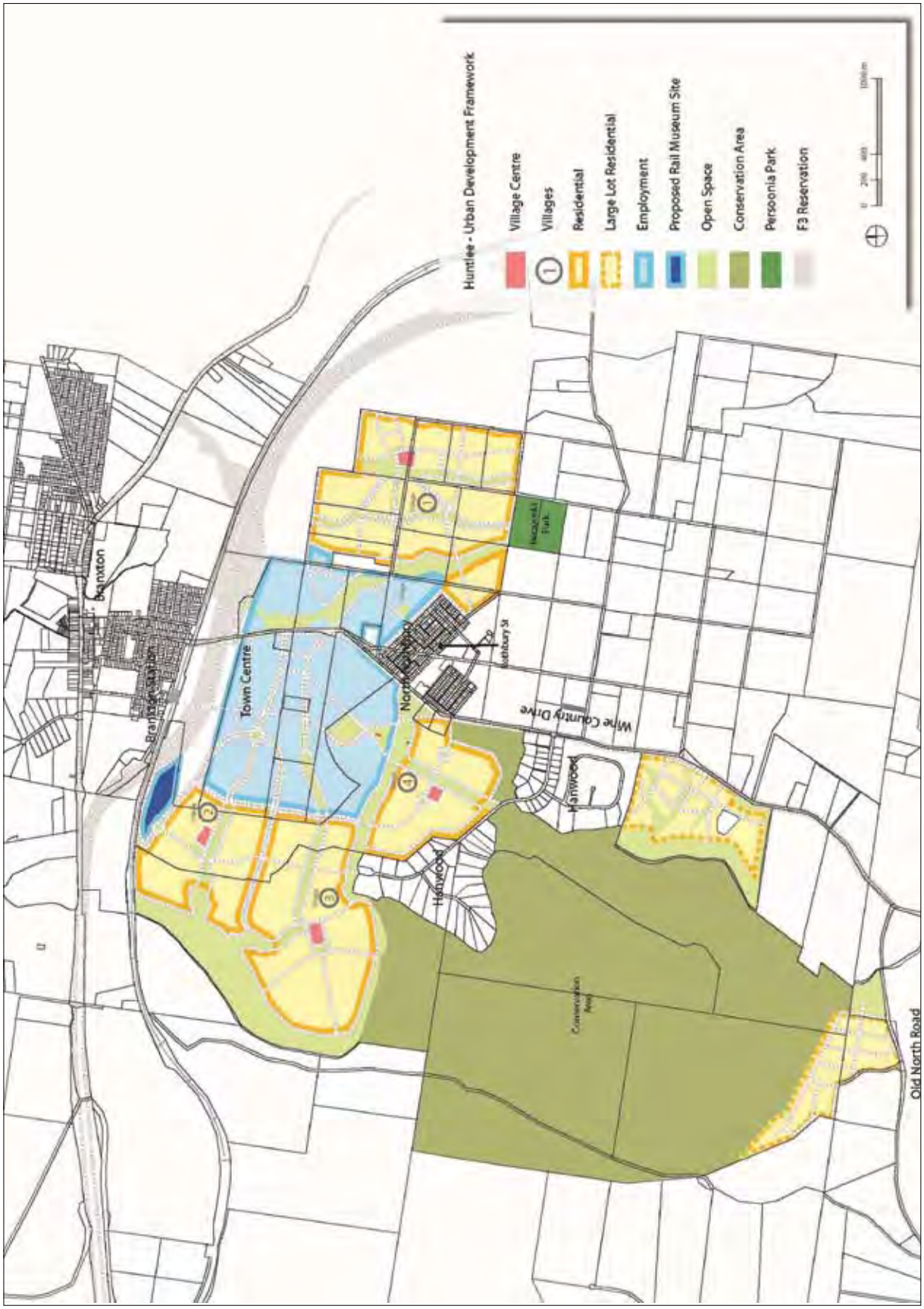


Figure 4 – Huntlee Urban Development Framework

Source: Cox Richardson

5.2 Urban Design Concept

Consistent with the overall Urban Development Framework, the location and inter-relationship of subdivision patterns, road networks, pedestrian and cycle movement, community facilities and open space for Stage 1 are underpinned by a number of key urban design principles that create a viable and sustainable community. These include:

- Creating a well connected street pattern that responds to the site's topography;
- Streets that generally terminate on an open space;
- Creating streets with generous green verges with street trees and footpaths on both sides of the street;
- A series of linear open space areas that preserve ridges, hilltops and significant areas of vegetation;
- Open spaces surrounded by public streets;
- Planning neighbourhoods where residents can easily walk or cycle to the neighbourhood core, a local shop, community centre, open space or school generally within 400 metres; and
- Providing a mixture of housing options to create diversity in the built form and accommodation choice.

As outlined earlier, a detailed draft Development Control Plan (**Appendix C**) and a Landscape Concept (**Appendix F**) have been prepared for the Stage 1 areas. These documents address:

- building form;
- heights;
- road widths;
- streetscape character;
- civic spaces;
- landscape treatment;
- water sensitive urban design; and
- Energy efficiency.

The documents are to be used to guide future development within the Stage 1.

5.3 Stage 1 Development

5.3.1 Overview

Stage 1 development will involve the initial development of the mixed use Town Centre, including a component of residential development, as well as the development of the first residential village and the first component of the large lot residential areas.

Village One will comprise up to 1391 lots with a development potential of 1700 dwellings, associated roads and utility infrastructure, open space areas and includes the first major village centre to be developed for the Huntlee New Town. It will contain a range of lot types and sizes which will cater for traditional residential dwellings through to smaller multi-unit housing.

The Project Application provides for the creation of 10 super allotments to enable the initial infrastructure development of the Town Centre and facilitate future detailed planning and development for core retail, service industry, bulky goods and mixed use development. Stage 1 of the mixed use area will also include subdivision and infrastructure works for up to 190 residential losts (with a development potential of 222 dwellings) which will be known as the "Entry Village" and are additional to the Village One lots. Three superlots are also proposed to be created in this locality for future subdivision.

An initial large lot residential area located to the south of the Huntlee on Wine Country Drive will be developed as part of Stage 1.

This Project Application seeks approval for:

- Subdivision both for residential lots and a number of super lots;
- construction of associated community infrastructure including landscaping, open space and recreation areas; and,
- construction of associated physical infrastructure (both on and off site) including:
  - road works and associated intersections;
  - stormwater management; and,
  - water supply and sewerage.

Key development information pertaining to Stage 1 is provided in **Table 4** below:

Table 4 – Key Development Information for Stage 1

Component	Proposal
Total Site area, including: - Residential Village One - Town Centre (including Entry Village) - Wine Country Drive Large Lot Residential Area - Open space areas	367 hectares
Site area Wine Country Drive large lot residential area	80 hectares
Maximum No. of residential dwellings - Village One	1700
Maximum No. Of residential dwellings - Town Centre (Entry Village)	222
No. of large lot residential lots	120
Landscape /open space areas (excluding Persoonia Park)	80 hectares
Open space area Wine Country Drive large lot residential area	28 hectares
Employment Area	50.5 hectares
Neighbourhood Village Centre	5 hectares

The overall Urban Structure for Stage 1 is shown in **Figure 5**.

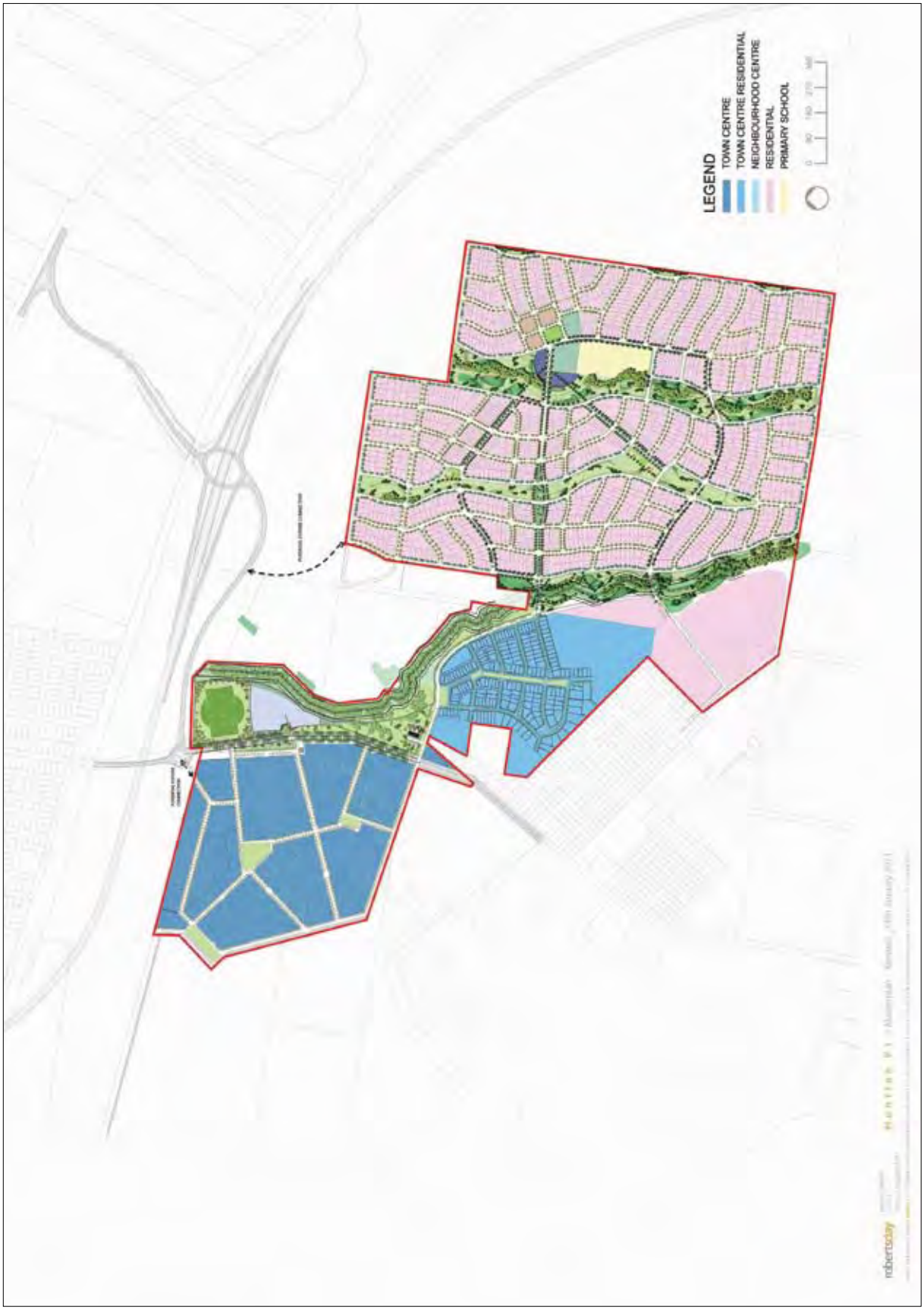


Figure 5 – Stage 1 Urban Structure

Ssource: Roberts Day / HDB

5.3.2 Stage 1 – Residential Village One

The proposed development pattern for the Village One residential neighbourhood follows the Huntlee urban design concept by responding to the site's gently undulating topography. In particular the proposed settlement pattern responds to the precinct's key features:

- A north-south ridge line that was formerly used as an airstrip and is currently largely cleared of vegetation. This ridgeline creates a sense of enclosure for most of the village when viewed from the west of the site and creates significant views along its length, particularly to the north.
- Two visually significant drainage lines that run north-south either side of the ridgeline;
- An existing farm dam/water storage area which is located along the drainage line in a central position in the precinct and forming a visual focus;
- Surrounding areas of bushland, particularly to the north, east of the precinct providing opportunities for natural views.

The following sections outline the various components of the urban design structure of the Village One residential neighbourhood. An overall urban structure for Stage 1 is shown in **Figure 5.**

The key principles behind the proposed residential density distribution for Village One are:

- To provide a variety of housing types to meet the needs of the community and for a range of demographics including cottage lots and multi-unit lots for retirees and young professionals and more traditional lots for families;
- To provide for varying housing styles which will promote housing affordability;
- Ensure larger lots (to cater for medium density development) are generally located on corners near local centres, local parks, schools, on collector roads, and near bus routes.
- To provide for larger, lower density lots on the perimeter of the site fronting the Asset Protection Zones.

The density distribution for the Stage 1 residential areas is shown in **Figure 6.**

Figure 6 – Stage 1 Residential Village One Dwelling Density Distribution

Lots within the Village 1 area are divided into four principle types as outlined in **Table 5** below:

Table 5 – Stage 1 Village One Residential Lot Types

Lot Type	Minimum Allotment Size	Number of Allotments	Number of Dwellings
Country	800m^2	196	196
Traditional lots	450m^2	842	842
Cottage Lots	360m^2	304	304
Duplex Lots	300m^2	24	48
Medium Density	200m^2	25	310
Total		1391	1700

5.3.3 Stage 1 Village Centre

The Village Centre is located in the north eastern part of Stage 1 adjacent to the existing natural drainage line running north south through the site. This village is identified in the Huntlee DCP as a Village Centre.

The centre will form one of four village centres in the overall Huntlee development which will provide a combination of low level local retail and community facilities complementing the major functions of the Town Centre.

The Village 1 Centre will be approximately 5 hectares and contain the following:

- Neighbourhood retail premises (maximum retail floorspace 3,000m^2);
- Community facilities such as a community centre, childcare facilities etc
- A primary school; and
- A Village Centre Park.

It is proposed that the village centre be located adjacent to a hard edged waterbody that will be a key feature of the Village Centre Park.

Buildings that comprise the Village Centre will be the subject future detailed development applications consistent with the draft DCP (**Appendix C**). The proposed Village Centre location is shown in **Figure 7**. An indicative plan of the Village 1 Centre is shown in **Figure 8**.

Figure 7 – Village One Neighbourhood Centre location

Figure 8 – Stage 1 Village One Centre Indicative Plan

Source Cox Richardson

5.3.4 Stage 1 Town Centre

The Town Centre layout has been prepared by Roberts Day and is shown in **Figure 9**. The Town Centre area is located to the west of Wine Country Drive and south of the Hunter Expressway Corridor. The proposed land uses within this component of the overall Town Centre are outlined in **Table 6** below:

Table 6 – Stage 1 Town Centre land use

Land Use	Area
Core Retail / Mixed Use	12.32 hectares
Service Industry / Bulky Goods	10.81 hectares
Town Centre Support / Mixed Use	17.13 hectares
Town Centre Open Space	1.77 hectares
Estimate Total	50.5 hectares

The Stage 1 development includes the subdivision to create 10 super lots within the Huntlee Town Centre area. These super lots vary in size from 0.17 hectares to 6.35 hectares and will facilitate the initial development of the Town Centre. This part of Stage 1 development site comprises a total of approximately 50.5 hectares.

The proposed layout responds to a detailed consideration of access and movement opportunities and the celebration of key site features including:

- Riparian and valley systems;
- Ridge systems providing high points and distant view opportunities for the community;
- Regional transit opportunities, especially the Hunter Expressway interchange, Wine Country Drive, New England Highway and improved commuter services over time at the Branxton Railway Station (as coal demand falls);
- Pedestrian, cyclist and vehicular connectivity between the four villages and the Huntlee Town Centre;
- Supporting public bus transport access and movement throughout the four villages and the Huntlee Town Centre, including movement to other major centres outside Huntlee;
- Creating a vibrant town centre with defined “quarters”.

It is proposed that within the Town Centre quarters, streets will be laid out as a permeable network that promotes choice of movement between key destinations. Community orientated buildings and uses shall be sited on the most prominent locations within the town centre, particularly within and adjacent to important public spaces.

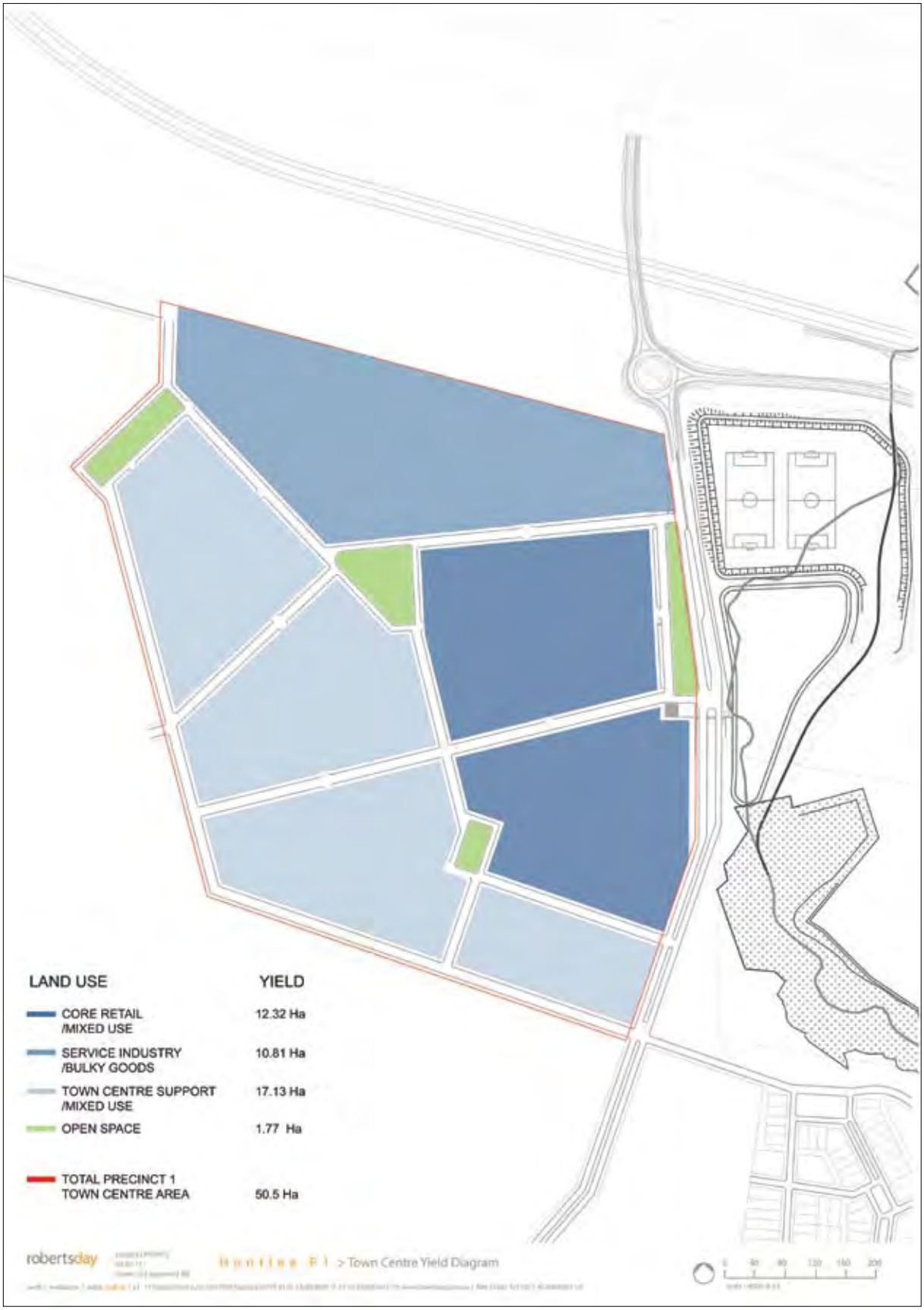


Figure 9 – Stage 1 Town Centre land use

Source: Roberts Day

Core Retail / Mixed Use Area

Land use within the Stage 1 Town Centre has been designed to ensure that a mix of retail, commercial, educational, recreational, entertainment and residential uses will be concentrated in a core retail/mixed use area concentrated along Main Street. Main Street is configured to represent the optimal response to the above opportunities and will be recognisable as the most important street in Huntlee, terminating at a Civic Park to the east. It is proposed that key civic buildings will be located at this eastern end adjacent to Wine Country Drive. The proposed street layout in this area creates a visual focus for traffic travelling along Wine Country Drive, clearly identifying Main Street and the Town Centre core.

Service Industry / Bulky Good Area

Employment generating service uses and light industry are proposed to be located adjacent to the Hunter Expressway corridor for optimal access to the State and Regional road network as well as providing a suitable transitional land use from the expressway to the high quality urban amenity of Main Street

Town Centre Support / Mixed Use

These areas will support lower intensity uses than the core retail centre that will support the town centre functions. Such uses will include education, health and community services, commercial and medium density residential development.

Subdivision of the Stage 1 Town Centre area into 10 super lots enables the broad structure of the Town Centre, including linkages and open space areas to be established and initial infrastructure such as collector roads and utilities to be constructed. The individual super lots will be planned in detail prior to development. The draft Huntlee DCP sets in place detailed principles and controls for development in the Town Centre. The DCP also provides for site specific amendments. It is proposed that such amendments to the DCP will be prepared as part of future development proposals.

5.3.5 Stage 1 Town Centre Residential - Entry Village

The State Significant Site Study for Huntlee proposed a mixed use Town Centre area for Huntlee within which up to 1700 dwellings with a range of type and density would be developed. Included in this application is subdivision for 190 lots to accommodate the first 222 dwellings for the Town Centre area. The Stage 1 Residential area is located in the south east section of the Town Centre on land to the east of Wine Country Drive and immediately north of the village of North Rothbury. The first stage of the Town Centre residential ("Entry Village") will also be the first sub-stage of the development to be constructed.

Entry Village will be bounded to the north by the Entry Road and the proposed Regional Park area. The site has a sloping northerly aspect that will enhance residential amenity through the provision of views and good access to public transport, pedestrian and cycleways connecting with Village One and the Main Street area. The proposed subdivision provides for a range of lot sizes and housing types including medium density and cottage housing adjacent to Entry Road transitioning to traditional lots in the centre of the site and larger country lots adjacent to North Rothbury to complement the historic subdivision size and pattern in that village.

The density distribution for the Stage 1 Town Centre residential area is shown in **Figure 10.**

Figure 10 – Stage 1 Town Centre Residential area

As part of this application, in addition to the proposed residential subdivision, approval is sought for three superlot subdivisions for the balance of the Town Centre area east of Wine Country Drive. These superlots will be the subject of future residential and mixed use subdivision as part of future stage applications. The location and areas of the proposed superlots are outlined in Section 5.3.6 below.

Table 7 – Stage 1 Town Centre Residential Lot Types

Lot Type	Minimum Allotment Size	Number of Allotments	Number of Dwellings
Country	800m^2	27	27
Traditional lots	450m^2	90	90
Cottage Lots	360m^2	70	70
Medium Density	200m^2	3	35
Total		190	222

5.3.6 Stage 1 Proposed Superlots

As outlined in previous sections, this application seeks approval for a number of superlots within the Stage 1 development area. These lots will be subject to detailed planning as part of future applications, however these areas require subdivision as part of this application to facilitate initial infrastructure provision and to also facilitate the development of adjoining areas. The superlots are primarily located in the Town Centre (see Section 5.3.4 above) however other lots are located in the Town Centre residential area as well as Village One.

The location of the proposed superlots is shown in **Figure 11** and the area of each lot are outlined in **Table 8.**

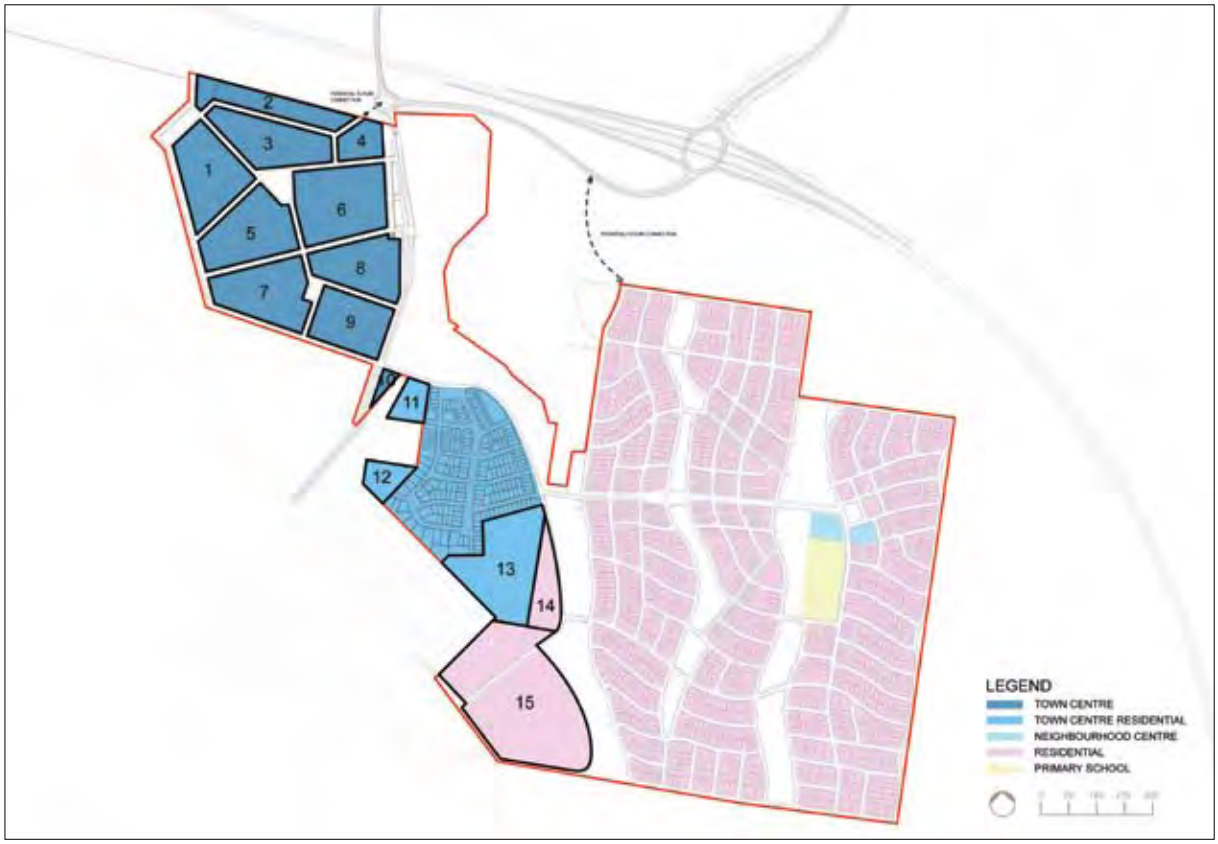


Figure 11 – Stage 1 Proposed Superlots

Source: Roberts Day

Table 8 – Stage 1 Superlot Areas

Superlot	Area (ha)
1	4.9
2	3.2
3	4.5
4	1.8
5	5.2
6	6.3
7	5.0
8	4.2
9	4.0
10	0.4
11	1.2
12	1.3
13	6.9
14	2.5
15	14.8

5.3.7 Wine Country Drive Large Lot Residential Area

This component of Stage 1 is located on cleared land with Black Creek forming the western boundary and Wine Country Drive the eastern boundary. Some lots on the western sections of the site are affected by flooding from Black Creek, however adequate flood free housing sites and access is provided to all lots. The development is designed on a minimum 2,000m^2 lot which provides varied housing opportunities within a garden-like setting. It is proposed to subdivide the site into 120 lots. The proposed subdivision plan is shown in **Figure 12**.

The site layout and urban design outcomes reflect the constraints and the opportunities of the site. Wine Country Drive to the eastern side of the site has a potential to impact on the development. As this is a main road within an 80km/h area, direct access to individual lots is not desired. In addition, the road creates a noise component and lots have been set back from the main road creating a buffer strip to reduce this impact.

Lots fronting a service road, which will provide a front yard view of the lots to present a positive visual appearance from the main road. The main distributor road within the subdivision has been aligned in a north-south direction, approximately on the line of the existing power easement and fibre optic cable. Relocation of the cable and the power line to underground will be required within this general area and the location of the internal road in this location reduces adverse impacts of having to move these services elsewhere.

Lots are generally orientated in an east-west direction, which although not critical for 2000m^2 lots, improves solar access. One primary and a possible secondary access option is provided for the site in a location that maximises site distance north and south on Wine Country Drive.

Open space linkages are created in an east-west direction within the existing drainage lines creating a permeable subdivision pattern linking Wine Country Drive through to Black Creek and the proposed open space network.

Figure 12 – Wine Country Drive Large Lot Residential Subdivision Plan

Source: HDB

5.3.8 Open Space and Public Domain

A Landscape Concept has been developed for Stage 1 by Hassell, and is included at **Appendix F.** The key landscape principles which underpin the public domain development within Stage 1 are:

- Create and overall landscape setting that responds to the site's natural assets including natural systems, topography and vegetation;
- Protect flora and fauna habitats through the creation of conservation areas;
- Protect and enhance watercourses and significant riparian vegetation;
- Create parks and streets that celebrate the natural landscape and the needs of the surrounding community;
- Create parks and streets that are of a high quality and which promote local character and identity;
- Provide pedestrian and cycleway connections through the conservation lands and beyond the site; and
- Provide large shady trees as a relief from the new urban environment.

The overall Landscape Concept for Stage 1 is shown in **Figure 13** and in greater detail in **Appendix F.**

The key components of the Landscape Master Plan are outlined below.

Anvil Creek Regional Park

A major new regional park will be created as part of Stage 1 in the Anvil Creek Floodplain to the east of the Town Centre and Wine Country Drive. This park will be highly visible and accessible and become a memorable civic focus for the new Town Centre celebrating the natural features of the local creek system and vegetation communities, accommodate significant water related functions and offer and provide for a range of recreational activities to suit community, family and individual pursuits.

Three main activity areas will be created within the park:

- Village Green
- Civic Park
- Community Park

Village Green

The lowest area of the Anvil Creek catchment will be recontoured to create a large 4.5 hectare detention basin which will be occupied by local sporting fields and a central village green. Features of the park will include car parking and amenities, broad amphitheatre / bleachers and seating in a natural setting to possibly cater for local festivals, market days, large community gatherings and celebrations, picnicking and interpretation.

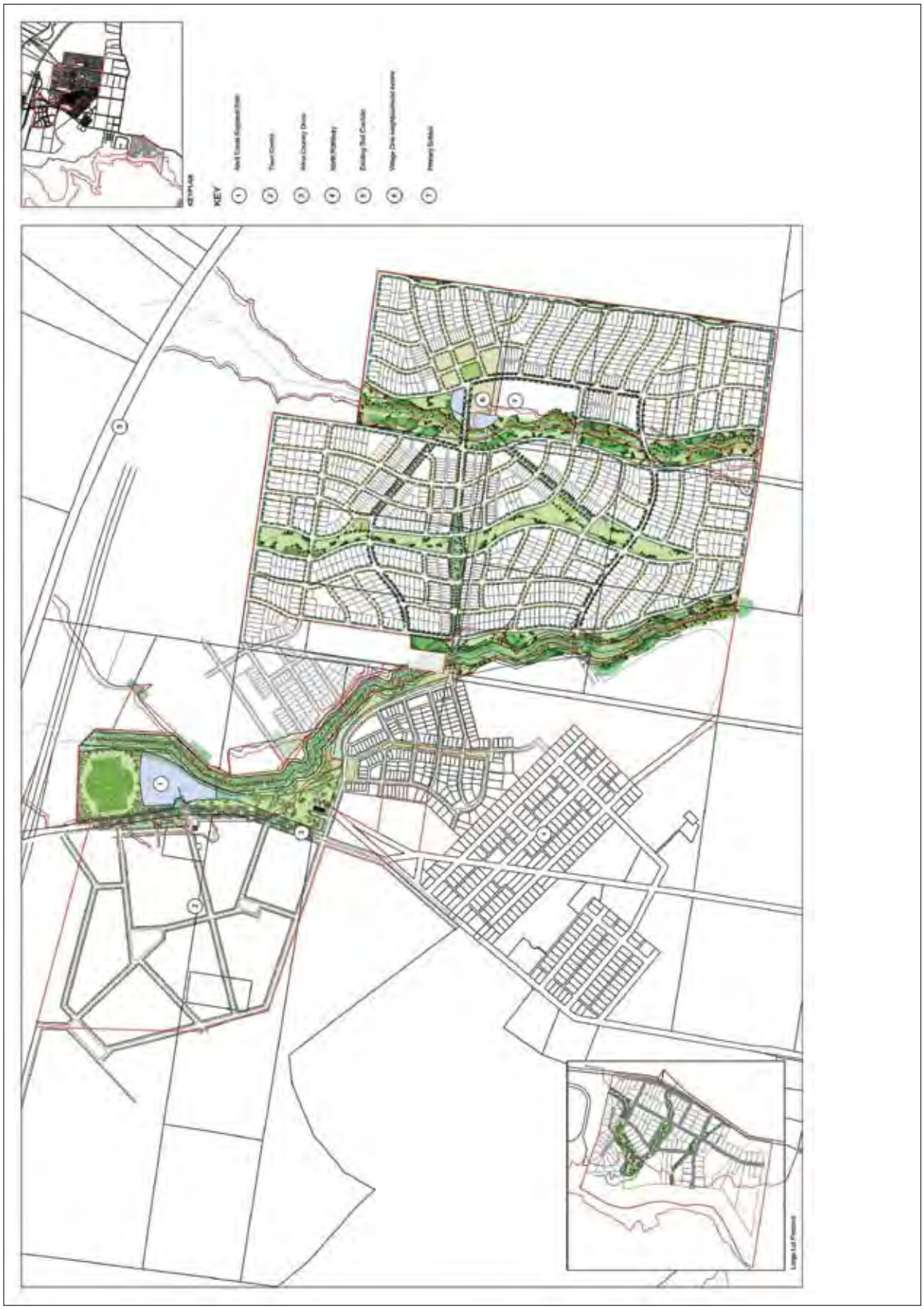


Figure 13 – Stage 1 Landscape Concept

Source: Hassell

Civic Park

A primary focus of the new Town Centre will be a new 3 hectare lake and civic park. The lake is located at the confluence of view corridors from the new Main Street and from Wine Country Drive on approach from south and north. The proposed Lake will receive runoff from the town centre and from Anil Creek upstream, and provide water quality control via fringing wetlands and bio-retention. The Civic Park is a place for lunching, relaxation, promenading and escape from the action of the busy town centre. Features will include a jetty structure, promenade and boardwalks, paved and seating areas with access to the water's edge, a lakeside walk and possibly boating / canoeing.

Community Park

Significant new facilities are proposed in the southern portion of the Regional Park which is envisaged as a major new destination for communities within and outside the new town of Huntlee. Proposed facilities will include a kiosk / cafe, regional standard adventure or themed playground, major cycleway and pedestrian link, amenities, car parking and picnicking facilities to cater for family and group gatherings and celebrations. This park is a place for lingering and relaxing where there is a choice of activities to be enjoyed by a variety of users and age groups.

Other Stage 1 Local Parks

Ridge Top Park

The key principles and features which underpin the Ridge Top Park are:

- Large and open in scale, taking advantage of existing long vistas framed by vegetation;
- Use of large scale "land art" to take advantage of the park's size;
- The existing "meadow" character to be maintained and upgraded, with a managed mowing regime creating informal paths and rooms through the park;
- Proposed uses include BBQ shelters, look outs, informal kick about areas and passive recreation.
- Cycleway network through the reserve and linking to adjoining residential precincts

Eastern Riparian Corridor

The key principles and features which underpin the Creek Line Reserves are:

- Creek Line Park to be naturally themed reflecting the existing creek line and the Lower Hunter Redgum Forest (EEC) on site;
- Through the effective delivery of Water Sensitive Urban Design principles, the Creek Line Reserve provides stormwater management and cleansing;
- Dry basin bio-retention swales divide the reserve into a series of "rooms" providing a variety of uses;
- The existing creek to be reinforced and upgraded where required;
- Proposed uses include BBQ shelters, informal kick about areas, passive recreation, informal amphitheatre spaces.

Village Centre Park

The key principles and features which underpin the Village Centre Park are:

- Urban style central park, provides a centre piece to the village as well as accent point for long distance vistas down the main village entry road and diagonal roads;
- A large hard edged waterbody to provide visual amenity with required detention capacity;
- Proposed uses include BBQ shelters, look outs, terraced waterbody, terraced play area, amphitheatre;
- The park to reflect the Contemporary Australian theme of the Village Centre and an overall theme of vineyard living.

Neighbourhood Parks

The key principles and features which underpin the Neighbourhood Parks are:

- Neighbourhood parks to reflect the contemporary Australian Style of the Village Centre, and provide small scale play and gathering facilities for individual housing precincts;
- Uses to include BBQ shelters, play, informal gathering spaces and lookouts with provision for seating, interpretive elements, lighting, fencing and signage;
- Where appropriate parks to incorporate Water Sensitive Urban Design principles;

5.3.9 Road Hierarchy, Circulation and Public Transport

The road hierarchy has been designed to comply with the design environment appropriate to road function and facilitate a safe environment for all users, including pedestrians and cyclists. The road hierarchy responds to the particular local topography to provide for streetscape environments that facilitate a range of experiences including view penetration, sense of entry to the precincts and visual connectivity within the Village One neighbourhood and with the village centre. The street pattern and layout has also been designed to facilitate the location and efficient function of local utility services and drainage as well as the provision of bus services such that routes are located within close proximity and access to residences.

A key requirement of the Huntlee development will the upgrade to Wine Country Drive which is proposed to be duplicated from the Hunter Expressway Link Road roundabout in the north to the proposed entry to Residential Village One just north of North Rothbury. Initially the duplication will be to dual carriageway with 2 lanes in each direction. The road reservation width will be increased to 32 metres to accommodate this upgrade and a potential further upgrade to 3 lanes carriageway for later stages of the development if required. Key intersections along Wine Country Drive that will be implemented or upgraded are:

Rothbury Street / Wine Country Drive

Ultimately a fully signalised 4 way intersection is required at this location but not until future sections of the Town centre and / or Village 1 are progressed. This intersection will function as a secondary access for Huntlee Stage One allowing access for traffic onto Wine Country Drive to be dispersed across more than one location. It will also provide access for North Rothbury to the new facilities within Huntlee.

Wine Country Drive / Rural Residential Land Parcel 1

A new 3 leg Channelised Right turn intersection (Type CHR) is planned on Wine Country Drive to satisfactory access to the northern rural residential land parcel.

Wine Country Drive/ Huntlee Stage One Main Access

A fully signalised 4 way intersection is required at this location, and is able to be constructed off line because of the proposed road widening to improve the horizontal alignment of WCD. This intersection will also function satisfactorily until 1000 dwellings in Village One are occupied, at which time a second access will be required on to Wine Country Drive.

Wine Country Drive/ Main Street Access

A signalised 3 leg intersection is proposed, and will be required as soon as development of the Huntlee Town Centre proceeds. This intersection will function satisfactorily until 1000 lots of Huntlee Stage One are operational, at which time a second access will be required to avoid congestion on the Wine Country Drive intersections.

Hunter Expressway Link Rd / Huntlee Stage One Secondary Access

A 3 leg roundabout is proposed for this intersection. Intersection modelling has indicated an offset roundabout will function satisfactorily under full development loadings. This intersection will also function satisfactorily until 1000 dwellings in Village 1 are occupied, at which time a second access will be required on to Wine Country Drive.

The general arrangement for the upgrade of Wine Country Drive, including key intersections is at **Appendix A.**

Within the development areas, the following road hierarchy is proposed:

Residential Village 1

- Entry Street connecting the Stage 1A Residential Village with the Town Centre and Wine Country Drive;
- Collector Roads characterised as wide residential streets with a leafy parkway character. The Collector Roads also function as bus routes through the precinct;
- Avenue Streets which are wide residential streets that form view corridors linking high points along the ridgeline to the Village Centre;
- Local Streets;
- Local Park Edge Streets which are local streets adjacent to open space areas; and
- Access Lanes.

Town Centre

- Wine Country Drive Boulevard which links Huntlee with the Hunter Expressway Link Road to the north and North Rothbury / Cessnock to the south and forms an important edge to the Town Centre and Regional Park;
- Town Centre Street (Type 1) which includes Main Street;
- Town Centre Street (Type 2);
- Civic Streets which form the perimeter of

The design and layout of the road system and associated hierarchy will accommodate a proposed bus route. The bus route, shown in **Figure 14** will undertake a loop through the Village 1 area via the Village centre, including school, community facilities and neighbourhood shops. The route will ensure the vast majority of all dwellings within the residential area are within 400m of the bus stop.

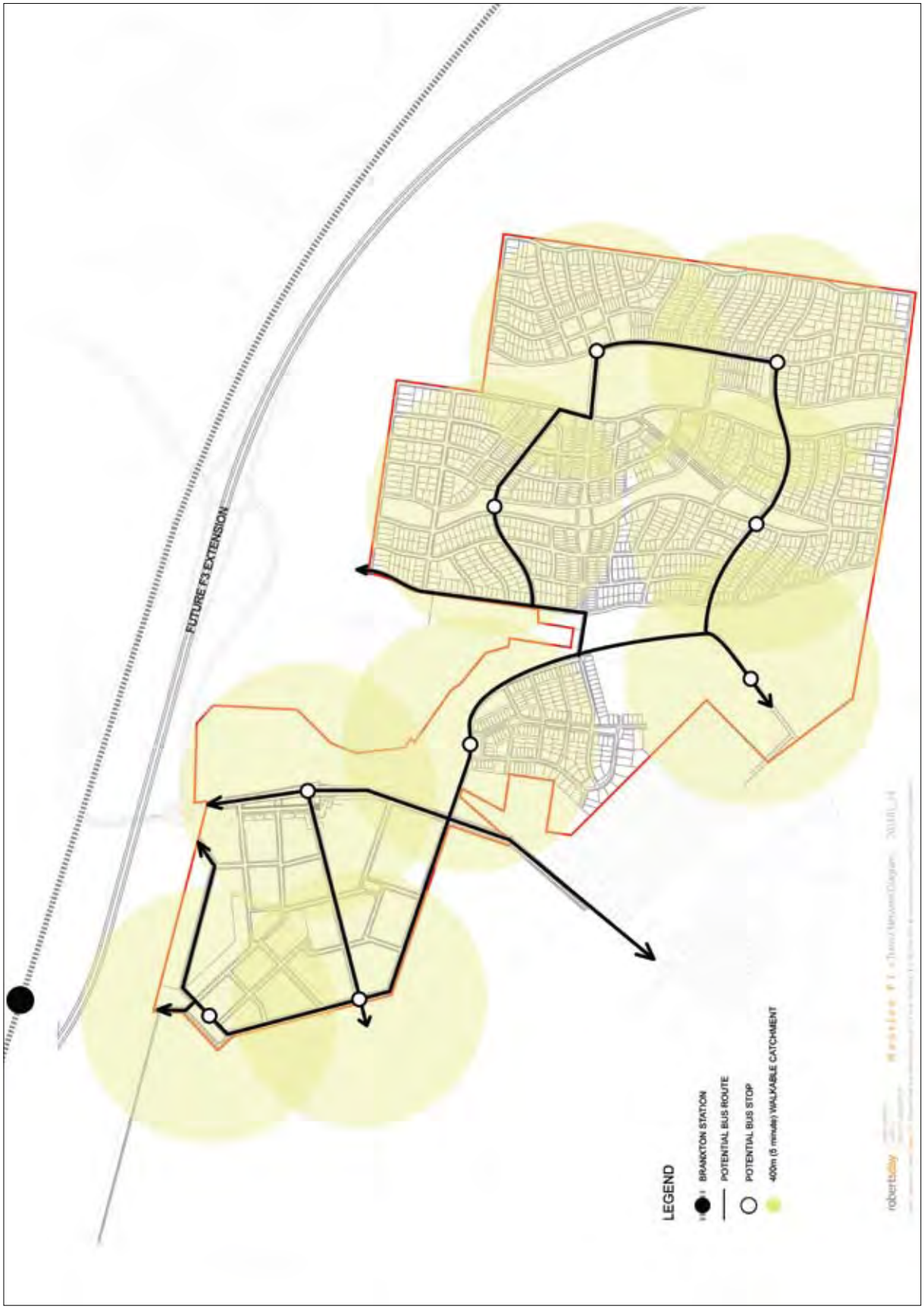


Figure 14 – Stage 1 Proposed Bus Routes

Source: Roberts Day

The Road hierarchy and corresponding street cross sections for Stage 1 is shown in **Figures 15** to **18**. The proposed road carriageway and reserve widths are outlined in **Table 9**.

Table 9 – Stage 1 Road Carriageway and Reserve Widths

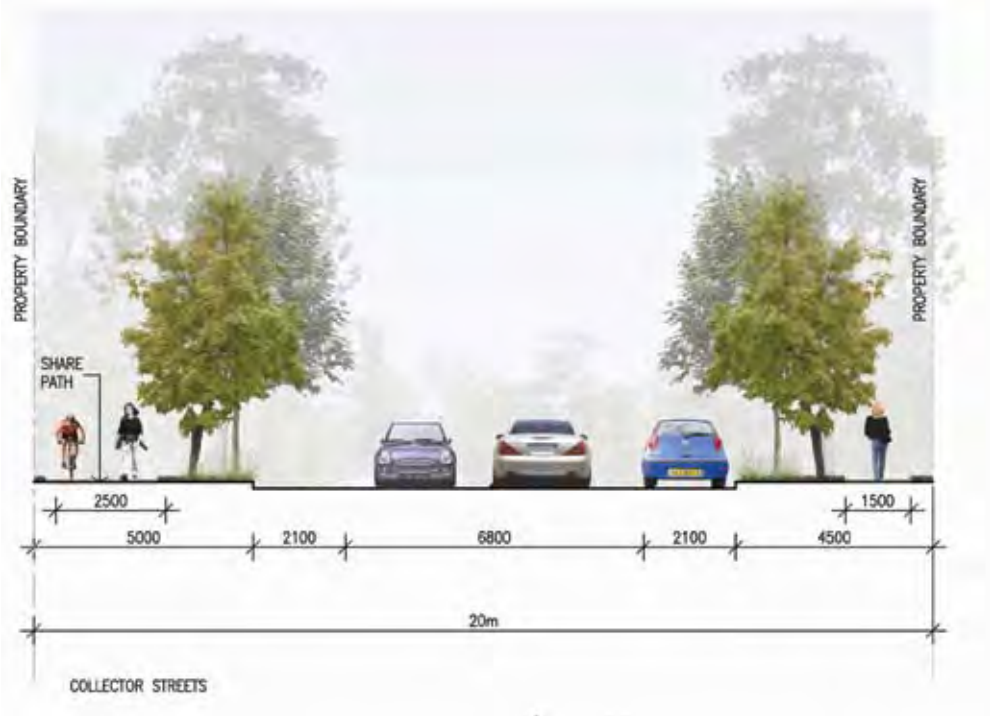
Road Type	Minimum Carriageway Width (M)	Minimum Verge Width (M) Each Side	Minimum Road Reserve (M)	Minimum Footpath Required (M)
Wine Country Drive	8.8m (northbound) 10.9m (southbound)	3.5m	32m	1.5m
Town Centre Type 1 Street	12m (incl possible rain garden)	5m	22m	3m
Town Centre Type 2 Street	11.2m	4.5-5m	19.2-21.2	3m
Entry Street	9.1m	5m & 1.5m	15.6m	1.5m
Avenue Street	5.1m (each direction)	4.5m (3m-10.8m Central Median)	23m	1.5m (2.5m including cycleway)
Collector Roads	11m	4.5m	20m	1.5m (2.5m including cycleway)
Local Streets	7.7m	4 – 4.5m	15.7 – 16.7m	15m
Edge Street	7.7m	4 – 4.5m	13.2-13.7m	1.2 – 1.5m
Laneways	5m	1.5m	8m	Nil

Figure 15 – Stage 1 Street Hierarchy

Source: Hassell

Figure 16 – Stage 1 Wine Country Drive Road Carriageway and Reserve Widths

Source: Hassell


PROPERTY BOUNDARY
SHARE PATH
PROPERTY BOUNDARY
2500
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2100
6800
2100
4500
20m
COLLECTOR STREETS


PROPERTY BOUNDARY
SHARE PATH
PROPERTY BOUNDARY
2500
1500
4500
5100
3-10.8m
5100
4500
30m (MAX)
AVENUE STREETS

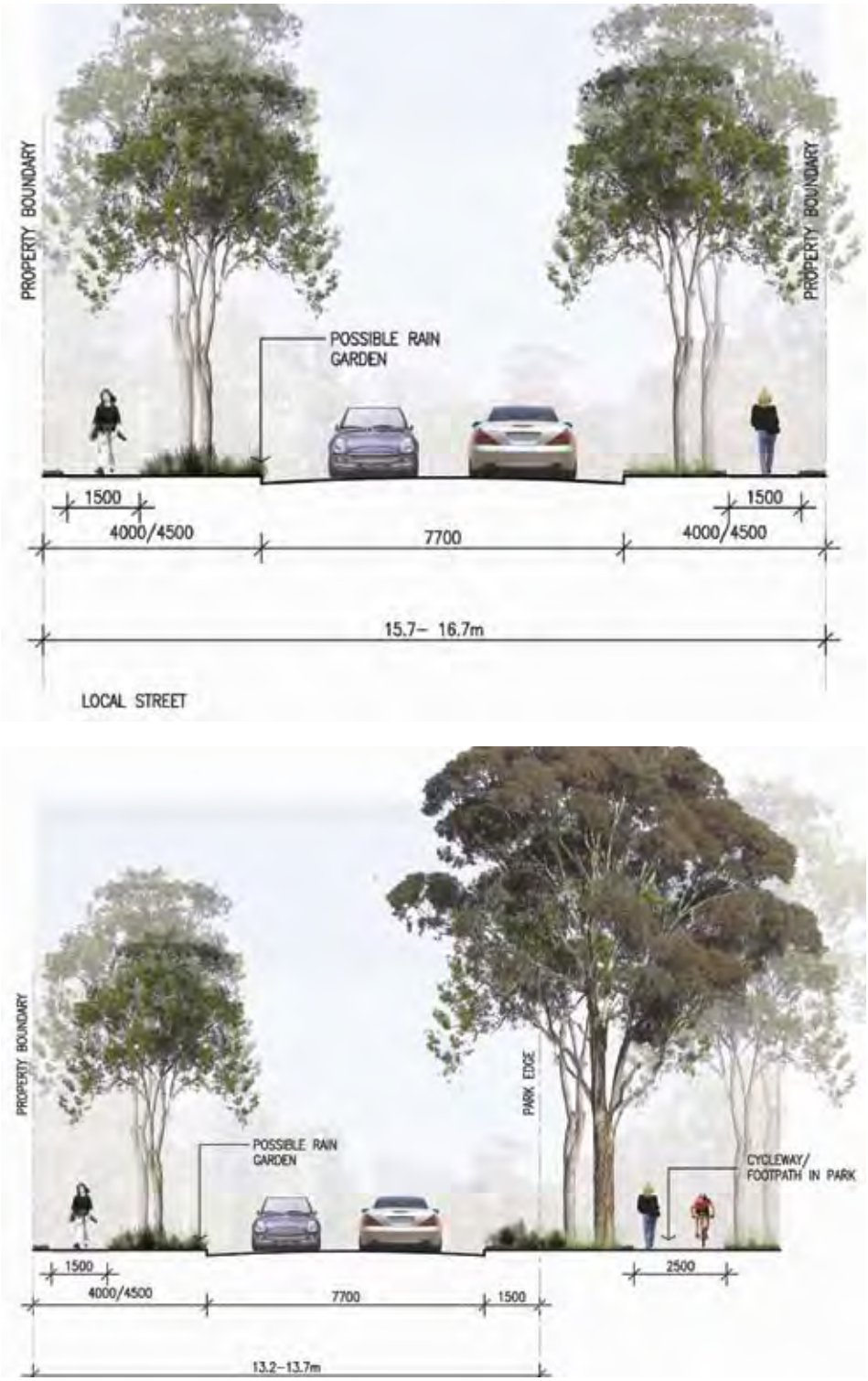

Figure 17 – Stage 1 Residential Village - Road Carriageway and Reserve Widths

Source: Hassell

Figure 18 – Stage 1 Town Centre - Road Carriageway and Reserve Widths

Source: Hassell

5.3.10 Pedestrian and Cycle Network

A key component of the overall layout for Stage 1 is the planned network of pedestrian and cycle linkages, which aim to encourage walking and cycling as much as possible for on-site movement, as well as providing links both within the site and to surrounding precincts and beyond, in particular the Town Centre and employment areas.

Pedestrian and cycle links will be important public spaces and principal movement corridors through the site. Pedestrian only areas will be incorporated into the design of important public spaces such as the Village centre. The network takes advantage of the open space corridors running through the site, maximising their activities, views and vistas and natural vegetation features. The network also takes advantage of the street pattern, to connect with public transport and to take advantage of the desire lines created by the Regional Park, Entry Street and Diagonal View Corridors that focus on the Village Centre. Generous landscaped verges along road corridors will further add to their attractiveness. The dedicated cycle network proposed for Stage 1 is shown in **Figure 19.**

5.3.11 Utilities and Services

Internal service networks for the development for wastewater, potable water, combined services (electricity, telecommunications and gas) and inter-allotment drainage for the Stage1 area have been developed. A full description and assessment of the provision of utility services both internal to the site and in terms of regional capacity is at Section 6.5.

5.3.12 Staging

Figure 20 illustrates the proposed staging framework for the first 6 years of the Stage 1 development. It is proposed to broadly develop Stage 1 of Huntlee over a number of sub-stages. Each sub-stage contains a variety of lot types. This will ensure a diversity of housing is developed early in the life of the project.

Sub-Stage 1

Development will commence in the Town Centre residential area immediately east of Wine Country Drive between the Regional Park (and the Entry Road) and the Village of North Rothbury. This sub-stage will be known as “Entry Village”. Entry Village will contain 190 lots of varying types including larger country lots of at least 1000m^2 to the south of the release area forming a transition to the existing Village of North Rothbury.

Within the Town Centre, Sub-stage 1A will see the implementation of the first section of Main Street including the construction of its intersection with Wine Country Drive. Stage 1B which will be implemented concurrently, will see the provision of infrastructure to support development of the first section of the service industry area.

The Upgrade to Wine Country Drive and associated intersections with the Town Centre and Residential Village 1 will commence as part of Sub-stage 1. In terms of the provision of open space and landscaping, the Anvil Creek Regional Park will be constructed as part of Sub-stage 1.

Figure 19 – Stage 1 Cycle Network

Source: Hassell

Future Sub-stages

In terms of the remainder of Residential Village One, as can be seen from **Figure 20**, development of Sub-stage 2 will progress immediately east of the Entry Village on the other side of the Anvil Creek Tributary. Subsequent stages (3,4 and 5) will be developed on the western side of this ridge to ensure efficient roll out of water, sewer and stormwater infrastructure. Development will then progress eastwards across Ridgetop Park down the hill on the eastern side (substages 6-9). Development of the Village 1 Neighbourhood Centre and surrounding area will be sub-stages 10-14.

The number of lots to be developed for sub-stages 1-14 are shown in **Table 10**.

For the Town Centre, Stage 2A infrastructure will be implemented to facilitate the planning and development of an education precinct at the western end of Main Street. Concurrently, Stage 2B infrastructure will be implemented to facilitate planning and development for medium density housing and mixed uses.

Stage 3A / 3B will be an extension of infrastructure to the western end of Main Street to facilitate planning and development of additional retail and mixed uses to support the growing population. Stage 4 infrastructure will complete the Main Street.

A full Infrastructure Costing and Stage Delivery Plan is at Appendix M and addresses the stage delivery of serviced lots and superlots as well as the provision of water and wastewater infrastructure and roadworks.

Table 10 – Residential Village One Sub-stage Lot Yield

Sub-stage	Number of Lots
1	190
2	75
3	60
4	51
5	43
6	54
7	45
8	44
9	77
10	48
11	47
12	63
13	53
14	74

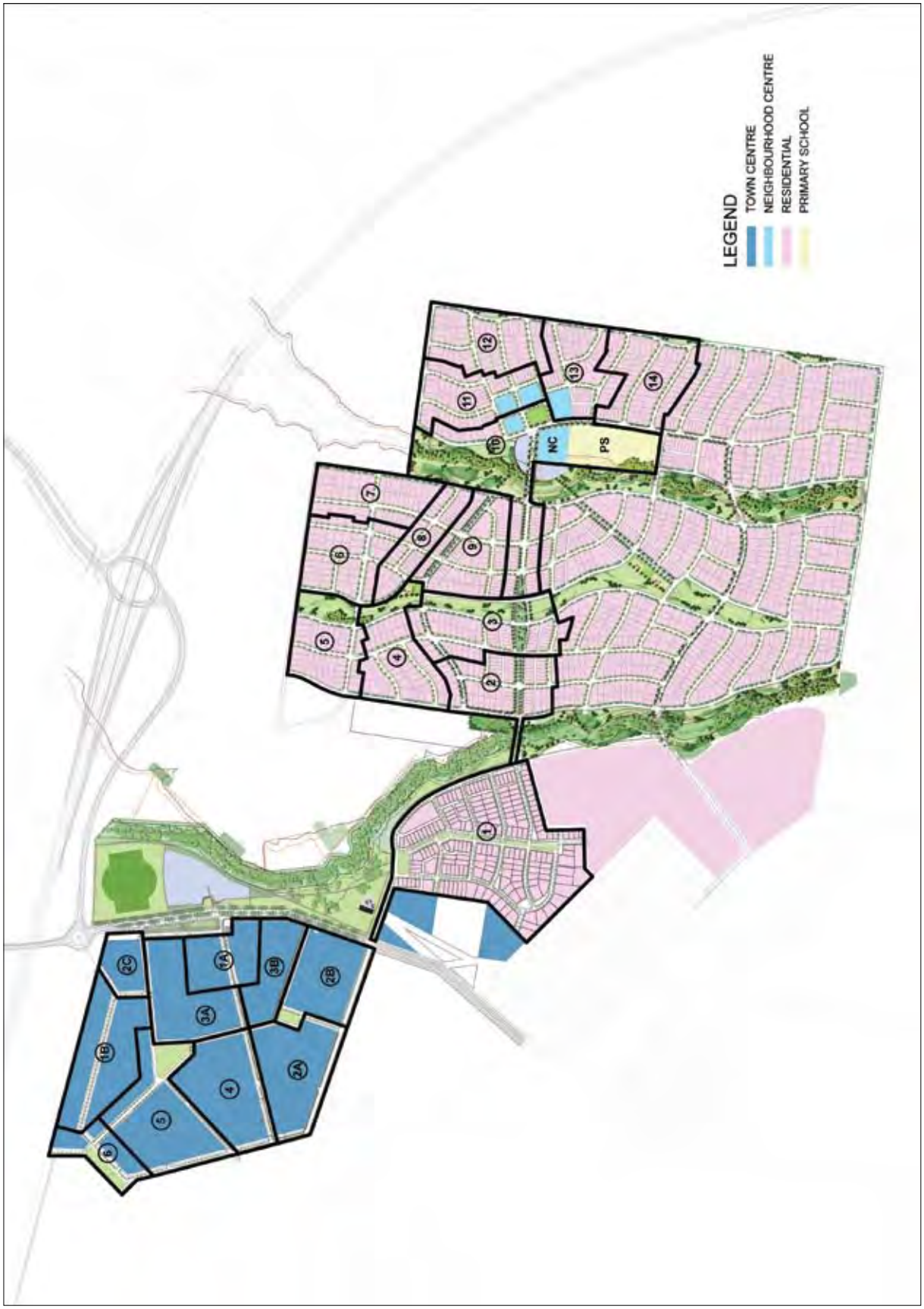

Figure 20 – Proposed Staging Framework

Source: Roberts Day

5.4 Consideration of Alternatives

The following outlines the various development alternatives considered for the Stage 1 Huntlee development. These have largely been the result of progressive discussions with the NSW Government, and detailed analysis of the site's attributes to determine the suitable locality for land uses and formulate urban design outcomes for the site.

5.4.1 Alternative Land Use Configurations

The development framework for Huntlee takes into consideration the site's relationship to adjoining land uses particularly the interface with state highway infrastructure (both the New England Highway and the Hunter Expressway) and proximity to North Rothbury and Branxton townships. Throughout this process a number of different urban and landscape designs have been considered and tested to develop the proposed urban development framework, to select the most suitable development option for the site.

More specifically, the proposed development footprint for the site was determined on suitability for development based upon areas of the site with the least environmental constraints, good accessibility, good access to services and appropriate interface with surrounding lands. This was also weighted with the requirement to provide at least 797ha of high conservation land within the site.

5.4.2 Consequences of Not Proceeding

Should the proposed Huntlee development not proceed the following economic, social and environmental benefits would not be attained:

- the provision of new residential and employment land within the Lower Hunter Region;
- the provision of large areas of conservation lands to be conserved and dedicated to the public;
- provision of improvements in infrastructure and service for nearby areas, such as North Rothbury ;
- fulfilment of the expectations of the Lower Hunter Regional Strategy to provide a suitable quantum of employment lands, and resultant job opportunities;
- restoration and rehabilitation of drainage corridors across the site; and
- remediation of previous mining and land fill operations across the site.

6.0 Assessment of Planning Issues

The following is our assessment of the environmental effects of the proposed Project Application development as described in the preceding sections of this report. The assessment addresses the Director General's Requirements issued on 19 November 2010 (**Appendix B**).

The key planning issues associated with Stage 1 of Huntlee are as follows:

- Traffic and Transport;
- Flooding and Stormwater Management;
- Utility Services
- Biodiversity;
- Energy Efficiency; and
- Bushfire Management.

6.1 Director General's Environmental Assessment Requirements

Table 11provides a summary of the matters listed in the DGRs and where each requirement has been addressed in this document.

Table 11 – Director General's Requirements

Director Generals Requirements	Report Section
The Environmental Assessment (EA) must include - An executive summary;	Executive Summary
A detailed description of the project including the: - details of and justification for works proposed; - alternatives considered; and - infrastructure staging;	Section 5
A consideration of the following with any variations to be justified: - all relevant State Environmental Planning Policies, and - relevant legislation and policies.	Section 3
A draft Statement of Commitments, outlining commitments to the project's management, mitigation and monitoring measures with a clear identification of timeframes and who is responsible for these measures;	Section 7
A detailed conclusion justifying the project, taking into consideration the environmental impacts of the proposal, mitigation measures to address these impacts, the cumulative impacts of the proposal, the suitability of the site, and whether or not the project is in the public interest;	Section 8
Identify the development contributions applicable to the site and, if relevant, and any public benefits to be provided with the development, and consider any relevant development contributions plans prepared to date;	Section 6.12
A signed statement from the author of the EA certifying that the information contained in the report is neither false nor misleading; and	Statement of Validity
A report from a quantity surveyor identifying the correct capital investment value for the stage 1 project application.	Appendix M
The EA must address the following key issues and discuss how the proposed development is consistent with the Development Control Plan prepared for this part of the site:	

Director Generals Requirements	Report Section
Urban Structure Provide an assessment of the detailed urban structure, analysing the following issues: - Land use (residential, employment, community, etc) - Residential mix in terms of lot size and dwelling density - Subdivision patterns and utilisation of the sire's setting - Recreation and open space provision - Road layout, hierarchy and local access points - Pedestrian and cycle access and circulation Outline principles for built form, urban design and the public domain for the town centre and employment lands.	Section 5
Subdivision - Provide a detailed subdivision layout, including (but not limited to) easements, boundary lengths, lot areas - Provide detailed design of infrastructure including roads (including a selection of typical cross sections and long sections), drainage, open space, pedestrian and bicycle infrastructure.	Section 6 / Appendix A / Appendix G
Transport and Accessibility Prepare a detailed Traffic Study that includes (but is not limited to) the following: - Identify all relevant vehicular traffic routes and intersection for access and egress; - The anticipated vehicular traffic generated from the proposed lots and the distribution on the road network. - An analysis of the cumulative traffic and transport impacts of this development on the existing township taking into consideration other proposed developments; - identify the necessary the road network infrastructure upgrades required to maintain existing levels of service on the local and classified road network. - Proposed pedestrian and cycle access and circulation within and to the site.	Section 6.2 / Appendix E
Management and Maintenance of Open Space Outline the long-term management and maintenance of any areas of open space, riparian corridors or conservation (including any offset areas).	Section 6.12.2
Biodiversity Address the impact of the development of existing threatened and endangered native flora and fauna and their habitats, especially Persoonia pauciflora, and outline proposed mitigation measures.	Section 6.6 / Appendix I
Bushfire Risk Assessment Provide an assessment against Planning for Bush Fire Protection 2006 and identify the ongoing management arrangements of any proposed APZs.	Section 6.7 / Appendix J
Geotechnical and Mine Subsidence - Identify and assess geotechnical issues, noting the implications for slope stability, rehabilitation (compaction) and the presence of potential and actual acid sulfate soils. - Identify and assess mine subsidence issues noting any risk factors associated with the former mining uses at or near the site - Outline measures that would be implemented to avoid, minimise, manage or remediate potential subsidence or geotechnical issues encountered at the site.	Section 6.10 / Appendix G

Director Generals Requirements	Report Section
Flooding Identify any flood risk associated with the site and demonstrate that the proposed development is suitable in terms of flooding and evacuation and is consistent with the NSW Floodplain Development Manual; the management of flood liable land (2005). Identify the building footprints above 1:100 flood level for flood affected lots.	Section 6.4 / Appendix H
Ecologically Sustainable Development (ESD) Demonstrate how this stage of the development will commit to ESD principles in design and construction, and outline commitments to sustainability including water re-use, waste minimisation, the minimisation of energy use and car dependency.	Section 6.11
Drainage and Stormwater Management Address drainage and stormwater management issues, including: on site detention of stormwater; water sensitive urban design (WSUD); waste water re-use; drainage infrastructure and groundwater.	Section 6.3 / Appendix H
Contamination Identify and detail any measures to be undertaken to appropriately remediate the site in accordance with State Environmental Planning Policy No 55 - Remediation of Land (SEPP 55) and any existing remediation notices.	Section 6.10
Construction Impacts - Outline ongoing principles and proposed management for construction for access, earthworks, open space construction, drainage and riparian corridors and conservation interface areas. - Outline how construction impacts, including (but not limited to) noise, vibration, dust, erosion will be managed in relation to the amenity of existing and future residents.	Section 6.13.2 / Appendix G
Infrastructure Delivery Plan - Prepare an Infrastructure Delivery Plan identifying community infrastructure requirements including associated costings and apportionment and delivery timeframes. - Prepare a utility and infrastructure servicing strategy that provides evidence that the development can be adequately serviced in terms of water, sewerage, stormwater, gas (if appropriate), electricity and telecommunications services and outline staging for delivery.	Section 6.5 / Appendix M
Developer Contributions - Identify and address the additional demand created by the development on existing public facilities and infrastructure. - Detail the likely scope of any planning agreement and/or developer contributions between the proponent, Council and State agencies.	Section 6.12
Consultation The EA should reference any consultation undertaken with relevant parties. You should undertake an appropriate level of consultation with local Councils, relevant State and Commonwealth agencies, utility providers, emergency services, adjoining landowners and the local community and provide written evidence/documentation of any consultation carried out. The EA shall clearly indicate issues raised by stakeholders during consultation and how those matters have been addressed in the proposal.	Section 4

6.2 Traffic and Transport

Consistent with the overall traffic framework proposed in the Huntlee SSS Study, Better Transport Futures has prepared a Transport Management and Accessibility Plan (TMAP) for the Huntlee development. The TMAP addresses transport issues for the overall Huntlee development, including Stage 1. The full TMAP is at **Appendix E**. The following section includes extracts from the full study.

6.2.1 Stage 1 Traffic Assessment

Modelling Process and Road Infrastructure Assumptions

To assess the road traffic impacts of Huntlee, a Paramics model has been developed in conjunction with SIDRA intersection modelling. This modelling in turn was compared with modelling undertaken by Colin Buchanan (China) applying the RTA Hunter Regional (TransCAD) Model.

This multi level modelling approach has allowed consideration of regional movements and planned improvements such as the Hunter Expressway, to guide the localised modelling tools which have been applied to determine the required level of road infrastructure to support Huntlee's development.

A number of key assumptions have been made as part of the modelling process. The following external infrastructure upgrades have been assumed to be completed before Huntlee Stage 1 is occupied:

- Hunter Expressway, a four lane dual carriageway freeway standard road, linking the New England highway at Branxton to the F3 Sydney Newcastle Freeway at Seahampton, and to Newcastle via the Newcastle Link Road;
- Full interchange facilities adjacent to the town of Branxton, connecting to the New England Highway, and to Wine Country Drive. This will provide a full by pass of the existing Branxton village for east west and north south main road traffic.
- Completion of the Hunter Expressway link road, connecting Wine Country Drive to the planned Branxton Interchange, and providing a bypass of the town.

In terms of internal road infrastructure to be provided as part of the Stage 1 development, a number of key assumptions have been made as part of the modelling process, including:

The planned road network improvements that will support Huntlee include:

- A dual carriageway between the Hunter Expressway off ramp roundabout and Wine Country Drive south to the entry into Residential Village 1 just north of North Rothbury. The road reservation width has been increased to 32 metres, with some localised widening at intersections.
- Four (4) new intersections, three (23) on Wine Country Drive and one (1) on the Hunter Expressway link Road to service access into the Town Centre and Residential Village 1.
- Separate intersections with Wine Country Drive and Old North Road for access to the isolate rural residential precincts to the south of the Huntlee.

The effect of these assumptions and sensitivity testing is to allow for a degree of flexibility in the form of the base road infrastructure, so that future service levels can be maintained at satisfactory levels.

Local Network modelling for the project has been completed using two models.

- A Paramics traffic model has been completed on the road network, for the critical PM Peak network. The base model was calibrated against existing traffic counts completed as part of this study. The Paramics model has been run for the future design years of 2020, 2026 and 2031.
- Sidra analysis has been completed for the future 2020PM peak design year to assess road upgrade requirements for the road network within the study area. This Sidra analysis has been completed for each of the intersections identified within the study brief as well as a number of other intersections identified as critical to the overall network.

In addition to the above, in consultation with the NSW RTA Huntlee Pty Ltd has formerly requested access to the Hunter Region transport (TransCAD) model. This license is now in place and allows a third level of modelling to be completed, to add rigour by way of directly referencing the recently completed modelling work into the Lower Hunter Transport Needs Study.

There are several areas of potential variance in traffic generation associated with the Huntlee Master Planning process and provide an additional level of rigour by way of directly referencing the recently completed modelling work as part of the Lower Hunter Transport Needs Study.

There are several areas of potential variance in traffic generation associated with the Huntlee project. These include;

Trip Containment

- In the context of the Huntlee Stage 1 this has been assumed to be zero initially increasing to the RTA accepted 25% level. This is because initially it is expected the ability to contain trips at this early stage will be minimal, but with development local schools and shops this will increase to traditional subdivision levels.
- For the Rural Residential parcels of Huntlee Stage 1, this has also been assumed to be zero, with no ability to contain trips from these isolated development parcels.
- For the Town Centre the attraction of trips is assumed as from Huntlee Stage 1 as above, with the balance from external sources.

Mode Split

- In the context of Huntlee Stage 1 this has been assumed to be as per RTA current standards, with no allowance for any levels of improved public transport. This is conservative but presents a worst case scenario in terms of road and intersection capacity requirements.

Traffic Generation and Flows – Paramics Modelling

The RTA Guide to Traffic Generating Developments has been used to identify the capacity of key links in the road network. Table 4.5 from the Guide (reproduced below as **Table 11**). Specifies the peak hour flow capacity for one and two lane carriageways. This has been to calculate the capacity/flow ratio of each key link in the study area and identify where capacity issues develop over the next 20-25 years.

Applying **Table 12** indicates where Levels of Service are deteriorating and in what timeframe these reductions in Levels of Service are occurring.

Table 12 – Urban Road Peak Hour Flows per Direction

Level of Service	One Lane (vehs per hour)	Two Lanes (vehs per hour)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Source: Table 4.5, RTA Guide to Traffic Generating Developments, version 2.2 dated October 2002

The Paramics model forecast of traffic flows on Wine Country Drive, Hunter Expressway Link Road and Old North Road with full Stage 1 development at Huntlee in the AM peak hour is shown in **Figure 21.** It should be noted that the analysis includes flows from the Old North Road large lot residential area, which will not form part of Stage 1.

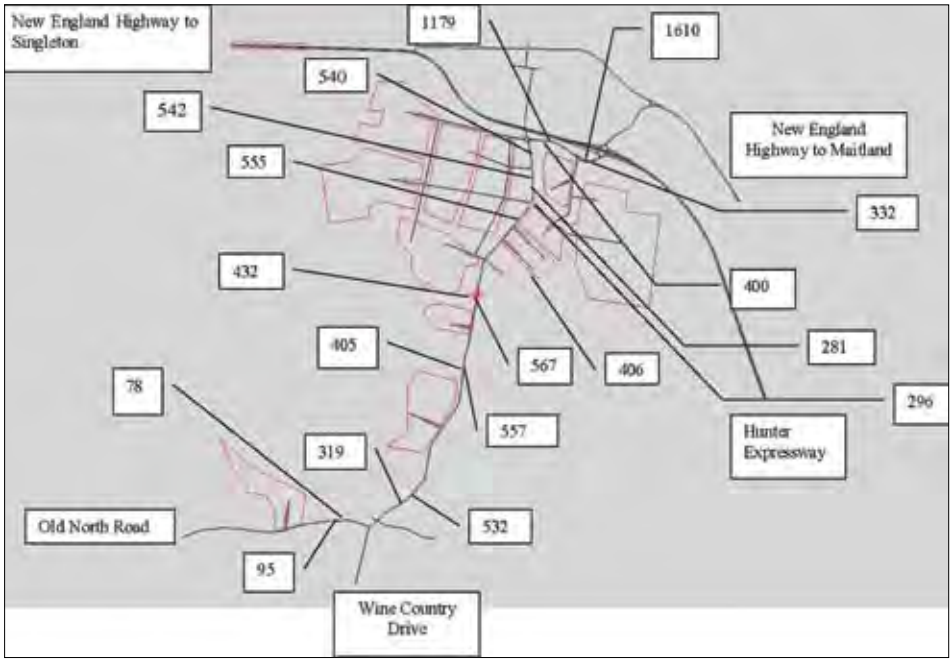

Figure 21 – Paramics Model AM Peak Forecast Traffic Flows for Stage 1 Development

Source: Better Transport Futures

Based on the Paramics modelling the following conclusions are drawn:

- The Hunter Expressway Link Road is required to operate as a 4 lane dual carriageway under Huntlee Full development;
- Forecast flow levels on Wine Country Drive are within 2 lane carriageway service levels. This would suggest that full duplication of Wine Country Drive is not required until the latter stages of development, provided the access staging applied here is adopted;
- The impact of the access choices on Wine Country has a significant influence on the levels of flow on this road. For example, once Access Intersection 3 serving Huntlee Village 1 is built, this takes considerable pressure off the traffic flows along Wien Country Drive. The intersection performances however dictate the timing of this access being required, so that junction performance along Wine Country Drive remains at satisfactory levels. Forecast Intersection Operation – SIDEA Analysis.

The forecast performance of proposed intersection of the Huntlee road network with external roads has been considered as required by the road authorities, with full intersection analysis by movement and approach using SIDRA modelling. **Table 13** below provides a summary of the overall intersection performance as an indicator to potential performance of the proposed new and upgraded intersections.)

Table 13 – Summary of Intersection Performance

Location	Cross Street	Movement	LoS Stage 1	Ave Delay (sec)Stage 1	95% Queue (m) Stage 1	LoS FULL PM	Ave Delay (sec) FULL PM
WCD	Main Street	All Vehicles	C	29.7	217.7	A	11.7
		Worst Movement	D	46.7	14	D	43.3
WCD	Stage 1	All Vehicles	C	30.5	202.6	C	30.6
		Worst Movement	B	27.3	74	D	52.6
WCD	RR A	All Vehicles	-	-	-	B	1.4
		Worst Movement	-	-	-	B	27.2

Notes:

a) Results present overall junction performance and worst movement for each nominated intersection

b) Results of SIDRA analysis drawn Huntlee Stage 1 SIDRA modelling

c) Results given for Full Development Scenario drawn from Full Huntlee Model Paramics with HE operational.

d) Intersections 10,11 tested only for full development as type CHR intersections

e) Intersection 12 Old North Road/RR B not tested – assumed as operating under free flow conditions

Road Network Upgrade Requirements for Stage 1

Wine Country Drive

To be built as a dual carriageway between the Hunter Expressway off ramp roundabout and on Wine Country Drive south to the entry into Village 1 just north of North Rothbury. Road reservation width on Wine Country Drive has been increased to 32 metres, with some localised widening at intersections. (Further upgrading for Huntlee Stages 2, 3, and 4 would occur in line with development staging and approvals for those villages).

Hunter Expressway

Whilst already approved and under construction, this project is fundamental road infrastructure required to support the Lower Hunter regional Strategy, and consequently was always assumed as required to support Huntlee. It will be constructed as a 4 lane dual carriageway freeway standard road, linking the New England Highway at Branxton to the F3 Sydney Newcastle Freeway at Seahampton. It will have a full interchange adjacent to the town of Branxton, connecting to the New England highway, and to Wine Country Drive. This will provide a full bypass of the existing Branxton village for east west and north south main road traffic.

Existing Intersection Upgrades for Huntlee Stage 1

Rothbury Street/Wine Country Drive

Ultimately a fully signalised four way intersection is required at this location but not until future sections of the Town centre and / or Village Four are progressed. This intersection will function as a secondary access for Huntlee Stage One allowing access for traffic onto Wine Country Drive to be dispersed across more than one location. It will also provide access for North Rothbury to the new facilities within Huntlee.

Wine Country Drive/Large Lot Residential

A new three leg channelised right turn intersection (Type CHR) is planned on Wine Country Drive to satisfactory access to the northern large lot residential land parcel.

New Links/New Intersections

Wine Country Drive/Huntlee Residential Village 1 Main Access

A fully signalised four way intersection is required at this location, and is able to be constructed off line because of the proposed road widening to improve the horizontal alignment of WCD. This intersection will function satisfactorily until 1000 dwellings in Village One are occupied, at which time a second access will be required on to Wine Country Drive.

Wine Country Drive/Main Street Access

A signalised three leg intersection is proposed, and will be required as soon as development of the Huntlee Town Centre proceeds. This intersection will also function satisfactorily until 1000 dwellings in Village One are occupied, at which time a second access will be required onto Wine Country Drive.

Hunter Expressway Link Rd / Huntlee Stage One Secondary Access

A three leg roundabout is proposed for this intersection. Intersection modelling has indicated an offset roundabout will function satisfactorily under full development loadings. This intersection will also function satisfactorily until 1000 dwellings in Village One are occupied, at which time a second access will be required onto Wine Country Drive.

TransCAD Modelling

An assessment of the Huntlee development by way of a review of the RTA TransCAD model was undertaken by Colin Buchanan (China). The TransCAD model uses the regional distribution of land use (represented as population and employment) to determine distributions of movement across the Lower Hunter Region. The Paramics model by contrast uses past experience and assessment of existing traffic distributions from the existing traffic data available at the time of compiling the model.

Hence the two models are almost certainly likely to have different distribution of trips.

The following id the TransCAD split of traffic from the development:

- 25% of the traffic will head south from the Huntlee development;
- 75% of the traffic will head north from the Huntlee development;
- 20% of the traffic will head west along the New England Highway towards Singleton;
- 37% of the traffic will head east along the Hunter Expressway; and
- 18% of the traffic will head east along the New England Highway towards Maitland.

This compares favourably with the assumptions made in the DA submission report prepared by BTF:

- South via Wine Country Drive - 15%
- To attractions in Branxton 10%
- West via the New England Highway - 20%
- East via the New England Hwy / Hunter Expressway corridor - 55%

The significant difference in the assumed BTF Paramics trip distributions is the flow south on Wine Country Drive, where the assumed 15% is less than the RTA TransCAD prediction of 25%.

The implications of this difference are considered as follows:

- The higher forecast of 1150 vehicles per hour one way is still within the limits of peak hour urban capacity for a single traffic lane, with controlled access (which is the RTA's requirement for Wine Country Drive).
- It is likely, based on the overarching Government (and Proponent) objectives to secure higher proportions of travel (i.e. Higher Mode Splits) to non car based travel, that this forecast traffic flow is an upper limit worst case scenario.

The conclusion therefore is that even if the most conservative approach is taken in terms of estimating the future (full development) traffic flows from Huntlee (which is the very conservative approach adopted by the RTA) then there will still not be a need to upgrade Wine Country Drive south of the Huntlee development (with the possible exception of specific intersection improvements, as identified for Huntlee).

The conclusion from the review of the BTF traffic report and the Colin Buchanan TransCAD modelling work is that the two separate models provide similar forecasts in terms of traffic flows and traffic distribution on the key infrastructure links requiring upgrading as a direct result of the Huntlee development (i.e. Wine Country Drive and Hunter Expressway Link Road.)

The implications of the key differences in the 2031 forecasts have been considered and it is concluded that the level of infrastructure upgrade and improvement recommended for the external road network to support the development of Huntlee would remain the same as that previously determined by BTF, irrespective of the differences in forecasts from the Colin Buchanan TransCAD modelling work.

6.2.2 Public Transport

Public Transport is addresed in detail in the TMAP at Appendix E. Public transport in the vicinity of the site is currently limited, mainly due to the low density residential and limited commercial development within the locality of Branxton and North Rothbury.

Public transport is an integral component of Huntlee's masterplanned urban design and social and economic investment into reduced car dependency. A bus network will commence from Stage 1.

Huntlee is committed to a high quality local public transport system, providing good access for residents and workers within the site. The response being a significant reduction in demand on neighbouring local roads within Branxton and North Rothbury, as well as other regional road infrastructure.

Links from the Huntlee Bus Transport Network onto the external network reduce private vehicle demands along the existing road network. There will be commuter demands to and from the site to Maitland, Newcastle, Cessnock, Kurri Kurri and Singleton.

The basic principles of the public transport facilities proposed in the Huntlee TMAP include the following:

- Priority internal routes connecting high intensity centres e.g. town centre, schools, shops, business park area;
- Bus Interchange located centrally within the Huntlee Town Centre, connecting internal Village bus routes with trunk routes to major centres external to the site;
- Cycling & Walking Network as an integral component of the development of Huntlee to supplement and support local public transport initiatives
- Consultation with Council and existing public transport providers to ensure delivery of adequate services as required.

The existing rail network and local Branxton station provides limited services and will remain so for the medium term as coal transport is the major priority in this rail corridor.

Bus Service Provision and Development Staging

It is recommended that a bus service linking Village One to the Huntlee Town Centre be commenced early in the development of the Town Centre, to encourage use of public transport by Huntlee residents. The bus route would connect Village One to the Huntlee Town Centre, and provide connection to the regional destinations of Cessnock ,Maitland, Newcastle and Singleton.

The provision of services of this nature is consistent with other applications in the Greater Sydney Metropolitan Region as part of recent development considerations in Sydney. (It is envisaged as further villages of the Huntlee are developed, that local bus services developed in conjunction with operators and Transport NSW would be extended to also provide coverage of these areas.

Good quality bus stops will be provided at the requisite intervals (400 metres) along all agreed bus routes. Stops will be placed efficiently to serve major attractors (local shops, schools, parks) and also within the Town Centre. A dedicated Bus Interchange Facility will be provided in the Huntlee Town Centre.

6.3 Stormwater Management

6.3.1 Hydrology

Worley Parsons undertook a hydrological assessment (**Appendix H**) using the Runoff Analysis and Flow Training Simulation ((RAFTS) software to determine the likely impacts of the proposed Stage 1 Huntlee development on Tributary 1 and Tributary 2 catchments which both flow into Anvil Creek. The Tributary 1 and 2 catchment areas and their sub-catchments are shown in **Figure 22**.

Tributary 1 has a contributing catchment area of approximately 205ha which incorporates a portion of the Stage One Project Application area, including the Stage One Neighbourhood Centre. Tributary 2 has a contributing catchment area of approximately 315ha and incorporates parts of Stage One, including the Town Centre.

The proposed Huntlee development will ultimately encompass a significant portion of the Tributary 1 catchment and nearly the entire Tributary 2 catchment. Additionally, the RTA proposes to construct a dual carriage-way freeway to the north of the proposed Huntlee site. The initial Stage One Project Application area encompasses a significant portion of the ultimate development area in the Tributary 2 catchment. Therefore, it is essential that the hydrologic assessment for the Stage One Project Application considers both the initial Stage One development as well as the ultimate catchment development.

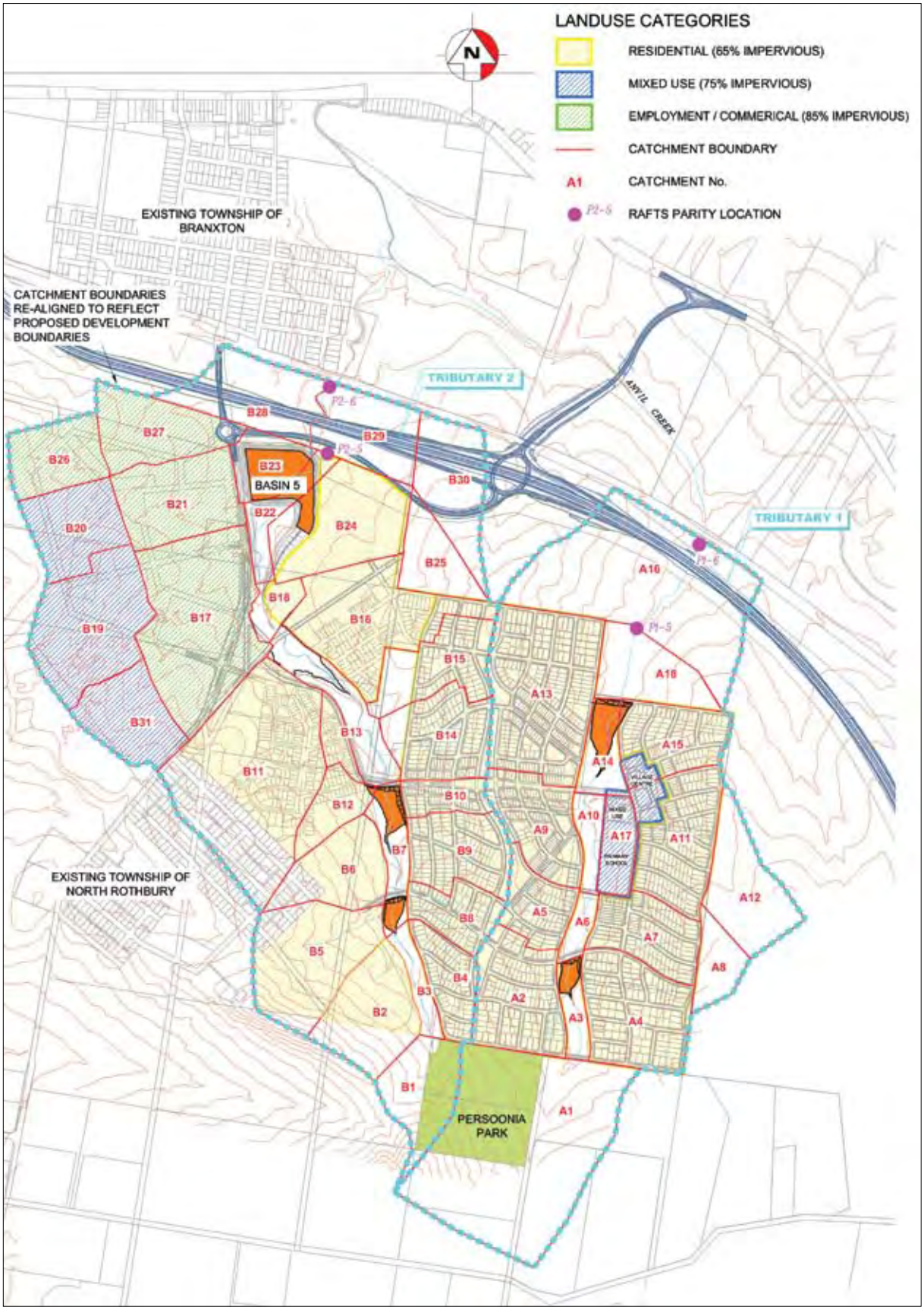

Figure 22 – Tributary 1 and 2 Catchment Areas

Source: Worley Parsons

The hydrological assessment adopted the following objectives:

- *Assessment of the existing and developed state hydrology, including an assessment of the likely impacts of the development on local and regional hydrology;*
- *Establishment of an appropriate detention basin policy to minimise the effects of urban development on local and downstream flooding.*

The modelling provided peak flow predictions at the downstream parity location (the railway embankment) for both existing state and developed state for both tributaries. The modelling predicted that with the proposed Stage 1 development, mitigation measures would be required to minimise the impact on local and regional hydrology.

In terms of mitigation, it is proposed to construct the following on-line detention basins to alleviate the peak flow resulting from the development:

- **Tributary 1 Catchment:** Two dry online detention basins with the following active storage:
  - Basin 1 – 5, 600m^3
  - Basin 2 – 20, 000m^3
- **Tributary 2 Catchment:** Three on-line detention basins with the following:
  - Basin 3 – 8, 100m^3
  - Basin 4 – 11, 500m^3
  - Basin 5 - 80,000m^3

As discussed earlier, the detention basins in Tributary 2 have been designed to be able to accommodate the ultimate proposed development for the catchment and are oversized for the initial (Stage 1 development). Locations of proposed detention basins are shown in **Figure 23.**

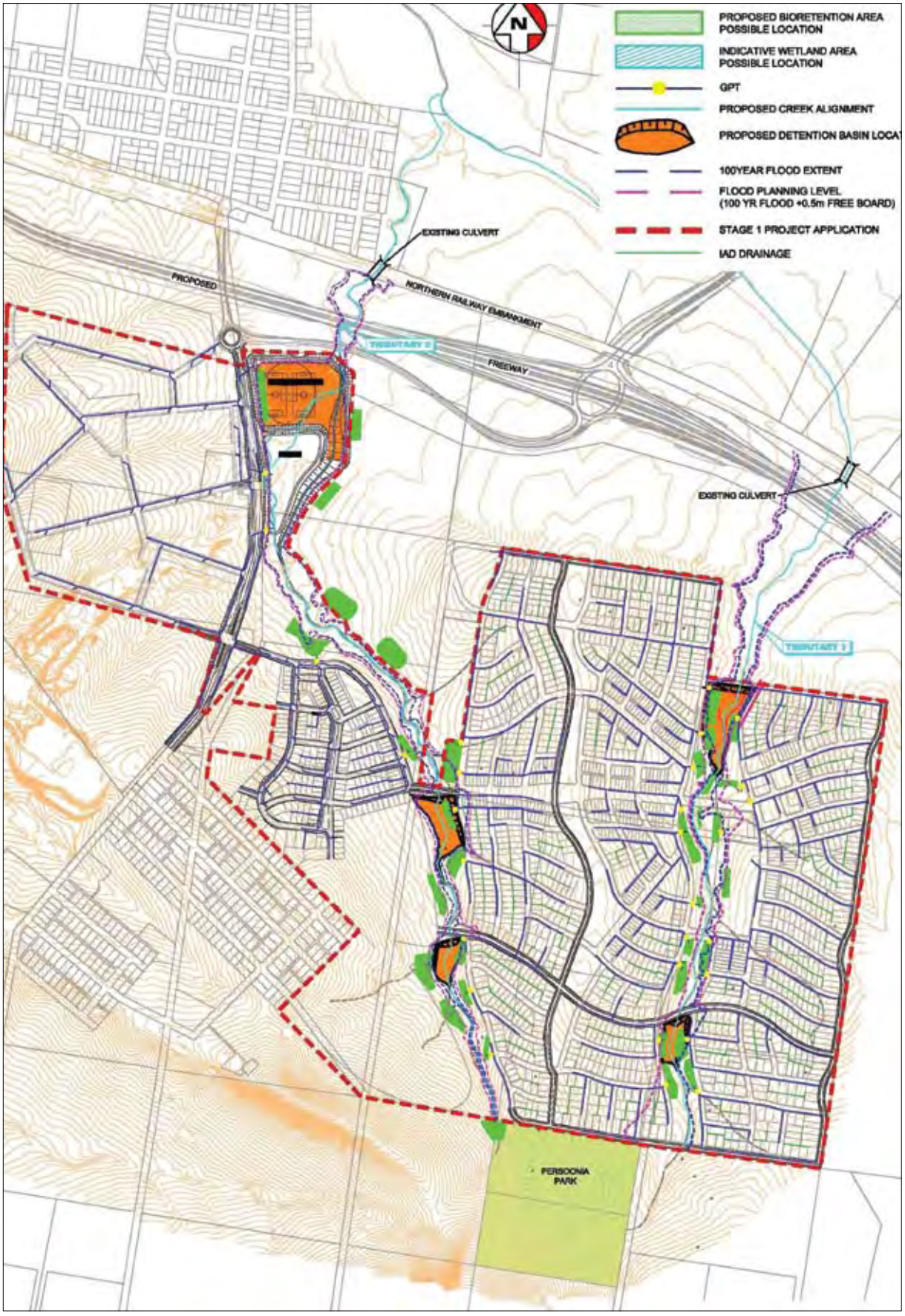

Figure 23 – Stage 1 Stormwater Management Plan

Source: Worley Parsons

Tables 14 and **15** show the predicted peak flows at the rail embankment for the existing state, developed state (no controls) and developed state (with controls). The modelling summarised in the table shows that for Tributary 1, the attenuation of flow provided by the proposed detention basins would reduce peak flows at the railway embankment to at least existing-state levels for all ARI rainfall events considered.

For Tributary 2, results show that the post development peak discharges can be reduced down to existing state peak discharges with the proposed on-line detention basins in place for the higher ARI events. However, peak discharges in the 2 year ARI storm event at locations P2-5 and P2-6 (see **Figure 20**) are slightly greater than those in the existing state. This is considered acceptable, given the fact that the modelling ignores the effect of proposed offline water quality control (bio-retention) basins that will effectively control peak discharges up to the 2 year ARI event. Furthermore, the design of outlet controls from the on-line basins within Tributary 2 can be further refined accordingly (*at a more detailed stage*) to further reduce peak discharges at the lower ARI events, as required.

Table 14 – Developed State Tributary 1 – with detention basins

ARI	Tributary 1 (RAFTS node P1-6)		
	Existing State	**Developed State** *(no controls)*	**Developed State** *(with controls)*
	Peak flow (m^3/s) / Critical Storm Duration		
2 year	6.7	11.6	6.6
	540 min	120 min	540 min
5 year	9.9	16.3	9.9
	540 min	120 min	540 min
20 year	13.9	22.5	13.9
	540 min	120 min	540 min
100 year	20.0	29.6	18.8
	120 min	120 min	120 min

Table 15 – Developed State Tributary 2 - With Detention Basins

ARI	**Tributary 2** *(RAFTS node P2-5)*			**Tributary 2** *(RAFTS node P2-6)*		
	Existing State	**Developed State** *(no controls)*	**Developed State** *(controls)*	**Existing State**	**Developed State** *(no controls)*	**Developed State** *(controls)*
	Peak flow (m^3/s) / *Critical Storm Duration*					
2 year	9.7	20.5	11.2	10.4	18.3	12.1
	540 min	*120 min*	*120 min*	*540 min*	*120 min*	*120 min*
5 year	14.1	27.6	13.4	14.7	22.1	14.3
	540 min	90 min	120 min	540 min	120 min	120 min
20 year	20.1	37.4	15.7	19.7	25.4	16.6
	360 min	*90 min*	*120 min*	*540 min*	*120 min*	*120 min*
100 year	30.2	48.8	18.3	23.8	28.1	19.3
	120 min	*90 min*	*120 min*	*120 min*	*120 min*	*180 min*

Sensitivity Analysis for F3 Freeway & Climate Change Scenario

A sensitivity analysis was also undertaken to assess the potential impacts as a result of the future Hunter Expressway which would sit within the flood storage area immediately upstream of the rail embankment within Tributary 2. Based on the limited data available of the proposed freeway, hydrologic modelling results for this scenario suggest that the freeway would have negligible impact on peak discharges at P2-6 (*increase from 19.3m³/s to 19.4m³/s for the 100 year ARI in the developed case – with controls*), provided adequate culvert structures beneath the road ways are provided for in the Freeway design.

A sensitivity analysis was also undertaken to model the impacts of climate change on peak discharges from the development site. To do this, the average rainfall intensities in the hydrologic model were increased by 10% and 30% for the critical storm duration for the 100 year ARI event. Results for the more conservative 30% rainfall intensity increase scenario suggest that the 100 year ARI peak discharge at P2-5 would increase from 30.2m³/s (*Existing case*) to 31.0m³/s (*Developed with controls + 30% increase in average rainfall intensity*). The 100 year ARI peak discharge at P2-6 would increase from 23.8m³/s (*Existing case*) to 25.2m³/s (*Developed with controls + 30% increase in average rainfall intensity*). However, an increase in average rainfall intensities of 10% is typically adopted for hydrologic models in the Hunter Valley. The case for 10% increase in rainfall intensity results in no significant change to peak discharge levels compared to existing conditions at the parity locations.

Water Quality

The overall water quality objective is to achieve a no net increase in pollutant export loads from development areas. The existing water quality in some areas of the site is likely to be poor due to the former mining activities and current agriculture land-uses, while runoff from forested areas is likely to be of reasonable quality. However, it is not possible to quantify the existing water quality conditions without comprehensive water quality sampling data collected over an extended period of time. As such, a more reasonable approach is to adopt long term water quality treatment targets recommended in current best management guidelines. Best practice guidelines such as ARQ (IEAust, 2006), recommend the following water quality treatment targets:

- Suspended Solids (TSS) - 85% retention of the developed average annual load;
- Total Phosphorous (TP) - 45% retention of the developed average annual load; and
- Total Nitrogen (TN) - 45% retention of the developed average annual load.

The above water quality treatment targets would be adopted as design objectives when sizing stormwater controls. It is noted that stormwater controls designed to achieve the above water quality treatment targets will also remove a substantial portion of the other stormwater pollutants through bio-chemical processes. In addition to the water control targets listed above, a range of preventative measures and source controls would also be integrated into the development design and ongoing management procedures.

The following stormwater controls have been identified as suitable for implementation within the Stage 1 Project Area:

Preventative Measures – applied at the subdivision scale include:

- **Minimising areas of Impervious Surfaces** - by reduced road widths and increased landscaping around dwellings.
- **Native Landscaping** – Native species are generally drought tolerant and do not require frequent fertilisation. As such, native landscaping should be encouraged in both public open space and on individual allotments. This will assist in minimising nutrient concentrations in storm water runoff.

- **Public Education** – information can be provided to residents to inform them of stormwater management issues and provide recommendations on how they can minimise their impact.

Source Controls - applied at the lot level include:

- **Rainwater Tanks** - can be installed at the lot scale to capture roof water runoff for reuse for non-potable uses within the allotment. Rainwater tanks reduce the runoff volume from the allotment, reducing the size of downstream controls. Rainwater tanks will be installed at all dwellings that are not serviced by the proposed reticulated recycled waste-water network.
- **Permeable Pavers** - can be implemented into driveways, parking bays, car parks and on roads with low traffic loads. The pavers allow stormwater to infiltrate into the sub-base, where stormwater retention and treatment is provided. As permeable pavers can be integrated into the streetscape, they generally have no net land take and are therefore well suited to high density areas such as the proposed Town Centre.
- **Landscaping Features** – such as contour banks and soak-a-ways are suitable for rural residential lots where runoff from impervious surface can be directed onto grassed areas and slowly infiltrated.

Conveyance Controls - applied at the street level and include:

- **Bio-Filtration Swales** – can be integrated into the urban landscape in a longitudinal swale or a small basin area (*commonly referred to as rain gardens*). The bio-filtration areas would consist of vegetated areas with enhanced filtration media which would typically be 500-600mm deep. Filtered stormwater would be collected in an underlying subsurface drainage system and directed into roadside drainage. The bio-retention areas could be designed to provide 2 year retention storage, negating the need for downstream basins in some catchment areas; and
- **Road Side Swales** – can replace traditional kerb and guttering in residential and rural residential areas. Swales provide water quality and water quantity benefits as well as providing landscaping opportunities.

End of Line Controls - applied at the end of the stormwater system and include:

- **Gross Pollutant Traps (*GPTs*)** – can be installed at the end of piped drainage systems. GPTs primarily remove gross pollutants (*i.e litter*) and coarse sediments and provide pre-treatment for other downstream controls.
- **Bio-Filtration Basins** – incorporate a similar concept to the bio-filtration swales, but are constructed on a larger scale at the end of a stormwater drainage line.
- **Constructed Wetlands** – can be implemented to treat stormwater prior to discharge into receiving waters. Wetlands would be designed to incorporate sediment fore bays, deep water zones and ephemeral (*'wet and dry'*) macrophyte beds to achieve maximum pollutant removal efficiencies. Extended and active detention can also be provided above the permanent pool to meet water quantity management objectives.

Stage 1 of the Huntlee development would incorporate varied land-uses including low density rural residential allotments, medium density residential allotments and higher density residential and commercial areas.

Worley Parsons undertook an assessment using the MUSIC Model to determine the sizes of stormwater management controls required for the end of line controls (Gross Pollutant Traps, Bio-filtration Basins and Constructed Wetlands). These controls are sized to provide adequate hydraulic resistance time to meet the water quality treatment targets outlined earlier in this section. The modelling found that the proposed water quality control structures would act to equal or exceed the level of water quality treatment required as outlined below:

Table 16 – Stage 1 Stormwater Quality Management Model Results

Pollutant	Target (reduction)	Tributary 1	Tributary 2
TSS Removal	85%	89%	89%
TP Removal	45%	57%	59%
TN Removal	45%	45%	45%

6.3.2 Assessment under the Water Management Act 2000

The WMA specifies riparian corridor requirements based on the stream order. Both Tributary 1 and 2 have been determined to be first order streams in the upper reaches, becoming second order stream within a few hundred metres of the southern Project Application area boundary. This stream order determination has been adopted for this study and is presented in **Figure 24** in context with the proposed development layout.

The WMA stipulates that the riparian corridors should be determined through consideration of three riparian corridor zones, being the Core Riparian Zone (*CRZ*), Vegetated Buffer and Asset Protection Zone (*APZ*). The following sections discuss each of these zones in the context of the development proposal.

Core Riparian Zones (CRZ)

The CRZ refers to land contained within and adjacent to a water course. It is proposed to provide the following CRZ setbacks:

- 1st order water courses would incorporate a 10 meter CRZ setback from the top of bank. A channel width of 5 meters is adopted resulting in a total CRZ width of 25 metres.
- 2nd order water courses would incorporate a 20 meter CRZ setback from the top of bank. A channel width of 5 meters is adopted resulting in a total CRZ width of 45 metres.

The above setbacks are in accordance with the recommended CRZ widths in the WMA. **Figure 22** indicates the adopted CRZs within the Stage One Project Application area.

In accordance with the WMA, it is proposed to rehabilitate the CRZs, with the following rehabilitation measures proposed:

- Remove any exotic weeds from existing riparian corridors;
- Retain existing native riparian vegetation;
- Where required, enhance riparian vegetation to consist of a fully structured vegetation corridor, including ground cover, shrubs and trees;
- Where required provide bed and bank stabilisation; and
- Decommission all existing farm dams.

The above rehabilitation measures are likely to enhance the environmental function of the existing riparian corridors, which have been degraded from cattle grazing and land clearing. With reference to **Figure 24** it is proposed to construct a number of detention basins within the CRZ. **Table 17** discusses the potential impacts of on-line basins on riparian functions and outlines proposed mitigation measures.

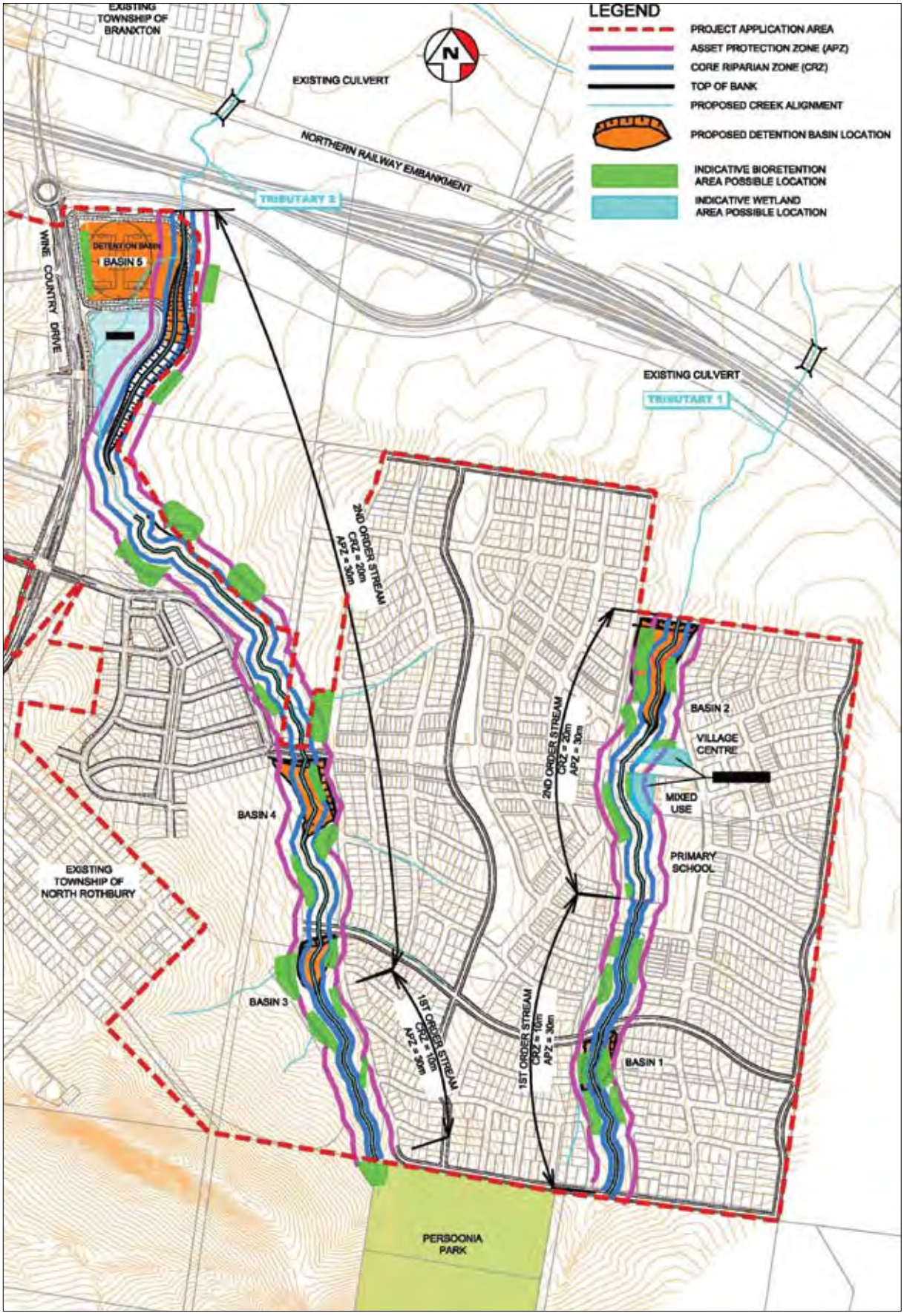

Figure 24 – Stage 1 Residential Village and Town Centre Riparian Corridors

Source: Worley Parsons

Table 17 – Potential Impact of On-line Basins

Potential Impact on Riparian Corridors	Proposed Mitigation Measures
Disruption of natural flow regime	The proposed online detention basins are for flood mitigation purposes only. They would provide an important function in mitigating peak flows during high return period rainfall events, minimising the impact on downstream flooding. As the basins would be designed for flood mitigation purposes, ponding would only occur when flows within the watercourse exceed the existing state, 2 year ARI peak flow rate. Water quality controls, located off-line from the water course would provide retention storage to mitigate the increased flow rates and runoff volume during lower return period rainfall events.
Disruption of natural geomorphologic functions such as sediment movement	As the proposed basins are not permanent water bodies, they are not likely to pose a barrier for sediment flow through the water course.
Introduction of barriers to the dispersal of biota and the loss of continuity between up-stream and downstream communities	It is possible to utilise open channel controls such as baffle weirs to allow for fauna connectivity through the basin controls. However, this is subject to further investigation at the detailed design stage.
Loss of riparian habitat	The basins would generally be constructed at proposed road crossings, resulting in no additional loss of riparian habitat due to the construction of the embankments (*assuming the proposed roads would be constructed*). Inundation behind the embankments would only temporarily occur during high return period rainfall events.

Vegetation Buffer

The vegetation buffer function is to protect the environmental integrity of the CRZ. The proposed vegetation buffer would contain offline bio-retention basins, which would be vegetated with indigenous riparian species. Measures would be undertaken to discourage access to the bio-retention basins.

Figure 24 indicates the proposed locality of bio-retention basins within the Stage One Project Application area.

Riparian Asset Protection Zone (APZ)

The APZ is a requirement of the NSW Rural Fire Service and is designed to protect assets from potential bushfire damage. A minimum 30 meter APZ has been assumed from the outer CRZ boundary. It is proposed that the APZ would contain stormwater infrastructure, roads and open space, but no building structures.

Figure 24 indicates the adopted riparian APZ within the Stage One Project Application area. APZ's are discussed in further detail in Section 6.7.

In conclusion, the development proposal would:

- Provide CRZ and APZ setbacks in compliance with the WMA specifications;
- Construct managed bio-retention areas, vegetated with indigenous riparian vegetation, adjacent to the CRZ to provide a buffer between public areas and the CRZ;
- Increase the coverage of riparian vegetation within the Stage One Project Application Area, through retaining existing riparian vegetation and rehabilitating degraded areas;
- Decommission all online permanent water bodies (*i.e. existing farm dams*);
- Rehabilitate the existing channel where degraded;

- Construct five on-line detention basins (*for flood mitigation purposes only*) within the riparian corridors. The following mitigation measures would be adopted to address the potential impact of on-line stormwater controls on riparian functions:
  - Online basins would be designed to only detain water when flow exceeds the existing state 2 year ARI peak flow;
  - Online basins would not have a permanent water body;
  - Detention basins would utilise proposed road crossings for embankments to minimise the loss of riparian vegetation areas; and
  - Potential to implement open channel controls such as baffle weirs to allow for fauna connectivity through the embankment.

As discussed, the proposed online basins do not technically comply with the WMA (*2000*). However, with the proposed mitigation measures listed above, there would be no significant impact on the creekline corridors.

Farm Dam Assessment

It is proposed to decommission all existing farm dams within the Stage One Project Application area. Hence, an assessment of the existing harvestable rights is not required. With reference to the DWE website (*Farm dams in NSW*), the following dams are exempt from harvestable rights calculations:

- Dams for flood detention and mitigation. This applies to all proposed detention basins.
- Dams for the capture, containment and recirculation of drainage and/or effluent. This applies to all proposed water quality controls.

It is noted that no extraction is proposed from water quality controls for irrigation or other uses.

As all existing farm dams within the Stage One Project Application area are to be decommissioned, therefore a harvestable rights assessment of the existing farm dams is not required.

As discussed in Section 6.3.1, the development proposal would not include any online permanent water bodies in the form of detention basins, however, there would be one permanent water body (*Pond 1*) for water quality purposes.

Water Rights Assessment

It is proposed to construct three permanent water bodies in the Stage 1 Project Application Area (*Ponds 1 - 3*). A water rights assessment was undertaken in order to determine whether these permanent water bodies would be required to be licensed under the WMA. Accordingly, an assessment was undertaken to determine the maximum dam volume permissible using the *Maximum harvestable right dam calculator* on the NSW Office of Water (*NOW*) website. Based on a multiplier of 0.075ML/ha and contributing catchment area of approximately 500ha (*catchment area of Tributary1 and 2, excluding the existing township of North Rothbury which partly falls within the Tributary 2 catchment area*). The results of the calculation are shown in **Table 18**.

Table 18 – Harvestable Rights Assessment

Proposed Water Bodies	Project Application Area	Maximum Harvestable Rights (ML)	Proposed Permanent Water Volume (ML)
Ponds 1, 2 & 3	505	37.8	Pond 1 20–30ML Ponds 2 & 3 5-10ML

As indicated in **Table 17**, the proposed permanent water volume is less then that permitted using the maximum harvestable rights calculator. Hence, the proposed permanent water bodies will not be required to be licensed under the WMA. In addition, as the Pond 1 water body will be principally for water quality control, it should be exempt from harvestable rights calculations.

6.4 Flooding

The assessment of the flooding impacts of Stage 1 was undertaken by Worley Parsons and is at **Appendix H.** A flood hydraulics model was created to assess the 100 year ARI flood events over the Stage 1 areas in both Tributaries 1 and 2 which form part of the Anvil Creek catchment. The model adopted the developed-state landforms and included proposed detention basins, proposed bridge locations and other possible ground level modifications such as filling and minor creek re-alignment.

The flood modelling work carried out to date for Stage 1 of the Huntlee Project has considered the provisions of the NSW Floodplain Development Manual (2005) in relation to selection of flood planning levels and consideration of potential evacuation routes during extreme events.

In terms of the Residential Village area and the Town Centre, the predicted flood extents and indicative flood planning levels are shown in **Figure 25**. The main Stage 1 development area contains two minor tributaries of Anvil Creek and is therefore not affected by flooding from any major creeks or rivers. All flooding issues within the site are due to local flooding characteristics of the two Anvil Creek tributaries.

In accordance with the NSW Floodplain Development Manual (2005), Flood Planning Levels (FPL's) equal to the 1% AEP plus 500mm freeboard will be applied to all development lots within Stage 1. For storm events greater than the 1% AEP, the development and road layout is such that continuously rising evacuation routes to higher ground are available to areas immediately adjacent to the Anvil Creek tributaries. The modelling shows that, with the exception of minor areas which will require fill (particularly around detention basins), the development is above the flood planning level. Predicted flood events would be generally confined to the designated drainage corridors.

The large lot residential area is affected by flooding from Black Creek and similarly to the main residential area, FPL's equal to the 1% AEP plus 500mm freeboard have been applied to these lots. As per previous modelling which was undertaken on Black Creek (Worley Parsons August 2010), the large lot area will also be impacted by the PMF event in Black Creek. Whilst a specific Flood Emergency Evacuation Plan has not been prepared for the large lot area, a continuously rising evacuation route would be achievable back to Wine Country Drive. The time to peak for Hunter River flood events would normally be in the order of at least 1 to 2 days and therefore there would be sufficient warning time to allow for evacuation of the large lot area during a PMF event. The proposed subdivision pattern has been designed to ensure that each proposed lot has sufficient flood free land for a dwelling and associated access. The 100 ARI flood extent for the Northern Large lot residential area is shown in the report **Figure 26.**

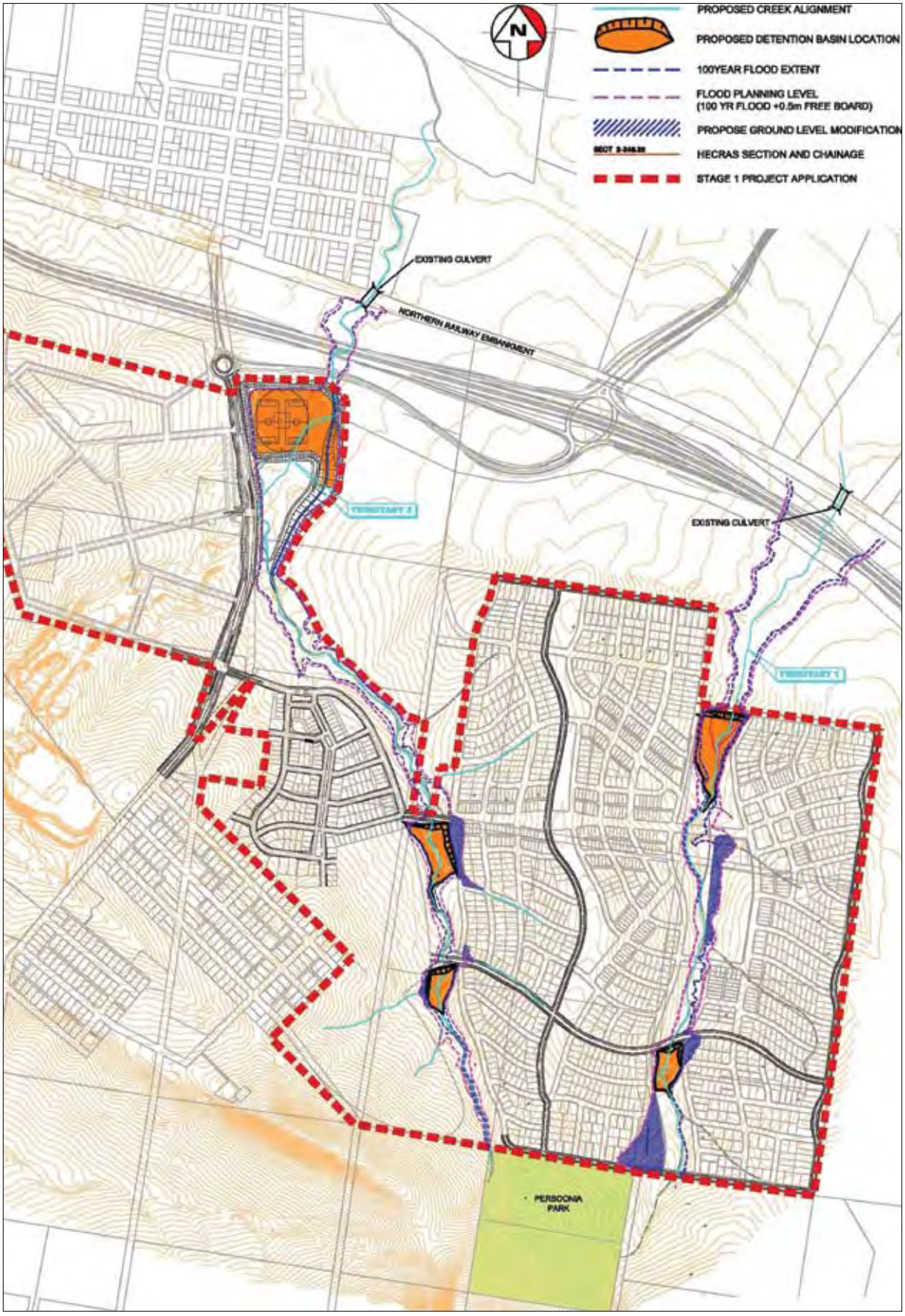

Figure 25 – Stages 1 Residential Village and Town Centre Predicted Flooding Extent

Source: Worley Parsons

Figure 26 – Wine Country Drive Large Lot Residential Predicted Flooding Extent

Source: HDB

6.5 Utility Services

Worley Parsons has prepared a Physical Infrastructure Report for the Stage 1 Project Development (**Appendix G**) that addresses both internal and external arrangements for the provision of the following:

- Potable water;
- Wastewater;
- Recycled Water;
- Electricity;
- Telecommunications; and
- Natural Gas

There are currently no utilities infrastructure servicing or affecting the Stage 1 area. The following sections are extracts from the Worley Parsons report.

6.5.1 Potable Water Infrastructure

Regional

The proposed Huntlee site is located at the extremity of the existing Maitland North Rothbury water supply network. Water is supplied to the existing township of Branxton via trunk water mains along the New England Highway from Harpers Hill Reservoir. North Rothbury is serviced from the North Rothbury Reservoir, with a small portion of the town serviced off the North Rothbury Water Pumping Station (WPS).

The demands identified exceed any existing infrastructure capabilities in the vicinity of the site.

Hunter Water have completed forward infrastructure planning for the Maitland North Rothbury water network, with a planning horizon of 20 years. Ultimately, upgrades planned for the Branxton trunk water supply system include:

- Stage 2 upgrade works downstream of Harpers Hill, including 1100m of DN375 main through Greta and 1500m of DN300 main from Branxton to North Rothbury. Once these works are complete, 200 ET capacity will be available. It is understood these works were completed in 2010 (TBC by Hunter Water).
- Stage 4 upgrade works include construction of DN375 main from Harpers Hill to Branxton and will yield approximately 3000 to 3500 ET downstream of Harpers Hill. These works are currently scheduled for completion in 2013.
- Stage 6 upgrade works where an additional 3500 ET can be connected after the completion of the other future works that include an additional 5ML reservoir at Harpers Hill and DN375 main from Harpers Hill to Branxton (additional to that constructed in Stage 4).

It is pertinent to note that current Hunter Water Corporation water infrastructure planning for Branxton will ultimately see a future demand of 7,000 ET connected to the proposed upgraded New England Highway water supply trunk system. However, the current Huntlee plans will see an ultimate water demand for Huntlee of 9,100 ET.

It is understood that Hunter Water is considering establishing a strategic link between the Maitland North Rothbury water supply system and the Cessnock water supply system. This will provide a greater flexibility and a higher level of security of supply within the area in the long term. Therefore, the potential connection point for the final stage of the proposed development may be in the Cessnock system via Pokolbin. As such, boundary conditions beyond 6,000 ET (Stage 6 of upgrade works) have not yet been provided to Worley Parsons by Hunter Water, as they will change if this connection proceeds.

Internal

Due to the difference in elevation across the site, two pressure zones will be required to meet Hunter Water requirements. A reservoir is proposed to service the high-level zone, and will be sited on the ridge line adjacent to the existing North Rothbury Reservoir. The lower zone will be directly fed from the New England Highway connection. For Stage 1, there will be a single connection to the New England Highway and emergency storage will be supplied by the proposed Huntlee reservoir. In later stages, additional connection points will be brought across from the New England Highway, providing security of supply to the low-level zone. Security of supply for the high level zone will still be provided from the reservoir. Additionally, a small high-level tank is required for the Old North Road rural residential lots (80 lots), as they are too high to be serviced by the proposed Huntlee reservoir.

The proposed Huntlee Water Servicing Strategy is shown in **Figure 27**. The concept potable water reticulation plans for the Stage 1 development areas is at **Appendix A**).

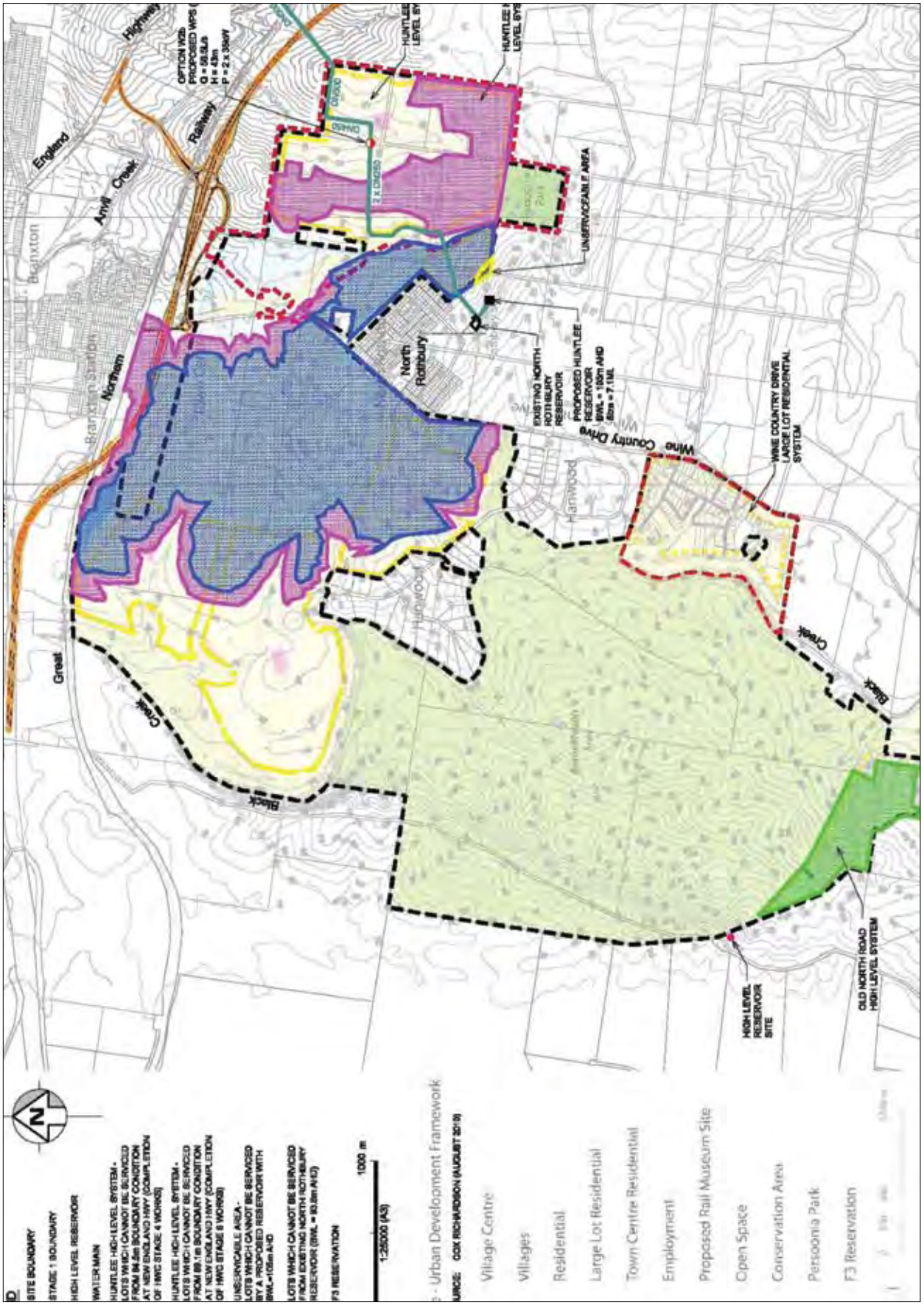

Figure 27 – Huntlee Water Servicing Strategy

Source: Worley Parsons

6.5.2 Wastewater Infrastructure

The wastewater supply authority responsible for the proposed development area is Hunter Water Corporation (HWC).

Extensive engagement with Hunter Water has been undertaken to date with regard to provision of wastewater services to the Huntlee Development. A developer-funded servicing strategy has been approved by Hunter Water (21 May 2009). This strategy was prepared for Stage 1 (~2,400 ET), with a high-level approach taken for the remaining stages.

Regional

The nearest reticulated wastewater system to the Huntlee Development Area is located at Branxton. There is no reticulated wastewater infrastructure south of the Main Northern Railway, with the township of North Rothbury and Hanwood currently not sewered. It is understood that there are no plans in place to sewer these areas in the short term. The proposed development site has not been identified as part of the current Hunter Water Developer Servicing Plan (DSP) for Branxton. Hunter Water have nominated Branxton Wastewater Treatment Works as the wastewater connection point for the Huntlee development.

There are approximately 1,809 equivalent tenements (ETs) currently connected to the Branxton sewerage transportation system. The existing township is serviced mainly by gravity, with 3 pump stations (Branxton 1, Branxton 2 and Branxton 3) delivering wastewater to Branxton Wastewater Treatment Works. Huntlee would include a Wastewater Pumping Station (WWPS) that would pump flows directly to the Branxton WWTW.

At the time of strategy, optimisation works were proposed to be undertaken in 2008/09, to increase the planned capacity to approximately 7,000 EP. Hydraulic constraints at the treatment works will require inflows to be limited to 88 L/s.

Stage 3 of the Branxton WWTW upgrade works was scheduled to be commissioned in 2012 to increase plant capacity to 13,000 EP. It is noted that HWC advised most recently in September 2008 that this may be postponed until after 2012. Further upgrades beyond 13,000 EP will be required to meet the ultimate projected development within the WWTW catchment. The staging and timing of these upgrades will be determined based on the observed rate of development within the catchment. Hunter Water have indicated that this provides sufficient lead time to ensure that wastewater treatment capacity is not a constraint to development at Huntlee.

Internal

The internal sewer system is proposed to be developed on a sub-catchment basis, with each sub-catchment draining to a wastewater pumping station (WWPS). At this stage, 11 WWPS sites have been identified, each located at the low point of the particular catchment.

Investigation was undertaken into the use of low pressure sewer in the southern large lot areas. It was found economically preferable to service the majority of the lots with conventional gravity sewage, with pump stations and rising mains. A small portion of land at the very southern extent, which grades away from the remainder of the Huntlee site will need low pressure sewer, as the number of lots are too small for a conventional wastewater pump station.

The proposed Huntlee Wastewater Servicing Strategy is shown in **Figure 28**. The concept potable water reticulation plans for the Stage 1 development areas is at **Appendix A**).

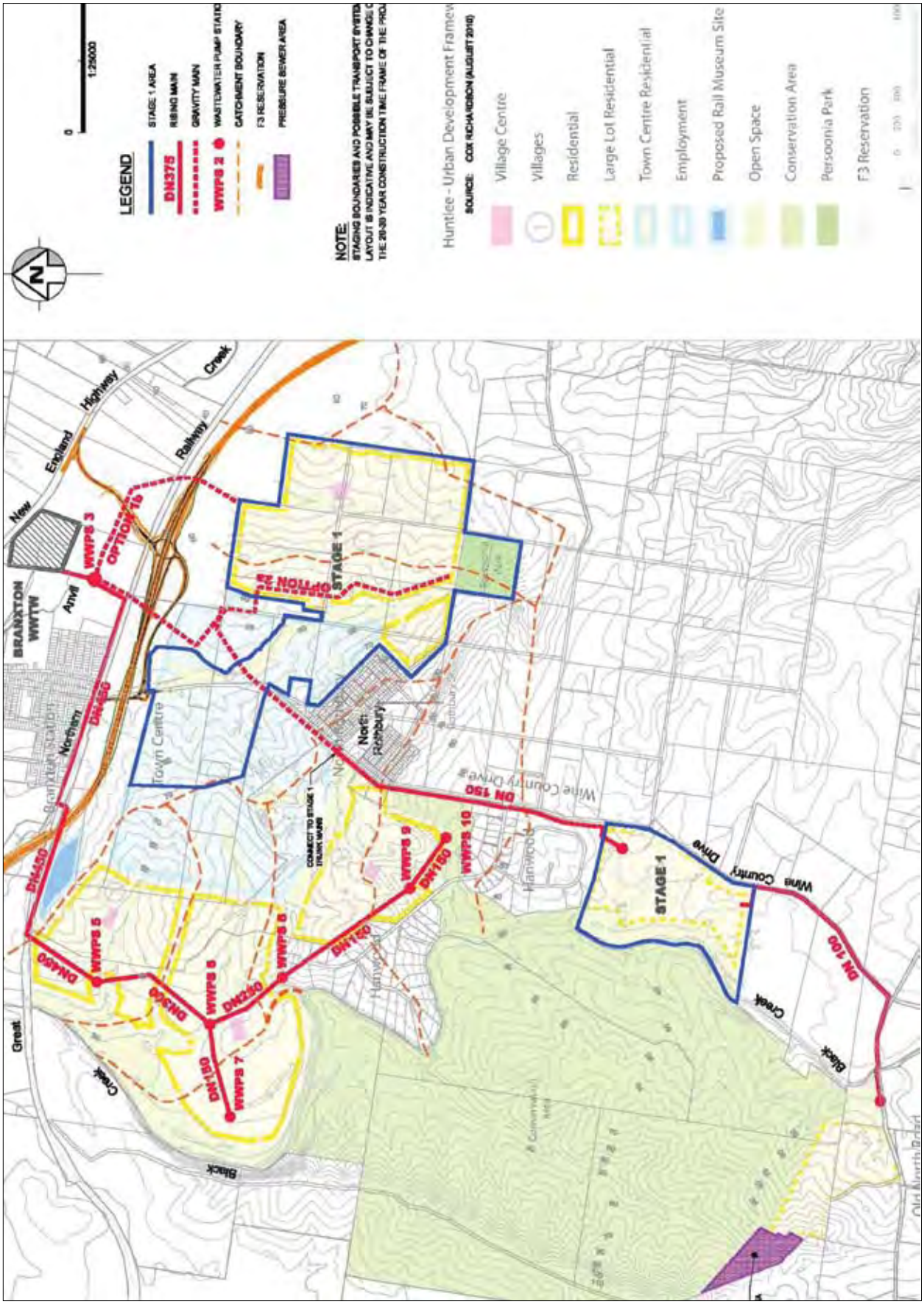

Figure 28 – Huntlee Wastewater Servicing Strategy

Source: Worley Parsons

6.5.3 Recycled Water

Hunter Water is supportive of the potential use of dual reticulated recycled water in the Braxton area. Generally the use of dual reticulated recycled water is technical feasible and has the potential to become a viable water-saving measure for this development – thereby reducing overall potable water demands.

The supply of recycled water will be from the Branxton WWTW. An upgrade of this WWTW is currently underway and is due for completion in 2011. As part of this upgrade, a membrane bioreactor (MBR) will be installed that will allow the treatment of wastewater effluent for distribution to The Vintage Golf Club at Rothbury. Supply to The Vintage will be via a dedicated pumping station and rising main. Currently, effluent discharging to Branxton WWTW will be fully utilised by The Vintage and other existing customers.

Huntlee is progressing negotiations regarding the provision of recycled water with Hunter Water. Full details of the negotiations with Hunter Water are contained within **Appendix G**.

6.5.4 Telecommunication Infrastructure

With the government announcement of the National Broadband Network (NBN), changes have also been made to the way the telecommunications infrastructure will be provided in greenfield developments. Telstra will no longer be deploying copper infrastructure as standard practice. All new greenfield developments will require fibre-to-the-premises (FTTP) infrastructure to be installed.

NBN Co will act as wholesale provider of last resort in new developments constructed within, or adjacent to, NBN Co's long term fibre footprint. Developers will be required to cover the costs of trenching and ducting. NBN Co will cover the other costs of installing fibre infrastructure in the development, including backhaul (*the mid-to-long-distance transport of data from a series of disparate locations back to a more centralised location*).

These arrangements will not prevent developers from using other companies to roll-out fibre networks in new developments if they wish, but such networks will need to comply with the technical specifications of the NBN and be operated on an open access basis, and just like the NBN wholesale services would be offered on an equivalent basis.

As part of the detailed design phase, Huntlee will negotiate with relevant authorities to determine detailed infrastructure requirements for the development.

Full details of the negotiations with Telstra are contained within **Appendix G.**

6.5.6 Electricity Infrastructure

The energy supply authority responsible for network supply to the proposed development area is Energy Australia (*EA*).

Energy Australia has carried out preliminary studies to determine a concept plan to supply electricity to the development. The required electricity supply upgrade works would be constructed in stages as needed to service the staged development of the Huntlee site.

The existing feeder from the North Rothbury Zone Substation can supply around 400 lots in its present configuration. With a conductor upgrade, this feeder could supply up to 1200 lots. Beyond this, a new Zone Substation would need to be constructed in the Huntlee development.

The Huntlee substation would require approximately 200x200m of land. The 132kV overhead feeders would be constructed as overhead lines following easement routes, normally 30m wide. Around ten 11kV underground feeders may be needed from the new substation to service the final development.

Design and construction of a zone substation is anticipated to take approximately 5 years. EA have indicated that the large-lot residential areas can be serviced from the existing North Rothbury Substation.

The internal electrical reticulation within the development will be designed by the developer and typically handed over to Energy Australia to maintain and operate as the network authority. Full details of the negotiations with Energy Australia are contained within Appendix G.

6.5.6 Natural Gas Infrastructure

AGL Energy Limited currently provide reticulated gas to the townships of Branxton and Rothbury. It is proposed that natural gas will be provided throughout Huntlee to facilitate efficient and sustainable energy usage. Natural gas will be designed, constructed and funded by AGL as part of the normal land development process. Further consultation with AGL regarding takeoff locations, sizing and programming will be undertaken during the detailed design and assessment phase.

6.6 Biodiversity

An Ecological Constraints Master Plan (ECMP) report was prepared by RPS for the Huntlee State Significant Site Study (see **Appendix I)**. The ECMP provided an assessment of flora and fauna within the site and surrounding areas and to identify potential constraints and opportunities associated with the entire Huntlee development. The study also examined the ecological attributes of the conservation lands proposed for dedication in accordance the Huntlee Environmental lands Offset Strategy to implemented through a Voluntary Planning Agreement (VPA) with the NSW Government.

The ECMP assessment concluded that the impacts of the development of Huntlee as proposed in the SSS Study with the Environmental Lands Offset Strategy are sustainable. The assessment showed that the large majority of threatened species and ecological communities found at Huntlee are represented in the proposed conservation areas in the south of the site. Further the Environmental Lands Offset Agreement, involving the dedication of up to 780 hectares at Huntlee and up to a further 4,988 hectares of conservation land in a number of locations in the Lower Hunter Valley Region provides robust ecological outcomes for threatened species and ecological communities and is consistent with the outcomes proposed in the Lower Hunter Regional Strategy and the Lower Hunter Regional Conservation Plan.

6.6.1 Vegetation Communities

Three endangered ecological community listed under the *Threatened Species Conservation Act 1995* (TSC Act) have been identified within the Stage 1 project areas; the Hunter Lowlands Redgum Forest, Central Hunter Ironbark - Spotted Gum - Grey Box Forest and the Central Hunter Riparian Forest. Vegetation Communities in Stage 1 are shown in **Figure 29**.

Hunter Lowlands Redgum Forest

The Hunter Lowlands Redgum Forest is present in three areas within the Stage 1 development area:

- along the length of the drainage line in the eastern section of Residential Village 1;
- a small area on the ridge top in the north east of the Residential Village 1; and
- within the western drainage corridor to the south east of the "Entry Village".

The total area of the community in Stage 1 is 5.05 hectares. Notwithstanding the overall environmental offsets proposed in the offset strategy and VPA , the Hunter Lowlands Redgum Forest is, on its own, not offset in the proposed conservation areas which contain only approximately 1.05 hectares of the community. The proposed areas are almost entirely located within proposed open space areas along riparian corridors and Ridgetop Park. These communities have been incorporated into the design of these open space areas.

Central Hunter Riparian Forest

Small pockets of the Central Hunter Riparian Forest areas are located in the Wine Country Drive large lot residential area, in particular along the Black Creek corridor and in the south east corner. These areas are designated as open space and will not be disturbed. Notwithstanding this, in terms of the entire Huntlee development, this community has been offset adequately dealt with through the Environmental Offsets Strategy.

Central Hunter Ironbark - Spotted Gum - Grey Box Forest

This is the predominant vegetation community within the overall Huntlee development area. 568 hectares which is approximately 60% of the community within Huntlee is will be dedicated to the NSW Government through voluntary planning agreements. In terms of Stage 1 development, the community is present throughout most of the Town Centre area as well as being present in the southern section of Residential Village 1 and in the north east corner of the large lot residential area. In terms of the entire Huntlee development, this community has been offset adequately dealt with through the Environmental Offsets Strategy.

Figure 29 – Existing Vegetation in Village 1

Source: Hassell

6.6.2 Persoonia Pauciflora

Persoonia pauciflora or the North Rothbury Persoonia is listed as a critically endangered species under both the TSC Act and the EPBC Act. A detailed inventory of individual plants occurring within or immediately adjacent to the Huntlee site has been undertaken by RPS in 2005 and estimated that there was a population of some 550 individual plants. Since that time, some 277 plants have been lost through removal on a nearby site, not owned by Huntlee Pty Ltd.

In 2007, a further survey was undertaken of all known plants within the Huntlee Pty Ltd lands. The survey found a total of 23 plants, the majority of which were located in areas to be dedicated to the government either in the proposed Persoonia Park or within dedication areas to north of the Hanwood Estate boundary. Further surveys were undertaken in 2009 and 2010 to report on the status of the identified plants.

Section 5.2.1 of the ECMP (**Appendix I**) addresses the impact of the proposed Huntlee development on *P.pauciflora*. The proposed mitigation and management measures proposed by Huntlee have been assessed against the heads of consideration contained in the Draft National Recovery Plan (2009) prepared by DECCW for the species.

Proposed management and mitigation measures committed to by Huntlee Pty Ltd as part of a conservation strategy are:

- The dedication as part of the SEPP VPA an area of 17 hectares (Persoonia Park) as a reserve to retain in-situ specimens of *P.pauciflora* and to provide an area of habitat where research of the species would be undertaken;
- Protection of all in-situ occurrences of *P. pauciflora* . Protection will consist of the following measures:
- Development of a 30m diameter buffer surrounding each plant; and,
- Collection of seeds and cuttings with the view to achieving successful propagation;
- Contribute $100,000 to the Minister for the Environment and Climate Change for the North Rothbury Recovery Plan, to enable DECCW and the Commonwealth Department of Sustainability, Environment, Water, Population and Communities to develop reliable propagation techniques that can be used to help re-establish *P. pauciflora* on suitable habitat across what is believed to be its normal range;
- Since 2007, no stock has been agisted on the land, and cessation of any activities that will have a negative impact on *P. Pauciflora*; and,
- Seed and cutting collections in 2009 and 2010 have resulted in the successful propagation of 22 plants through the Annan Botanical Gardens.

Huntlee Pty Ltd has been working with DECCW since 2007 and established protective measures to the satisfaction of DECCW for those *P.pauciflora* on the Huntlee land. Seed surveys and collections in 2009 and 2010 have resulted in successful propagation. Huntlee Pty Ltd has offered $100,000 towards the Recovery Plan as part of the SEPP VPA. The collaboration with DECCW on the preservation and propagation programmes is strongly documented between DECCW and Huntlee.

In terms of Stage 1 of the Huntlee development, no *P.pauciflora* plants have been identified as being within the Stage 1 Residential Village or Town Centre areas. Three plants are identified in the proposed Persoonia Park located immediately south of the Residential Village 1 area and a further two plants on adjoining land (not owned by Huntlee Pty Ltd) also immediately south of Residential Village 1. These plants will not be affected by the development. Three plants are located in the north east corner of the Wine Country Drive large lot residential area. A further two plants are located within the road reserve immediately adjacent to this area. The proposed subdivision of this area proposes to designate this part of the site as open space to prevent development within the buffer area of the plants.

6.6.3 Threatened Fauna

The following threatened species, listed in the TSC Act were identified within the Stage 1 areas during the surveys that underpinned the Concept Plan:

- Grey-crowned Babbler (Residential Village 1)
- Speckled Warbler (Wine Country Drive)

The assessment contained in the ECMP concludes that adequate habitat would be provided within the proposed conservation areas and offset areas to ensure that there was not likely to be a significant effect to these species.

6.6.4 Aquatic Habitat

An aquatic habitat assessment was undertaken as part of the ECMP by RPS for the Huntlee development as a whole. The assessment concluded that the larger and more important watercourses and aquatic features are to be retained within the development framework as open space and drainage corridors.

In terms of the Stage 1 development areas, the majority of water courses are intermittently flowing watercourses contributing to larger watercourses, representing opportunistic feeding and dispersal habitat, and contributing to maintaining main stream water quality. With the exception of Small Intermittent Creeks, most of the water courses (within Stage 1 Development Area) are likely to provide at least some habitat opportunities for aquatic species, i.e. Class 2 'Moderate Fish Habitat' and Class 3 'Minimal Fish Habitat'.

For the Village 1 and Town Centre areas the proposed subdivision pattern will conserve the existing two large intermittent creeks flowing south to the north through this part of the Huntlee site to Anvil Creek. These creeks will be buffered from development by open space areas. These creeks will also include existing dams that are located along these corridors.

Black Creek forms the western boundary of the Wine Country Drive large lot residential area. This section of the site is proposed to be an open space corridor. The nearest lots will be located approximately 80m from the creek.

6.6.5 Mitigation Measures

Notwithstanding that offset measures were adopted by the NSW Government as part of the rezoning of the land, the ECMP recommended a range of principle mitigation considerations that could be adopted during the development phase to supplement the primary biodiversity protection measures(dedication of high conservation lands and measures associated with the conservation strategy for *Persoonia pauciflora)*. These measures are outlined in Section 6 of the ECMP (**Appendix I**) and include:

- Erosion and sediment control measures;
- Fencing between construction areas and adjacent retained vegetation,
- Minimisation of clearing in the development, particularly any areas that currently contain threatened species or ecological communities;
- Strict weed management, monitoring and control practices;
- A tree felling protocol to minimise harm to all fauna species during clearing of trees for the proposal;
- An assessment of tree hollow provision in areas surrounding clearing for the development and, if required, local supplementing of hollows, using salvaged tree hollows or nest boxes of a range of sizes;
- On-going management and monitoring nest boxes;

- Timing of clearing to avoid removal of hollow bearing tress during the breeding season of threatened species;
- An annual fauna monitoring program
- protection and enhancement of wetland and riparian areas;
- pest management;
- stormwater and effluent management
- Restoration and maintenance of riparian buffers
- Design and construction of watercourse crossings.

The above mitigation measures will be addressed as part of the management plans to be prepared for the site prior to construction. These management plans are included in the Statement of Commitments (Section 7) and include:

- Construction Management Plan;
- Vegetation Management Plan;
- Soil and Water Management Plan.

6.7 Bushfire Management

A Bushfire Threat Assessment for the SSS Study was prepared by HDB Town Planning and Design. The assessment was prepared to demonstrate the site's ability to accommodate bushfire protection measures and therefore facilitate future residential development throughout the site for the Huntlee development. The assessment was undertaken to ensure that the development of Stage 1 of Huntlee would meet the requirements of *Planning for Bushfire Protection 2006.* To this effect, the assessment methodology addressed the following:

- Vegetation assemblages on and adjoining the development area and categorisation based on the amount of fuel that can be found in each vegetation classification;
- Topography, including an assessment of the slope of the site, over a distance of 100m from the proposed building areas towards the vegetation communities which are bushfire prone;
- A bushfire protection assessment combining the dominant vegetation assemblage with the slope of the site to determine the appropriate asset protections zones required;
- An assessment of roads and access to the site;
- An assessment of water supply for fire fighting purposes; and
- Standards of construction.

The assessment concluded that, provided a number of key recommendations were implemented in the subdivision and road design, the development would be consistent with the provisions of *Planning for Bushfire Protection 2006.*

The proposed Huntlee Stage 1 areas are located within bushfire prone areas as indicated on Cessnock Council's Bushfire Prone Land Map. Current legislation requires that a Bushfire Threat Assessment be undertaken for new residential development within bushfire prone land. HDB Town planning and design has undertaken Bushfire Threat Assessments for all Stage 1 areas (see **Appendix J**).

The extent of the Asset Protection Zone (APZ) has been determined based on the assessment of Vegetation Assemblages and the site's topography which is generally within a 0-10% slope for all areas to be developed. The required APZ for any lot within Stage 1 is detailed in **Table 19.** APZs are delineated between Inner Protection Zones (IPZ) and Outer Protection Zones (OPZ).

Table 19 – APZ Requirements

Vegetation Type	Slope (from fire threat)	APZ (m)	
		IPZ	OPZ
Grasslands	All upslope vegetation considered 0° (flat)	10m IPA*	N/A
	>0° to 5° downslope		
	>5° to 10° downslope		
	>10° to 15° downslope		
	>18° downslope		
Grassy Woodlands	All upslope vegetation considered 0° (flat)	10m IPA*	
	>0° to 5° downslope	15m IPA*	N/A
	>5° to 10° downslope	20m IPA*	
	>10° to 15° downslope	25m IPA*	
	>18° downslope	30m IPA*	
Dry Sclerophyll Forest	All upslope vegetation considered 0° (flat)	20m APZ	10m OPZ optional within 20m APZ
	>0° to 5° downslope	25m APZ	10m OPZ optional
	>5° to 10° downslope	35m APZ	15m OPZ optional
	>10° to 15° downslope	50m APZ	25m OPZ optional
	>18° downslope	60m APZ	30m

*Maintained as an Inner Protection Area (IPA)

The above APZs have been incorporated into the subdivision design of the Stage 1 areas. This has largely been achieved through the design of perimeter roads around the Village 1 residential subdivision. The APZs are shown in **Figure 30.**

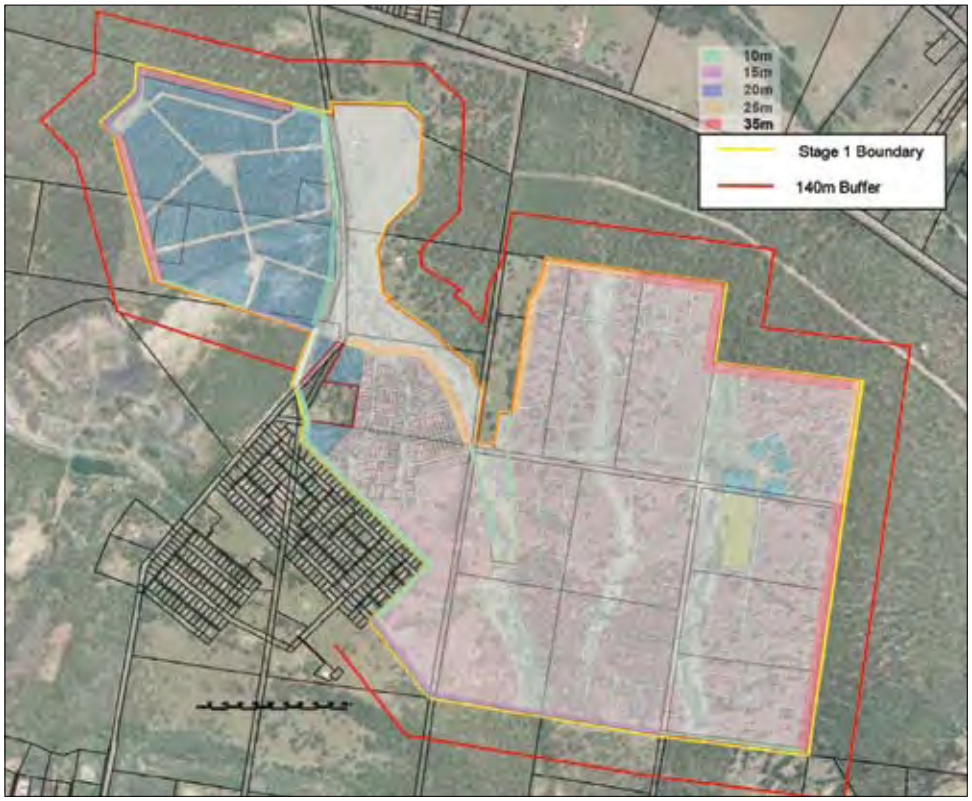

Figure 30 – Stage 1 APZs

Source: HDB

The Bushfire Threat Assessment for Stage 1 identified the subject areas as being subject to potential bushfire attack. Vegetation and slope within the areas vary considerably and Asset Protection Zones will be necessary around the Village 1 and large lot residential areas. The following recommendations have been would be required for future development of dwellings within Huntlee.

The key recommendations can be summarised as follows:

- The APZ's (detailed in **Table 19**) are to be implemented for proposed subdivision boundaries and future dwelling houses for the corresponding slope and vegetation.
- All created lots who share boundaries with vegetation will require the corresponding APZ on any boundary which is exposed to a possible fire threat.
- All APZ's are to be contained in respective lots i.e. within individual lot boundaries.
- Access is to be provided in line with the requirements of the RFS (as detailed in the Bushfire Threat Assessment), and *Planning for Bushfire Protection 2006.*
- The use of perimeter roads will provide a buffer between all residential allotments and vegetation, in and around the site.
- The urban design prevents the occurrence of dead-end roads/streets which can cause evacuation problems in a fire event and be hard to negotiate for RFS vehicles. Where avoidable dead-end streets should not be used in the subdivision design.
- The road widths and turning radiuses conform to the requirements of the RFS (as detailed in the Bushfire Threat Assessment).
- In providing water for fire fighting purposes, residential allotments will be serviced by hydrant system, built in accordance with AS2419.1-2005.
- Whilst further evaluation of the level of construction of structures will be undertaken as part of the detailed design stages, if the minimum APZ has been achieved, level 3 construction is used.
- The overall development of Huntlee requires successive stages of development after Stage 1. As part of the construction period and phasing of Huntlee staged release areas will each be exposed to a bushfire threat prior to the development of the next stage. In such circumstances, concentric APZ's are recommended around each release area which faces a bushfire hazard.

6.8 Salinity

The Huntlee SSS Study was supported by a Preliminary Geotechnical Assessment prepared by Douglas Partners in light of the *Hunter Priority Aquatic Health Catchment* diagrams identifying the site as high hazard area for salinity.

Despite little evidence of salinity being identified during a walk over survey of the site, the Huntlee Concept Plan committed to further testing prior to commencement of physical works to assess the presence of salinity and potential impacts to and from the proposed development.

Worley Parsons reviewed the Douglas Partners report and has reiterated the necessity for further salinity investigations to be undertaken to categorise the level of salinity across the site prior to the detailed design of infrastructure and servicing. Huntlee Pty Ltd has committed to undertaking these investigations as outlined in the Statement of Commitments as part of the erosion and sediment control measures.

The following management strategies will also be implemented through various aspects of the development to further limit the impacts of saline / sodic soils:

- Maintaining natural water balance and good drainage to prevent interference of subsoil and surface drainage pathways, and to prevent rising groundwater levels;
- Avoiding disturbance or exposure of sensitive soils to minimise erosion potential;
- Appropriate management of earthworks;
- Retaining and where appropriate increasing native vegetation in strategic areas such as along creek lines and drainage paths;
- Implementing building controls and engineering responses where appropriate;
- Avoiding water collection in low lying areas which have been earmarked for construction (eg: depressions, behind embankments or services trenches, etc);
- Location of stormwater quality ponds outside areas of moderate salinity, or in instances where this cannot be avoided implementation of mitigation measures that will minimise the risk of structural degradation and other impacts;
- Designing roads and shoulder areas well to ensure drainage of surface water and using materials which have minimal or no salt; and
- Choosing construction materials following an assessment of the site's salinity, agressivity or corrosivity.

Preliminary investigations suggest the Stage 1 Project Application Area exhibits little or no evidence of salinity. Notwithstanding, Huntlee Pty Ltd has committed to a series of actions including detailed investigations and implementation of various management strategies to mitigate the impacts of salinity. It is our view that the salinity issues associated with the site can be managed effectively.

6.9 Groundwater Management

Despite there being no intention to extract groundwater or use it for domestic purposes, the Huntlee SSS Study confirmed that there are no groundwater bores within the Stage 1 Project Application areas.

Notwithstanding this, groundwater on the subject site is likely to coincide with natural surface drainage paths, with surface aquifers being generally confined over relatively impermeable unweathered rock strata.

Huntlee Pty Ltd had reaffirmed that there is no intention to harvest existing groundwater resources at the site to facilitate the Stage 1 Project Application. The clay soils on the site and introduction of new impermeable surfaces further limit the potential to recharge to the groundwater aquifer.

The proposal's drainage strategy will ensure that no surface ponding occurs, whilst also guaranteeing adequate through flow of near surface aquifers. This will reduce the risk of groundwater "backing up", and consequently concentrating saline groundwater.

The proposed Stage 1 development is unlikely to interfere with, or impact upon existing groundwater resources. The site's natural attributes and the proposed built form and infrastructure will mitigate the effects of the proposed urban development on the groundwater.

6.10 Contamination and Subsidence

Contamination

In accordance with *State Environmental Planning policy No. 55 - Remediation of Land,* a limited Phase 1 Environmental Site Assessment was undertaken for the proposed development area by AECOM (**Appendix K**). This report was in addition to the assessments undertaken for both contamination and mine subsidence for the Huntlee SSS Study. It should be noted that the Stage 1 development area is not located on land previously used for mining activities associated with the Ayrfield Colliery nor landfill areas currently subject to the Remediation and Rehabilitation Plan approved by the Department of Planning in August 2009.

The Stage 1 site assessment comprised a site inspection and review of historical information to assess potential risks at the site with respect to contamination and identify where additional investigations and/or remediation may be necessary. Based on this assessment a Preliminary Conceptual Site Model (CSM) was developed which identified areas of environmental concern (AECs) and contaminants of potential concern (CoPCs), potential exposure pathways and sensitive receptors.

While the assessment found that, based on site history, there was no evidence of potentially contaminating activities, the preliminary CSM identified a number of AECs across the development area including a metal scraps storage area, two above ground storage tanks which may contain fuel, a shed and surrounding area used for timber furniture manufacture, a derelict shed, a car wreck and a rusted drum.

In terms of CoPCs, these include:

- Heavy metals which are commonly found in fill materials and rusted metal objects including the scrap metal area, rusted drum and furniture manufacturing shed;
- Organochlorine and organophosphate potentially used in previous farming practices on the site;
- Asbestos - may be present in fill materials around the site;
- Total Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene and Xylenes associated with former fuel storage in above ground storage tanks.

The report also considered potential exposure pathways to humans and environmentally sensitive receptors including ground and surface water, flora and fauna. A qualitative risk assessment was undertaken to assess the nature of potential risks identified on the site with respect to contamination and hazardous construction materials. The findings of the risk assessment were used to determine an appropriate level of further investigation and / or remediation at the site. The risk assessment found that there was a moderate risk (further investigation and possible remediation required) associated with the following:

- Areas surrounding above ground storage tanks;
- The metal scrap storage area ;
- The timber furniture manufacturing area; and
- A derelict shed and abandoned residence.

The report recommends that further Phase 2 investigations be undertaken for these areas prior to demolition or development. This has been included in the Statement of Commitments.

Subsidence

The Stage 1 areas are located above previous mining activities and not subject to mine subsidence restrictions.

6.11 Sustainability

An assessment of the potential greenhouse gas emissions of the total Huntlee development was prepared by Sustainable Built Environments (SBE) for the Concept Plan (see concept plan Section 7.12). The Sustainability Strategy considered a range of factors which may contribute to greenhouse gas emissions based on the technical reports and advice prepared by relevant technical consultants.

The Sustainability Strategy considered the use of:

- energy;
- water;
- materials and waste;
- transport;
- land and biodiversity;
- emissions;
- social impact; and
- management.

The estimated greenhouse gas emissions based the quantum of the Huntlee development were provided. They were calculated on the CO_2 emissions that can be attributed to a mixed-use development, such as Huntlee new town, over its life cycle as follows:

- transport energy i.e. travel to, from and around Huntlee by residents, workers and visitors;
- emissions associated with the embodied energy of construction materials;
- due to on-site construction energy;
- operational energy i.e. the energy required to operate, manage and maintain buildings once constructed; and
- associated with a buildings demolition.

The predicted CO_2 emissions for residential and employment lands for Huntlee is summarised in **Tables 20** and **21**.

Table 20 – Predicted CO_2 residential emissions, over a 40yr period

Operational Energy	Predicted CO_2 emissions
Based on: - 7,500 dwellings - Average dwelling size 215m^2 - Average energy use/household at 8 tonnes CO_2[3] (per year)	- No. dwellings x Average dwelling size x Av energy use - 7,500 x 215 x 8t CO_2/m^2/year = 12,384,000t CO_2/yr - 12,384,000t CO_2/yr x 40 yrs - = 495,360,000t CO_2
Total Residential CO_2 emissions	495,360,000t CO_2

The Total CO_2 emissions detailed in Table 22 excludes transport energy and CO_2 emissions associated with the buildings' demolition as these measures are unable to be quantified at this stage.

Different business sectors (i.e. commercial, industrial, mixed-use) within the Employment Lands have been calculated using the same methodology as the breakdown (in terms of NLA etc) of each use is not yet known. The Huntlee Sustainability Strategy is at **Appendix M.**

Table 21 – Predicted CO_2 employment lands emissions, over a 40yr period

CO2 Generator	Significance*	Predicted CO2 emissions
Embodied energy of construction materials	(moderate impact) Approx. 0.5 – 2t CO_2/m^2. Average is 1.25t CO_2/m^2	100,000 (NLA) x 1.25t CO_2/m^2 =125,000t CO_2
On-site construction energy	(low impact) Approx. 10% of embodied energy. Therefore 0.05-0.2t CO_2/m^2. Average is 0.125t CO_2/m^2	100,000 (NLA) x 1.25t CO_2/m^2 =125,000t CO_2
Operational energy	(moderate to large impact) Approx 0.3t CO_2/m^2/yr for an average office building	100,000 (NLA) x 0.3t CO_2/m^2/yr =30,000t CO_2/yr Assuming a buildings lifespan is 40yrs = 1,200,000t CO_2
Total Employment Lands CO_2 emission		1,337,500t CO_2
* Source: "Major greenhouse emission issues associated with commercial and industrial buildings"		

6.11.1 Stage 1 Assessment

The green house gas emissions associated with Stage 1 of the Huntlee New Town are included within the total figures in **Tables 20** and **21** above. To achieve these targets, a Sustainability Strategy has been prepared for Huntlee that provides a range of targets. The compliance with these targets is summarised in **Table 22** below:

Table 22 – Sustainability Targets

Sustainability Strategy Target	Compliance
Energy	
To incorporate best practice passive solar designs into the subdivision layout and building	Village 1 residential subdivision pattern is characterised by a predominance of east west street and maximising opportunities for dwelling s to have a northern aspect
To exceed BASIX energy requirements	To be addressed at building development stage
To supply a percentage of the site's energy from renewable sources	To be addressed at building development stage
All residences to be installed with solar hot water systems	To be addressed at building development stage
Water	
To incorporate Best practice Water Sensitive Urban Design principles	Addressed in Stormwater management strategy
To exceed BASIX water requirements;	Huntlee Pty Ltd is in discussion re the design of a wastewater re-use scheme to be implemented during Stage 1. A "Third pipe" system is able to be implemented.
No potable water to be used for landscape irrigation;	Huntlee Pty Ltd is in discussion re the design of a wastewater re-use scheme to be implemented during Stage 1. A "Third pipe" system is able to be implemented
No potable water to be used for toilet flushing and urinals;	Huntlee Pty Ltd is in discussion re the design of a wastewater re-use scheme to be implemented during Stage 1. A "Third pipe" system is able to be implemented

Sustainability Strategy Target	Compliance
Material and Waste	
To maximise material re-use on-site;	Target to be included in the Construction Management Plan
To recycle a high percentage of construction waste, diverting it from landfill	Target to be included in the Construction Management Plan
Transport	
To prioritise personal mobility routes;	Village 1 has been designed to provide priority for pedestrians and cyclists in terms of segregated pathways and easy access to facilities.
To locate dwellings and commercial premises within easy walking distance of public transport stops;	All lots in Village 1 are located within 400m of public transport.
To locate all dwellings within easy walking distance of a convenience store	Village 1 incorporates a Village Centre containing neighbourhood retail services. Pedestrian and cycle movement is designed to provide easy access to this centre
Land and Biodiversity	
To protect and enhance the site's biodiversity.	Achieved through the Huntlee Environmental Offsets Strategy. In Stage 1, the majority of the Hunter Lowland Redgum Forest (EEC) is protected by an open space zoning. 17 hectares is set aside in Stage 1 for the conservation and propagation of Persoonia pauciflora.
To plant a high percentage of the site with indigenous drought-tolerant species	The Landscape Strategy recommends a number of local species for street tree planting and parkland planting.
Emissions	
To minimise emissions to air, water and soil;	Incorporated into the Stage 1 design through - Convenient pedestrian and cycle movement - Convenient public transport access - WSUD principles in stormwater management
Social	
To integrate a percentage of affordable housing into the development;	Stage 1 provides for a range of lot sizes to accommodate a life cycle of housing types for residents and promote affordability.
To integrate best practice Crime Prevention Through Environmental Design (CPTED) principles into buildings and urban design.	These have been considered in the design of the Stage 1 areas.
Management	
New commercial, retail, educational, health and industrial buildings constructed on the site are to achieve a minimum of 5 Green Stars using Green Building Council of Australia's Green Star tools.	To be addressed at building approval stage.

The Sustainability Strategy for Huntlee will be subject to on-going development through the staged planning process. The ESD opportunities described and the targets have been considered in the design and technical assessments of the Stage 1 areas. Elements of the Sustainability Strategy have been incorporated into the draft Development Control Plan (**Appendix C)**. Huntlee Pty Ltd commits to the further development and implementation of the Sustainability Strategy and its integration into the future planning and design of Huntlee.

6.11.2 Principles of Ecologically Sustainable Development

An assessment of the proposed Stage 1 development of Huntlee has been assessed against the key heads of consideration in the definition of Ecologically Sustainable Development (ESD) incorporated into the *Environmental Planning and Assessment Act 1979*, as follows:

Precautionary Principle - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation:

- all supporting technical reports are based on careful evaluation of the proposed impacts on the environment through measures such as analysis of historic documentation, field surveys and technical modelling. Based on this evaluation management and mitigation measures have been formulated based on best practice and in accordance with relevant policies and guidelines to avoid serious or irreversible damage to the environment.
- a conservation area adjacent to Stage 1 will be dedicated for *P.pauciflora* as part of the Regional VPA with the NSW Government even though all individuals will be protected and there is some evidence that translocation is possible.
- the principle has also been applied by RPS in its ecological assessment. For example RPS:
  - assumed certain parts of the Huntlee development areas contain habitat for threatened species even when those species could not be located during extensive surveys,
  - assumed that certain ecological communities were groundwater dependent ecosystems even if though it could not be confirmed.
  - proposing mitigation measures for any future development.
- it has also been considered in that the large conservation offset areas (particularly those that adjoin or constitute 'stepping stones' to National Parks or other reserves) could provide refugia to assist species adapt to human induced climate change. This is consistent with some of the priorities of the NSW Priorities for Biodiversity Adaptation to Climate Change in that it will assist in protecting a diverse range of habitats by building a comprehensive, adequate and representative (CAR) reserve system and increasing opportunities for species to move across landscapes.
- by applying the DECCW Guideline titled *Floodplain Risk Management: the Practical Consideration of Climate Change (2007)* and undertaking a sensitivity analysis of increased rainfall densities as a result of climate change as part of the floodplain risk assessment for the Black Creek catchment.
- by restoring degraded habitat which can reduce the impacts of invasive species (which are likely to increase as a result of climate change)

Inter-Generational Equity – namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations

- this has been satisfied through:
  - creation of a safe, healthy and high quality living environment with housing diversity and choice;
  - employment generation and opportunities;
  - delivery of biodiversity outcomes which will see significant high conservation areas dedicated for public ownership;

Conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration

- this is satisfied through:
  - protection of significant habitat that is considered to be of high or strategic conservation value;
  - dedication of conservation offset lands;
  - creation of conservation measures for *P.pauciflora* including the creation and dedication of Persoonia Park and funding for research and propagation of the species;
  - habitat preservation and creation; and
  - provision of wildlife corridors.

Improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services,

- The Sustainability Strategy for Huntlee incorporates key environmental objectives that are required to be considered in decisions relating to the future design, construction and on-going management of Huntlee. These objectives address the principles of polluter pays, full life cycle pricing and establishing goals and incentive structures to enable those best placed to maximise environmental benefits of minimise environmental costs to develop solutions and responses to environmental problems. The key objectives in the Sustainability Strategy relate to:
  - Energy
  - Water
  - Materials and Waste
  - Transport
  - Emissions
  - Land and biodiversity
  - Social environment; and,
  - Management goals.

6.12 Regional and Community Infrastructure Provision and Funding

The Huntlee development areas are divided between the LGAs of Cessnock and Singleton. The SSS Study identified the potential for governance arrangements in the new town 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.

Huntlee Pty Ltd has held a number of discussions with both Cessnock and Singleton Councils and the DoP. Huntlee Pty Ltd has briefed both Councils on the overall development and in briefing the Cessnock City Council officers on 18th January 2011 pertaining to Stage 1. It has been agreed 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.

Voluntary Planning Agreements (VPA) under Section 93(F) of the EP&A Act will be prepared to provide for regional and local infrastructure. The VPAs will relate to development and associated infrastructure and community services for each stage of the project.

It has been agreed that two VPAs be prepared for each stage; one between Huntlee Pty Ltd for regional infrastructure provision and a second VPA between Huntlee and Cessnock and Singleton Councils for local infrastructure provision. It should be noted that Stage 1 development is located wholly within Cessnock Council and therefore the Stage 1 VPA will be with that Council only.

It should be noted that the NSW Department of Planning has developed a draft plan to streamline the contributions process for regional infrastructure in the Lower Hunter region. The Government's policy on contributions for State infrastructure is one of the implementation actions in the Lower Hunter Regional Strategy.

It is proposed to introduce a uniform special infrastructure contribution (SIC) scheme to replace the current process where contributions are negotiated site-by-site. The aim is to reduce costs and delays, and promote long-term infrastructure planning. The plan is proposed for those non-urban lands that are rezoned to residential and industrial purposes. It will fund a wide range of road, education, emergency services, health and regional open space infrastructure.

The proposed SIC was recently publicly exhibited by the Department of Planning but has yet to be enacted. Should it be enacted by the NSW Government prior to the determination of Huntlee Stage 1, regional contributions will be in accordance with that scheme.

6.12.1 Regional Planning Agreement

A VPA to address funding and delivery of regional infrastructure for Stage 1 of Huntlee has will be negotiated between Huntlee Pty Ltd and the Minister for Planning.

The Stage 1 VPA for regional infrastructure provides for the following contributions outlined in **Table 23** below.

Table 23 – Stage 1 Regional VPA Infrastructure Contributions

Item	Works	Contribution
Regional Road	- Regional Road infrastructure works - Duplication of Wine Country Drive between North Rothbury and the Hunter Expressway Link Road	- Per lot contribution towards regional road infrastructure works - Works in kind
Education	- Primary School	- provision of a fully serviced primary school site
Environmental	- Conservation offsets	- dedication of Lot 2 DP 1042240 (172 ha) to the NSW Government

The tables to the VPA will specify set contribution amounts or items that are required to be paid at specified stages of the project.

6.12.1 Local Planning Agreement

The local VPA will be negotiated between Huntlee Pty Ltd and Cessnock City Council for Stages 1 development.

The local VPA will provide the following contributions:

Table 24 – Local VPA Infrastructure Contributions

Item	Works	Contribution
Community Facilities	- Neighbourhood centre - Town Centre Community Building	Dedication of 0.5ha and monetary contributions towards construction of centre. Dedication of 0.9ha of land and monetary contribution towards the staged construction of the building.
Education	- Dedication of land and the provision of a public pre-school	Dedication of 0.1ha and monetary contributions towards construction of pre-school.
Recreation	- Neighbourhood parks (incl landscape and maintenance for 3 years)	Dedication of land
	- Public open space and cycleways	Material public benefit towards provision and 3yr maintenance of open space, cycleways, playgrounds and park infrastructure.

6.13 Other Issues

6.13.1 Heritage and Archaeology

The assessment of European and archaeology undertaken by HDB Town Planning and Design as part of the SSS Study for the overall Huntlee development did not identify any listed heritage items or other items of significance within the proposed Stage 1 project areas.

In terms of Aboriginal archaeology, the assessment undertaken by Myall Coast Archaeological Services did not identify any significant Aboriginal sites or objects within the Stage 1 project areas. Notwithstanding this, the Statement of Commitments will address procedures to be followed should a site be discovered during any works associated with this application.

6.13.2 Demolition, Earthworks and Construction Impacts

A detailed Construction Management Plan will be required to be prepared by Huntlee Pty Ltd prior to works being undertaken. A construction Management Plan Framework for Huntlee has been prepared by Worley Parsons as part of the Physical Infrastructure Report (**Appendix G)**

The Construction Management Plan will include the following considerations:

- Air quality;
- Erosion and Sediment Control;
- Ecological;
- Heritage;
- Site Safety and Emergency Response;
- Construction Waste;
- Construction Noise;
- Construction Vibration;
- Hazardous Materials; and
- Traffic Management.

7.0 Stage 1 Project Application Statement of Commitments

The following commitments have been compiled based on the environmental assessment undertaken in the preparation of this report and outlined in Section 5. They provide a commitment by Huntlee Pty Ltd indicating the responsibilities and timing to implement measures to prevent potential environmental impacts that have been identified through this assessment to ensure that the project is environmentally, socially and economically sustainable, and to outline a program of works to take forward the staged development of the Huntlee site under future project applications.

Subject	Commitments	Responsibility	Approved by Whom	Timing
General	Huntlee Pty Ltd will carry out the development in accordance with this Project Application and Environmental Assessment Report (EAR) prepared by JBA Urban Planning Consultants and dated January 2011 and associated plans and supporting reports.	Huntlee Pty Ltd	Various	Duration of the subdivision and infrastructure works
Regional Planning Agreements	A Voluntary Planning Agreement for Stage 1 will be executed between Huntlee Pty Ltd and the Minister for Planning to provide for the timely delivery of regional infrastructure.	Huntlee Pty Ltd	Minister for Planning	The Voluntary Planning Agreement will be executed at the time the Project Application is determined or thereafter.
Local Planning Agreement	A Voluntary Planning Agreement for Stage 1 will be executed between Huntlee Pty Ltd and Cessnock City Council to provide for the timely delivery of local infrastructure and community services.	Huntlee Pty Ltd and Cessnock City Council	Cessnock City Council	The Voluntary Planning Agreement will be executed at the time the Project Application is determined or thereafter.
Road Works	Prior to the issue of a Subdivision Certificate in respect of land upon which residential dwelling is to be developed within Stage 1, Huntlee Pty Ltd will enter into a Roadworks Agreement with the RTA, or such other legally binding agreement as approved by the Minister at his discretion, in respect of the carrying out and completion of the following Road Improvement works: Duplication of Wine Country Drive between the Hunter Expressway Link Road and North Rothbury; Construction of the intersection of Wine Country Drive and Main Street; Construction of the intersection of Wine Country Drive and the Village 1 Entry Road Construction of the intersection of Wine Country Drive and the access to the WCD Large Lot Residential Area.	Huntlee Pty Ltd	RTA	Prior to relevant Subdivision Certificates
Legislative Controls and Approvals	Huntlee Pty Ltd will obtain and maintain the following licences, permits and approvals for the residential subdivision: - Relevant Council – Construction Certificates for engineering works for each stage of the subdivision. The application for Construction Certificates will contain Design Drawings submitted containing, where relevant, detailed designs relating to earthworks, drainage, Soil erosion and Sediment Control and site rehabilitation, tree clearing and site stability, roadworks, footpaths/cycleways, water supply (both potable and use of reclaimed water) and sewerage works, and landscaping;	Huntlee Pty Ltd	Various	Duration of subdivision

Subject	Commitments	Responsibility	Approved by Whom	Timing
Legislative Controls and Approvals	- Relevant Council - Road Opening Permit from Cessnock City Council as required; - Relevant Council - Section 138 Consent for roadworks (Roads Act 1993); - Energy Australia - Design Certification; - Energy Australia - Notification of Arrangement; - Telstra - Compliance Certificate; - Hunter Water Corporation - Compliance Certificate; and, - Relevant Council – Subdivision Certificates for each stage.	Huntlee Pty Ltd	Various	Duration of subdivision
Staging Plans	Prior to the issue of a subdivision certificate for each sub-stage of the development, an up-dated staging plan shall be submitted showing at a minimum the next five sub-stages of the development.	Huntlee Pty Ltd	Department of Planning	Prior to the issue of each Subdivision Certificate
Detailed Engineering and Subdivision Plans	Huntlee Pty Ltd will prepare and submit detailed engineering and subdivision plans for each sub-stage of the development prior to the issue of the relevant Construction Certificate or Subdivision Certificate. The detailed plans shall include the following: - Lot areas - Lot dimensions - Road cross sections and long sections - Cut/fill and finished levels - Bulk earthworks plan	Huntlee Pty Ltd	Department of Planning	Prior to issue of relevant Construction or Subdivision Certificate
Final Plans of Subdivision	Huntlee Pty Ltd will prepare a final plan of subdivision and Section 88B instrument for each sub-stage of the development in accordance with the recommendations of the Environmental Assessment and requirements of the relevant Council.	Huntlee Pty Ltd	Cessnock Council	Prior to the issue of Subdivision Certificates
Construction Management Plan	Prior to the issue of a Construction Certificate, a Construction Management Plan shall be submitted to and approved by the relevant Council. The Plan shall address, but not be limited to, the following matters where relevant: - hours of work, - contact details of site manager, - construction traffic management, - noise and vibration management, - waste management, - erosion and sediment control - Vegetation management. The CMP shall be consistent with the Construction Management Plan Framework outlined in *Huntlee Project Stage 1 - Physical Infrastructure Report* prepared by Worley Parsons dated December 2010 (Appendix G of the EAR)	Huntlee Pty Ltd	Council	Prior to issue of construction certificate

Subject	Commitments	Responsibility	Approved by Whom	Timing
Vegetation Management Plan	Prior to the commencement of works, a Vegetation Management Plan must be prepared and submitted to and approved by the relevant Council. The Plan must address protective measures during the construction phase, potential impacts of the adjoining residential development and means of control, weed removal, revegetation, threatened species protection (especially Hunter Lowland Redgum Forest). The VMP shall address the mitigation measures outlined in Section 6 of the *Ecological Assessment Report* - Huntlee prepared by RPS dated September 2010 (Appendix I of the EAR)	Huntlee Pty Ltd	Council	Prior to commencement of works
Erosion and Sedimentation Control	Soil erosion and sediment control measures shall be designed in accordance with the document Managing Urban Stormwater–Soils & Construction Volume 1 (2004) by Landcom. Details are to be submitted of a Soil and Water Management Plan to the satisfaction of the Council prior to the issue of the Construction Certificate. All erosion and sediment control measures are to be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as a source of sediment. Salinity investigations will be undertaken to categorise the level of salinity across the site prior to the detailed design of infrastructure and servicing. The Soil and Water Management Plan shall include the management and mitigation measures contained in: *Huntlee Project Trunk Stormwater and Flooding Assessment - Stage 1 Project Application* prepared by Worley Parsons and dated December 2010 (Appendix H of the EAR) *Ecological Assessment Report* - Huntlee prepared by RPS dated September 2010 (Appendix I of the EAR)	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Traffic & Pedestrian Management	Prior to the issue of a Construction Certificate, a Traffic and Pedestrian Management Plan prepared by a suitably qualified person shall be submitted to and approved by the Council. The Plan shall address, but not be limited to, the following matters: - ingress and egress of vehicles to the site, - loading and unloading, including construction zones, - predicted traffic volumes, types and routes, and, - pedestrian and traffic management methods. The *Transport Management and Accessibility Plan* prepared by Better Transport Futures dated December 2010 (Appendix E of the EAR)	Huntlee Pty Ltd	Council	Prior to issue of construction certificate

Subject	Commitments	Responsibility	Approved by Whom	Timing
Noise and Vibration Management Plan	Prior to the issue of a Construction Certificate, a Noise and Vibration Management Plan prepared by a suitably qualified person shall be submitted to and approved by the Council. - The Plan shall address, but not be limited to, the following matters: - Identification of the specific activities that will be carried out and associated noise sources, - Identification of all potentially affected sensitive receivers including residences, schools, and properties containing noise sensitive equipment, - The construction noise objective, - The construction vibration criteria, - Determination of appropriate noise and vibration objectives for each identified sensitive receiver, - Noise and vibration monitoring, reporting and response procedures, - Assessment of potential noise and vibration from the proposed construction activities including noise from construction vehicles and any traffic diversions, - Description of specific mitigation treatments, management methods, and procedures that will be implemented to control noise and vibration during construction, - Construction timetabling to minimise noise impacts including time and duration restrictions, respite periods, and frequency, - Procedures for notifying residents of construction activities that are likely to affect their amenity through noise and vibration, and - Contingency plans to be implemented in the event of non-compliances and/or noise complaints.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Construction Waste Management Plan	Prior to the issue of a Construction Certificate, the Proponent shall submit to the satisfaction of the Council a Waste Management Plan prepared by a suitably qualified person in accordance with Council requirements.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate
Stormwater and Drainage Works Design	Final design plans of the stormwater drainage systems within the proposed subdivision, consistent with the stormwater management objectives and controls in Section 5.4 of the Environmental Assessment and prepared by a qualified practicing Civil Engineer and in accordance with the requirements of Council shall be submitted to and approved prior to issue of a Construction Certificate.	Huntlee Pty Ltd	Council	Prior to issue of construction certificate

Subject	Commitments	Responsibility	Approved by Whom	Timing
Contamination	A Phase 2 Investigation shall be undertaken for each area identified as "moderate risk" in *Limited Phase 1 Environmental Site Investigation - North Rothbury* prepared by AECOM dated March 2011. Should the Phase 2 investigation recommend remediation measures be implemented, a remediation action plan shall be submitted and approved prior to any works being undertaken on the site.	Huntlee	Department of Planning	Prior to a Construction Certificate for any demolition or construction works at that location.
Road Design	All roads shall be designed in consultation with Council and with the relevant requirements of Council and / or Roads and Traffic Authority as appropriate. Final road design plans shall be prepared by a qualified practising Civil Engineer and submitted to the Council prior to the issue of a Construction Certificate.	Huntlee Pty Ltd	Council and / or RTA where works occur	Prior to issue of construction certificate
Compliance	Prior to the issue of a Construction Certificate, the Proponent, or any party acting upon this approval, shall submit to the Department of Planning a report addressing compliance with all relevant conditions of this Part.	Huntlee Pty Ltd	Department of Planning	Prior to issue of a Construction Certificate.

8.0 Conclusion

This environmental assessment report for Stage 1 subdivision and infrastructure works for the Huntlee development addresses the following:

Section 1 of the report provides an introduction to the Huntlee Stage 1 project including the scope of what approval is sought for, a background to the Huntlee New Town development and details of the proponent and project team

Section 2 of the report provides a detailed analysis of the Stage 1 development area including its location in the context of the overall Huntlee development, land ownership and legal description, existing development on and surrounding the site and a summary of constraints and opportunities.

Section 3 of the report outlines the planning framework and statutory context of the development including Commonwealth Legislation, State and regional strategic planning and local planning strategies.

Section 4 of the report provides an outline of community, Council, agency and Aboriginal consultation that has been undertaken for the project to date and the consultation process moving forward should approval be granted.

Section 5 of the report provides a detailed description of the proposed Huntlee Stage 1 development including the overall Huntlee vision, the specific components of the Stage 1 development, urban design, landscaping and public domain, proposed road layout and hierarchy, pedestrian and cycle movement, public transport, and staging

Section 6 of the report provides an assessment of the planning issues associated with the proposed Stage 1 development and outlines management and mitigation measures that the will be employed in the design and construction of the development. The section also addresses ecologically sustainable development and a consideration of alternatives to the development.

Section 7 of the report is the draft Statement of Commitments that details the responsibilities and timing to implement measures to prevent environmental impacts that have been identified through the assessment.

The environmental assessment report and supporting specialist technical studies demonstrate that approval should be granted on the basis that:

- The proposal is specifically identified in the Lower Hunter Regional Strategy as a major urban release area able to accommodate up to 7,200 residential dwellings as part of the proposed Urban Development Program for the region. This Project Application represents the first stage of the development;
- Strategic and ongoing traffic investigations demonstrate that Huntlee New Town can provide appropriate improved modal splits;
- The sustainable urban development framework for Huntlee can be designed and implemented through the implementation of the draft Development Control Plan that will provide detailed guidance and controls for this and each subsequent staged Project Application for subdivision and infrastructure works;
- Regional road, educational and environmental infrastructure / facilities can be funded and implemented through Voluntary Planning Agreement arrangements;
- Detailed Plans of Management for the proposed conservation lands will be prepared in consultation with DECCW and the local community;
- The ecological attributes of the proposal have been well documented and will be protected and enhanced through dedicated of the conservation offset lands;

- The proposal's response to managing impacts on the *Persoonia pauciflora* is addressed through the conservation offsets in the SEPP VPA, proposed on-site management measures including protection of all in-situ occurrences for up to 5 years and proposed measures including $100,000 funding towards research and propagation techniques;
- The environmental assessment report and the associated specialist studies comprehensively analyse the potential environmental impacts of the proposed Huntlee development and provide a detailed justification for the development including land use, urban design principles and the proposed development staging framework;
- The assessment of the Huntlee proposal has considered potential greenhouse gas emissions from the quantum of the development including embodied energy of construction materials, construction impacts and operational energy; and
- The principles of Ecologically Sustainable Development have also been considered through a Sustainability Strategy that includes a range of targets to address all aspects of the development including energy, water, material and waste, transport, land and biodiversity, emissions and social equity.

Huntlee Pty Ltd requests therefore that the Minister approve the Stage 1 project application for subdivision and associated infrastructure works for the first residential village (up to 1700 dwellings), the large lot residential area (up to 120 dwellings) and the first 68 hectares of the Town Centre (which includes up to 222 dwellings). The preceding environmental assessment demonstrates that the matters for which approval is sought are consistent with the SEPP amendment framework and the Director-General's Requirements.

Huntlee

Development Control Plan 2013




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Contents

Figures

Tables

1 Introduction

1.1 Name and application of this plan

This Development Control Plan (DCP) is called the Huntlee Development Control Plan 2013 (DCP 2013). It has been prepared pursuant to the provisions of Section 74C of the Environmental Planning & Assessment Act, 1979 (the Act).

This DCP was adopted by the Director-General of the Department of Planning and Infrastructure on 17 May 2013 and came into force on 12 June 2013. The DCP applies to all development on the land in Zone R1 General Residential, Zone R2 Low Density Residential and Zone B4 Mixed Use within the Huntlee site as shown at Figure 1.

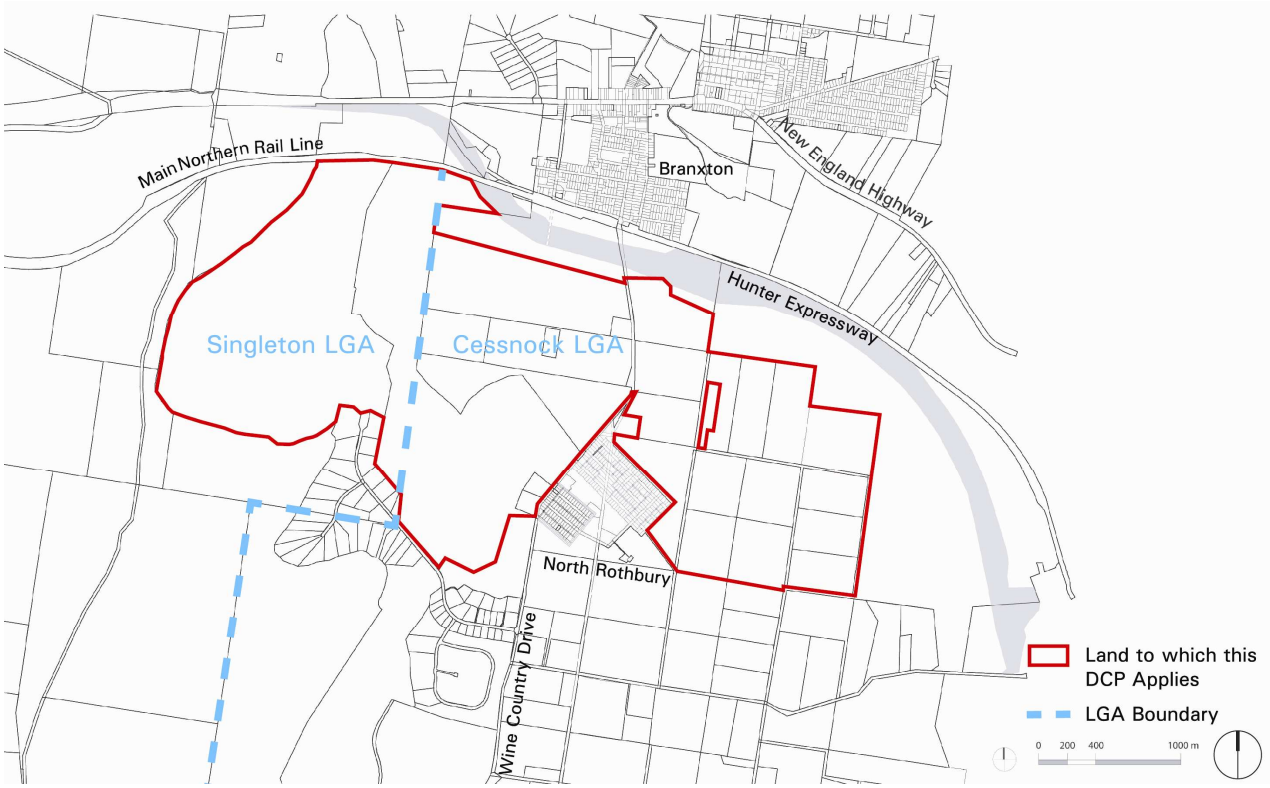

Figure 1: Land application map

1.2 Purpose of this plan

The purpose of this DCP is to:

- Communicate the planning, design and environmental objectives and controls against which the consent authority will assess Development Applications;
- Consolidate and simplify the planning controls for Huntlee;
- Ensure the orderly, efficient and environmentally sensitive development of Huntlee as envisaged by Part 27 of Schedule 3 of S*tate Environmental Planning Policy (Major Development) 2005* (the Major Development SEPP); and
- Promote high quality urban design outcomes within the context of environmental, social and economic sustainability.

1.3 Relationship to other plans

This DCP should be read in conjunction with Part 27 of Schedule 3 of the Major Development SEPP and other relevant State planning policies.

In addition, provisions from the following sections of Cessnock DCP 2010 apply to development in all zones within Huntlee that are within the Cessnock Local Government Area:

- Part B.2 Advertising and Notification
- Part D.8 Temporary Events
- Part D.9 Outdoor Dining

Provisions from the following sections of Singleton DCP apply to development in all zones within Huntlee that are within the Singleton Local Government Area:

- Part C Advertising and Notification of Development Applications
- Part D, Element 3, Section 3.8 Outdoor Dining, Display and Seating Areas
- Part D, Element 19 Events and Festivals

This DCP, the Huntlee Development Control Plan 2013, supersedes all previously adopted DCPs that apply to this site.

1.4 Structure of this plan

This DCP is structured as follows:

Section 1 **Introduction**
sets out the administrative provisions of the DCP

Section 2 **Vision and character**
relates to the overall layout and vision for the future development of the site and development targets for town and village centres, employment area and residential precincts.

Section 3 **Managing the environment**
relates to the general environmental issues that apply across the site including riparian corridors, flooding salinity, Aboriginal and European heritage, bushfire management, contamination and mine subsidence.

Section 4 **Subdivision Design**
relates to the overall design of subdivisions including character, road layout, public domain and minimum lot sizes.

Section 5 **Residential development**
relates to the design controls for dwelling houses, multi-unit housing and residential flat buildings. It also includes residential amenity controls such as streetscape, safety, visual and acoustic privacy and sustainable building design.

Section 6 **Town and village centre**
relates to the design controls for the village centres and the town centre including controls for the core retail and main street.

Section 7 **Employment area**
relates to the design controls for industrial and business park development.

1.5 Review of this plan

The Director General may review this Plan from time to time to ensure that the State Government's objectives continue to be met.

1.6 Consent authority

The relevant council is the consent authority for all development to which this DCP applies unless otherwise authorised by the *Environmental Planning and Assessment Act 1979*. The relevant council will use this DCP in its assessment of Development Applications.

1.7 Approval Process

1.7.1 Exempt and complying development

The *Environmental Planning and Assessment Act 1979* enables certain forms of development to be classified as either exempt development or complying development through Environmental Planning Instruments.

Exempt development is development of a minor nature that can be undertaken without the need for development consent.

Complying development is development that, providing the provisions of the Building Code of Australia are satisfied, can be assessed through the issuance of a complying development certificate.

The *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (Codes SEPP) includes the General Housing Code and Housing Alterations Code which provide controls for the siting and design of detached housing on lots 200m^2 and larger as well as alterations and additions to existing residential dwellings up to two storeys.

The Codes SEPP also contains the General Exempt Development Code that provides controls for minor forms of development such as access ramps, balconies, minor earthworks, fences, playground equipment etc.

The Codes SEPP further contains the Commercial and Industrial Code which outlines how internal modifications to commercial and industrial premises in certain zones can meet the complying development criteria.

Development that meets the criteria in the Codes SEPP is complying development and this DCP does not apply. Where a development does not meet the requirements of the Codes SEPP, consent is required and this DCP applies.

1.7.2 Development application process

The development application process is summarised in Figure 2**.**

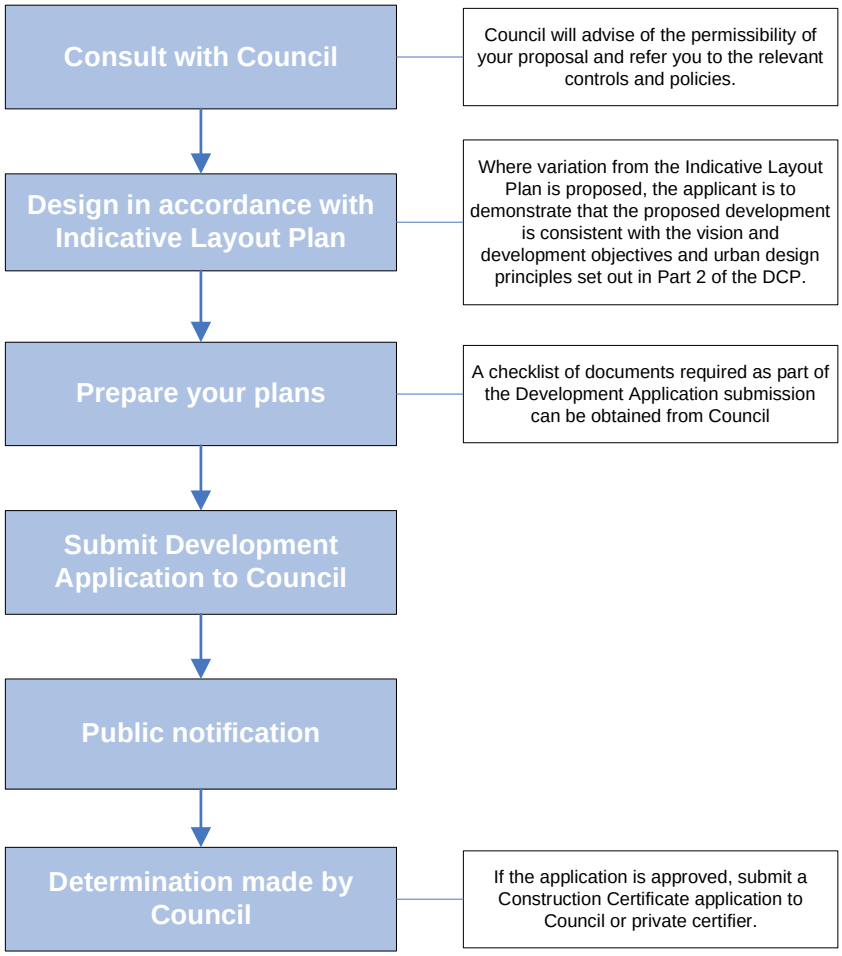

Figure 2: Development application process

1.7.3 Advertising and notification

The relevant council shall refer development applications to relevant agencies where an agency has an interest or role in the proposal. The Council policies for advertising and notification of development applications that apply to the site are in Table 1:

Table 1: Advertising and notification requirements

Local Government Area	Development Control Plan
Cessnock LGA	Cessnock DCP 2010: Part B.2
Singleton LGA	Singleton DCP: Part C

1.7.4 Variations to development controls

Council may grant consent to a proposal that does not comply with the controls in this DCP, provided the intent of the controls is achieved. Similarly, Council may grant consent to a proposal that varies from the Indicative Layout and Staging Plan (in Figure 12), where the variation is considered to be minor and the proposal remains generally consistent with the Plan. As such, each DA will be considered on its merits.

Where variation from the Indicative Layout Plan is proposed, the applicant is to demonstrate that the proposal is generally consistent with the design principles contained in Section 2.4.

Where a variation is sought it must be justified in writing indicating how the development is meeting the intention of the objectives of the relevant control and/or is generally consistent with the Indicative Layout Plan.

1.7.5 Developer design guidelines

In addition to the provisions of this Plan, a developer may implement and administer further building and landscape design guidelines that are not inconsistent with this Plan via conditions attached to sales contracts, land release brochures and through covenants on title to ensure a high quality product.

1.7.6 Design Review Panel

To assist in ensuring good urban design outcomes at the site, a Design Review Panel may be formed to assist with urban design advice for subdivision applications as well as to provide built form advice on key buildings and potentially to review housing products. The panel could include Council representatives alongside independent urban design professionals.

1.8 Explanatory notes

Terms used in this DCP are defined in the Standard Instrument – Principal Local Environmental Plan.

Advice on the lodgement procedures and information requirements for development applications can be obtained from the Council.

2 Vision and Character

2.1 Regional context

The Lower Hunter Regional Strategy recognises the regional significance of the Huntlee site as a major new release area. Huntlee will contribute up to 7,300 dwellings and 200 hectares of employment land to the region, which is capable of generating over 3,000 jobs.

Huntlee is located 20km north of Cessnock and 25km southeast of Singleton. It straddles Wine Country Drive which links Cessnock with the New England Highway at Branxton. The site is generally bounded by the Main North Railway and Hunter Expressway to the north and east, the existing North Rothbury village to the south and the Black Creek floodplain to the west.

The Huntlee location plan is shown in Figure 3.

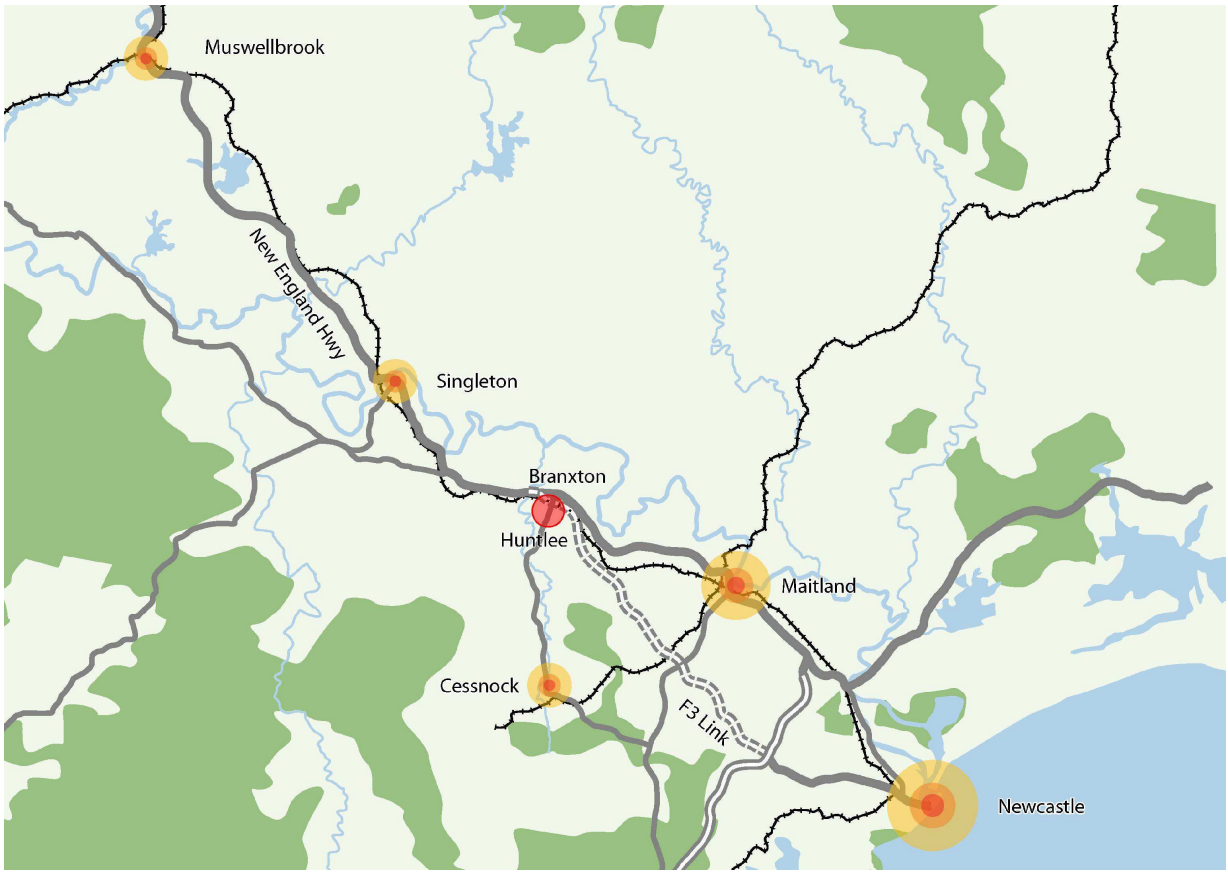

Figure 3: Huntlee location plan

2.2 Vision and development objectives

The vision for Huntlee is to create a new Hunter Valley town that retains the character of the place. The new town will comprise a town centre, residential precincts, open spaces, recreation areas and supporting employment lands. It should reflect its natural attributes and rich Aboriginal and European past. It should establish an active and memorable urban core, surrounded by well connected neighbourhoods, each with an identifiable centre that is within easy and safe walking and cycling distance from the houses in that neighbourhood. Huntlee will have a high quality public domain of connected streets, parks, and recreational open space links.

The natural attributes of the site include an undulating topography affording panoramic views, extensive areas of vegetation including dedicated conservation areas. The man-made heritage of the site includes pre-European remnants as well as the memory of the site's significant industrial past – an important part of the Hunter's development as an industrial mining centre in New South Wales. While parts of the site's topography have been significantly altered by mining activity, these areas offer the opportunity to create interesting places.

The vision for the Huntlee Town Centre is to create an exciting township in the Hunter Valley combining community, commercial, local shopping and educational facilities that is well connected to open space, Branxton and public transport, including the rail station. Supporting this will be a series of residential neighbourhoods each connected to the Town Centre via the road network. Each neighbourhood will be distinctive in character, being located within a different landscape within the larger site. Some neighbourhoods will be on ridge tops, others along watercourses and areas of vegetation.

The Huntlee Town Centre comprises a mixed use area of approximately 200 hectares catering for a range of uses including retail, service industries, bulky goods, commercial, entertainment, residential, educational and community including open space. The Town Centre will ultimately serve the residents of Huntlee and surrounding areas.

The Town Centre will be laid out with defined centres and edges. Within the Town Centre, streets will be laid out as a permeable network that promotes movement between key destinations. Community oriented buildings and uses shall be distributed throughout the Town Centre.

Village centres will provide for low level retail and community facilities and complement the Town Centre. The village centres will be approximately 5 hectares in area and contain uses including neighbourhood retail premises, community facilities, a primary school and a village centre park. There will be four village centres in the overall Huntlee development.

The key development objectives for Huntlee are:

- To facilitate urban development that meets environmental sustainability objectives.
- To promote housing diversity by providing a range of housing types.
- To create walkable neighbourhoods, with good access to public transport.
- To maximise opportunities for local employment and business.
- To create vibrant, successful town and neighbourhood centres.
- To provide social infrastructure that is flexible and adaptable.
- To maximise opportunities for future residents to access and to enjoy the outdoors.
- To protect and enhance riparian corridors, significant trees and vegetation.

2.3 Site characteristics

2.3.1 Existing development

The site is predominantly characterised by areas of woodland vegetation and cleared areas used for agricultural purposes. The agricultural uses are generally limited to grazing and are largely located along the western boundary of the site along the Black Creek floodplain and to the east of the village of North Rothbury.

The key developed features of the site include infrastructure associated with the former Ayrfield Colliery including a number of buildings and structures, rail infrastructure and water storage dams. Areas of mine waste emplacement and land fill occur in the central section of the site.

Part of the former colliery area is used for the storage and restoration of historic train carriages, locomotives and other commercial vehicles such as decommissioned buses. To the south of the colliery area are gravel quarry operations.

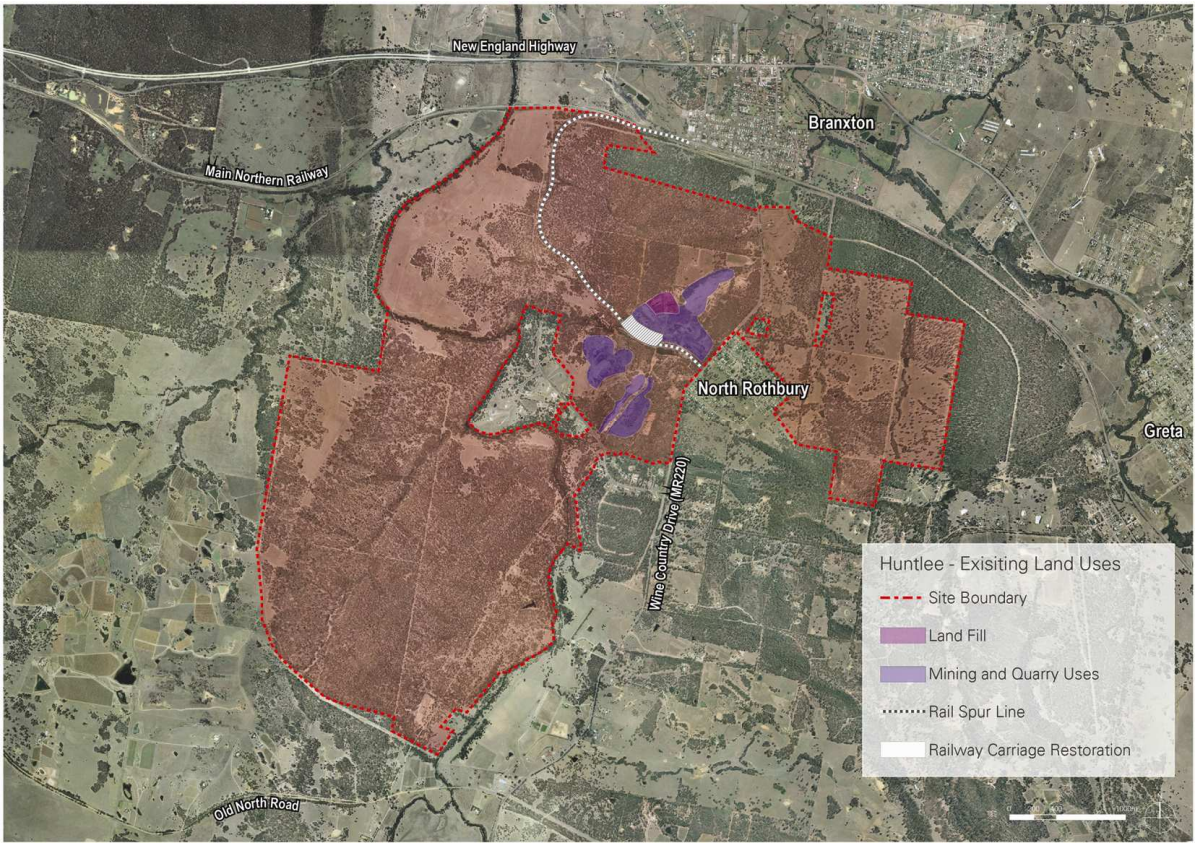

Figure 4: Existing development on the site

2.3.2 Topography and slope

The topography of the site is characterised by gently undulating terrain. Key features include the Terrace Ridge that runs along the western boundary of the site, with a secondary ridge that forms a steep valley containing a minor tributary to Black Creek.

The remainder of the site is generally undulating with a predominantly defined 5-10% grade. Flatter areas of 0-5% and various low ridgelines run north-south across the site.

The highest point on the site is located to the west of the site along Terrace Ridge and reaches 121m AHD. The lowest point on the site is 22m AHD at the north-western boundary where Black Creek exits the site.

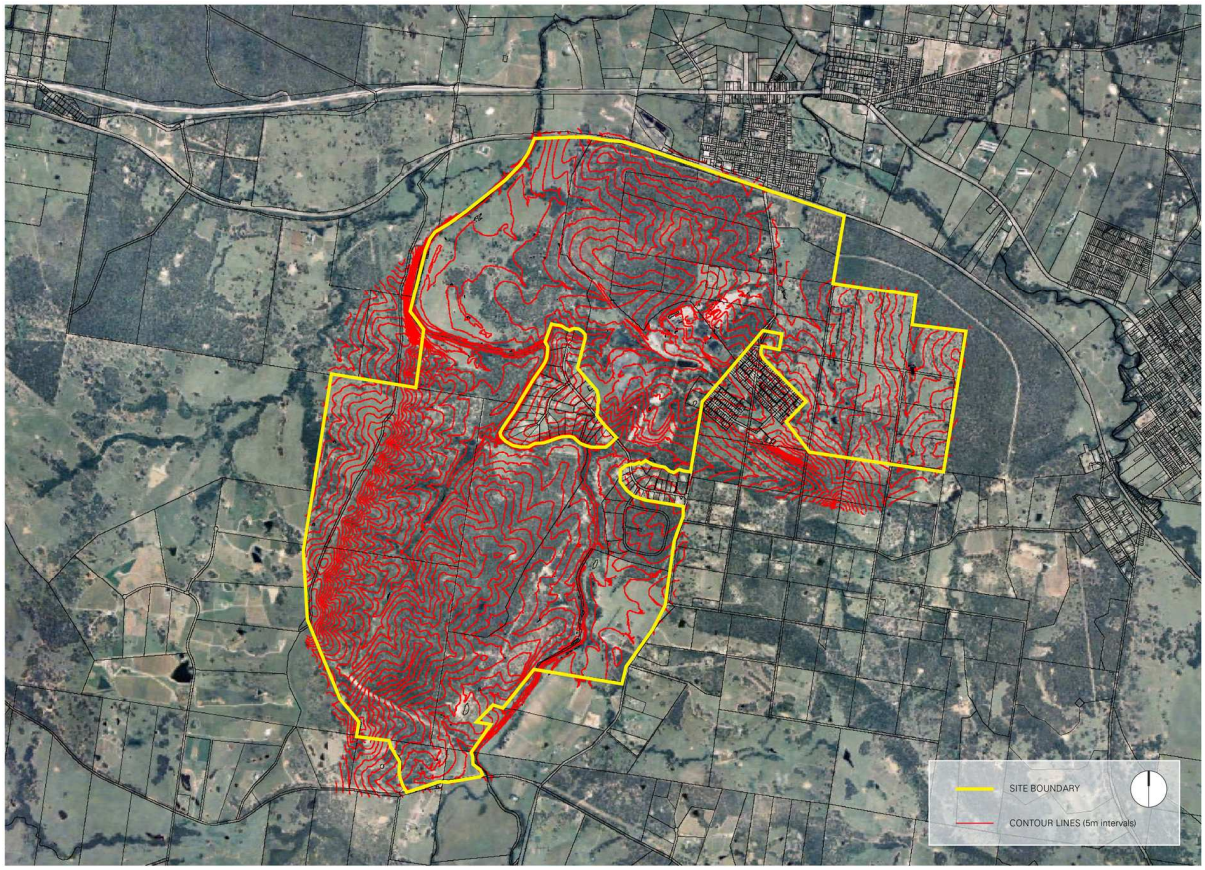

Figure 5: Topography

2.3.3 Hydrology

The site is located within the catchments of Black and Anvil Creeks which are tributaries of the Hunter River.

Black Creek is the largest of the two creek lines and runs north-south through the site and marks the north-western boundary. The entire catchment of Black Creek is approximately 304km^2 and extends from the Broken Back Range in the west to the Cessnock State Forest in the east. The catchment headwaters are in the Aberdare State Forest to the south of Cessnock. The junction of Black Creek with Hunter River is downstream of the site and to the north of the New England Highway.

Anvil Creek is located to the north-east of the site outside its boundary. However, three minor tributaries drain under the Main North Railway before meeting Anvil Creek which then drains into Black Creek north of Branxton.

Both Black and Anvil Creeks are 3rd order streams and generally sustain permanent flows. A number of minor tributaries drain across the site and into these creeks. These streams are ephemeral and of 1st and 2nd order. A number of water storage dams of varying sizes, associated with agriculture and mining are present across the site.

Patterson Britton & Partners Pty Ltd has prepared a flood study of the site. The study models the flooding across the site to determine the 100 year and 20 year ARI (average recurrence interval) peak flows.

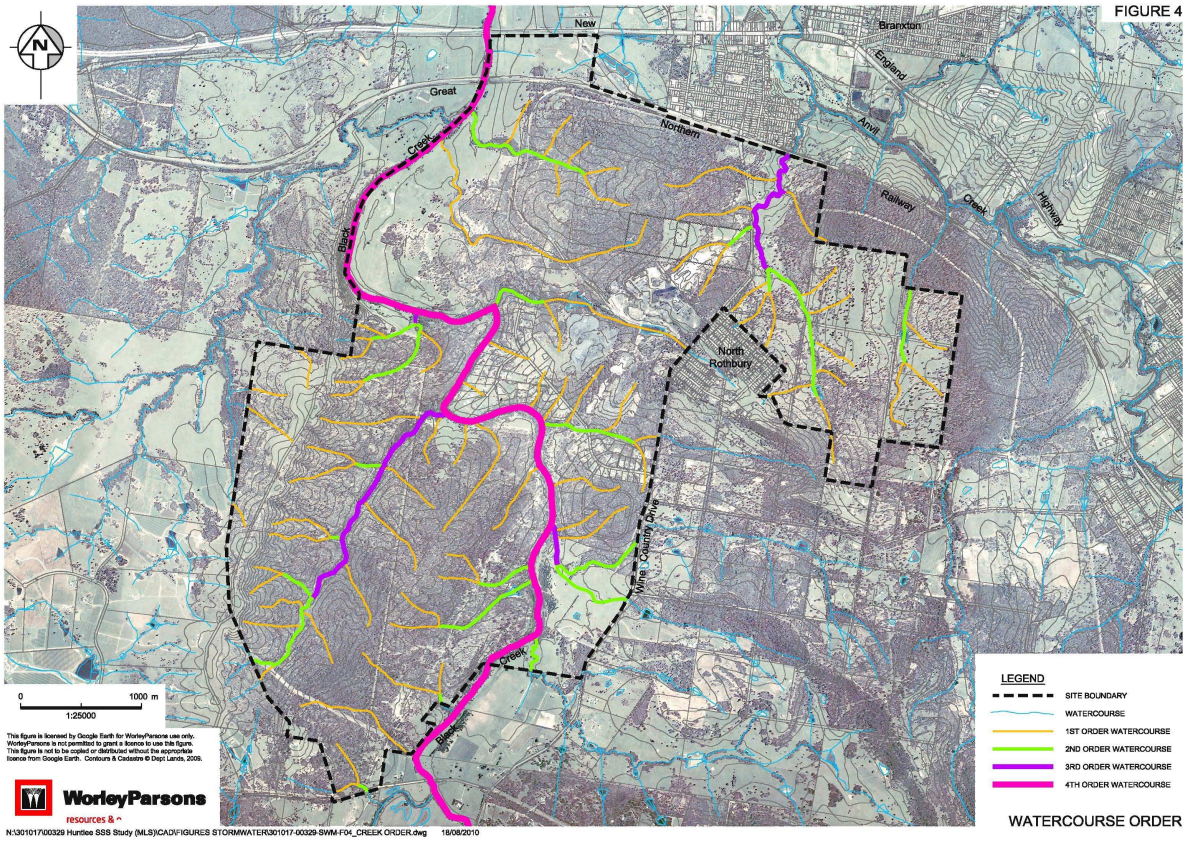

Figure 6: Hydrology

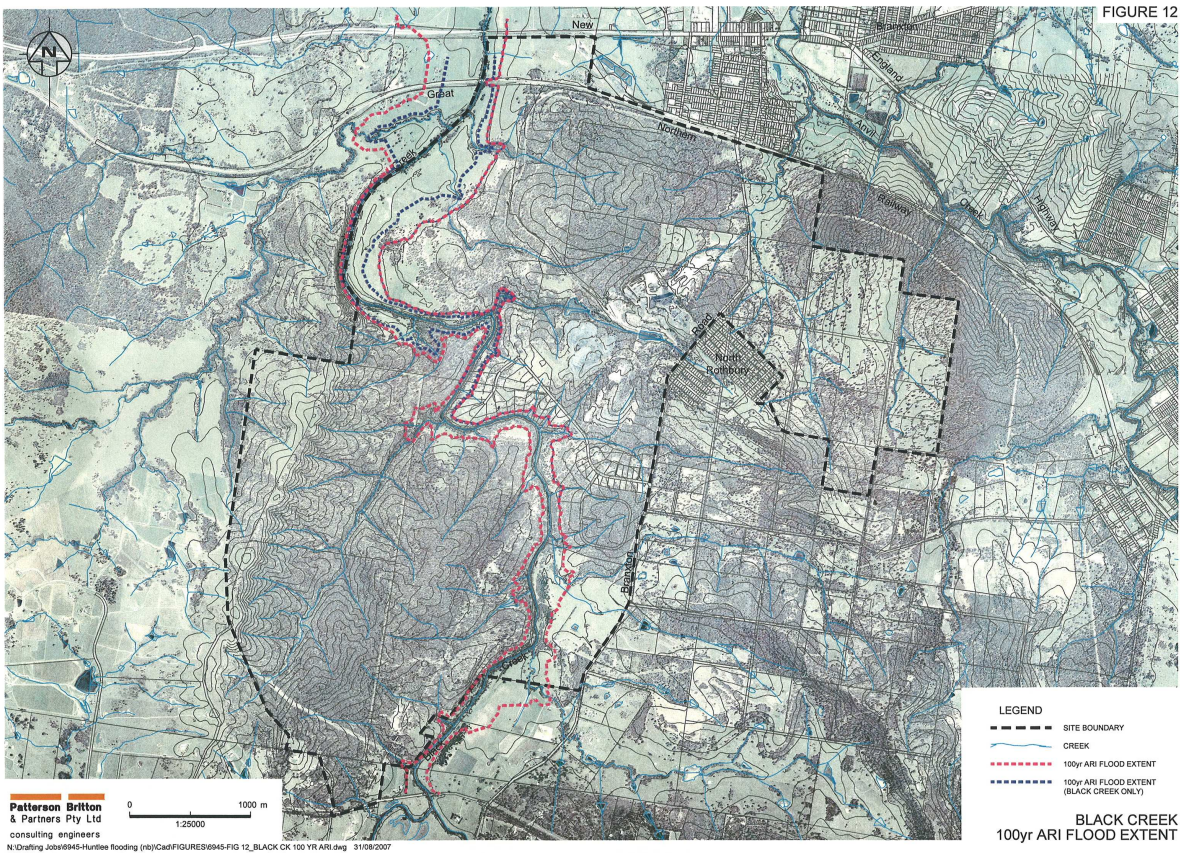

Figure 7: Black Creek 100 year ARI flood extent

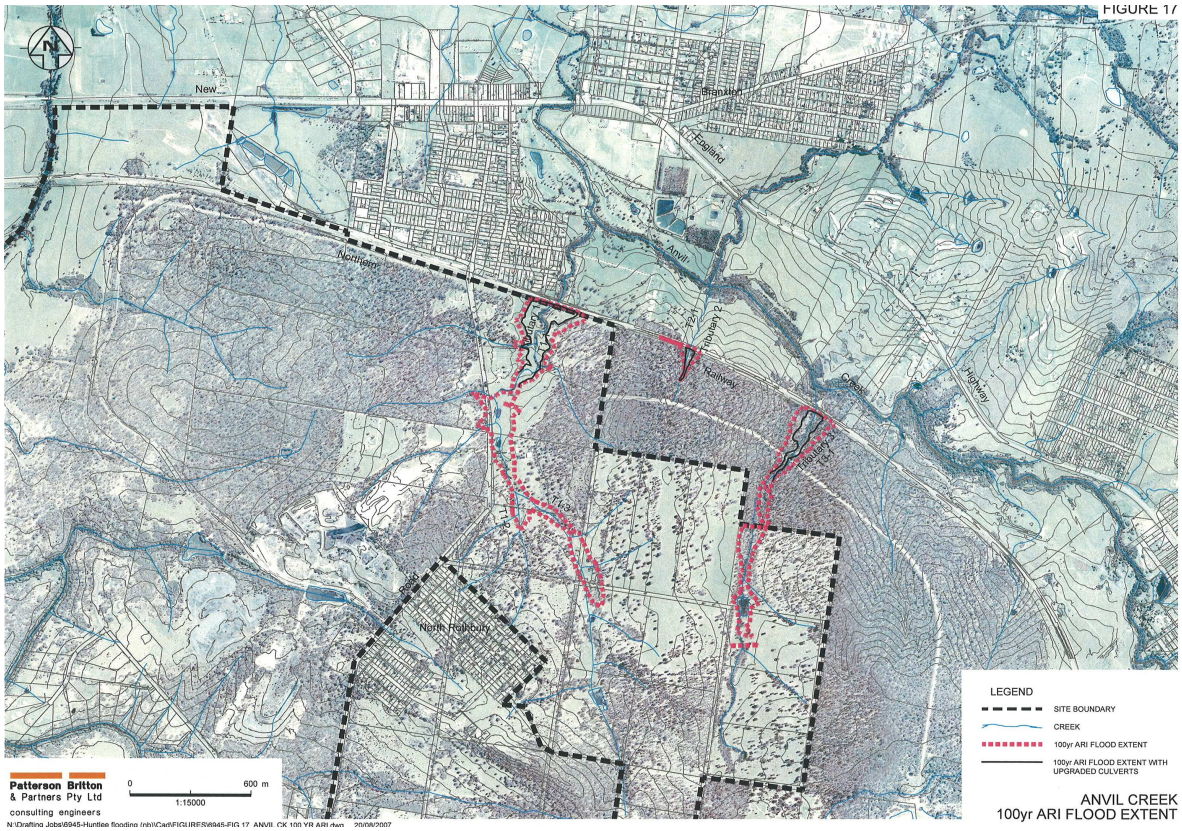

Figure 8: Anvil Creek 100 year ARI flood extent

2.3.4 Geology

The geology of the site is relatively complex, with steeply dipping strata with a number of faults leading to changes in geology over a small distance. The key features are:

- The Greta Fault which trends south-east across the north of the site.
- The Rothbury Fault which runs north-south through the site to the west of Black Creek.
- The Greta Coal Measures which typically consist of conglomerate, sandstone, siltstone and coal and outcrop in a 200m-600m wide strip west of the Rothbury Fault.
- Areas to the west of the Greta Coal Measures and to the north of the Greta Fault that are underlain by Branxton Formation which typically comprises conglomerate, sandstone and siltstone.
- Areas to the east of Rothbury Fault and south of the Greta Fault that are underlain by Farley Formation and the Dalwood Group which comprise silty sandstone.

The site is divided into four zones:

- Hill slopes and gullies where it is anticipated that residual soils are underlain by shallow bedrock (possibly at depths less than 1m).
- Undulating landforms in the north, where there is evidence of both rock outcrops and areas of deeper alluvial / residual soils with varying depth to bedrock.
- Low lying areas associated with Black Creek which possibly contain alluvial soils and some colluvium.
- The former Ayrfield Colliery which is characterised by large areas of disturbed ground and fill including mine waste emplacements.

2.3.5 Contamination

The key areas where there is observed or potential contamination present on the site are:

- The landfill operations in the former Ayrfield Colliery fines settling pond areas.
- The 400m^2 area to the south of the fines settling ponds where sandblasting has occurred.
- Asbestos sheeting and friable insulation materials.
- Stained soil material in and around a storage area containing fuels, lead acid batteries, oils and greases.
- Hydrocarbon stained areas in and around the railway vehicle storage areas and workshops likely to contain Total Petroleum Hydrocarbons TPH's and inorganics.
- Potential contaminants in sludge contained in the main dam to the west ad downstream of the colliery pit top area.
- Leachate water draining from the coal fine cells downstream from a storage dam potentially discharging highly saline water into the aquatic environment.
- The Bath-house complex of the Maitland Extended No. 2 Colliery, including materials within buildings, surrounding soils and open land fill used for rubbish dumping.
- General contamination of areas associated with mining activities including haul roads, emplacement areas and coal handling areas.
- Mounds of fill in locations across the site including building rubble that may contain asbestos, hydrocarbons and car tyres.
- Discarded asbestos brake linings adjacent to rail lines.

2.3.6 Mine subsidence

Extensive mining activities took place at the Ayrfield / Maitland extended area to the west of North Rothbury village from 1908 until 1974. Mining activity occurred along a band that runs northeast – southwest through the length of the site associated with where Greta coal measures outcrop at the surface.

Areas where mine workings and subsidence risks are located are shown in Figure 9.

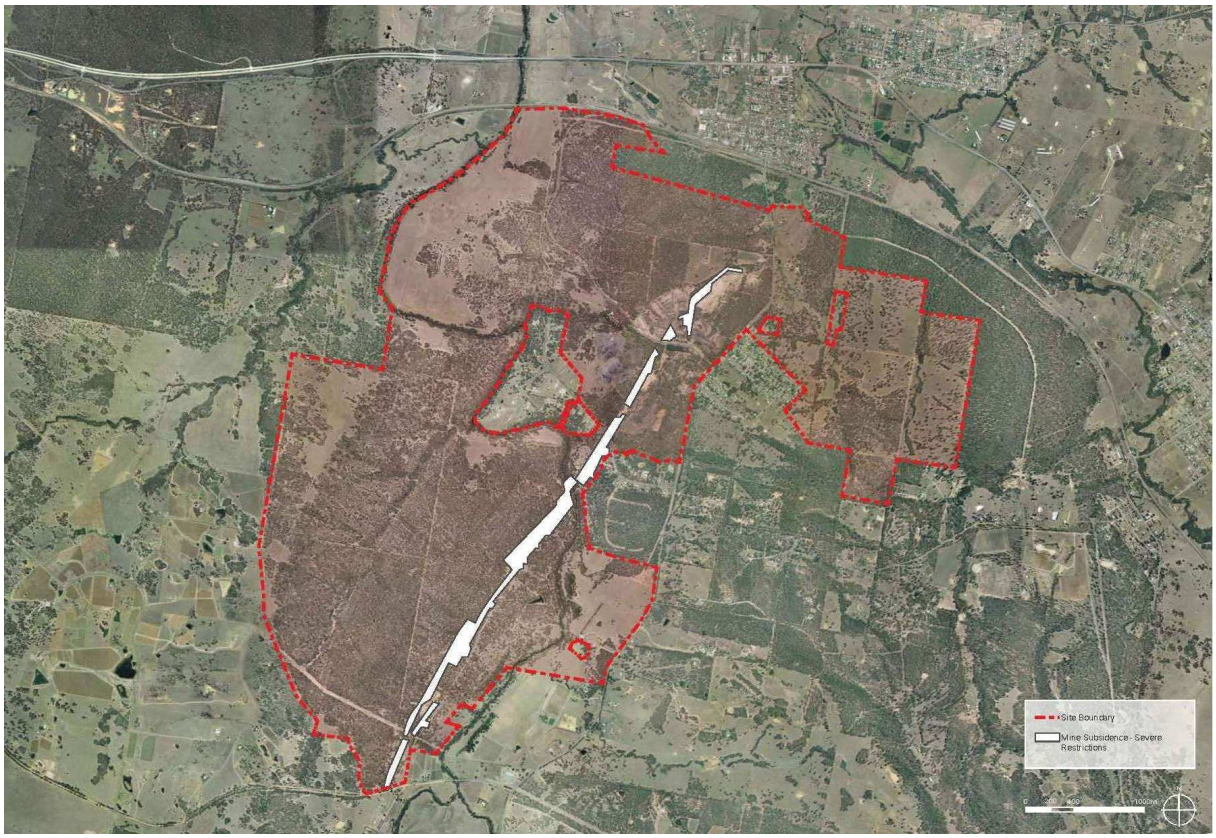

Figure 9: Mine subsidence

2.3.7 Vegetation

Vegetation on the site consists largely of regrowth forest following the extensive clearing of vegetation associated with mining activities and agriculture.

There are six native vegetation communities identified on the site, five of which are listed as an Endangered Ecological Community (EEC) under the *NSW Threatened Species Conservation Act 1995*. Where significant vegetation and threatened species habitat exists attempts to conserve these where possible are encouraged. However, the entire development area of Huntlee has been appropriately offset as part of the Voluntary Planning Agreement at the time of rezoning.

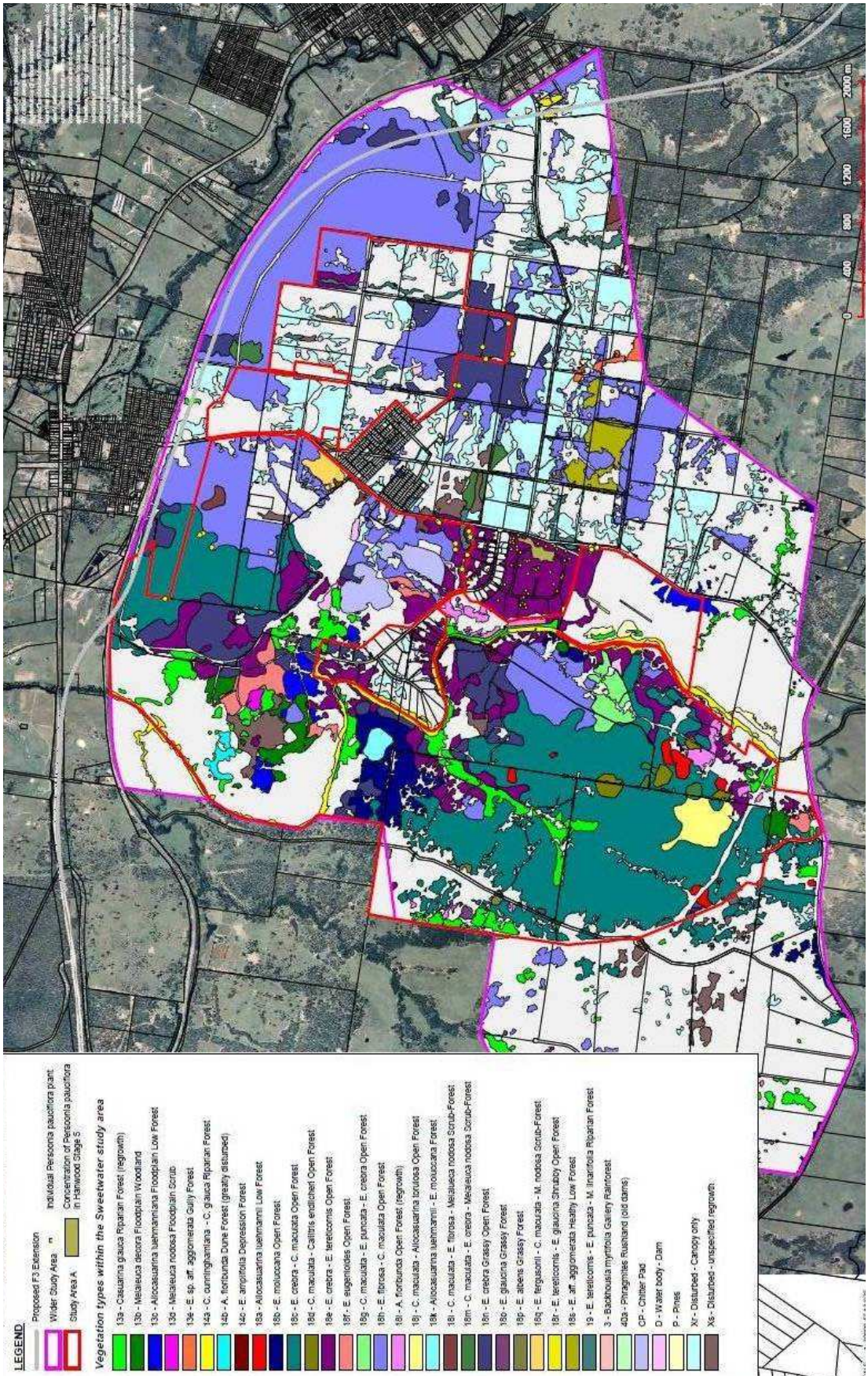

Figure 10: Vegetation Types

2.3.8 Flora, fauna and aquatic habitat

Flora and fauna species listed under the *NSW Threatened Species Conservation Act 1995* and the *Environmental Protection and Biodiversity Conservation Act 1999* have been identified on the site in various historical studies, including studies undertaken as part of the rezoning of the site. Where significant vegetation and threatened species habitat exists, attempts to conserve these where possible are encouraged. Water courses present on the site are unlikely to contain threatened species. However, the habitat value they provide at a local level is important.

The entire development area of Huntlee has been appropriately offset as part of the Voluntary Planning Agreement at the time of rezoning. This agreement between the Developer, the Minister for Environment and Climate Change and the Minister for Planning was executed in connection with the rezoning of the site under the Major Development SEPP (State Environmental Planning Policy). The Planning Agreement provided that the Developer make various environmental conservation offset contributions including:

- Transfer of up to 5,612 hectares of environmentally significant land for environmental conservation purposes which is proposed to be dedicated under the *National Parks and Wildlife Act 1974* comprising*:*
  - approximately 607 hectares of conservation land within Huntlee;
  - "Persoonia Park" (approximately 17 hectares) within Huntlee; and
  - up to 4988 hectares of conservation land elsewhere within the Lower Hunter Region.

- $100,000 contribution towards the conservation of *Persoonia pauciflora*; and

- $1 million contribution towards the management of the conservation offset lands.

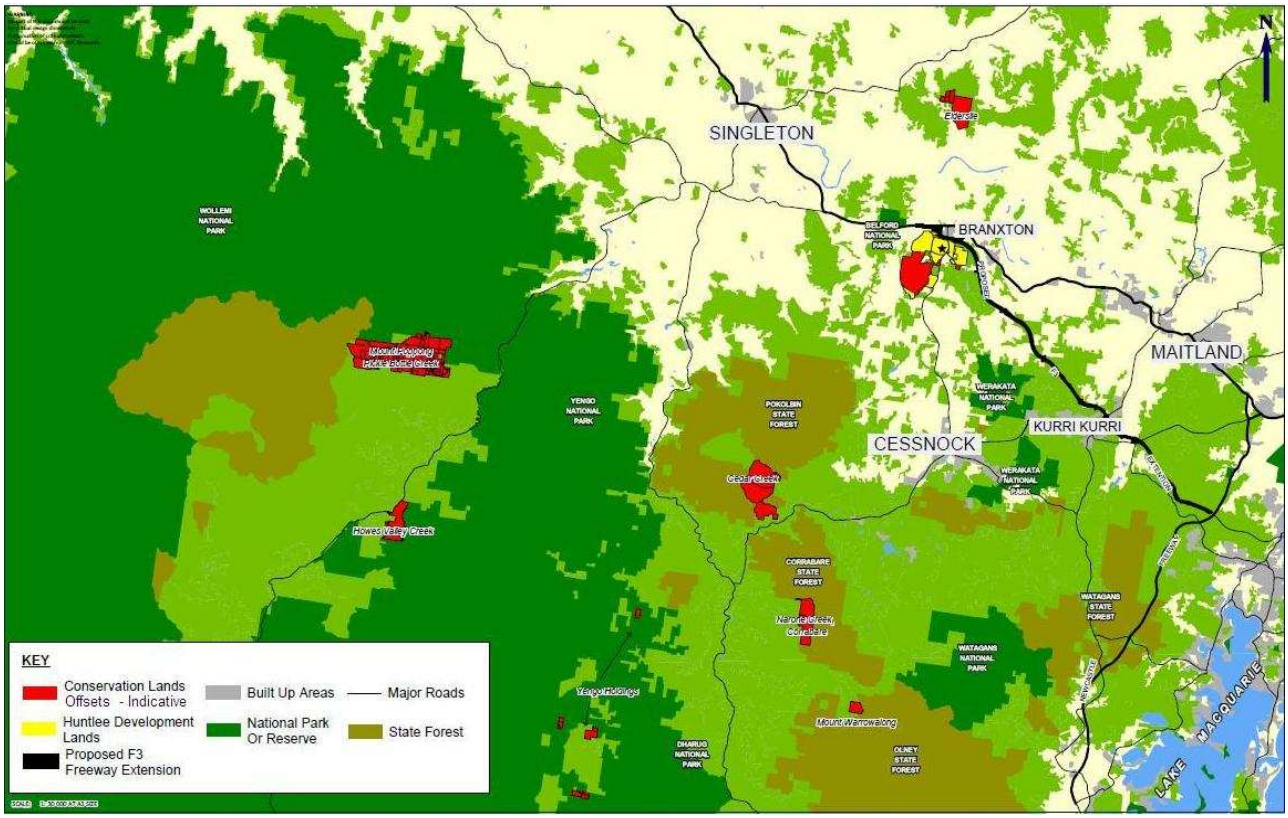

Figure 11: Environmental offsets plan

The offset agreement provides robust ecological outcomes for threatened species and ecological communities and is consistent with the outcomes proposed in the Lower Hunter Regional Strategy and ensuring that environmental conservation lands identified in the Lower Hunter Regional Conservation Strategy will be transferred into public ownership.

2.3.9 Aboriginal and European heritage

The areas of Aboriginal heritage significance on the site include:

- Black Creek and its tributaries where a number of artefacts have been identified which are not rare or unusual but may assist in highlighting the history and culture of Aboriginal people.

- A rock outcrop in the south-western portion of the site parallel with a tributary of Black Creek that is considered to be of great significance to Aboriginal people and is retained in the Conservation Area to be dedicated to State Government.

Potential European heritage and archaeological sites within Huntlee include:

- Bentham Farm – established by Joshua Thorpe around 1860s and remains of the farmhouse, barn, milking shed and farming activities are evident.

- North Rothbury Colliery – the mine operated from 1908 until the early 1980s and buildings, footings and structures are evident on the site.

- Rothbury Riot site– an important industrial action in 1929 resulting in a riot after months of widespread strikes and the introduction of the 'Unlawful Assembly Act'.

2.3.10 Access and transport

The key features of the road system are the New England Highway, Wine Country Drive and Hunter Expressway. The Main North Rail Line and Branxton Railway Station are located to the north of the site.

The New England Highway is the main arterial road connecting the Upper Hunter Valley with Newcastle and provides regional and interstate connections to the New England, north-west regions of NSW and Brisbane. Wine Country Drive provides the main connection between Branxton and Cessnock and serves the village of North Rothbury. It is generally a two lane road.

The Hunter Expressway is a dual carriageway link between the F3 Freeway at the Newcastle Link Road and the New England Highway approximately 2km west of Branxton. The Branxton Interchange is located just immediately north of the site and connects to New England Highway and Wine Country Drive.

2.4 Design principles

2.4.1 Urban design principles

The Indicative Layout Plan proposes four residential villages connected to each other and the town centre by a network of open space, pedestrian and cycleways, local roads and bus routes.

The Indicative Layout Plan is underpinned by a number of key urban design principles that relate principally to the creation of the public domain. These include:

- Adopting a Main street approach to the Town Centre to create an active centre.
- Creating a well connected street pattern that responds to the site's topography.
- Streets that generally terminate on an open space.
- Creating streets in residential villages with generous green verges with street trees and footpaths on both sides of the street where required.
- A series of linked open space areas, generally along riparian corridors and ridgetops, that preserve ridges, hilltops and significant areas of vegetation, and heritage.
- Persoonia pauciflora should be retained including 30m curtilages and where possible incorporated into public open space areas.
- Open spaces generally surrounded by public streets.
- Neighbourhoods where residents can easily walk or cycle to the neighbourhood core, local shops, open space and schools.
- Provide a mixture of housing options to create diversity in the built form and accommodation choice.
- Rehabilitation of former mine working areas and infrastructure.
- Low density residential area adjacent to the existing township of North Rothbury and the rural-residential development known as Hanwood Estates.
- Large residential lots adjacent to the outer rural boundary of the development area.
- Smaller residential lots and medium density residential development in the vicinity of the town and village centres, open spaces and recreation areas.
- Service industry and/or bulky goods retailing uses adjacent to the Hunter Expressway and railway line.

2.5 Indicative Layout Plan and Staging

An Indicative Layout and Staging Plan is contained in Figure 12 and illustrates the broad level development outcomes for the Huntlee New Town. It outlines the development footprint, land uses, open space, major transport linkages and location of neighbourhood villages that will contain community facilities and schools as well as when each area is expected to be developed in order to ensure an efficient roll out of infrastructure.

Objectives

(1) To ensure development of the precinct is undertaken in a co-ordinated manner generally consistent with the Indicative Layout and Staging Plan.

Controls

(1) All Development Applications for subdivision and infrastructure are to be generally in accordance with the Indicative Layout and Staging Plan in Figure 12.

(2) When assessing development applications, Council will consider the extent to which the proposed development is consistent with the Indicative Layout and Staging Plan.

(3) Any proposed variations to the general arrangement of the Indicative Layout and Staging Plan must be demonstrated by the applicant, to Council's satisfaction, to be consistent with the Design Principles in Section 2.4.

(4) Any proposed variation to the order of staging of development in the Indicative Layout and Staging Plan must be justified, to the Council's satisfaction.

Figure 12: Indicative Layout and Staging Plan

2.6 Development targets

2.6.1 Residential

Huntlee will provide housing for approximately 20,000 people accommodated within up to 7,300 dwellings. A mix of housing types and forms are to be provided across the Huntlee site to achieve this. The targets in Table 2 can be utilised by the relevant Council to determine the appropriate amount of community facilities and open space required for each precinct to meet the demand generated by the future population of Huntlee.

Objectives

(1) To provide a range of residential development densities and housing types for a wide variety of demographic and socio-economic groups.

(2) To provide appropriate densities in proximity to the Town Centre and Village Centres to promote walking and cycling.

(3) To ensure the residential targets identified in the NSW Government's Lower Hunter Regional Strategy are met.

Controls

(1) The number of dwellings in each precinct should be generally consistent with the dwelling targets shown in Table 2.

(2) Where variation to the precinct dwelling yield is proposed, an applicant is to demonstrate that the overall dwelling yield of 7,300 dwellings can still be achieved.

(3) A mix of housing types and forms are to be provided.

Table 2: Residential yield

Precinct	**Total dwellings (Maximum)**
Town centre	1,700
Village One	1,925
Village Two	1,515
Village Three	1,460
Village Four	700
Total	7,300

2.6.2 Town centre

Objectives

(1) To provide a range of retail, business, bulky goods retailing, service commercial and support uses to service the needs of people living, working and visiting the town centre, as well as the broader area.

(2) To provide new jobs in a concentration of retail, community, entertainment, health and professional services for the local and broader population.

(3) To ensure a high level of self sufficiency in employment within the region, with opportunities for maximising home based and localised employment.

Controls

(1) Provide employment uses such as business premises, service and light industry, offices, retail and bulky goods retailing.

(2) Provide services including supermarkets, discount department store, shops, child care centres, schools, community facilities, banks, library, professional services, and medical centres.

2.6.3 Community facilities

Objectives

(1) To provide a range of community facilities in locations accessible to residential areas and public transport.

(2) To provide a range of community facilities appropriate to the needs and demographics of the local population.

Controls

- Provide land for the following community facilities within the Town Centre and village centres:
    - Community health centre
    - Youth centre
    - Library facility
    - Emergency services for police, fire and ambulance
    - Government Primary Schools
    - Government High School
    - Tertiary education

2.6.4 Open space

Objectives

(1) To provide a variety of open spaces to cater for a range of recreational, social and cultural activities.

(2) To develop designs for open spaces in recognition of their different functions and characteristics and the environmental and natural qualities of the area.

Controls

(1) Provide open space as follows, generally located in accordance with the Indicative Open Space Plan at Figure 13. Open space will be provided in the following forms:

- Urban squares within the Town Centre;
- Neighbourhood and village parks;
- Active recreation and playing fields.

(2) Provide appropriate car and bicycle parking for active recreation and playing fields (refer to Section 7.10).

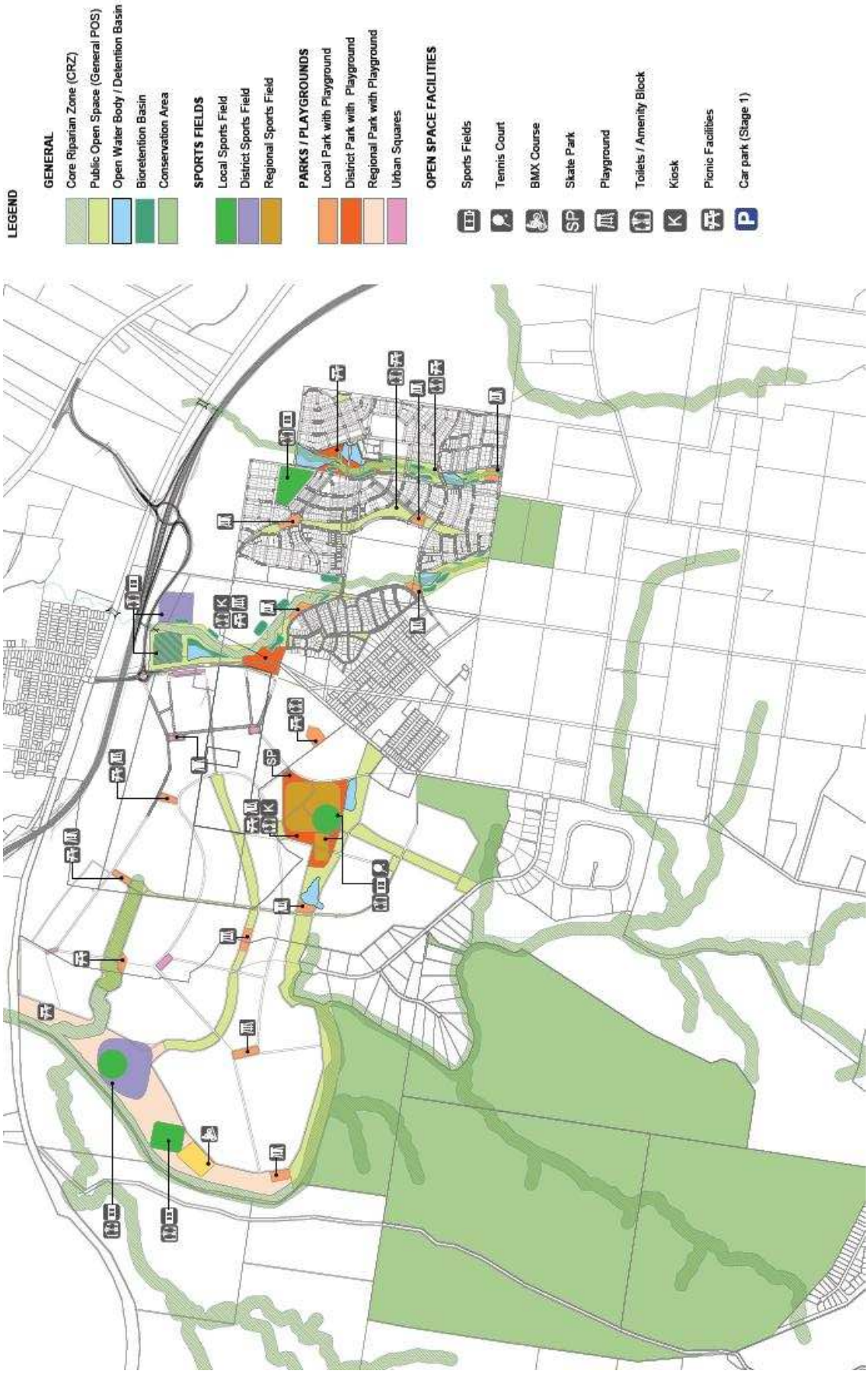

Figure 13: Indicative open space network

3 Managing the Environment

This section outlines the objectives and development controls relating to general environmental management of issues that apply across the entire site including conservation areas, integrated stormwater management, Aboriginal and European heritage, bushfire hazard management, tree and bushland protection, contamination, earthworks, soils and salinity, waste, riparian corridors and acoustics.

3.1 Riparian corridors

Objectives

(1) To protect, restore and enhance the environmental values and functions of water courses and riparian corridors as shown in Figure 6.

(2) To ensure that the development has a neutral or beneficial impact on the quality and quantity of water and water courses.

(3) To allow for some limited use of riparian corridor buffers for low impact recreation activities such as walking and cycling.

(4) To maintain a stable naturally functioning watercourse that supports a viable naturally occurring local aquatic community.

(5) To provide, restore, rehabilitate and maintain the riparian corridor with the local provenance vegetation community.

(6) To provide a continuous riparian corridor that links to established stands of remnant vegetation and provides extensive habitat and connectivity for naturally occurring terrestrial fauna.

(7) To ensure vegetation in the core riparian zone (CRZ) is at a density that would occur naturally for the riparian ecotone.

(8) To minimise the number of road crossings to maintain riparian connectivity.

Controls

(1) Riparian corridors are to be provided generally in accordance with Figure 6 and designed in accordance with the controls below and generally comply with the '*Guidelines for Riparian Corridors on Waterfront land*' (DPI-Office of Water, 2012).

(2) The vegetated riparian zone (VRZ) setbacks should generally comply with the *'Guidelines for Riparian Corridors on Waterfront land'* (DPI-Office of Water, 2012).

(3) Infrastructure services, stormwater infrastructure, water quality treatment ponds, flood compatible activities (i.e. playing fields), pedestrian paths and cycleways, and asset protection zones are to be located outside of the VRZ unless otherwise allowed for in the aforementioned guidelines.

(4) The location of access ways to and within a riparian buffer is not to compromise the ecological integrity of any existing riparian vegetation, the streambed or bank stability.

(5) The impact of pedestrian paths and cycleways, general access points to riparian corridors and road crossings is to be minimised by using ecologically informed design principles (for example, elevated accessways that allow sunlight to penetrate and vegetation to grow beneath).

(6) The impact of salinity on the landscape and watercourses shall be managed.

(7) All VRZs are to be rehabilitated and revegetated with appropriate native vegetation having regard to its drainage function and vegetation management for bushfire protection.

(8) Where wetlands are proposed, a management strategy outlining ownership, ongoing management, annual maintenance costs and initial development costs shall be prepared.

3.2 Flooding and water cycle management

Objectives

(1) To minimise the potential impact of flooding on development.

(2) To incorporate best practice stormwater management principles and strategies in development proposals.

(3) To mitigate the impacts of urban development on stormwater quality.

(4) To control the impacts of urban development on channel bed and bank erosion by controlling the magnitude and duration of sediment-transporting flows.

(5) Limit changes in flow rate and flow duration within the receiving waterway as a result of development.

Controls

(1) The 100 year ARI flood extents are shown on Figure 7 and Figure 8.

(2) All habitable rooms shall have floor levels of a minimum of 500mm above the 1% Annual Exceedence Probability (AEP).

(3) Management of 'minor' flows using piped systems for the 5 year ARI (residential land use) and 10 year ARI (commercial land use) shall be in accordance with the relevant council's engineering requirements. Management measures shall be designed to:

- prevent damage by stormwater to the built and natural environment,
- reduce nuisance flows to a level which is acceptable to the community,
- provide a stormwater system which can be economically maintained and which uses open space in a compatible manner,
- control flooding and enable access to lots, stabilise the land form and control erosion,
- minimise urban water run-off pollutants to watercourses, and

- meet the standards for a 20% AEP flood.

(4) Management of 'major' flows using dedicated overland flow paths such as open space areas, roads and riparian corridors for all flows in excess of the pipe drainage system capacity and above the 5 year ARI shall be in accordance with the relevant council's engineering requirements. Management measures shall be designed to:

- prevent both short term and long term inundation of habitable dwellings,
- manage flooding to create lots above the designated flood level with flood free access to a public road located above the 1% AEP flood,
- stabilise the land form and control erosion, and
- meet the standards for a 1% AEP flood.

(5) Where practically possible, development shall attenuate up to the 2 year ARI peak flow for discharges into the local tributaries, particularly 2nd Order and 3rd Order Streams. This will be achieved using detention storage within water quality features and detention basins.

(6) The developed 100 year ARI peak flow is to be reduced to the pre-development flows through the incorporation of stormwater detention and management devices.

(7) All development is to incorporate Water Sensitive Urban Design (WSUD). WSUD is to be adopted throughout the development to promote sustainable and integrated management of land and water resources incorporating best practice stormwater management, water conservation and environmental protection.

(8) A Water Sensitive Urban Design (WSUD) Strategy is to be submitted as part of any subdivision DA and shall include:

- an identification of water management and other relevant objectives (relating, for example, to salinity hazard, mosquito risk);
- an identification and assessment of relevant site characteristics and constraints;
- an identification of potentially feasible (storm) water management strategies, which may comprise stormwater reuse options, best planning practices, stormwater treatment measures (in both public and private domain) and indicative maintenance requirements;
- an assessment of the potential strategies, including the nature, basis and outcomes of stormwater modelling used to assess alternative solutions. This assessment of alternative strategies should address compliance with management objectives, life cycle costs, ongoing operations and maintenance requirements, land take requirements, expected reliability, likely level of community acceptance and future management responsibilities; and
- a suitably detailed description of the preferred WSUD strategy and elements therein, in the form of documents, plans and conceptual diagrams (as appropriate).

(9) The WSUD Strategy shall demonstrate how the stormwater quality targets set in Table 3 will be achieved.

(10) Compliance with the targets at Table 3 is to be determined through stormwater quality (MUSIC) modelling.

Table 3: Water quality objectives

	Percentage reduction in pollutant loads		
	Total suspended solids	Total phosphorus	Total nitrogen
Objective	85%	45%	45%

(11) The WSUD strategy is to take into account riparian zone and creek management and include the following measures:

- the ephemeral hydrology of creeks is to be maintained or restored, where possible, by diverting excess flow via intercepting stormwater pipes to downstream storages for reuse,
- flow attenuation and/or diversion via the intercepting stormwater pipes will be required to meet the stream erosion index objectives within the 'Water Sensitive Urban Design – Book 2 – Planning and Management' guidelines produced by Landcom (2009)
- flow in excess of the 5 year ARI peak flow may flow into the creek and be conveyed to detention basins that form part of the major drainage system, and
- erosion control and bank stabilisation measures shall be incorporated within the waterway where required.

3.3 Biodiversity

Objectives

(1) To improve or maintain biodiversity values through habitat conservation, wildlife corridors and habitat linkages through the siting and design of open space networks and riparian corridors.

(2) Reduce impacts of runoff from roads and impervious areas on adjacent lands.

(3) To manage weeds on the site during and after construction, to prevent the spread of weeds.

(4) To manage environmental protection zones, passive open space and riparian corridors to reduce erosion, feral animals and loss of essential habitat features such as understorey and tree hollows.

(5) Ensure consideration of groundwater dependent ecosystems in land use planning.

(6) Regionally significant vegetation and habitat of threatened species, communities and populations, should be protected where possible.

(7) To ensure that the urban / conservation area interface and management regime for conservation areas (including access through development precincts, recreational infrastructure etc) are appropriately addressed.

Controls

(1) Riparian buffers are to be established through future applications for subdivision and infrastructure works in accordance with the *Water Management Act* and guidelines.

(2) Existing significant trees, in particular large hollow bearing trees, are to be retained wherever practicable within public and community parks, streetscapes and riparian corridors.

(3) Existing Persoonia pauciflora plants are to be conserved in situ with a 30m curtilage of existing native vegetation and incorporated into public open space networks and riparian corridors and not within private property.

(4) Native vegetation (canopy level) shall be provided, where appropriate for biodiversity outcomes, within pocket parks, riparian corridors and street verges to create a ‘stepping-stone corridor’ for terrestrial bio-diversity.

(5) Where development is located within or close to a known biodiversity corridor, fencing shall be sympathetic to that passage of native fauna.

(6) Ensure provision and maintenance of wildlife corridors and connectivity with adjoining Office for Environment and Heritage (OEH) managed conservation land (such as Persoonia Park and the proposed addition to the National Park).

(7) Development that adjoins conservation land managed by the OEH should address the relevant requirements within the ‘*Guidelines for developments adjoining land and water managed by Department of Environment, Climate Change and Water’* (DECCW 2010).

3.4 Salinity and soil management

Objectives

(1) To ensure development will not significantly increase the salt load in existing watercourses within the site.

(2) To ensure measures are implemented as part of the development to prevent any degradation of the existing soil and groundwater environment.

(3) To minimise the damage caused to property and vegetation by existing saline soils, or processes that may create saline soils.

(4) To minimise erosion and sediment loss during and after construction.

(5) To minimise water pollution due to erosion siltation and sedimentation.

(6) Soil should be used with their land capability.

(7) Vegetation cover, including groundcover, should be retained on highly erodible soils to keep them stable and minimise risk of erosion.

Controls

(1) All development must incorporate soil conservation measures to minimise soil erosion, siltation and salinity impacts during construction and following completion of development. Soil and Water Management Plans, prepared in accordance with *Managing Urban Stormwater - Soils and Construction* (NSW Department of Housing 3rd Edition March 2004 (*'The Blue Book'*)) are to be submitted prior to construction.

(2) All sediment and erosion controls are to be installed prior to the commencement of any construction works and maintained throughout the course of construction until disturbed areas have been revegetated/ established. The applicant will be required to present certification to this effect, to be lodged with the relevant council prior to construction.

(3) Groundwater recharge is to be minimised, and preferably maintained at pre-development levels, by:

- directing runoff from paved areas (roads, car parks, domestic paving etc) into lined stormwater drains rather than along grassed channels as necessary,
- lining or locating any pondages higher in the landscape to avoid recharge where proximity to the water table is likely to create groundwater mounding,
- encouraging on site detention of roof runoff and use of low water demanding plants, and
- encouraging tree planting especially adjacent to watercourses.

3.5 Aboriginal heritage

Objectives

(1) To require the further investigation of the Aboriginal archaeological significance of the precinct.

(2) To ensure that any Aboriginal heritage significance is appropriately incorporated into the redevelopment of the precinct.

Controls

(1) Development shall not proceed within areas known to contain Aboriginal objects without appropriate investigation and consultation with the relevant local Aboriginal groups. The investigations are to identify, where required, conservation areas for the protection and management of archaeological deposits.

(2) A Plan of Management is to be prepared to address the ongoing protection and management of the archaeological deposits. Any DA for development which affects Aboriginal objects is to be accompanied by an Aboriginal Archaeological Report that is supported by the comments of the local Aboriginal groups.

(3) Where development impacts upon on Aboriginal sites previously not identified, Consent to Destroy Permits will need to be sought under Section 90 of the NSW National Parks & Wildlife Act 1974.

(4) Interpretive signage, that provides information on the history and heritage significance of the sites, is to be provided within the public domain areas. Where possible, such signage should be provided in close proximity to the site of any relics or remains that have been uncovered.

3.6 European heritage

Objectives

(1) To conserve and interpret the Rothbury Mine and the site of the Rothbury Riot in the context of its historical, technological and social significance.

(2) To ensure that information regarding the archaeological heritage significance of the precinct is incorporated into the development of the precinct.

Controls

(1) Prior to any development that affects relics associated with the Rothbury Mine or the site of the Rothbury Riot, a detailed assessment of heritage significance is to be undertaken which addresses the significance assessment criteria contained in the *NSW Heritage Manual*.

(2) Any proposed development that affects the identified heritage sites must respond to any identified archaeological constraints. If any relics are to be retained in situ, an applicant is to outline all management measures to ensure ongoing protection of the relics.

3.7 Bushfire hazard management

Objectives

(1) To prevent loss of life and property due to bushfires, by discouraging the establishment of incompatible uses in bushfire-prone areas.

(2) To encourage sound management of bushfire-prone areas.

Controls

(1) Subject to detailed design at DA stage, the location and widths of APZs are to be provided as follows:

- are to be consistent with the requirements in *Planning for Bushfire Protection* 2006,
- are to be located wholly within the precinct, and indicated on subdivision plans,
- may incorporate roads and flood prone land,
- are to be located wholly outside of a core riparian zone (CRZ) but may be located within the buffer areas to the CRZs,
- may be used for open space and recreation subject to appropriate fuel management,
- are to be maintained in accordance with the *Planning for Bushfire Protection 2006,*
- are to be located in the public road reserve where possible and encroach onto no more than 1/3 of the lot length of private lots, and
- are to be generally bounded by a perimeter road that is linked to the public road system at regular intervals in accordance with *Planning for Bushfire Protection.*

(2) Reticulated water is to meet the standards contained within *Planning for Bushfire Protection 2006.* Water supply is to be via a ring main system, engineered to the requirements of *Australian Standard 2419.1- 2005 Fire Hydrant Installations*.

(3) Vegetation within public and community parks and 1st Order watercourses is to be managed as a 'fuel reduced area'.

(4) Dwellings adjacent to APZs are to be constructed in accordance with the requirements of Appendix 3 of *Planning for Bushfire Protection 2006* and *Australian Standard 3959-1999 - Construction of Building in Bushfire Prone Areas.*

(5) Temporary APZs, identified through a Section 88B instrument, will be required where development is proposed on allotments next to undeveloped land. Once the adjacent stage of development is undertaken, the temporary APZ will no longer be required and shall cease.

(6) School buildings, and other 'special fire protection purpose' developments, fronting areas of bushland shall be setback 35 metres from the boundary or in accordance with Rural Fire Service requirements in *Planning for Bushfire Protection* guidelines or its equivalent.

3.8 Contamination management

Objectives

(1) To minimise the risks to human health and the environment from the development of potentially contaminated land.

(2) To ensure that potential site contamination issues are adequately addressed at the subdivision stages.

Controls

(1) Development Applications for development in areas identified in Figure 14 shall be accompanied by a Stage 2 Detailed Site Investigation. A Remediation Action Plan (RAP) will be required for areas identified as contaminated land in the Stage 2 Site Investigation.

(2) When redevelopment is proposed on a site where the relevant council suspects that contamination may be present or for applications proposing a change of use to a more sensitive land use (e.g. residential, education, public recreation facility etc), the relevant council may request a Stage 1 Preliminary Site Contamination Investigation.

(3) All investigation, reporting and identified remediation works must be in accordance with the protocols of the NSW EPA's (now OEH) *Guidelines for Consultants Reporting on Contaminated Sites* and *SEPP 55 – Contaminated Land.*

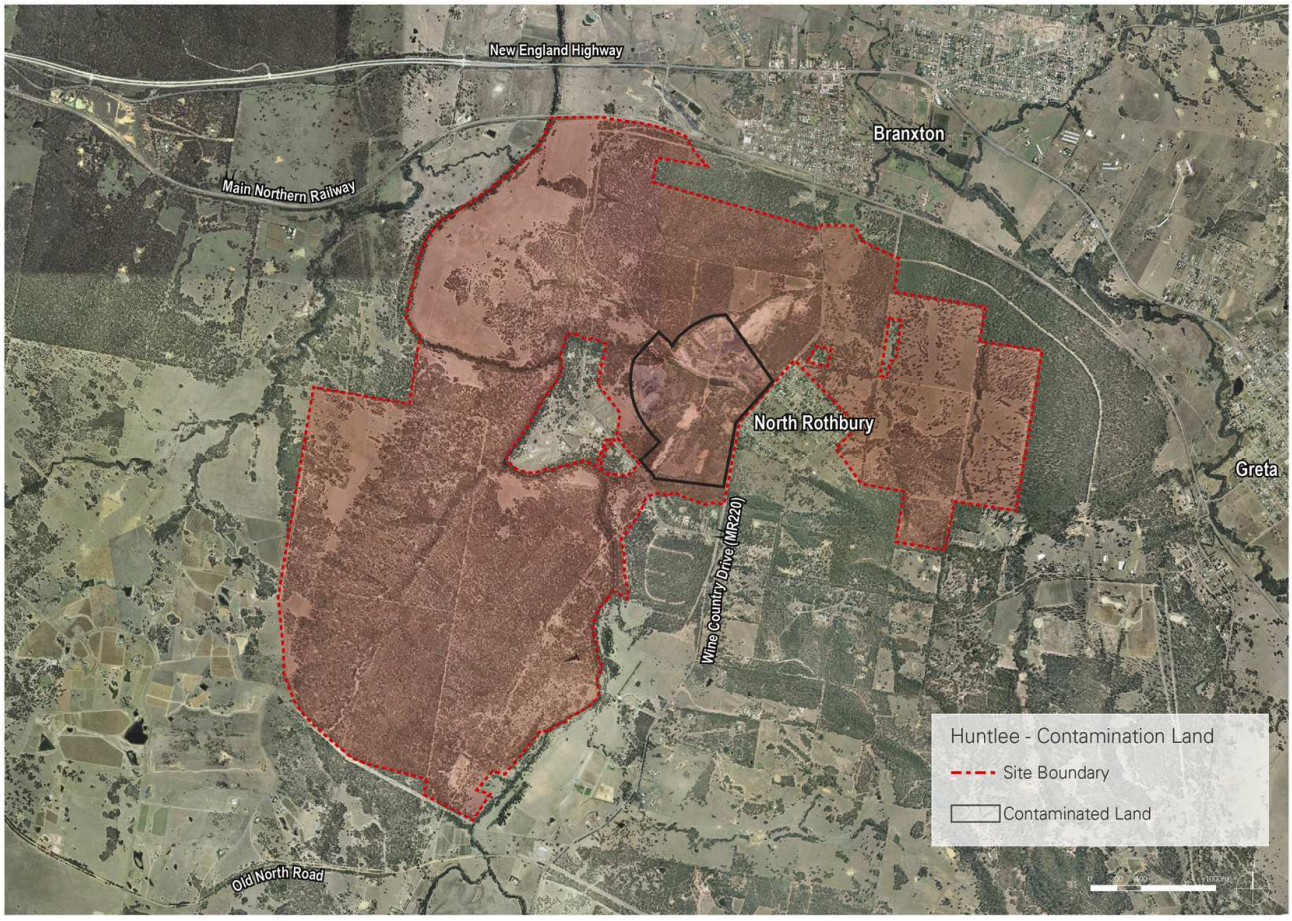

Figure 14: Contaminated areas

3.9 Mine Subsidence Management

Objectives

(1) To minimise the risks to human health and property arising from development on land with potential mine subsidence issues.

(2) To ensure that potential mine subsidence issues are adequately addressed at the subdivision stages.

Controls

(1) Areas of potential mine subsidence are shown in Figure 9, and the following lots are affected (as at March 2013):
   a. Lot 200 DP828486
   b. Lot 240 DP 1105591
   c. Lot 241 DP 1105591
   d. Lot 230 DP 879198
   e. Lot 231 DP 879198
   f. Lot 557 DP 1162248

(2) Prior to any development applications for structures within these lots, the applicant must undertake and submit further geotechnical assessment to verify the depth of cover to mine workings in the location of the proposed development.

(3) As there are mine workings beneath part of the site (where the coal seams dip steeply and the shallow mined areas have a history of mine subsidence potholes), the following restrictions on residential development should be applied:

- Where there is less than 25m of cover to the mine workings, structures are not permitted unless the risk of mine subsidence is removed.
- Between 25m to 50m depth of cover to mine workings, further geotechnical assessment would be required. Building restrictions would apply and this may limit the type and density of structures.
- Between 50m and 75m of cover to mine workings, residential structures not to exceed two storey brick veneer with a maximum length of 30m.
- Where the depth of cover to mine workings is greater than 75m, there would be no restrictions, provided structures do not exceed two storey brick veneer and the upper storey is limited to length of 30m.
- Shafts and mine entries are to be identified and sealed off as required by the Department of Trade and Investment – Minerals and Energy Division. Structures should not be built over these locations.

(4) Infrastructure, such as main pipelines, transmission cables and telecommunications, should not be located over shallow workings unless the risk of mine subsidence has been eliminated and/or specific design is implemented to prevent damage.

(5) Large, higher density structures within the town centre, should be located away from shallow mined areas unless the risk of subsidence has been removed.

(6) The proponent should prepare a long term management plan to deal with the risks associated with the development of potholes and cracks across the site and consider isolating these areas from development.

4 Subdivision design

4.1 Street network and design

Objectives

(1) To provide a hierarchy of interconnected streets that gives safe, convenient and clear access.

(2) To ensure that the hierarchy of streets is clearly discernible through variations in carriageway width, on-street parking, street tree planting, and pedestrian amenities.

(3) To provide a legible and permeable movement network for pedestrians and cyclists along streets and paths to points of attraction within and adjoining any development.

(4) To ensure sufficient carriageway and verge widths are provided to allow streets to perform their designated functions within the street network and to accommodate public utilities, drainage systems and the majority of Asset Protection Zones.

(5) To encourage the use of streets by pedestrians and cyclists, and to allow cars, buses and other users to proceed safely without unacceptable inconvenience or delay.

(6) To promote passive surveillance of publicly accessible areas thereby increasing safety.

(7) To provide an appropriate buffer between the rail corridor and sensitive land uses.

Controls

(1) The street network is to be provided generally in accordance with Figure 15.

(2) Road and intersection upgrades are to be generally in accordance with Figure 16 and Figure 17.

(3) Streets are to be provided in accordance with the cross-sections at Figure 18 to Figure 25.

(4) “Park Edge” roads (Figure 29) should accommodate the majority of the required Asset Protection Zone (APZ) within the road reserve, with APZs encroaching on to no more than 1/3 of the lot length of private lots. Where there is a slope or change in level at the boundary of the development, ‘Park Edge’ roads should also incorporate a battered slope within the road reserve to accommodate the changes in level.

(5) Alternative street designs for local streets and accessways may be permitted on a case by case basis to accommodate local features if they preserve the functional objectives and requirements of the design standards.

(6) Where any variation to the residential street network is proposed, the alternative street network is to be designed to achieve the following principles:

- a permeable network that is based on a modified grid system,
- encourage walking and cycling and reduce travel distances,

- maximise connectivity between residential areas and community facilities, open space and centres,
- take account of topography and accommodate significant vegetation,
- optimise solar access opportunities for dwellings,
- provide frontage to and maximise surveillance of open space and riparian corridors,
- provide views and vistas to landscape features and visual connections to nodal points and centres,
- maximise the use of water sensitive urban design measures, and
- minimise the number of road crossings of riparian corridors and ensure riparian connectivity is maintained.

(7) Except where otherwise provided for in this DCP, all streets and intersections are to be designed and constructed in accordance with Austroads Guide to Traffic Management and Australian Standards AS 1742, 1743 and 2890.

(8) For road works within areas identified as a salinity hazard, the following must occur as a minimum:

- roads should be perpendicular to the contours as much as possible,
- minimum disturbance of subsoil,
- engineering designs incorporating considerations of salinity impacts are required, and
- subsoil drainage is to be installed along both sides of all roads.

(9) Street trees are required for all streets. Street tree planting is to:

- be consistently used to distinguish between public and private spaces and between different classes of street within the street hierarchy,
- minimise risk to utilities and services,
- be durable and suited to the street environment and, wherever appropriate, include endemic species,
- maintain adequate lines of sight for vehicles and pedestrians, especially around driveways and street corners,
- provide appropriate shade, and
- provide an attractive and interesting landscape character and clearly define public and private areas, without blocking the potential for street surveillance.

(10) Signage, street furniture and lighting is to be:

- designed to reinforce the distinct identity of the development,
- coordinated in design and style,
- located so as to minimise visual clutter and obstruction of the public domain, and
- of a colour and construction agreed by the relevant council.

(11) Locating entry signage and the like within a public road reserve is subject to the relevant council's agreement.

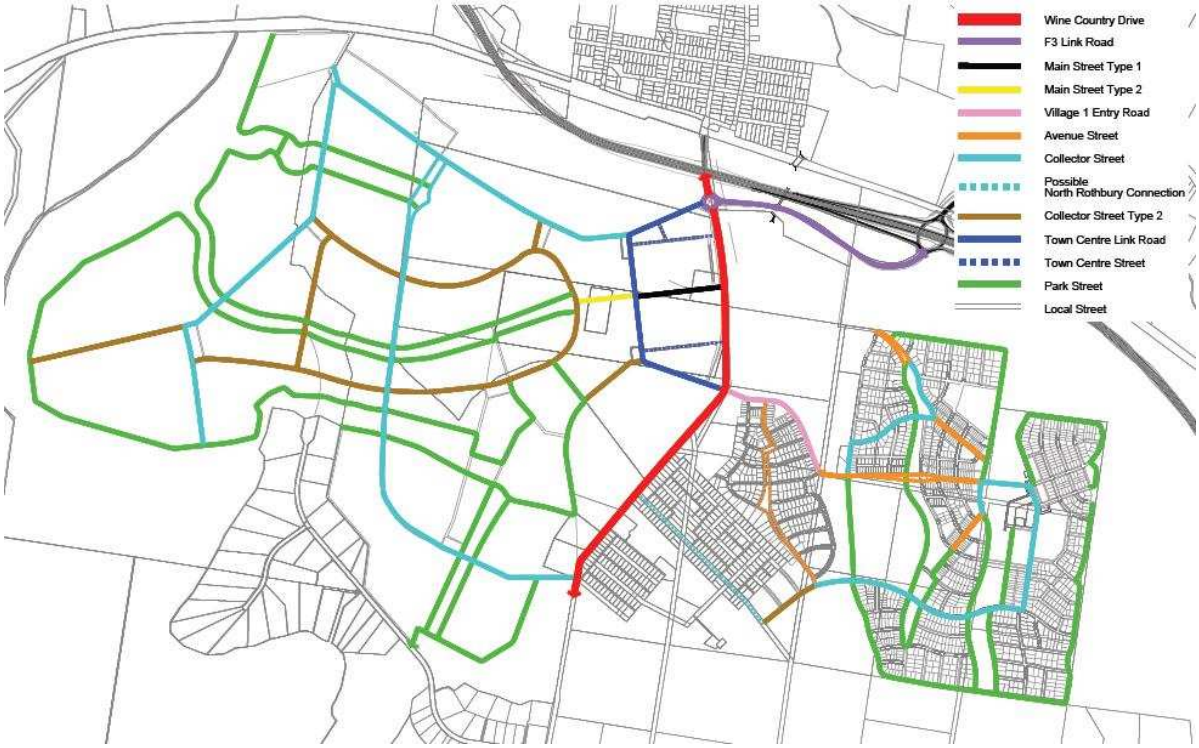

Figure 15: Overall road network and hierarchy

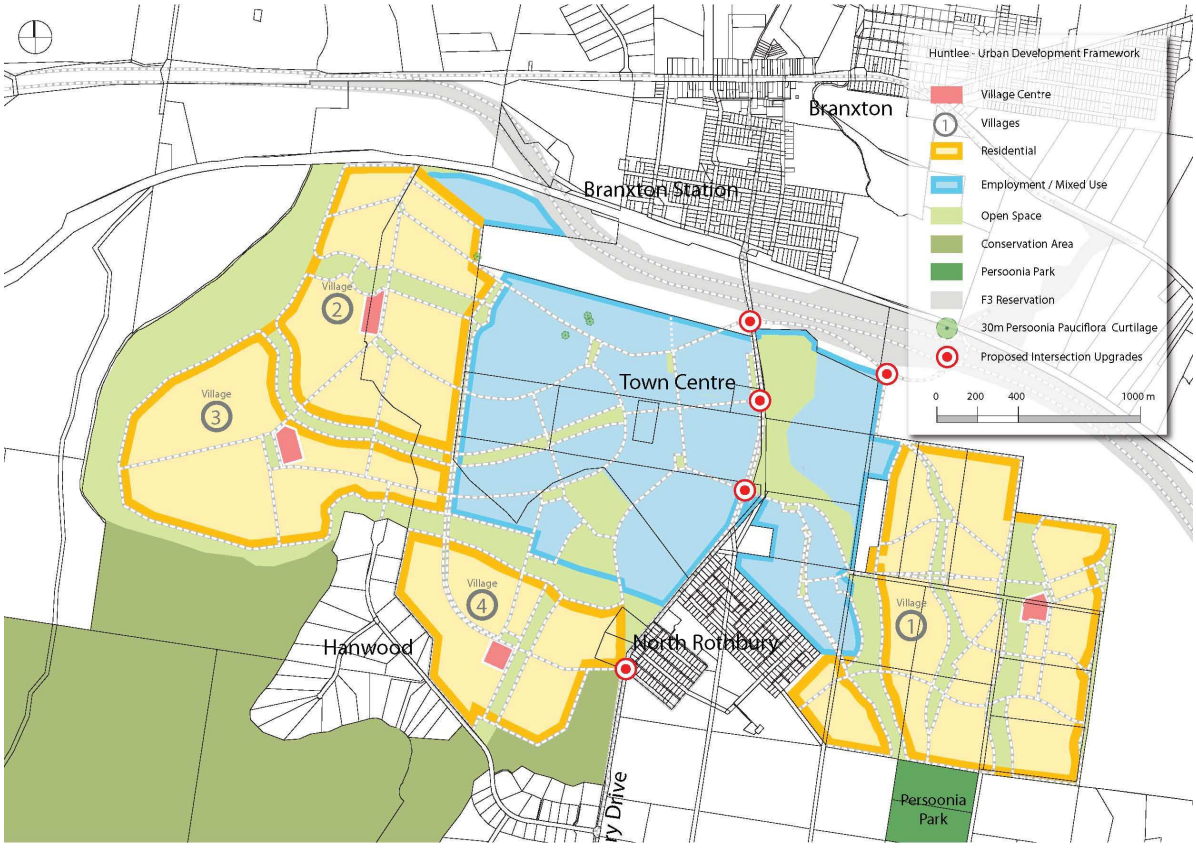

Figure 16: Key road and intersection upgrades

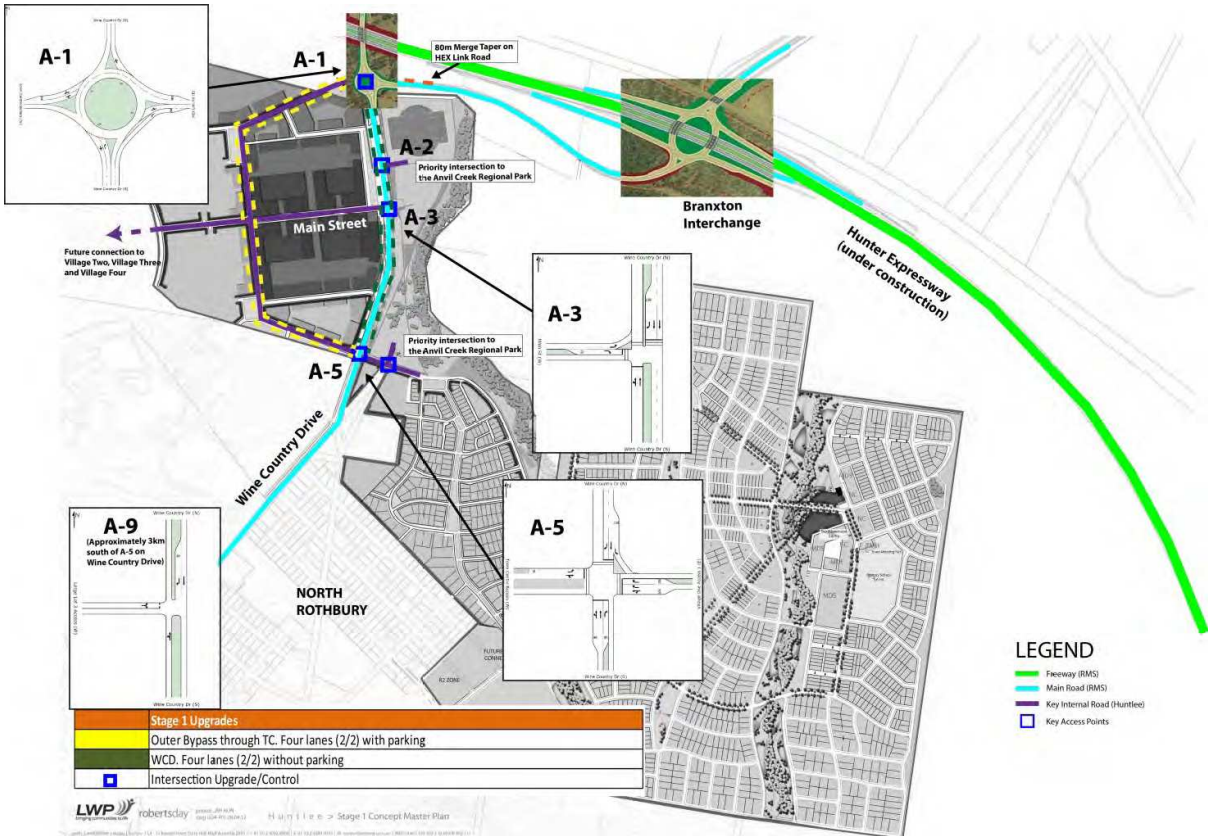

Figure 17: Detail of road and intersection upgrades

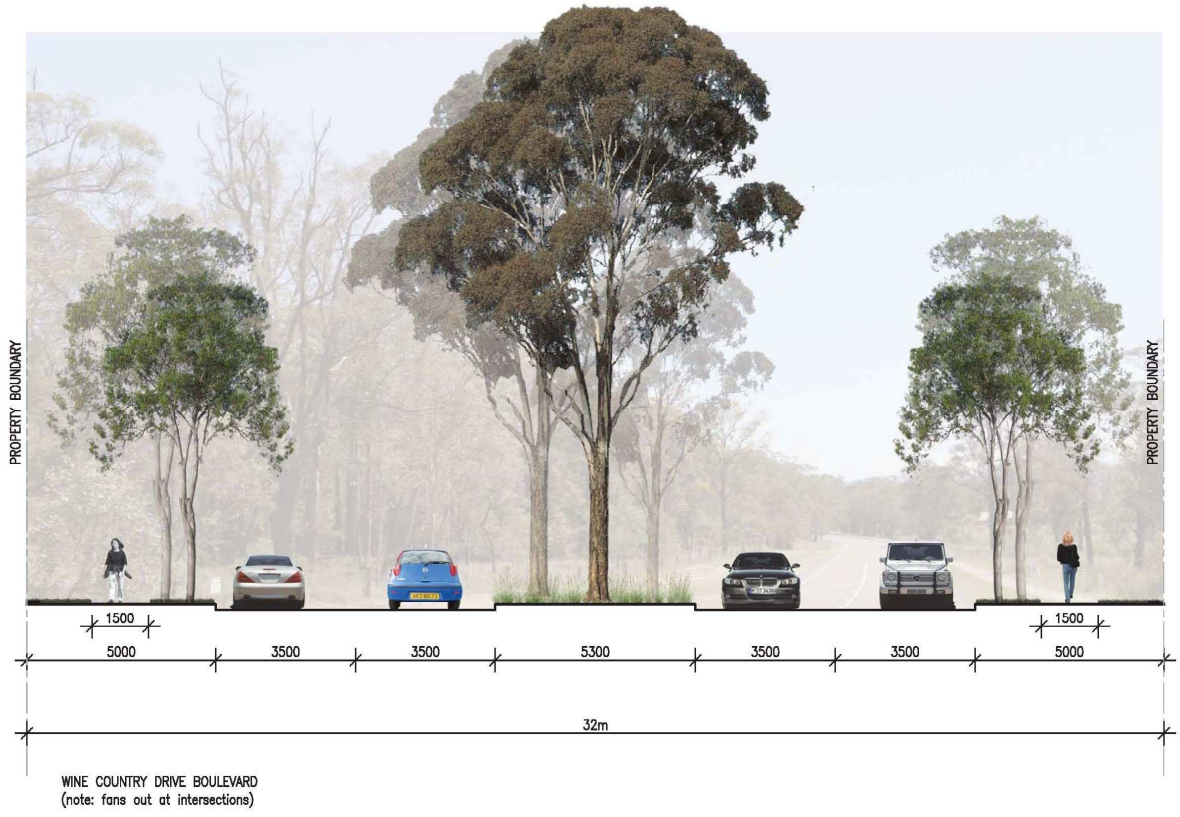

Figure 18: Wine Country Drive

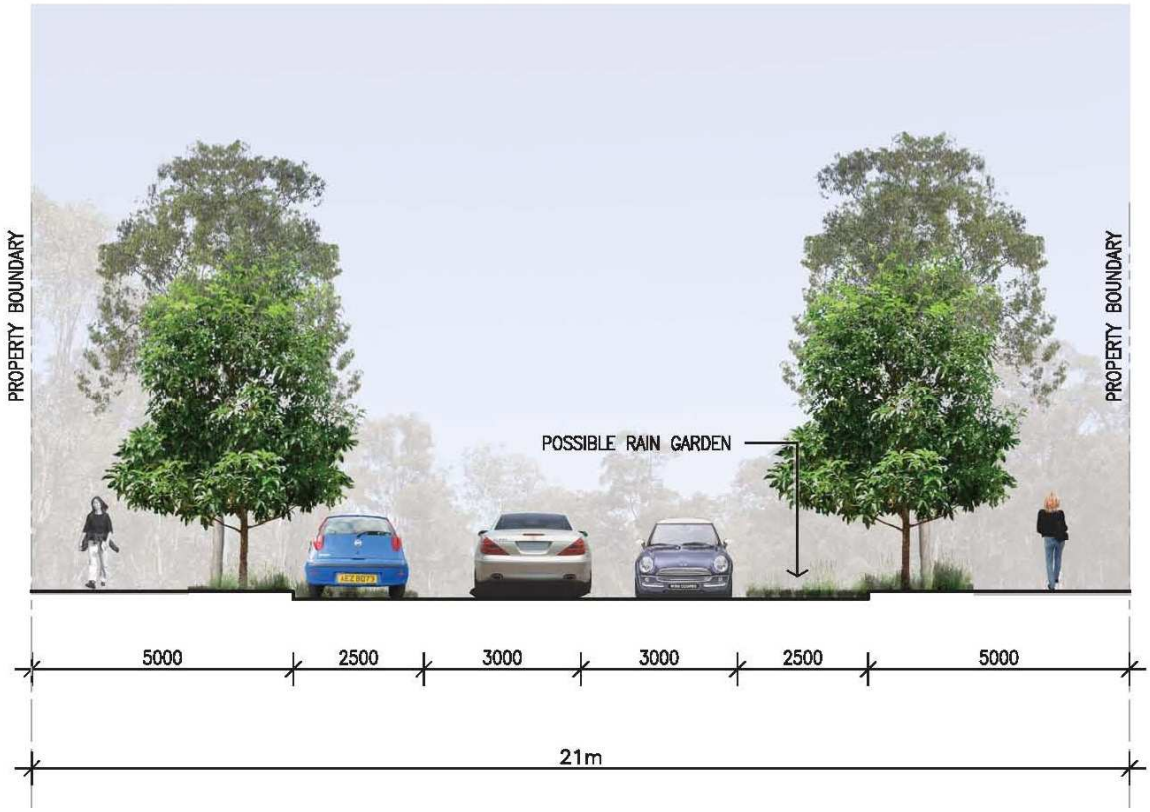

Figure 19: Main Street type 1 (East)

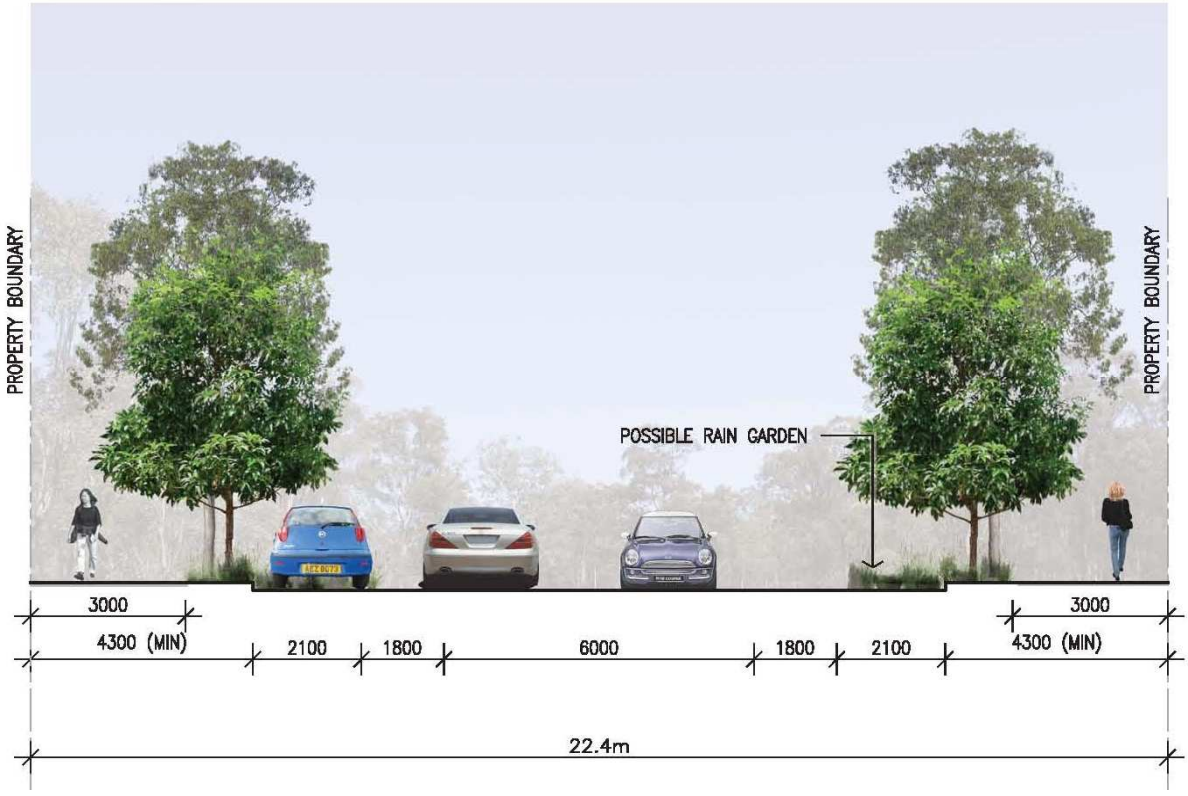

Figure 20: Main Street type 2 (West)

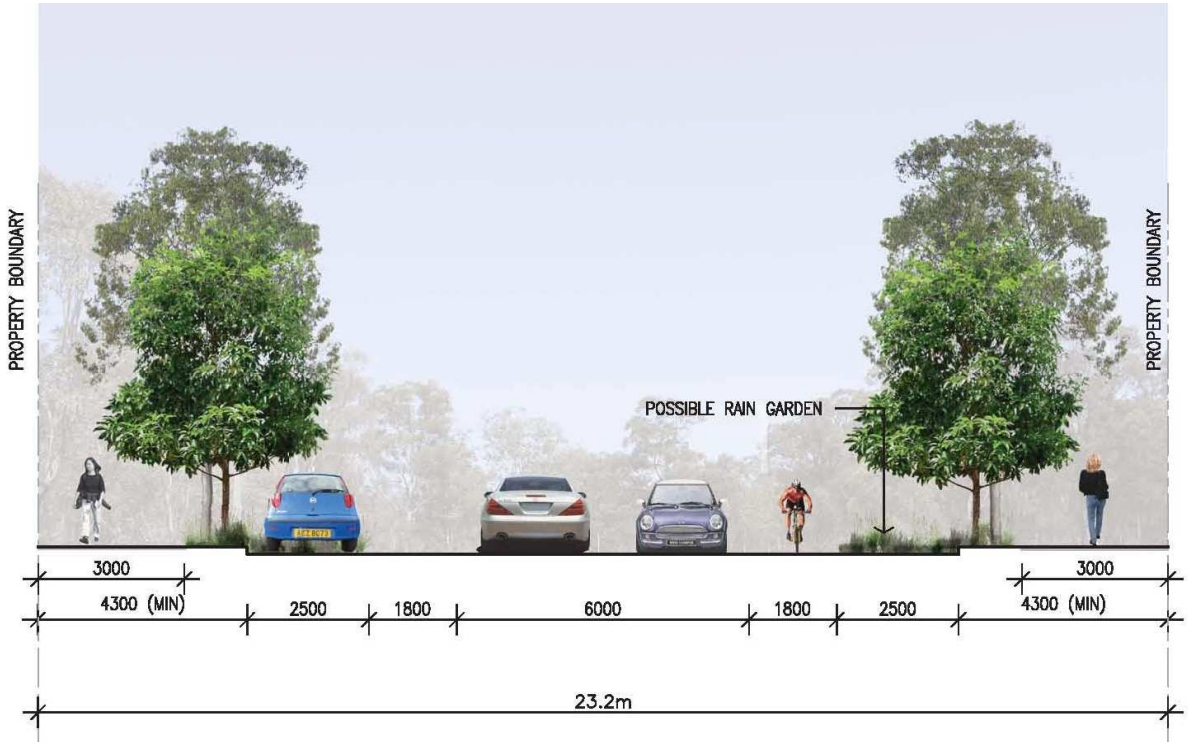

Figure 21: Town Centre Link Road

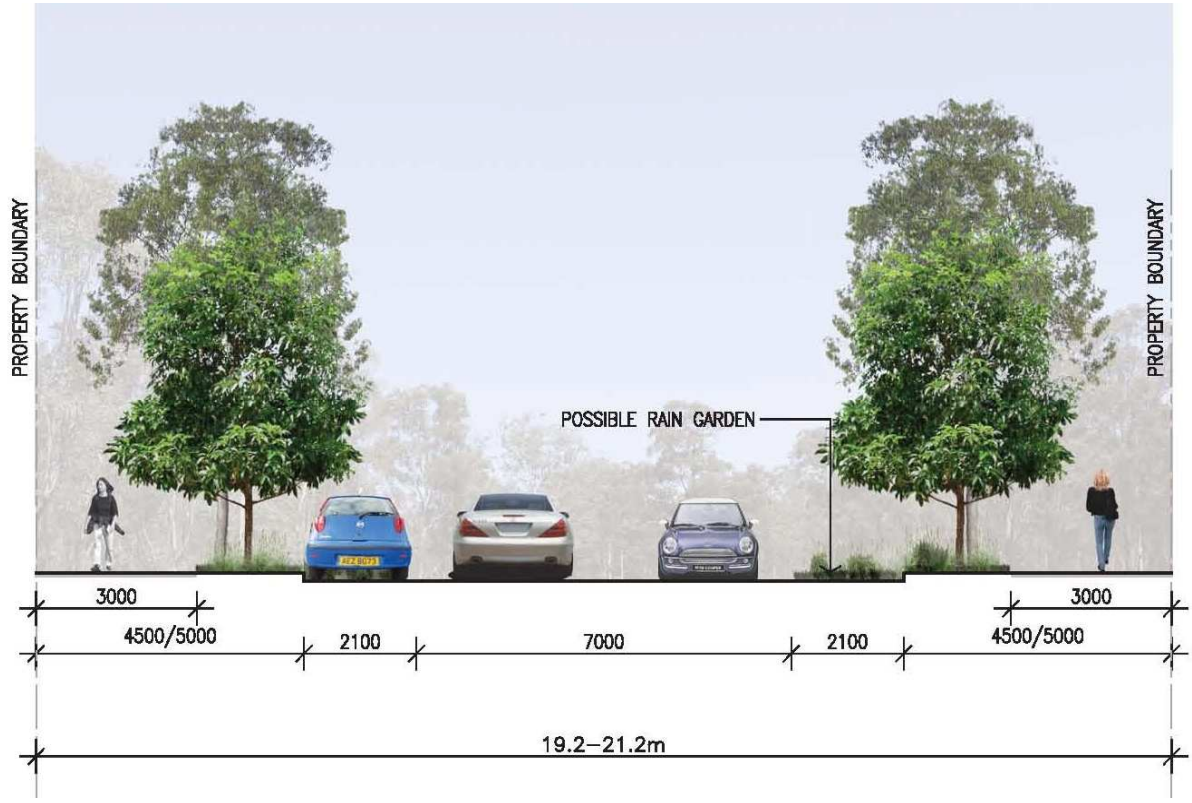

Figure 22: Town Centre Street

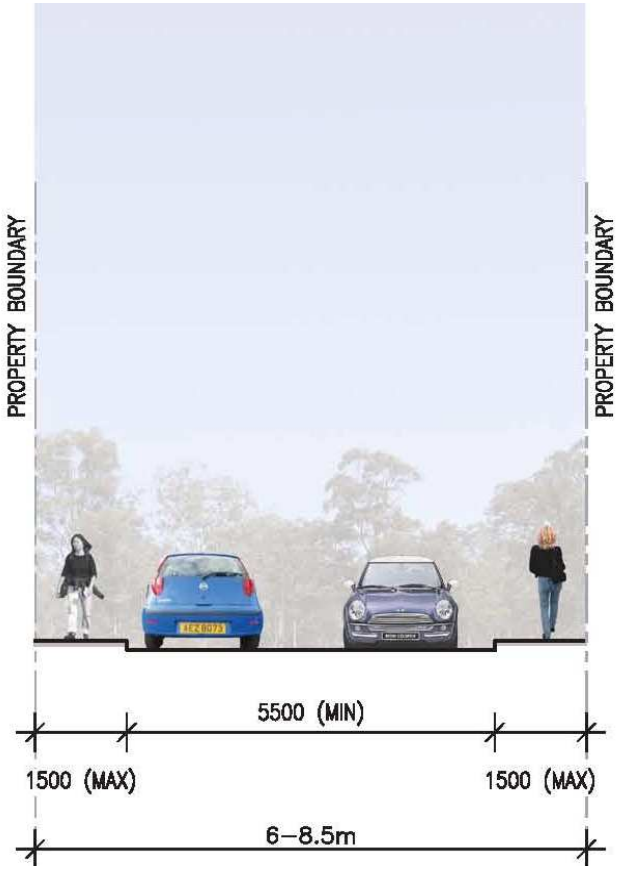

Figure 23: Town Centre Laneway

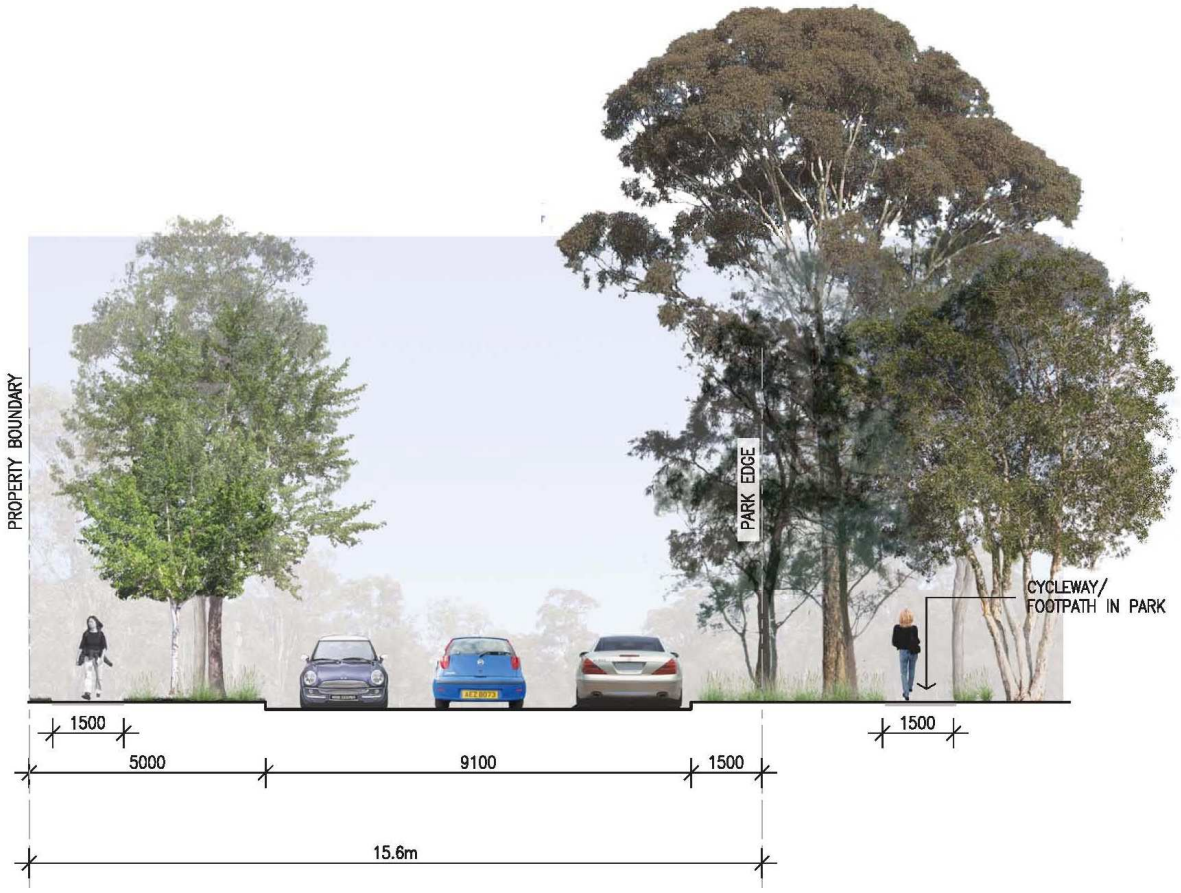

Figure 24: Village 1 Entry Road

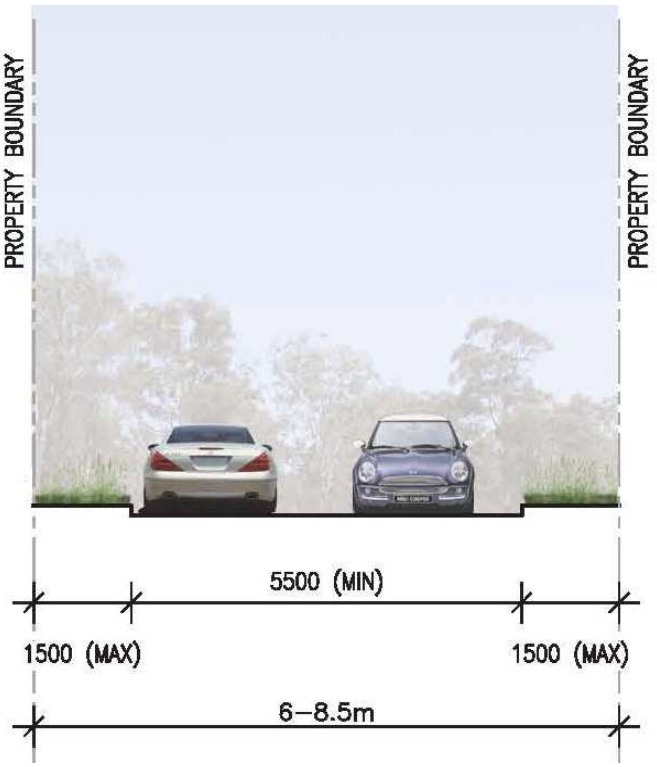

Figure 25: Residential Laneway

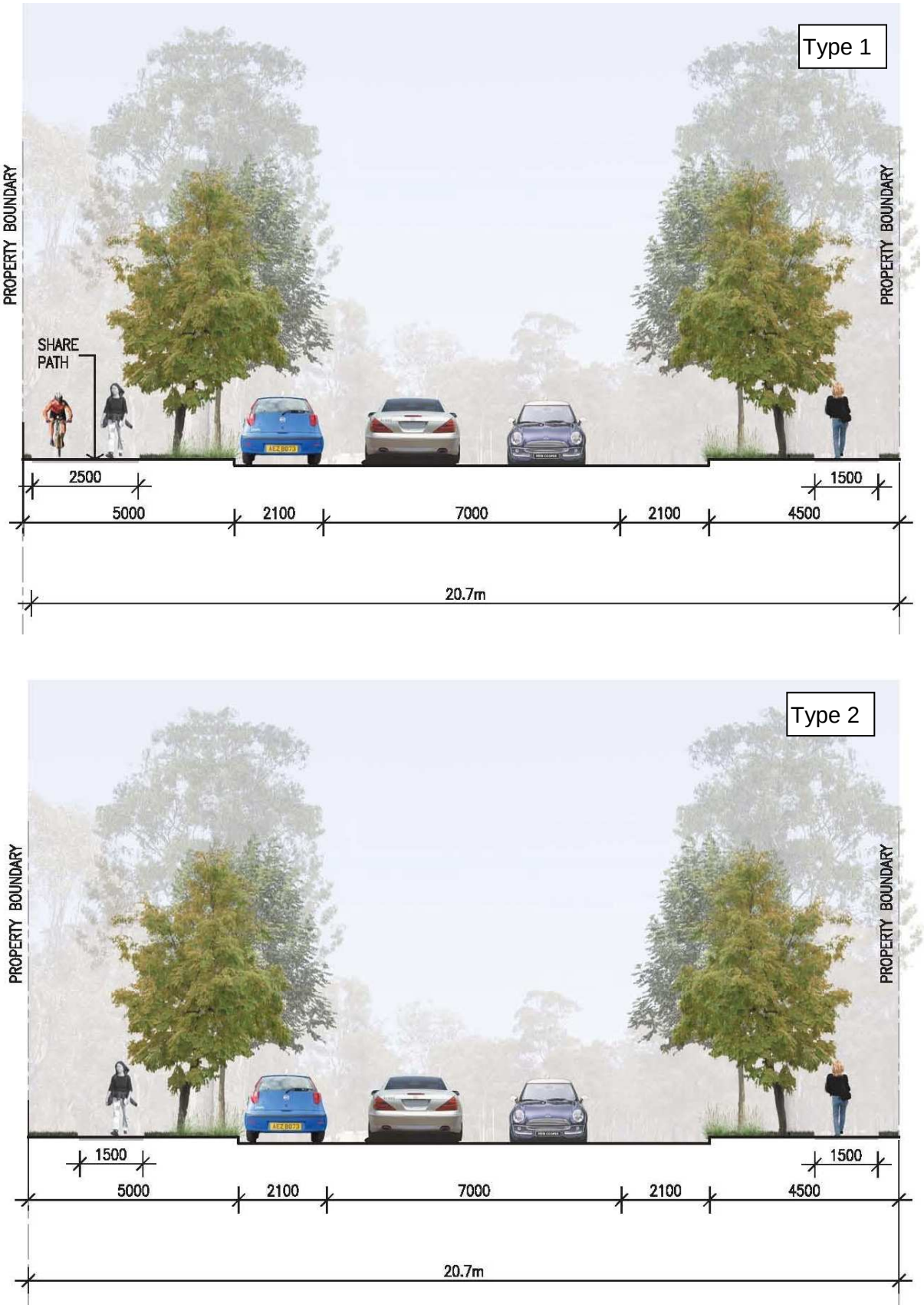

Figure 26: Collector Streets

Figure 27: Avenue Streets

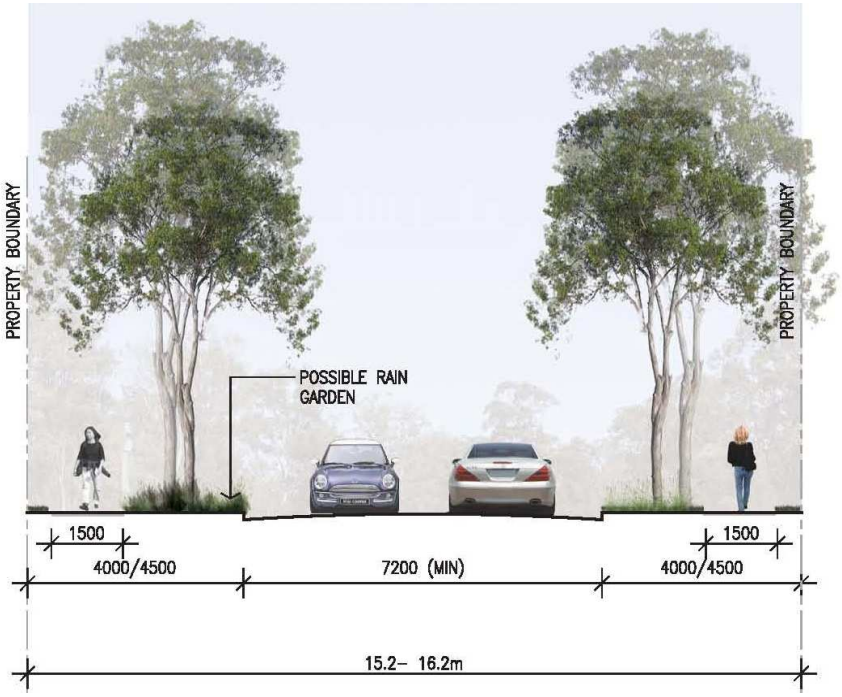

Figure 28: Local Streets

Figure 29: Local Park Edge Streets

4.2 Pedestrian and cycle network

Objectives

(1) To provide a convenient, efficient and safe network of pedestrian and cycleway paths for the use of the community, within and beyond the site.

(2) To encourage residents to walk or cycle, in preference to using motor vehicles, as a way of gaining access to the schools, shops, and local community and recreation facilities.

(3) To avoid duplication by allowing pedestrian pathways and cycleways to be located within parks and corridors wherever practical.

Controls

(1) Footpaths and cycle paths are to be provided in accordance with street sections provided in Section 4.1. Verge areas may be more generous in order to accommodate local features such as existing trees or provide visual interest.

(2) Pedestrian paths, cycle routes and facilities in public spaces are to be safe, well lit, clearly defined, functional and accessible to all.

(3) Pedestrian paths, cycle paths and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, generally in accordance with Australian Standard 1428:1-4.

(4) Pedestrian and cycle pathways are to be constructed as part of the infrastructure works for each residential stage with detailed designs to be submitted with the construction certificate application. Concept approval will be required at DA stage.

(5) Pedestrian and cycle routes shall be in accordance with Figure 30.

(6) Minimum footpath width is to be 1.5 m and a shared cycle/pedestrian path is to be 2.5 m.

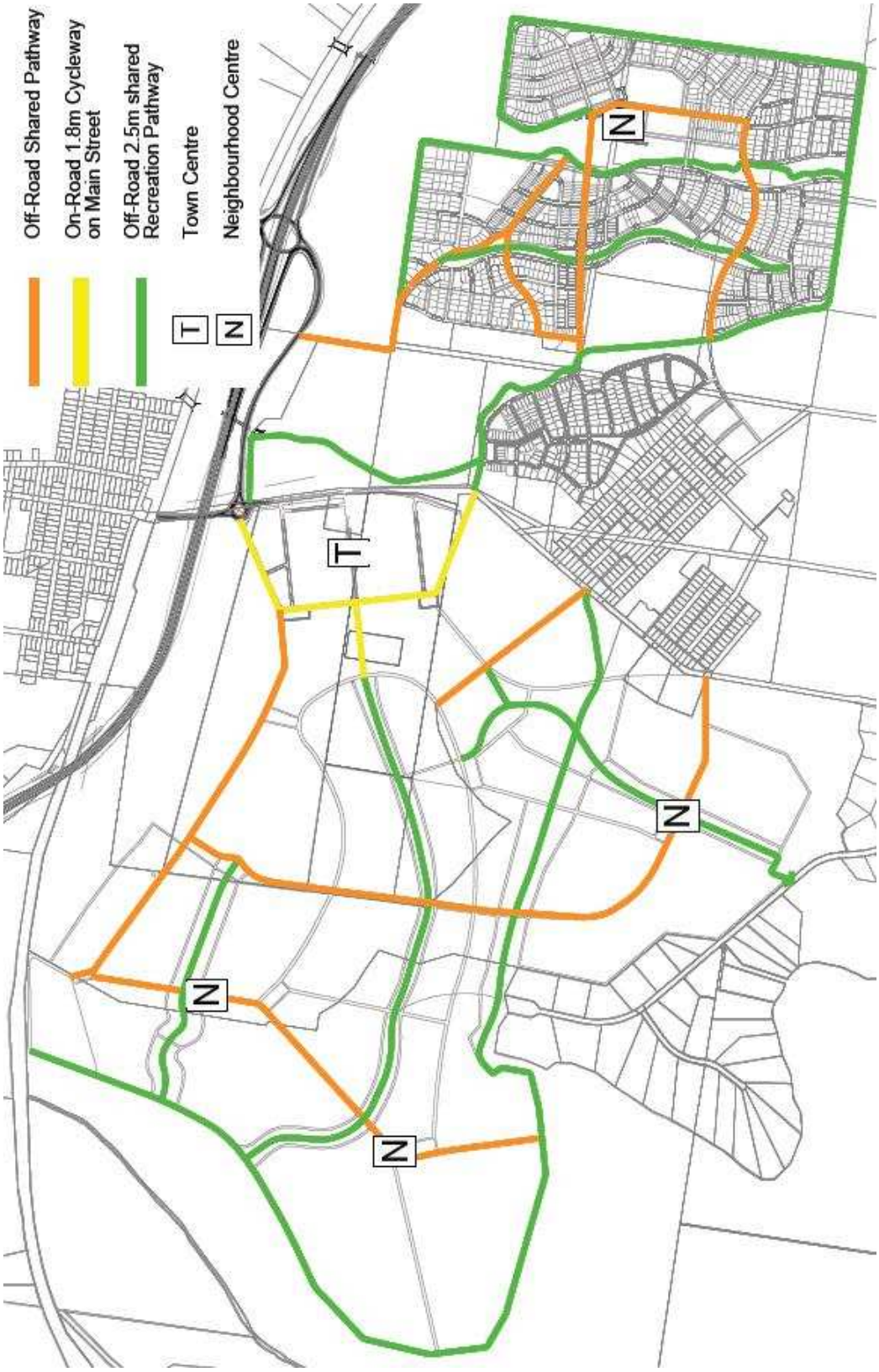

Figure 30: Overall cycleway network

4.3 Public transport network

Objectives

(1) To encourage the use of public transport within Huntlee.

(2) To ensure clear, safe pedestrian links to public transport stops.

Controls

(1) Bus routes and bus stops are to be provided generally in accordance with Figure 31.

(2) Residential lots should be located generally within a safe walking distance of 800m from an existing or proposed bus stop.

(3) A minimum carriageway width of 3.5m is to be provided along all bus routes. Roundabouts on bus routes are to be designed to accommodate bus manoeuvrability.

(4) Bus stops are to be provided on-street and generally not within indented bays. Bus shelters are to be provided at key stops and installed at the subdivision construction stage.

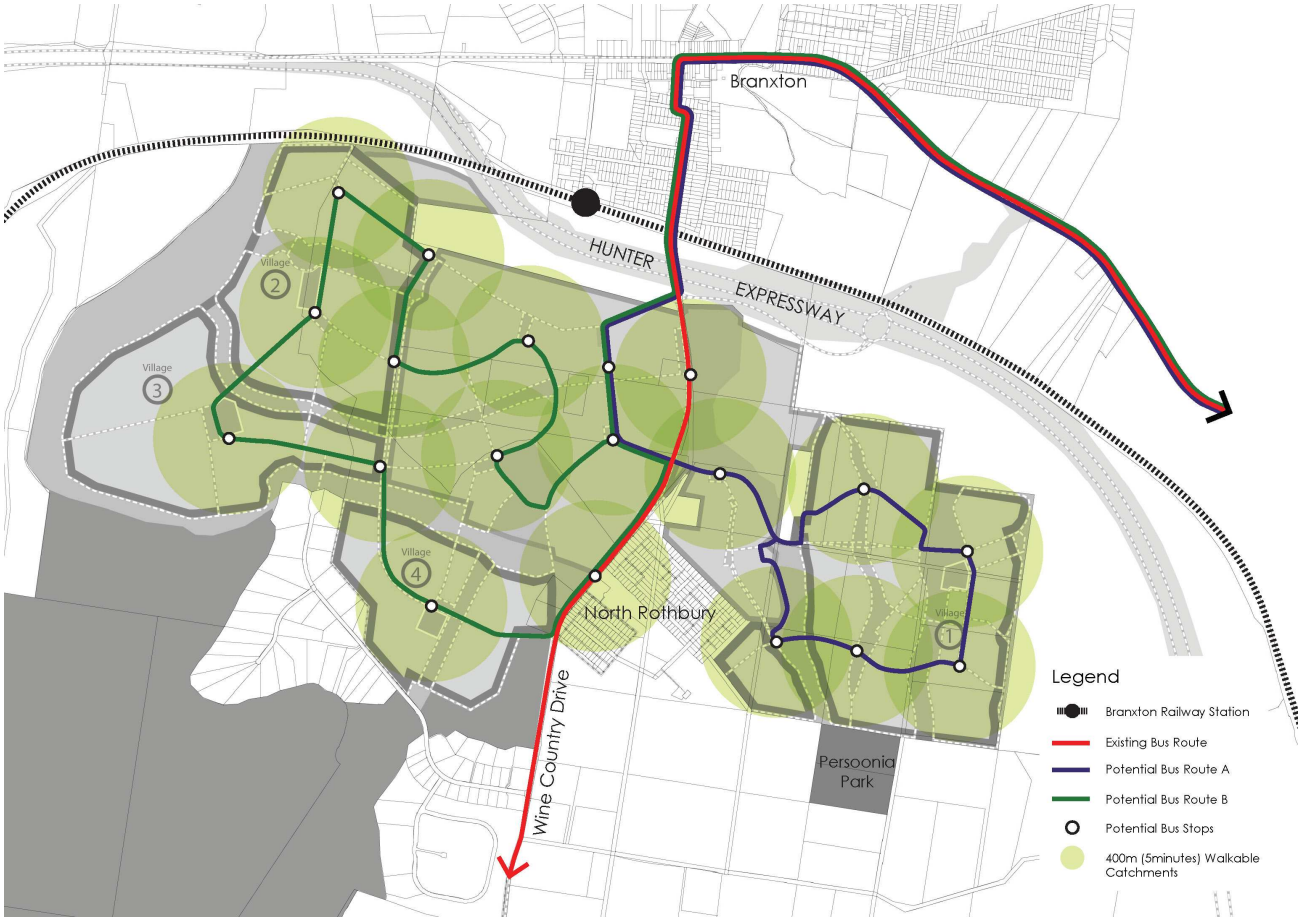

Figure 31: Overall public transport network (indicative)

4.4 Public domain works

Objectives

(1) To meet the public open space and recreational needs of residents.

(2) To provide an equitable distribution of public open space and recreation opportunities.

(3) To ensure a high quality of design and embellishment of all public open space.

(4) To ensure environmentally and visually sensitive land contributes to the landscape character of the precinct.

(5) To ensure that all the public domain elements like street trees, paving, street furniture, lighting and signage contribute to a consistent street character.

(6) To ensure that adequate provision is made for utilities.

(7) To ensure that all utilities are integrated into the development and are unobtrusive.

(8) To ensure that all parks are managed to the extent required to provide acceptable asset protection to adjoining dwellings.

Controls

4.4.1 Public parks and landscape

(1) Parks, open space areas and riparian corridors are to be provided generally in accordance with Figure 13.

(2) Public parks are to:

- be located as focal points within residential neighbourhoods,
- be co-located with community and education facilities,
- be generally bordered by streets on all sides with houses oriented towards them for surveillance,
- be highly accessible and linked by pedestrian and/or cycle routes,
- be linked to and integrated with riparian corridors where possible,
- be located and designed to accommodate remnant vegetation, where possible,
- where applicable incorporate interpretative signage detailing local history and environmental education themes, and
- provide a range of play spaces and opportunities and cater for a range of ages.

(3) Street furniture is to be incorporated into the design of public and community parks and should include seating, shade structures, drinking fountains, lighting, and information signs.

(4) Riparian corridors and conservation areas are to provide opportunities for pedestrian paths and cycleways, fitness trails and additional open space in a manner that maintains the environmental significance of these areas. Themed elements such as boardwalks, eco-pathways, and educational tracks should be utilised in appropriate locations.

(5) The selection of landscape species for public open space areas should incorporate locally endemic species with low water needs.

(6) A Landscape Plan is required to accompany any Development Application for subdivision creating a public park and is to provide details on elements such as:

- asset protection zones,
- earthworks,
- furniture,
- plant species and sizes (with consideration for bush fire risks),
- play equipment,
- utilities and services,
- public art,
- hard and soft landscaping treatments,
- signage,
- any entry statements,
- waste facilities, and
- any other embellishment.

4.4.2 Street tree planting

(1) Street trees are required for all streets. Street tree species must be generally in accordance with the list of preferred planting species in Table 4. The tree canopy should comprise predominantly native species.

(2) Street tree planting is to be provided to all streets with an average spacing of 15 metres, with a minimum of one tree per lot frontage. Corner lots will have a minimum of two street trees. The location of street trees must complement proposed driveway locations and not compromise sight lines.

(3) Landscape works in roundabout islands may include low-maintenance groundcover planting and native grasses with a mature height of up to 0.5 metres, as well as mature clear-stemmed tree planting, where sight lines are not compromised.

(4) Access streets located adjacent to arterial roads are to include landscape treatment of the verge adjoining the arterial road. Road verges provide opportunities for unifying the appearance and landscape character of the area and should be provided as a continuous design feature along the length of the arterial road.

(5) All street trees should be protected with root barriers to ensure that potential impact on infrastructure is mitigated as far as practicable.

Table 4: Street trees species list

Street Type	Species
Wine Country Drive	*Eucalyptus maculata* *Eucalyptus punctata* *Eucalyptus creba*
Town Centre and Civic Street	*Lophostermon confertus* *Magnolia gradiflora* *Waterhousia floribunda 'Exmouth'* *Tristaniopsis laurina 'Luscious'* *Acmena smithii* *Ficus rubignosa* *Fraxinus griffithii* *Pyrus calleryana cvrs* *Callistemon salignus* *Araucaria cunninghamii* *Brachychiton populneus* *Flindersia australis* *Syzygium australe* *Syzygium francissi* *Syzygium luehmannii* *Syzygium oleosum* *Elaeocarpus reticulatus* *Platanus x hybrida*
Collector / Avenue Streets	*Eucalyptus maculata* *Eucalyptus fibrosa* *Eucalyptus molucanna* *Eucalyptus tereticornis* *Fraxinus raywoodii* *Grevilla robusta* *Magnolia grandiflora* *Lophostemon confertus* *Waterhousia floribunda 'Exmouth'* *Tristaniopsis laurina 'Luscious'* *Acmena smithii* *Ficus rubignosa* *Fraxinus griffithii* *Pyrus calleryana cvrs* *Callistemon salignus*

	Araucaria cunninghamii – *Brachychiton populneus* *Flindersia australis*
Local streets	*Eucalyptus maculata* *Eucalyptus fibrosa* *Eucalyptus glaucina* *Eucalyptus tereticornis*
Local park edge (ridgelines)	*Eucalyptus maculata* *Eucalyptus fibrosa* *Eucalyptus glaucina*
Local park edge (creeklines)	*Casuarina glauca* *Melaleuca decora* *Melaleuca nodosa* *Allocasuarina iuehamannii* *Tristaniopsis laurina* *Elaeocarpus reticulatus*

4.4.3 Utilities and services

(1) Gas and water services may be located in a shared trench on one side of the street or rear lane and electricity power and telephone located in a shared trench on the other side of the street or rear lane. Trenches should be designed and located to allow for adequate street tree planting.

(2) All development shall incorporate underground electricity reticulation and telecommunications.

(3) Any existing aboveground electricity reticulation services shall be relocated underground with the exception of main transmission lines.

(4) Where agreement to develop shared trench practices cannot be met, or location of services are unable to be limited to one side of the road, the alignment of services shall be to a standard acceptable to the relevant council and allow for the inclusion of street trees.

(5) Utilities and services are to be supplied and constructed in accordance with the requirements of the relevant authority.

(6) Pipes and conduits through bushland areas and areas with significant vegetation cover are to be avoided, where possible.

(7) Development is to have a water supply for fire-fighting purposes in accordance with the NSW Rural Fire Service's requirements.

4.5 Residential neighbourhoods

4.5.1 Residential character

Objectives

(1) To establish a clear urban structure that encourages walking and cycling.

(2) To emphasize the natural attributes of the site and reinforce neighbourhood identity through the placement of visible key landmark features, such as parks, squares and landmark buildings.

(3) To ensure that all residential lots are afforded a high level of amenity in terms of solar access, views, outlook and proximity to public and community facilities and parks.

(4) To ensure that the siting and design of buildings minimises noise impacts from abutting busy roads, rail corridors and other noise-generating land uses.

(5) To ensure that commercial or industrial development does not unreasonably diminish the amenity of nearby residential uses from noise intrusion.

(6) To accommodate a mix of lot sizes and dwelling types.

(7) To establish minimum lot dimensions for different residential dwelling types, including potential future infill subdivision.

(8) To encourage variety in dwelling size to promote housing choice and create interesting streetscapes.

Controls

(1) Residential neighbourhoods are to be focused on elements of the public domain such as a school, park, retail, or community facilities that are typically within walking distance.

(2) Subdivision layout is to create a legible and permeable street hierarchy that responds to the natural site topography, the location of existing significant trees and solar design principles.

(3) Pedestrian connectivity is to be maximised within and between each residential neighbourhood with a particular focus on pedestrian routes connecting to public open space, bus stops and railway stations, educational establishments and community/recreation facilities.

(4) Street blocks are to be generally 150m to 180m long. Block lengths and widths in excess of 180m may be considered where pedestrian connectivity, stormwater management and traffic safety objectives are achieved.

(5) Residential lots should generally be rectangular in geometry.

(6) Battle-axe lots are not permitted.

(7) The orientation and configuration of lots is to be generally consistent with the subdivision principles shown at Figure 32 and Figure 33.

(8) Preferred lot siting is either on a north-south or east-west orientation.

(9) Alternative lot orientation may be considered where topography is a constraint or where other amenities such as views and outlook over open space are available, and providing appropriate solar access and overshadowing outcomes can be achieved.

(10) Residential subdivision applications should:

- Consist of a mix of dwelling types including attached dwellings, multi-dwelling housing and residential flat buildings which are located in close proximity to the town and village centres and public transport.
- Incorporate a mix of lot sizes for detached dwellings to provide a range of housing choice within the lower density areas.
- Provide cottage lots around open space and village centres
- Provide country lots around the perimeter of the site and where environmental constraints are managed within lots (ie Flooding, bushfire APZ etc).
- Be designed to provide for activation of the public domain, including streets and public open space through the orientation and design of buildings and communal spaces.
- Ensure that pedestrian, cyclist and road links provide legible and direct access to the town centre, public transport and areas of public open space.

(11) Residential development adjacent to sub-arterial roads, arterial roads and the rail line are to consider the effects of road and rail traffic noise, vibration and air quality on residential amenity and, where necessary, should include measures to ameliorate any adverse impacts.

(12) The provisions of the *State Environmental Planning Policy (Infrastructure) 2007* and *"Development near Rail Corridors and Busy Rods Interim Guideline"* 2008 must be taken into consideration, to minimise impacts of busy roads and railway corridors on residential and other sensitve development such as schools, child care centres, places of public worship and health services facilities.

(13) Non-residential development is not to adversely affect the amenity of adjacent residential development as a result of noise, odour, hours of operation and/or service deliveries.

(14) Non-residential development in the residential areas is encouraged where it:

- Contributes to the amenity and character of the residential area within which it is located.
- Provides services, facilities or other opportunities that meet the needs of the surrounding residential population and contributes to reduce motor vehicle use.
- Will not result in detrimental impacts on the amenity and safety of surrounding residential areas, including factors such as noise and air quality.
- Is of a design that is visually and functionally integrated with the surrounding residential area.

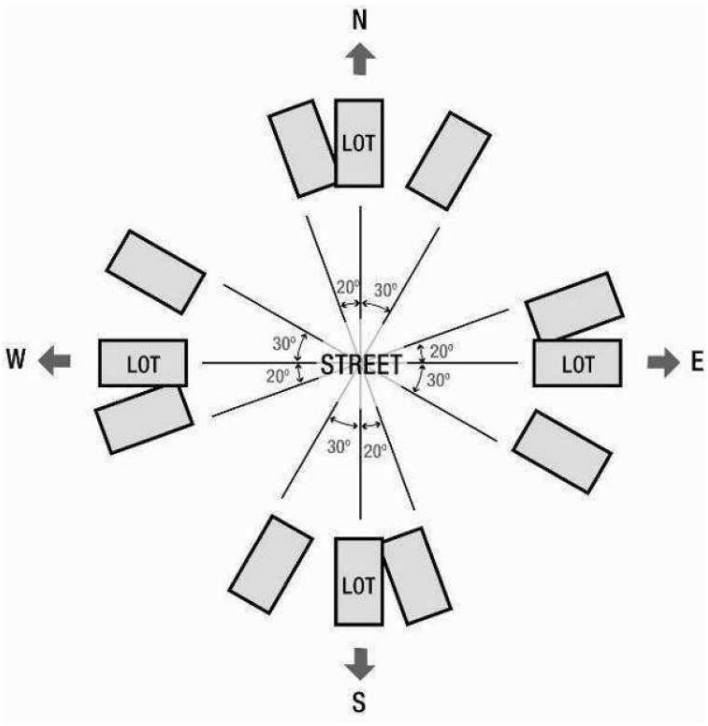

Figure 32: Lot orientation principles

Figure 33: Subdivision principles

4.5.2 Minimum lot dimensions

Controls

(1) Minimum lot frontage and lot sizes for each dwelling type will comply with Table 5 and should be located generally in accordance with the Lot Size Map at Figure 34.

(2) Lot frontage is to be measured at the street facing building façade line, not including articulation elements.

(3) Residential subdivision is to provide for a mix of lot frontage widths to enable the development of a range of housing types and sizes.

(4) Lots should be rectangular. Where lots are an irregular shape, they are to be large enough and oriented appropriately to enable dwellings to meet the controls in this DCP.

(5) Battleaxe lots are not permitted.

Table 5: Minimum lot frontage and lot size according to dwelling type

Dwelling Type	Lot frontage (minimum - maximum)	Lot size
Cottage lots	5m – 12m	150m^2 - 450m^2
Traditional lots	12m – 20m	250m^2 - 800m^2
Country lots	20m	> 800m^2
Multi-dwelling housing	26m	> 800m^2
Residential flat buildings	30m	> 2000m^2

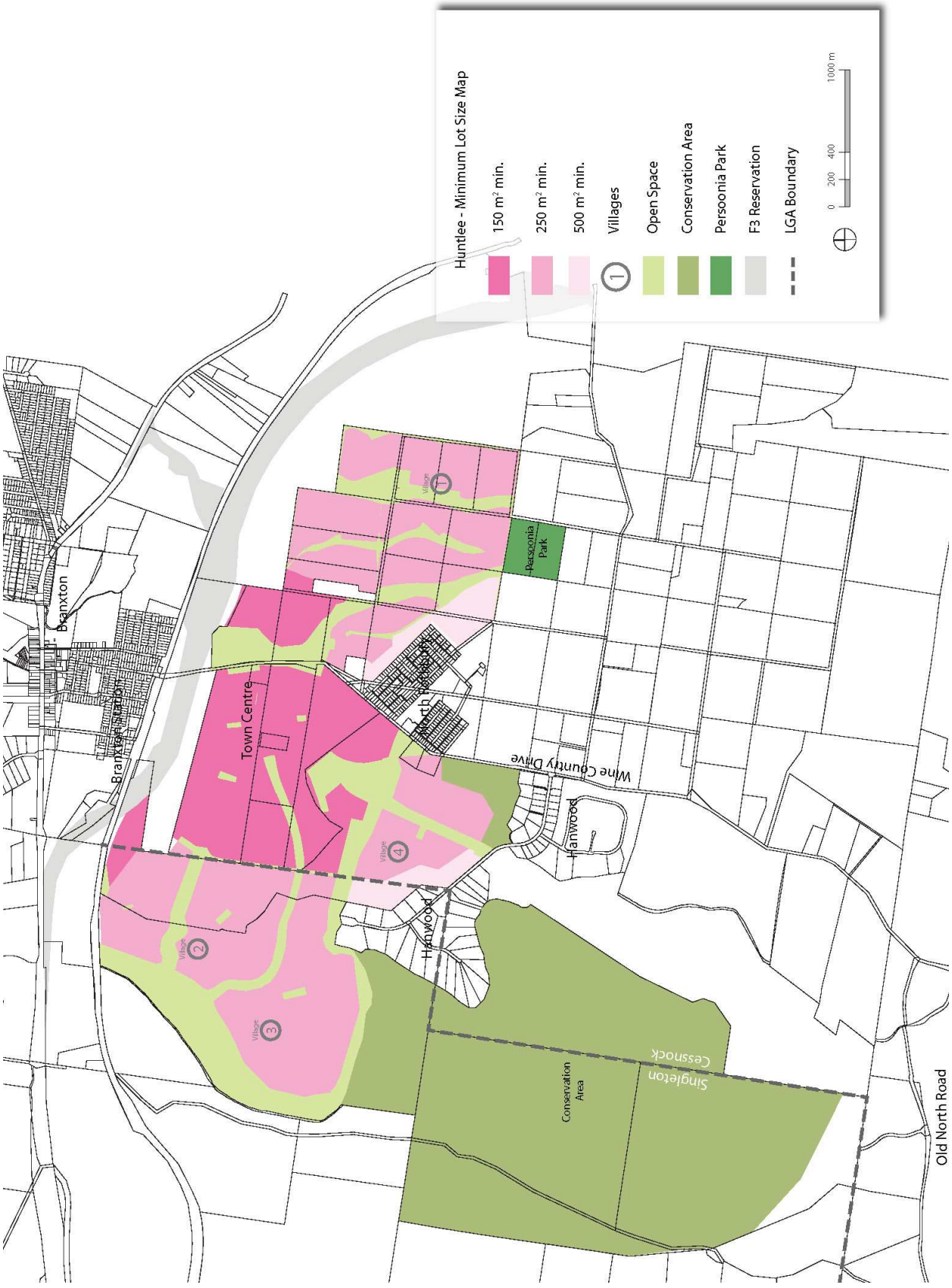

Figure 34: Lot Size Map (indicative)

4.5.3 Corner lots

Controls

(1) Corner lots are to be designed to allow dwellings to positively address both street frontages as indicated in Figure 35.

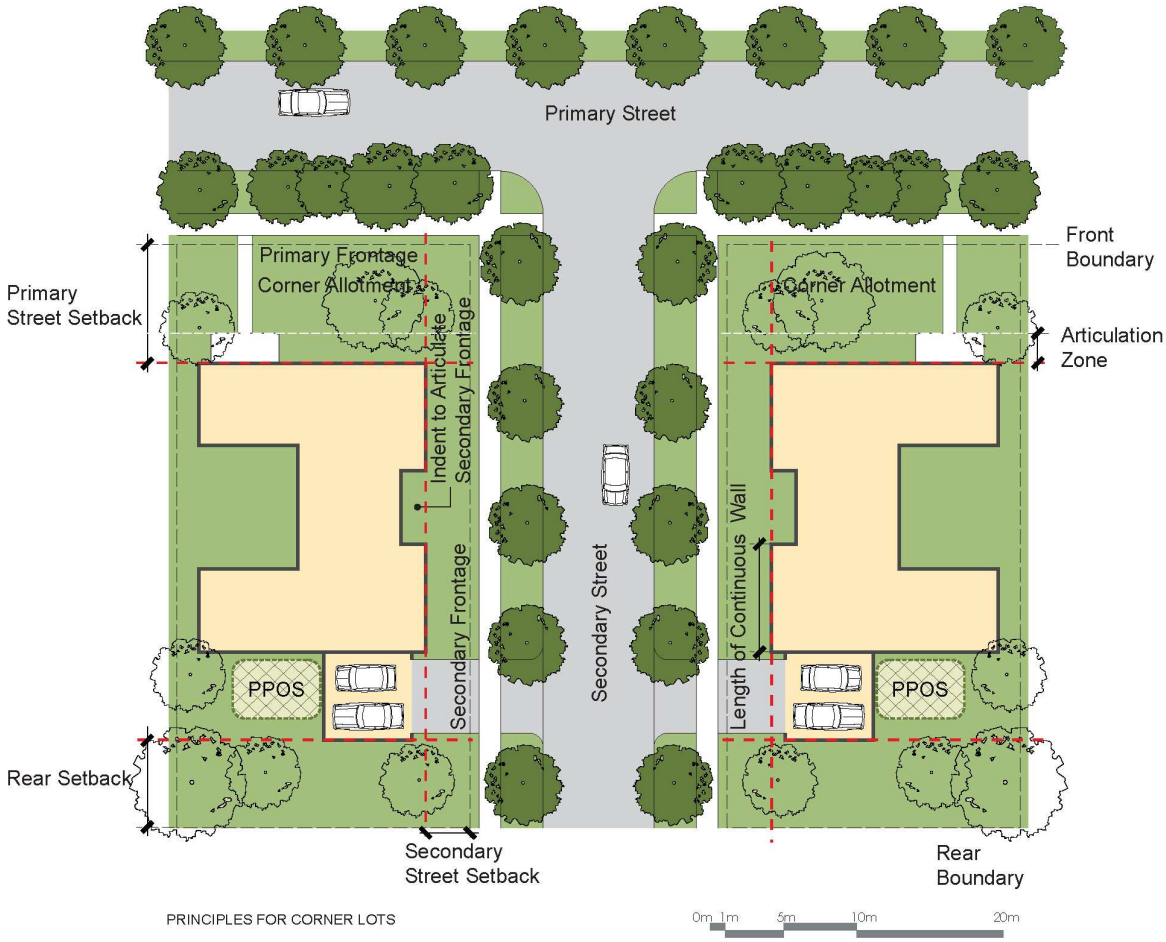

Figure 35: Principles for corner lots

4.5.4 Country lots

Controls

(1) Country lots should be provided around the perimeter of the site to provide an appropriate transition to adjoining rural land uses, in terms of character, scale and density.

(2) Country lot dwellings should be provided on all residential lots which are affected by the 1:100 flood level and/or require bushfire asset protection zones.

4.5.5 Residue lots

Controls

(1) Any development proposal including creation of residue lots for future subdivision must:

- Include documentation demonstrating the proposed density to be achieved on the residue lot.
- Demonstrate how the future development of each residue lot can be consistent with the character for the local area in terms of the built form, dwelling types, bulk and scale, height and other public domain considerations.
- Demonstrate that the residue lot can be serviced and accessed.

4.6 Town centre

Objectives

(1) To allow for a range of allotment sizes that caters for a diversity of land uses and employment opportunities.

(2) To ensure allotments are oriented and aligned to enable buildings to appropriately address streets and the public domain.

4.6.1 Lot subdivision

Controls

(1) Lots are to be relatively regular in shape. Irregular shaped allotments with narrow street frontages should be avoided.

(2) Lots should be orientated and aligned:

- so that future buildings can face the arterial, sub-arterial, collector and local streets to increase visual surveillance and to avoid streetscapes with loading docks and long blank walls,
- to facilitate solar efficiency, and
- to encourage building design that has frontage to landscaped areas and riparian corridors.

(3) Access to lots shall be sited to ensure unimpeded sight lines for exiting vehicles.

(4) Subdivisional roads should incorporate a road hierarchy that will accommodate the anticipated traffic volumes and vehicle types and be practical and legible for users.

(5) Where a residue lot is created, the applicant must demonstrate that future development of that residue lot can meet the controls in this DCP.

(6) Battleaxe lots are not permitted.

4.6.2 Strata or Community Title

Controls

(1) Where a Strata or Community Title subdivision is proposed, any space for parking or other purposes forming part of a sole occupancy unit required by the relevant council must be included in the same strata lot as the unit.

(2) All landscaping, access areas and directory board signs not forming part of an individual unit are required by the relevant council to be included in any strata plan of subdivision as common property.

5 Residential Development

5.1 Introduction

This Part sets out the objectives and development controls that relate to the design of all residential development across the Huntlee site. This Part is to be used to design buildings using principles that apply to all residential development and specific controls for certain types of housing.

5.2 Site analysis

Site analysis for each individual lot is an important part of the design process. Development proposals need to illustrate design decisions which are based on careful analysis of the site conditions and their relationship to the surrounding context. By describing the physical elements of the locality and the conditions impacting on the site, opportunities and constraints for development can be understood and addressed in the design.

The Site Analysis Plan should show the existing features of the site and its surrounding area, together with supporting written material. At minimum the Site Analysis Plan must show the following features:

- the position of the proposed building in relation to site boundaries and any other structures and existing vegetation and trees on the site,
- aspect,
- views,
- any easements over the land,
- the location, boundary dimensions, site area and North Point of the land,
- location of existing street features adjacent to the property, such as trees, planting, street lights,
- contours and existing levels of the land in relation to buildings and roads, and whether the proposed development will involve any changes to these levels,
- location and uses of buildings on sites adjoining the land, and
- a stormwater concept plan (where required).

5.3 Residential amenity and sustainability

5.3.1 Cut and fill

Objectives

(1) To minimise the extent of cut and fill within residential allotments.

(2) To protect and enhance the aesthetic quality of the area by controlling the form, bulk and scale of land forming operations.

(3) To ensure that filling material is satisfactory and does not adversely affect the fertility or salinity of soil, or the quality of surface water or groundwater.

(4) To ensure that the amenity of adjoining residents is not adversely affected by any land forming operation.

Controls

(1) Development Applications are to illustrate where it is necessary to cut and/or fill land and provide justification for the proposed changes to the land levels. Cut and fill shall be generally consistent with Figure 36.

(2) Proposals requiring significant moving and filling of earth will be considered if they contribute to the overall quality of the development and the urban design outcomes for the area. A Validation Report will be required to be submitted to the relevant council prior to the placement of imported fill on site. All fill shall comply with the Department of Natural Resources (now Office of Environment and Heritage - OEH) – *"Site Investigation for Urban Salinity"* and the DECC (now OEH) Contaminated Sites Guidelines – *"Guidelines for the NSW Site Auditor Scheme (2nd edition) – Soil Investigation Levels for Urban Development Sites in NSW."*

(3) Earth moved from areas containing noxious weed material must be disposed of at an approved waste management facility, and transported in compliance with the *Noxious Weeds Act 1993*.

(4) No earthworks shall be undertaken whereby excavation exceeds 500mm or fill exceeds 500mm from the present surface level of the property without approval from the relevant council.

(5) Lot benching is to be avoided where possible. On sloping sites, site disturbance is to be minimised by use of split level or pier foundation housing designs.

(6) Where retaining walls are unavoidable within residential allotments, they are to be no greater than 1m high at any point on the edge of any residential allotment. A 1m maximum retaining wall height is permissible between residential lots. Where terraced walls are proposed the minimum distance between each step is 500mm. A variation to the retaining wall heights can be considered with supporting justification and concurrence of the adjoining neighbour.

(7) Retaining walls on individual residential lots that are visible from the street or other public spaces are to be maximum 500mm high.

(8) Retaining walls along side boundaries protruding forward of the front building line must be tapered to meet the profile of the finished ground level.

(9) The maximum height of voids within individual allotments is 3m.

(10) All retaining walls proposed for the site are to be identified.

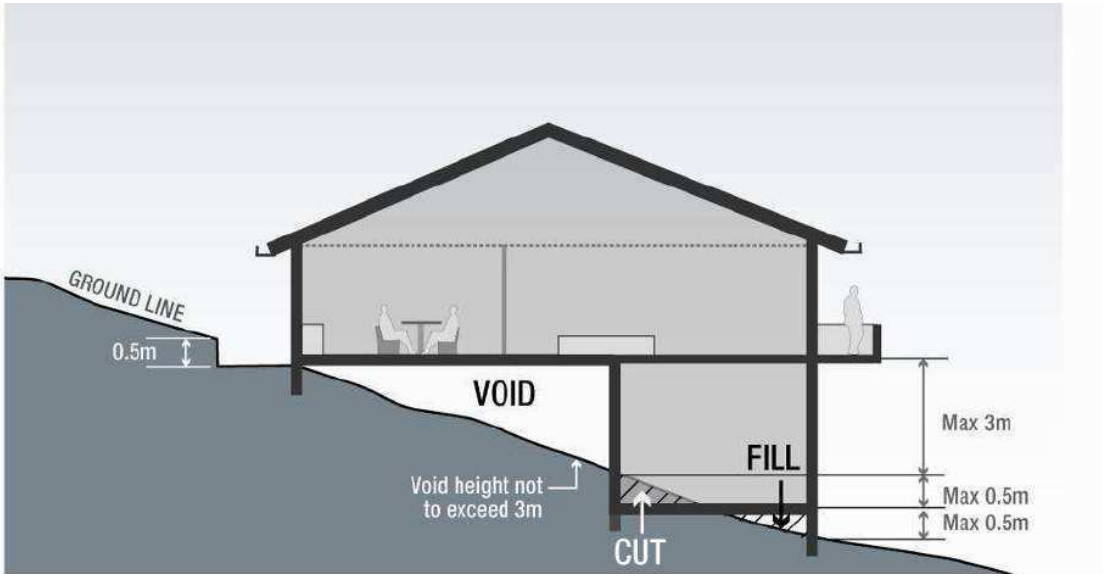

Figure 36: Maximum cut and fill within residential lots

5.3.2 Fencing

Objectives

(1) To ensure boundary fencing is of a high quality and does not detract from the streetscape.

Controls

(1) Front fencing, if proposed, shall be in harmony with the street, consistent in design and style with its dwelling and a maximum of 1m high. Front fences shall not be made of sheet metal materials. Front fences and walls are not to impede safe sight lines for traffic and should be of 50% open appearance.

(2) Side and rear fencing are to be a maximum of 1.8m high. Side fences shall not be made of sheet metal materials. Side fences higher than 1m are not to extend past 1m behind the main building line or garage building line. Areas of open fencing are encouraged to promote boundary planting.

(3) Side fences within the front setback should be the same design as the front fence and finish 1m behind the main building line.

(4) On corner lots, dwellings are to front both street frontages. Where fencing to the secondary street frontage is proposed, it is not to exceed 1.8m high for more than 50% of the length of the secondary road frontage.

(5) On corner lots the front fencing style is to be continued along the secondary street frontage to the building line of the dwelling or for a minimum of 30% of the lot length.

(6) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish. The design of the fencing is to permit casual surveillance of the open space from within the dwelling and provide the dwelling with outlook towards the open space.

(7) Where cut is proposed on the boundary of a lot, retaining walls are to be constructed with side fence posts integrated with its construction (relevant construction details are required with retaining wall approval). Otherwise retaining walls must be located a minimum of 450mm from the side or rear boundary of the lot containing the cut.

5.3.3 Safety and Surveillance

Objectives

(1) To ensure that the siting and design of buildings and spaces decreases the opportunities for committing crime through casual surveillance.

(2) To ensure that development encourages people to use streets, parks and other public places without fear of personal risk.

Controls

(1) Dwellings should be designed to overlook streets, lanes and other public or communal areas to provide casual surveillance. In the case of corner lots, habitable windows are to be oriented to overlook the side street.

(2) The design of all development, in particular, the public domain and community facilities is to enhance public surveillance of public streets, laneways and open space/conservation areas.

(3) Encourage a sense of community ownership of open and public spaces (eg parks, footpaths, etc) through appropriate design of publicly accessible areas. This may include areas for the community to meet, areas to sit in the sun and the shade, areas to play and interact, accessible areas and paths for mobility impaired, artwork, signage regarding history of area and community gardens. Design should aim to use materials that reduce the opportunity for vandalism and ensure areas can be maintained and cleaned easily.

(4) Use of roller shutters other than garages is not permitted on doors and windows facing the street. Any security railings must be designed to complement the architecture of the building.

(5) Developments are to avoid the creation of areas for concealment and blank walls facing the street.

(6) Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety. These areas must be designed to minimise opportunities for concealment.

(7) All development should aim to provide casual surveillance of the street as a means of passive security. This should be achieved by maximising outlooks and views, but minimising the overlooking of neighbouring properties. Opportunities for casual

surveillance from dwellings are to be incorporated into the design of shared driveways and where rear access is proposed from laneways.

(8) All developments are to incorporate the principles of Crime Prevention through Environmental Design (CPTED).

5.3.4 Visual and Acoustic Privacy

Objectives

(1) To site and design dwellings to meet projected user requirements for visual and acoustic privacy, whilst minimising visual and acoustic impacts of development on adjoining properties.

Controls

(1) Direct overlooking of main habitable areas and private open spaces should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.

(2) The design of dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.

(3) In attached dwellings, the bedrooms of one dwelling should not share walls with living spaces or garages of adjoining dwellings.

(4) Living areas and service equipment such as air conditioning units must be located away from bedrooms of neighbouring dwellings.

(5) Dwellings along arterial and sub-arterial roads or adjacent to the railway line should be designed to minimise the impact of road or rail traffic noise and vibration.

5.3.5 Environmentally Sustainable Design

Objectives

(1) To ensure that developments are environmentally sustainable in terms of energy and water use.

(2) To reduce consumption of potable water and waste water discharge.

(3) To maximise opportunities for natural ventilation in residential development.

Controls

(1) All applications for residential buildings are to be accompanied by a BASIX Certificate. All dwellings are to incorporate all commitments stipulated in the BASIX Certificate.

(2) Building envelopes, depths and internal layouts of all residential development is to facilitate natural ventilation.

5.4 Dwelling design controls

5.4.1 Summary of key controls

Objectives

(1) To enable the development of a diversity of dwelling types within low density residential areas.

(2) To promote innovative housing solutions that are compatible with the surrounding residential environment.

Controls

(1) The following tables and figures summarise the key controls that apply to residential development on:

- Cottage Lots between 150m^2 and 250m^2 (front or rear loaded) (Table 6 and Figure 37 and Figure 38),
- Traditional (detached dwelling) Lots between 250m^2 and 800m^2 (Table 7 and Figure 39), and
- Country Lots greater than 800m^2 (Table 8 and Figure 40).

(2) The key controls should be read in conjunction with the controls that follow in this section.

Table 6: Summary of key controls for Cottage Lots

Element	Control
Lot size	150m^2 - 450m^2
Lot frontage (min - max)	5m – 12m
Site coverage (max)	70% of site area
Landscaped area (min)	20% of site area
Private open space (min)	20% with min. dimension of 2.5m
Principal private open space (min)	16m² per dwelling with min. dimension of 3m
Building height	2 storey
Front setback	3.5m 1m articulation zone
Corner lot secondary street setback (min)	1m
Side setback (min)	Nil
Length of zero lot line wall	17m (maximum continuous length)
Rear setback (min)	3m (excludes garages – zero setback permitted on rear loaded lots)
Car parking spaces	1 space (min)

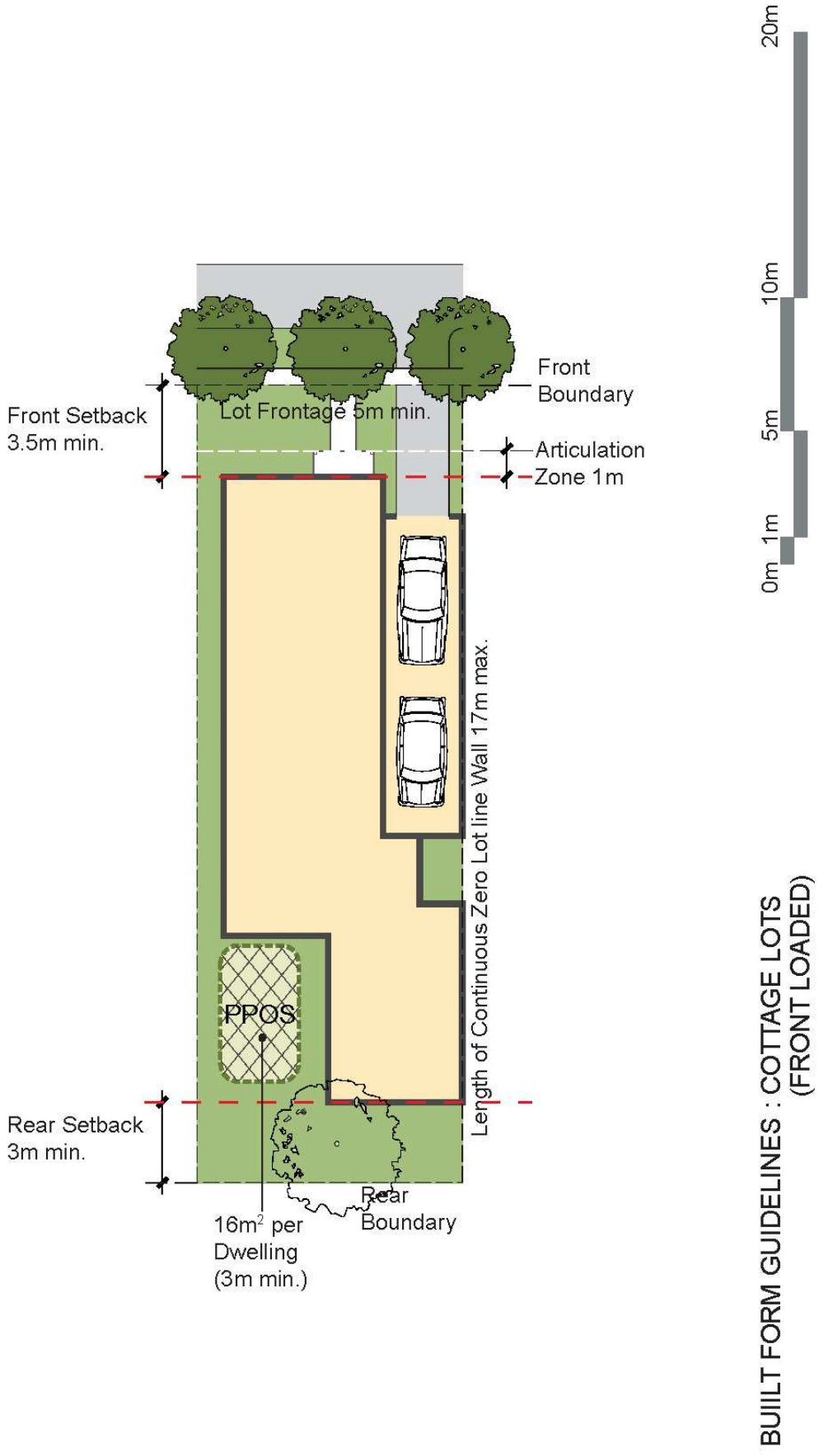

Figure 37: Indicative layout for cottage lots (front loaded)

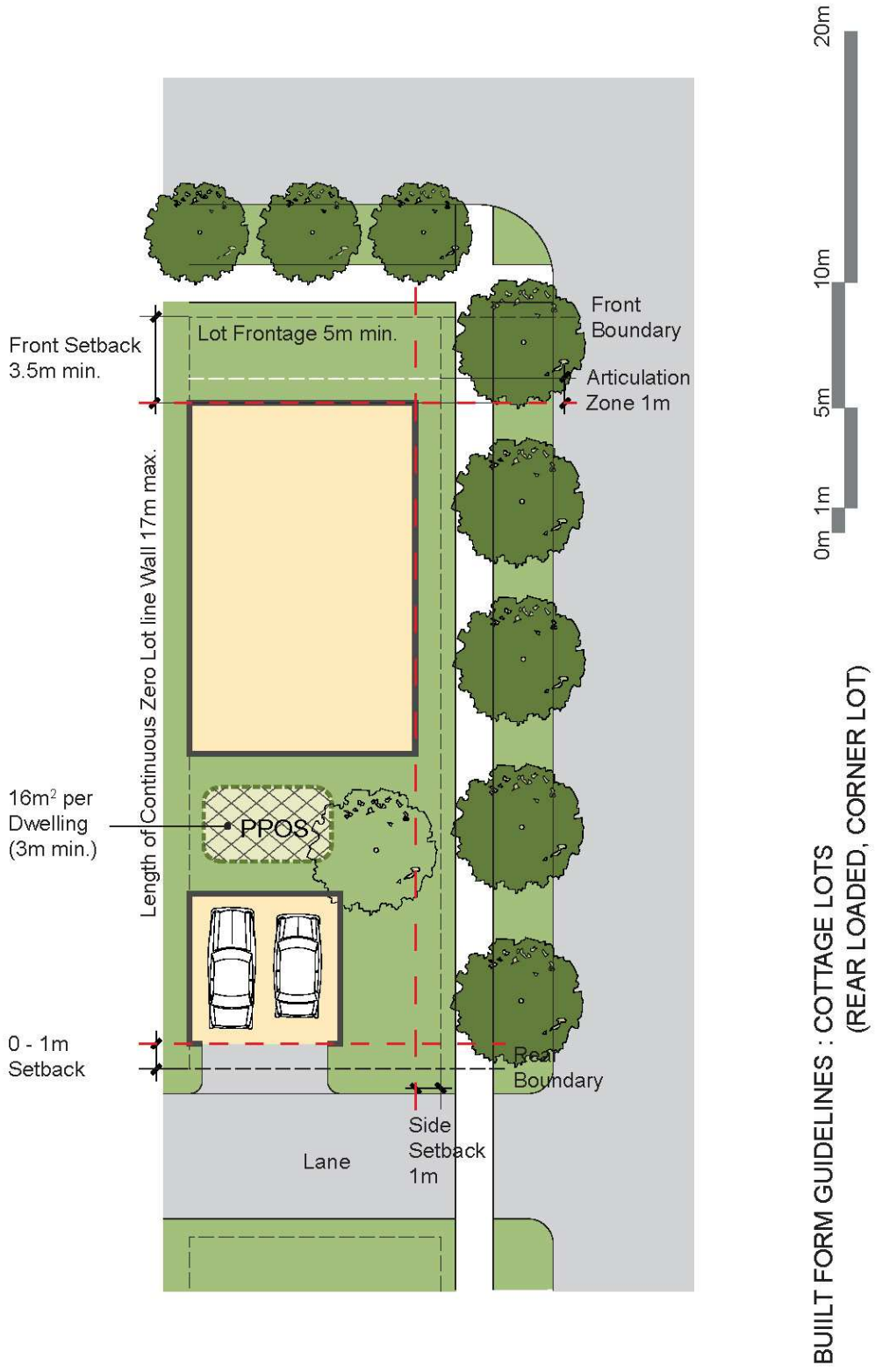

Figure 38: Indicative layout for cottage lots (rear loaded)

Table 7: Summary of key controls for Traditional (detached dwelling) Lots

Element	Control
Lot size	250m^2 - 800m^2
Lot frontage (min - max)	12m – 20m
Site coverage (max)	50% of site area (including garage) 60% for single storey
Landscaped area (min)	20% of site area
Private open space (min)	20% with min. dimension of 2.5m
Principal private open space (min)	24m² per dwelling (min. dimension of 4m)
Building height	2 storeys
Front setback (min)	4.5m (building façade) 1m (articulation zone) 5.5m (garage)
Corner lot secondary street setback (min)	1m - single storey 2m – second storey
Side setback (min)	1m – single storey 1.5m - second storey 0m - on one side for garages - where frontage is less than 15m
Rear setback (min)	4m
Car parking spaces	1 space (min) (accessed from street)

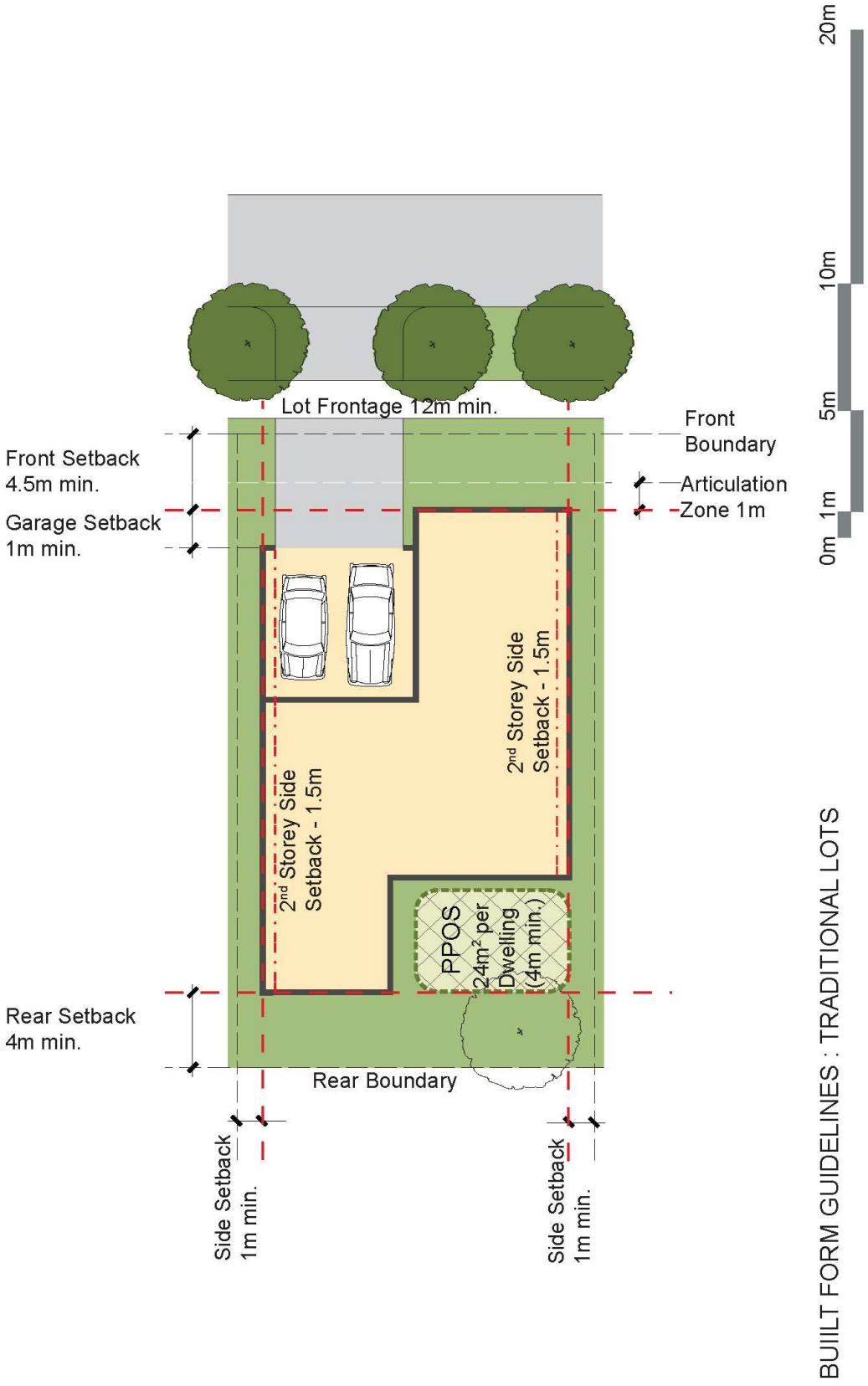

Figure 39: Indicative layout for traditional (detached dwelling) lots

Table 8: Summary of key controls for Country Lots

Element	**Control**
Lot size (min)	800m^2
Lot frontage (min)	20m
Site coverage (max)	40% of site area (including garage and ancillary structures ie. sheds) 50% for lots less than 1,000 m^2
Landscaped area (min)	30% of site area
Private open space (min)	20% with min. dimension of 2.5m
Principal private open space (min)	24m² per dwelling min. dimension of 6m
Front setback (min)	8m
Corner lots secondary setback (min)	3m
Side setback (min)	1.5m on one side 4.5 m on other side
Rear setback (min)	6m
Car parking spaces	2 spaces (min) (accessed from street)

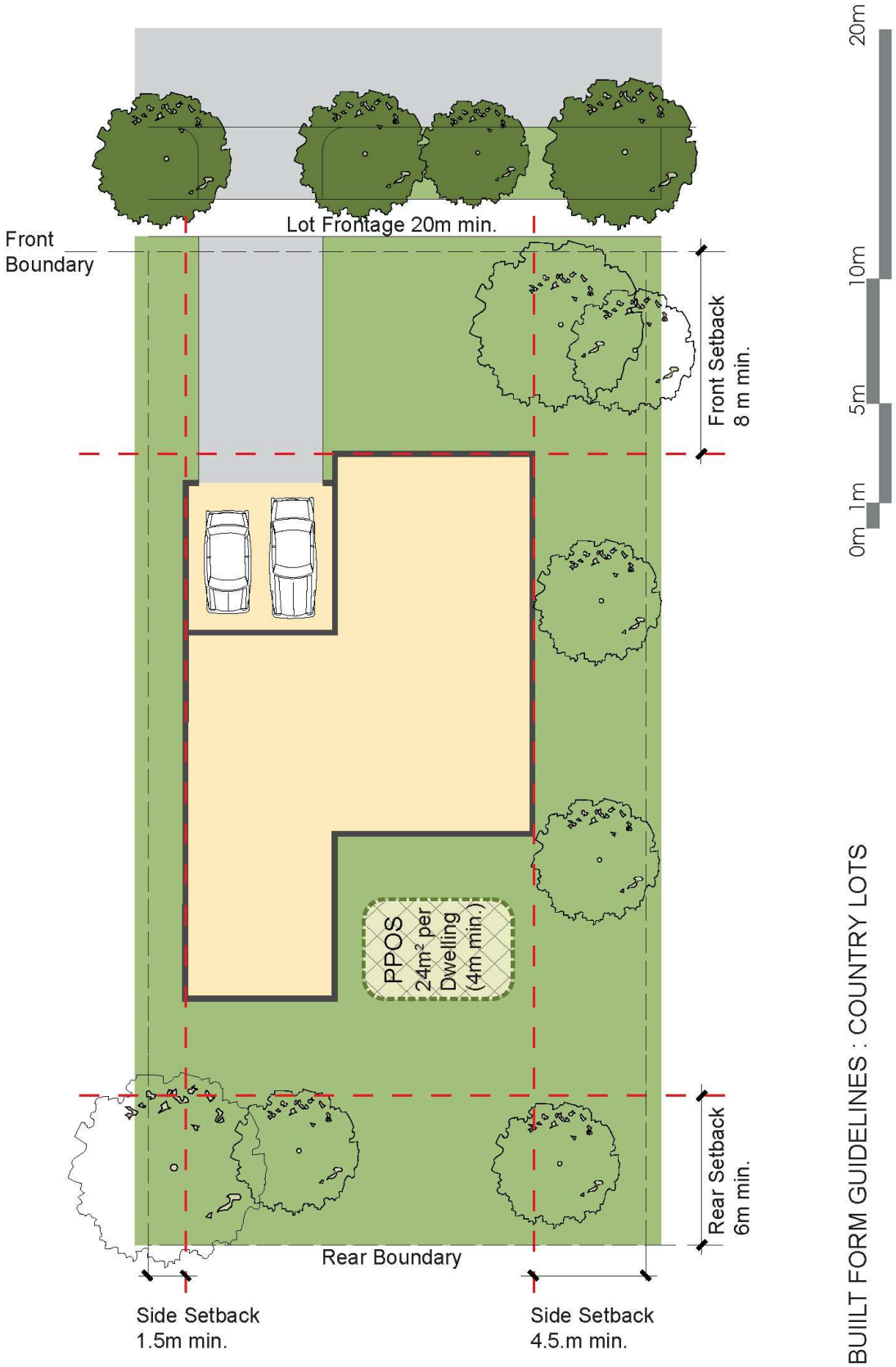

Figure 40: Indicative layout for country lots

5.4.2 Residential streetscape and architectural design

Objectives

(1) To ensure that buildings are designed to enhance the built form and character of the neighbourhood by encouraging innovative and quality designs that fit harmoniously with their surroundings.

(2) To encourage a diversity of house types and densities.

(3) To ensure the provision of equitable access to natural light and ventilation for the occupants of all residential buildings.

(4) To provide a clear distinction between private and public space and to encourage casual surveillance of the street.

(5) To reinforce significant street intersections particularly on open space and other key strategic areas through articulation of corner buildings.

Controls

(1) Streetscape design principles are illustrated at Figure 41. The primary street facade of a dwelling should address the street and must incorporate at least two of the following design features:

- entry feature or portico,
- awnings or other features over windows,
- balcony or window box treatment to any first floor element,
- recessing or projecting architectural elements,
- open verandah,
- mixture of building materials, or
- bay windows or similar features.

(2) Corner lot development should emphasize the corner. The secondary street facade for a dwelling on a corner lot should address the street and must incorporate at least two of the following design features:

- verandah,
- gable,
- vertical architectural elements to reduce the horizontal emphasis of the façade,
- entry feature or portico,
- balcony/window boxes or similar elements to habitable rooms, or
- landscaping/fencing compatible with the status of the surrounding streetscape.

(3) Modulation of the façade should be integral to the design of the building.

(4) Eaves are to provide sun shading and protect windows and doors and provide aesthetic interest. Except for walls built to the boundary, eaves should have a minimum of 450mm overhang (measured to the fascia board). The relevant council will consider alternative solutions to eaves so long as they provide appropriate sun shading to windows and display a high level of architectural merit.

(5) Proposed dwelling colours, materials and finishes are to be consistent with the character of the neighbourhood. Bright and highly reflective colours are to be avoided, except for architectural features. Multicoloured roof tiles are not permitted.

(6) Exact mirror-imaging of dwelling facades to form dual occupancy or semi-detached housing is not permitted. However, symmetrical design is permitted where each dwelling can satisfy two different design features as listed in sub-clause (1) above and where the overall design of the buildings is appropriate in the streetscape having regard to design, building form and bulk.

(7) The repetition of identical housing designs and colour palette in a group of dwellings, other than for attached dwellings will not be permitted.

(8) Complex roof forms should be avoided. Skillion roofs, roofs hidden from view by parapet walls, roofs on detached garages, studios and ancillary buildings on the allotment are excluded from this control.

(9) Low-pitched roofs behind a parapet need to successfully integrate with the side and rear elevations.

(10) All main entries to dwellings are to be orientated to the front / primary street only and not to side streets.

(11) Upper level wall lengths are not to exceed 15m in continuous length.

(12) Windows to living area are to be directed either to the street or rear private open space (and private driveway) to provide visual surveillance to the street and or private open space areas.

(13) No bathroom, ensuite or laundry windows are to face a public road.

(14) Communication devices, including antennae, satellite dishes and similar elements are not to be visible from the street.

(15) Carports and garages are to be constructed of materials that complement the colour and finishes of the main dwelling.

Figure 41: Streetscape design principles

5.4.3 Front setbacks

Objectives

(1) To enable the integration of built and landscape elements in the streetscape.

(2) To encourage simple and articulated building forms.

(3) To ensure garages do not dominate the streetscape.

Controls

(1) Detached dwellings are to be consistent with the front setback controls in Table 6, Table 7 and Table 8.

(2) Where dwellings are located opposite open space or drainage land, the front setback may be reduced by a maximum of 1m.

(3) Elements permitted in the articulation zone include those items listed in Section 5.4.2.

(4) Except for rear loaded garages, the garage line is to have a front set back that is at least 1m behind the building front facade line.

5.4.4 Side and rear setbacks

Objectives

(1) To create an attractive and cohesive streetscape that responds to the character areas.

(2) To minimise the impacts of development on neighbouring properties.

(3) To provide appropriate separation between buildings.

(4) To create opportunities for articulation on the side walls.

Controls

(1) All development is to be consistent with the side and rear setback controls in Section 5.4.1.

(2) For attached or semi-detached dwellings the side setback only applies to the end of a row of attached housing, or the detached side of a semi-detached house.

(3) Projections permitted into side and rear setback areas include eaves (up to 450mm wide), fascias, sun hoods, gutters, down pipes, flues, light fittings, electricity or gas meters, rainwater tanks and hot water units.

(4) Pergolas and other landscape features/structures are permitted to encroach into the rear setback.

(5) Applicants must demonstrate that the use of a zero lot line will not adversely affect the privacy and solar access of an adjoining property.

(6) An easement for maintenance of the zero lot line wall (and any services along the side of the dwelling) is to be provided within the adjoining property side setback. No overhanging eaves or services will be permitted within the easement.

5.4.5 Dwelling height and massing

Objectives

(1) To ensure development is of an appropriate scale to protect residential amenity.

(2) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.

(3) To protect residential amenity.

Controls

(1) Dwellings are to be generally a maximum of 2 storeys in height. A 3rd storey may be permitted where a dwelling is located:

- on a prominent street corner, or
- adjacent to a neighbourhood or local centre or public open space, or a golf course, or riparian corridors, or
- on land with a finished ground level slope equal to or more than 15%, and is not likely to impact adversely on the existing or future amenity of any adjoining land on which residential development is permitted, having regard to overshadowing, visual impact and any impact on privacy.

5.4.6 Landscaped area

Objectives

(1) To encourage the use of native species of flora and low maintenance landscaping.

(2) To contribute to effective stormwater management and energy efficiency.

(3) To ensure a balance between built and landscaped elements in residential areas.

(4) To provide for canopy tree planting that provides natural shade to houses.

Controls

(1) The minimum landscaped area within any residential lot is to be 30% of the site area.

(2) 50% of the landscaped area is to be soft (ie unpaved).

(3) A minimum of one tree is to be provided on the lot (excluding cottage lots).

(4) Cottage lots are to have soft landscaping in the front setback including a tree.

(5) Plans submitted with the Development Application must indicate the extent of landscaped area and nominate the location of the selected tree, and any other trees to be retained/ planted.

(6) Drains are to be installed and be connected to the stormwater system as necessary to prevent accumulation of water and concentration of salts.

(7) Use of low flow watering devices is encouraged to avoid over watering. Use of low water demand drought resistant vegetation is encouraged.

5.4.7 Private open space

Objectives

(1) To provide a high level of residential amenity with opportunities for outdoor recreation and relaxation.

(2) To enhance the spatial quality, outlook, and usability of private open space.

(3) To facilitate solar access to the living areas and private open spaces of the dwelling.

Controls

(1) Each dwelling is to be provided with an area of Private Open Space (POS) that contains an area of Principal Private Open Space (PPOS) consistent with the requirements in Section 5.4.1.

(2) The location of PPOS is to be determined having regard to dwelling design, allotment orientation, adjoining dwellings, landscape features, topography.

(3) 50% of the area of the required PPOS should receive at least 2 hours of sunlight between 9am and 3pm at the winter solstice (21 June).

(4) Development shall not prevent 50% of the required PPOS of adjacent properties from receiving at least 2 hours of sunlight between 9am and 3pm at the winter solstice (21 June).

(5) The PPOS is required to be conveniently accessible from the main living area of a dwelling or alfresco room and have a maximum gradient of 1:10.

5.4.8 Garages, site access and parking

Objectives

(1) To control the number, dimensions and location of vehicle access points. To reduce the visual impact of garages, carports, and parking areas on the streetscape.

(2) To provide safe, secure and convenient access to parking within garages, carports and parking areas, with casual surveillance of private driveways from dwellings and from the street.

(3) To minimise conflict between pedestrians and vehicles at the junction of driveways and footpaths and within the lot.

(4) To provide predominantly onsite parking for residents and visitors.

Controls

(1) The driveway crossing the verge between the property boundary and the kerb is to have a maximum width of 3 metres.

(2) Figure 42 illustrates driveway crossing design requirements.

(3) Driveways are to have the smallest configuration possible to serve the required parking facilities and vehicle turning movements.

(4) The location of driveways is to be determined with regard to dwelling design and orientation, street gully pits and tree bays and is to maximize the availability of on-street parking.

(5) On corner allotments, driveways are not to be within 6m of the tangent to the kerb return. Access from secondary streets is preferred.

(6) Driveways are not to be within 1m of any drainage facilities on the kerb and gutter.

(7) Planting and walls adjacent to driveways must not block lines of sight for pedestrians, cyclists and vehicles.

(8) Driveways are to have soft landscaped areas on either side, suitable for water infiltration.

(9) Provide a separate pedestrian path to access the front door, to avoid conflict between vehicles and pedestrians.

(10) Driveways must be in accordance with the relevant Australian Standards for vehicular turning circles, visibility distances and gradients.

(11) Garages are to be designed and located in accordance with the controls in Section 5.4.1.

(12) Single garage doors should be a maximum of 3m wide and double garage doors should be a maximum of 6m wide.

(13) Minimum internal dimensions for a single garage are 3m wide by 5.5m deep and for a double garage 5.6m wide by 5.5m deep.

(14) Detached garages are not to exceed an internal area of 40m².

(15) Garage design and materials are to be consistent with the dwelling design.

(16) Garage doors are to be visually recessed through use of materials, colours, and overhangs.

(17) Triple-fronted garages are not permitted.

(18) Complicated stencilled patterns on driveways are not permitted.

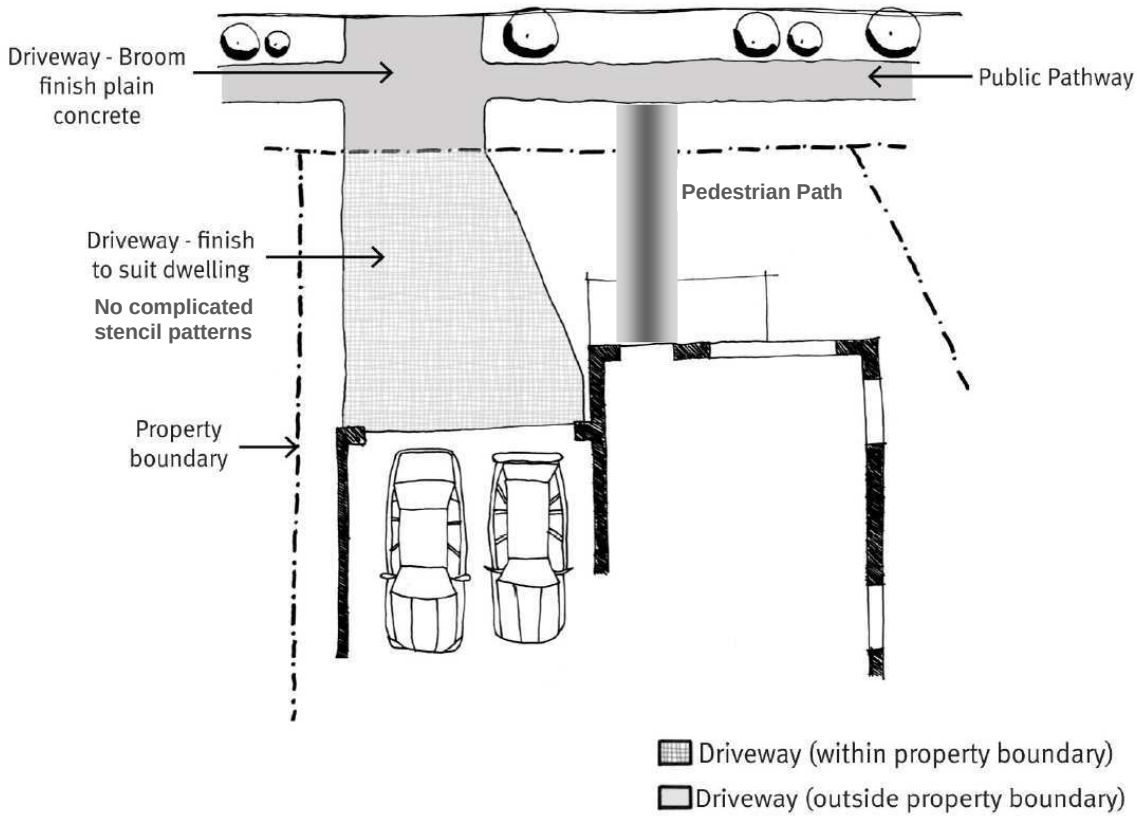

Figure 42: Driveway crossing requirements

5.5 Additional controls for other dwelling types

5.5.1 Multi-dwelling housing

Objectives

(1) To ensure that the design of multi-dwelling housing is consistent with the character of the residential areas

(2) To ensure the quality of multi-dwelling housing is of a high quality and contributes to the amenity of residents.

Controls

(1) Multi-dwelling housing is to be located on sites with a minimum street frontage of 30m and a minimum depth (from front to rear) of 25m.

(2) Garages and car parking areas are to be located at the rear of the lot with access provided from a lane to activate building facades.

(3) Multi-dwelling housing sites should incorporate canopy trees within the landscaped area.

(4) Multi-dwelling housing is to comply with the controls in Table 9.

Table 9: Key controls from multi-dwelling housing

Element	Controls
Site coverage (max)	50% of site area
Landscaped area (min)	30% of site area
Communal open space (min)	15% of site area
Private open space (min)	10m² per dwelling with min. dimension of 2.5m
Front setback (min)	4.5m
Corner lots secondary street setback (min)	3m
Side setback (min)	2m
Rear setback (min)	4m (excluding garages)
Car parking spaces	1-2 bedrooms: up to 2 spaces 3 or more bedrooms: 2 spaces Visitor parking: 1 space per 5 dwellings Bicycle parking: 1 space per 2 dwellings

5.5.2 Residential flat buildings and shop top housing

Objectives

(1) To establish a high quality residential environment where all dwellings have a good level of amenity.

(2) To encourage a variety of housing forms within residential areas.

(3) To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.

Controls

(1) Residential flat buildings are to:

- be located on sites with a minimum street frontage of 30m and minimum depth (from front to rear boundaries) of 30m, and
- have direct frontage to an area of the public domain (including streets and public parks), and
- not adversely impact upon the existing or future amenity of any adjoining land upon which residential development is permitted with respect to overshadowing impact, privacy impact or visual impact.

(2) All residential flat buildings are to be consistent with:

- the guidelines and principles outlined in SEPP No. 65 – Residential Flat Development, and
- the primary controls set out in Table 10.

(3) In all residential flat building developments containing 10 dwellings or more, a minimum of 10% of all apartments are to be designed to be capable of adaptation for disabled or elderly residents.

(4) Dwellings must be designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), which includes 'pre-adaptation' design details to ensure visitability is achieved.

(5) Where possible, adaptable dwellings are to be located on the ground floor. Dwellings located above the ground level of a building may only be provided as adaptable dwellings where lift access is available within the building. The lift access must provide access from the basement to allow access for people with disabilities.

(6) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).

(7) Car parking and garages allocated to adaptable dwellings must comply with the requirements of Australian Standards for disabled parking spaces.

Table 10: Key controls for residential flat buildings and shop top housing

Element	R1 zone	B4 zone
Site coverage (max)	50% of site area	50% of site area
Landscaped area (min)	30% of site area	30% of site area
Communal open space (min)	15% of site area	15% of site area
Private open space (min)	10m² per dwelling with min. dimension of 2.5m	10m² per dwelling with min. dimension of 2.5m
Front setback (min)	6m	0m for first floor 4m from 3rd floor
Corner lots secondary street setback (min)	6m	0m for first floor 4m from 3rd floor
Side setback (min)	2m	0m
Rear setback (min)	6m	6m
Height	4 Storeys	8 Storeys
Floor Space Ratio	1:1	1.5:1
Car parking spaces	1-2 bedrooms: up to 2 spaces 3 or more bedrooms: 2 spaces Visitor parking: 1 space per 5 dwellings Bicycle parking: 1 space per 2 dwellings	1-2 bedrooms: up to 2 spaces 3 or more bedrooms: 2 spaces Visitor parking: 1 space per 5 dwellings Bicycle parking: 1 space per 2 dwellings

5.6 Other development in residential areas

The residential zones permit a range of non-residential land uses which, depending on their scale, suitability, location and design, may be compatible with adjoining residential uses.

Allowing non-residential development in the residential zones is appropriate providing that controls are in place to minimise the negative impacts of noise, loss of privacy, traffic, parking and other nuisances on local residential amenity.

5.6.1 General requirements

Objectives

(1) To establish appropriate controls to minimise the adverse effects of non-residential development on surrounding residential development.

(2) To maintain consistency in development standards between non-residential and residential land uses and ensure that buildings are similar in height, bulk and scale to surrounding buildings.

(3) To ensure that non-residential development is appropriately located.

(4) To avoid concentrations of non-residential uses in any particular area where the cumulative impact on residential amenity would be unacceptable.

Controls

(1) Site analysis information as required by Section 5.2 is to be submitted with all applications for non-residential development in residential zones.

(2) Non-residential development on residential zoned land is to comply with the requirements of Section 5.3 of this DCP in relation to residential amenity and sustainable building design.

(3) The maximum site coverage of buildings is 60% of the total site area.

(4) The minimum landscaped area for non-residential development is 20% of the total site area of the allotment.

(5) Provision of car parking for non-residential uses will be assessed by the relevant council on an individual basis but must be sufficient to meet demand generated by staff and visitors.

(6) Where there is an inconsistency between the general requirements of this clause and the specific controls in the following sections, the specific controls prevail.

(7) The relevant council will have particular regard to the effects of non-residential development in the residential zones. Council will consider whether:

- the proposed development will be out of character with surrounding residential development, particularly in relation to the height and/or scale of any proposed buildings and the controls in Section 5.4,
- the proposed development will contribute to an undesirable clustering of that type of development, or non-residential uses in general, in the area,
- an undesirable effect on the amenity of the surrounding area will be created,

- the proposed use will draw patronage from areas outside of the surrounding neighbourhood, and the extent to which that patronage might impact on the amenity of residents through factors such as traffic generation, noise or the overall scale of the non-residential use,
- a noise nuisance will be created,
- the development will generate traffic out of keeping with the locality,
- adequate facilities are provided for the purposes of parking, loading and deliveries, and
- adequate provision is made for access by disabled persons.

(8) Non-residential development in residential zones should be similar in bulk, scale, height and siting to the surrounding buildings.

(9) Finishes, materials, paving and landscaping are to be consistent with those of surrounding residential development.

5.6.2 Childcare centres

Objectives

(1) To ensure all communities have access to a local child care centre and to minimise travel distances to and from child care facilities.

(2) To provide communities with child care centres that are appropriate in size and scale to the surrounding neighbourhood and to reduce excessive built form within residential streetscapes.

(3) To ensure the appropriate location and operation of child care centres in order to minimise any adverse impact on the amenity of residential areas.

(4) To ensure that child care centres provide a safe, healthy and active environment for children of all ages.

Controls

(1) Child care centres shall comply with the requirements of the Children's Services Regulation 2004.

(2) Child care centres are not appropriate on the following land:

- Land that has direct frontage to an arterial or sub-arterial road,
- opposite "T" intersections or on bends where sight distances are limited and may create dangerous conditions for vehicle entry to and exit from the site,
- adjacent to entry/exit points onto or directly accessible from roundabouts,
- on cul-de-sacs,
- flood liable land or land affected by local overland flooding,
- bushfire prone land, or

- land that requires significant cut or fill, where retaining walls would create a safety hazard for children.

(3) In order to limit impact on neighbouring properties child care centres should:

- Be located in close proximity to other non-residential uses such as schools, neighbourhood halls, churches and formal public reserves,
- be located in close proximity to transport routes and public transport nodes and corridors,
- if practical, be located on sites that have minimal common boundaries with residential neighbours,
- locate play areas as far as possible away from neighbours' living rooms and bedrooms, and
- be sited on allotments that can provide sufficient buffering so as to minimise noise and loss of privacy.

(4) The relevant council will consider the following matters when assessing development applications for child care centres:

- Whether the development maintains the privacy and amenity of adjoining developments,
- The extent to which the design of the proposed development is consistent with the desired character of the residential area in which it is located,
- The appropriateness of the location of the development, including its location in relation to other existing or proposed child care centres,
- The size of the land where the development is proposed, and
- The provision of and location within the development site of car parking.

5.6.3 Education establishments and places of public worship

Objectives

(1) To encourage the appropriate location of facilities to create community focal points, centres of neighbourhood activity and enhance community identity.

(2) To mitigate the impacts of noise, privacy, increased traffic and nuisance on surrounding residential development.

Controls

(1) Places of worship are to be located within centres or co-located with other community facilities in residential areas so as to create a community focal point, to share facilities such as parking, and to minimise impacts on residential areas.

(2) Places of public worship and educational establishments are preferably to be located on land with frontage to a collector road. Corner sites are preferred.

(3) In assessing applications, the relevant council will consider the following:

- the privacy and amenity of adjoining developments,
- the need and adequacy for provision of buffer zones to surrounding residential development,
- urban design,
- location,
- the size of the land where the development is proposed,
- traffic generation and the impacts of traffic on the road network and the amenity of nearby residents,
- the availability of parking,
- the scale of buildings and their capacity, and
- hours of operation and noise impacts.

(4) A traffic and transport report/statement is to accompany the Development Application addressing the impact of the proposed development on the local road system and defining car parking requirements.

(5) A landscape plan and associated documentation is to be submitted with the Development Application identifying existing vegetation and community plant species and/or existing design elements of the site layout, and the proposed landscaping treatment of the development.

(6) Car and bicycle parking spaces for places of public worship and educational establishments shall be provided on site in accordance with Table 11 .

Table 11: Car and bicycle parking for places of public worship and educational establishments

Land use	Parking requirement
Places of public worship	1 space per 4 seats or 1 space per 10m2 of seating area (whichever is greater) and 1 bicycle parking space per 10 seats
Primary and secondary schools	1 space per staff member; and 1 space per 100 students
Senior high school	1 space per staff member; and 1 space per 5 students in Year 12
Tertiary and adult education establishments	1 space per 5 seats or 1 space per 10m2 of seating area (whichever is greater)
All Educational Facilities	1 bicycle parking space per 5 students

(7) Development must be designed to minimise the possibility of noise disturbance to the occupants of adjoining or neighbouring dwellings.

(8) Development must be designed to minimise the possibility of noise to the occupants of adjoining or neighbouring dwellings.

(9) Where appropriate buffers should be put in place to limit noise impacts on the surrounding area.

(10) Sources of noise such as garbage collection, machinery, parking areas and air conditioning plants are sited away from adjoining properties and screened/ insulated by walls or other acoustic treatment.

(11) The general hours of operation for places of public worship and educational establishments are between 7am and 9pm. Variation to the approved hours of operation may be approved by the relevant council subject to other requirements or a merit assessment.

5.6.4 Neighbourhood shops

Objectives

(1) To ensure the appropriate provision of retail uses to serve the needs of the local community.

(2) To minimise the impacts of retail activities on surrounding residential areas.

(3) To ensure that retail activities in residential areas do not detract from the function or viability of nearby centres.

(4) To ensure the appropriate location of neighbourhood shops.

Controls

(1) For neighbourhood shops, the controls in the following sections of this DCP apply:

- Section 5.4.2 - Streetscape and architectural design,
- Section 5.4.4 - Side and rear setbacks,
- Section 5.4.5 - Dwelling height, massing and siting, and
- Section 5.4.8 - Garages, site access and parking.

(2) Shops fronts are to encourage active and interactive street frontages that are sympathetic to the streetscape with similar materials to adjoining buildings to be used.

(3) Neighbourhood shops must have a minimum 1m setback, unless on a corner site, and footpath activation is required within any setback provided.

(4) Address and entry points for any residential use on the same allotment of land are to be separate from the retail use access points and be readily identifiable.

(5) Design of the building frontage, front and side setbacks are to include safe and convenient pedestrian facilities such as weather protection, shade, seating and landscaping.

(6) On corner sites, shop fronts are to wrap around the corner and zero setbacks are permitted.

(7) Entrances are to be visible from the street and well lit.

(8) Car parking areas are to be located at the side or rear of the site.

(9) The site should not gain direct access to:

- A road with clearway or other parking restrictions, or
- An arterial road.

(10) Plant and equipment (particularly cooling or heating plant), is to be located so as to not cause noise annoyance to neighbours.

(11) Waste storage areas must be designed to minimise visual impact and should be screened and properly positioned so as to not to attract pests and cause odour problems for neighbours.

(12) All goods storage is to be internal.

5.6.5 Seniors housing

Objectives

(1) To ensure that the design of seniors housing is consistent with the character of surrounding residential areas.

Controls

(1) Applications for seniors housing are to comply with the controls for multi-dwelling housing in Section 5.5.1 of this DCP and the controls within *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*.

6 Town and Village Centres

6.1 Introduction

This part of the DCP outlines the objectives and design principles for the town centre retail, commercial and service uses within the B4 Mixed Use zone and neighbourhood shops and services within the village centres. The overall controls in Section 6.2 apply to retail and commercial development within both the town and village centres with more specific controls for the town centre in Section 6.3 and village centres in Section 6.4.

6.2 Overall controls

6.2.1 Active street frontages

Objectives

(1) To promote pedestrian activity and safety in the public domain.

(2) To maximise active street fronts in the town and village centres.

(3) To define areas where active streets are required.

(4) To provide an identifiable and desirable street address to residential buildings outside of areas where active street fronts are required.

(5) To clearly and consistently define the street edge.

(6) To allow for outlook to and surveillance of the street.

Controls

(1) Active frontage uses are defined as any of the following at street level:

- entrance to retail,
- shop front,
- glazed entries to commercial and residential lobbies,
- café or restaurant if accompanied by an entry from the street,
- active office uses, such as reception, if visible from the street, and/or
- public building if accompanied by an entry.

(2) Active street fronts, built to the street alignment, are required on the ground level of all retail and commercial development

(3) Large format retail such as supermarkets and parking areas are to be sleeved or hidden by retail and commercial uses as shown in Figure 43.

(4) Ground floor residential uses (other than entries to lobbies to residential uses above ground level) are not permitted along the Main Street in the retail core area.

(5) Active ground floor uses are to be at the same general level as the footpath and be accessible directly from the street.

(6) Restaurants, cafes and the like are to consider providing openable shop fronts.

(7) Only open grill or transparent security shutters (at least 50% visually transparent) are permitted to retail and commercial frontages.

(8) On corner sites, shop fronts are to wrap around the corner.

(9) Entrances are to be visible to the street and well lit.

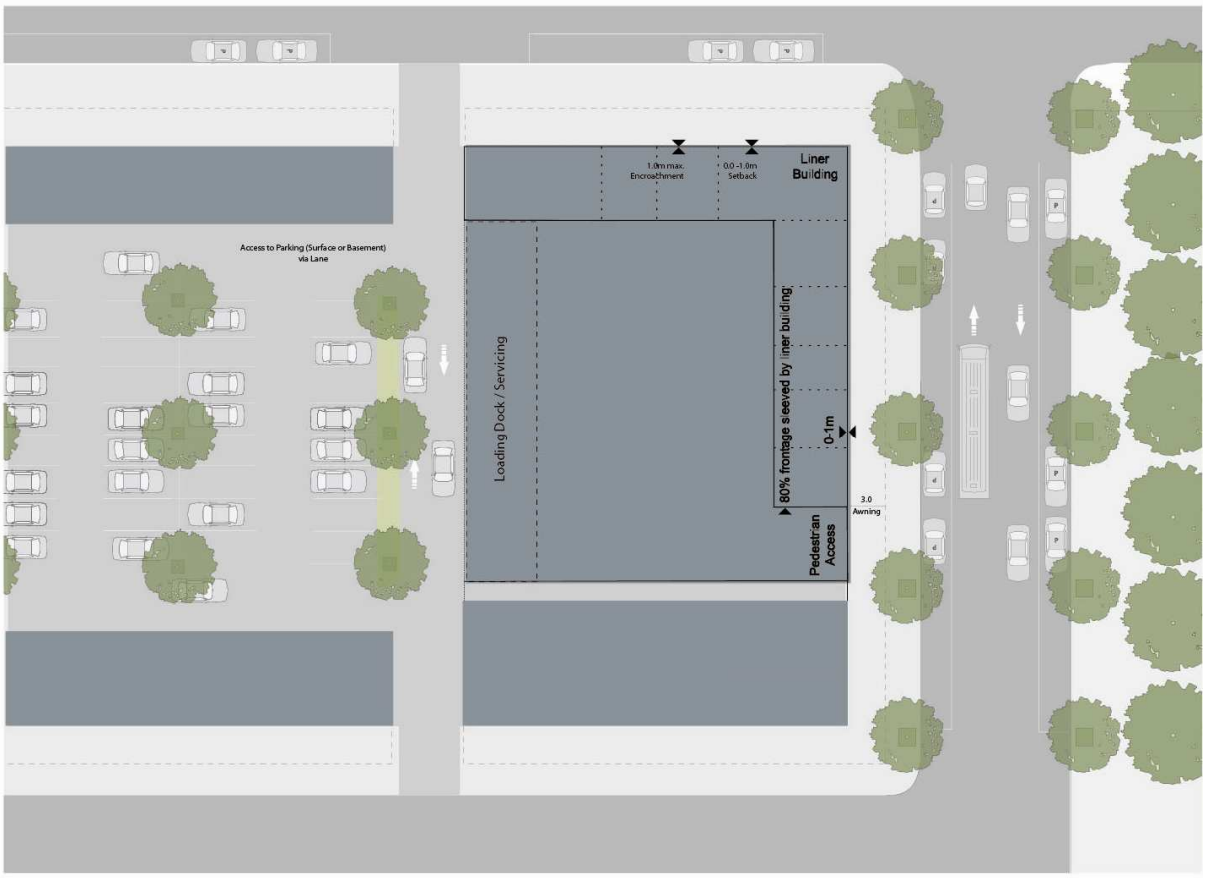

Figure 43: Large format building and liner

6.2.2 Awnings

Objectives

(1) To provide shelter for public streets where most pedestrian activity occurs.

(2) To address the streetscape by providing a consistent street frontage in the centres.

Controls

(1) Provide continuous street frontage awnings to all new commercial and retail developments within the town centre and village centres of varying styles.

(2) Wrap awnings around corners on street corner buildings.

(3) Cantilever awnings from buildings are to have a minimum soffit height of 3.2m and a maximum of 4m.

(4) Low profile awnings with slim vertical fascias and/or eaves (not to exceed 300 mm) are encouraged.

(5) Awnings are to be a minimum of 3m deep (dependant on street width) and setback from the kerb a minimum of 500mm to allow clearance for street furniture, trees etc.

(6) Awnings must be complementary to each other and maintain continuity.

(7) Steps for design articulation or to accommodate sloping streets are to be integrated with the building design and should not exceed 700mm.

(8) Provide under awning lighting to facilitate night use as well as improve public safety. Lighting is to be recessed into the soffit of the awning, or wall mounted onto the building.

(9) Any under awning signage is to maintain a minimum clearance of 2.7m from the level of the pavement.

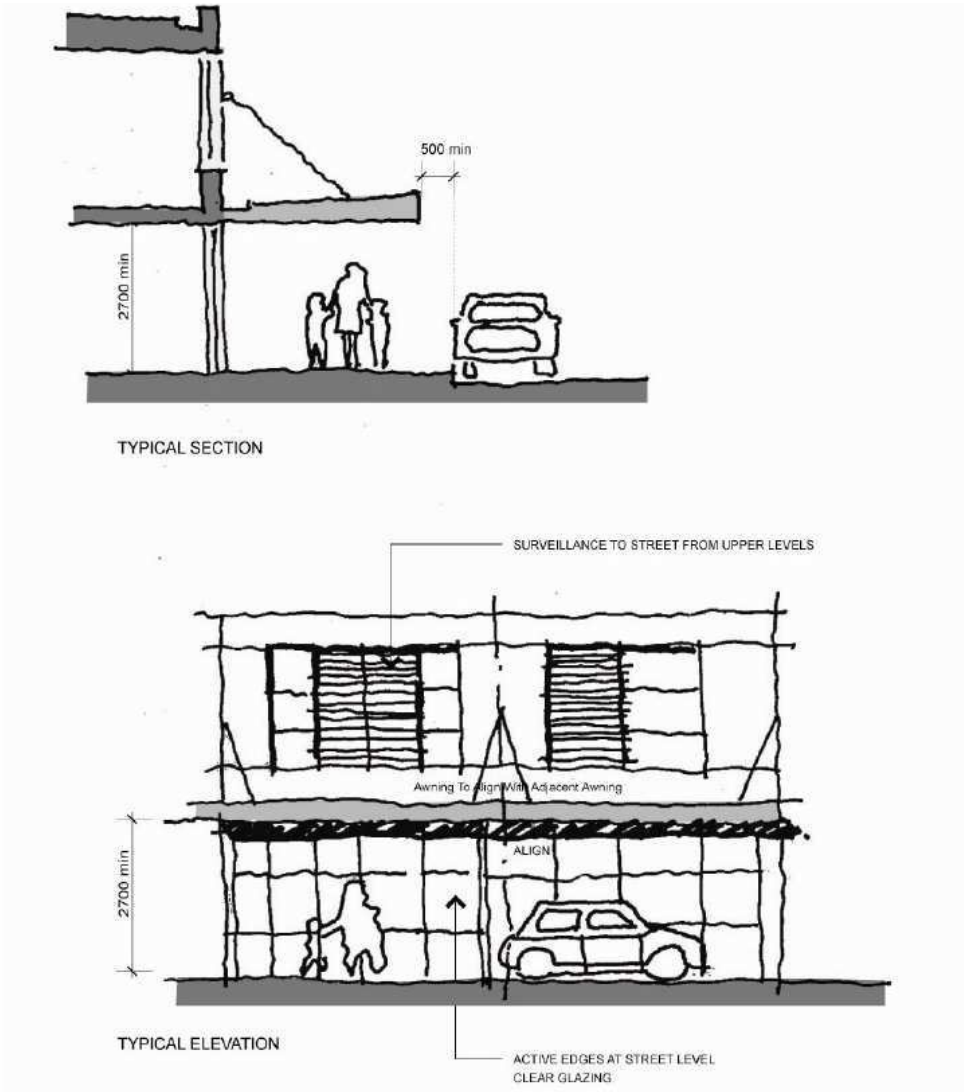

Figure 44: Awnings

6.2.3 Signage

Objectives

(1) To permit adequate identification and business advertising that achieves a very high level of design quality in terms of graphic design, its relationship to the architectural design of buildings and the character of streetscapes.

(2) To promote signage that complements the scale and character of a building.

(3) To avoid the creation of visual clutter on buildings and streetscapes.

(4) To ensure compatibility with the desired urban character of adjacent land uses.

(5) To consider the amenity of residential development and the visual quality of the public domain.

(6) To ensure that advertising signs do not adversely affect the safety of motorists and other road users.

Controls

General Signage

(1) Signage must be integrated into the building façade and achieve a high degree of compatibility with the architectural design of the supporting building having regard to its composition, fenestration, materials, finishes, and colours. Architectural features of the building are not to be obscured.

(2) One under-awning sign is permitted on each shop or commercial premises.

(3) Signs including real estate signs and temporary signs are not allowed to stand on the top of awnings.

(4) The total area of all signs is not to exceed $1m^2$ of advertising area per 1m of shop frontage. This includes signs painted on blinds or windows.

(5) Signs that contain additional advertising promoting products or services not related to the approved use of the premises or site (such as the logos of brands or products) are not permitted.

(6) Signs painted on or applied to the roof are not permitted.

(7) Directional signage and public notices are to have a coordinated appearance and help to establish the town centre as a unique destination and place.

Illuminated Signs

(1) Illumination (including cabling) of signs is to be

- concealed, or
- integral with the sign, or
- provided by means of carefully designed and located remote or spot lighting.

(2) Restricted hours shall be imposed on the operation of illuminated signs where continuous illumination is considered to impact adversely on the amenity of residential buildings, serviced apartments or other visitor accommodation, or have other adverse environmental effects.

(3) Up-lighting of signs is prohibited. Any external lighting of signs is to be downward pointing and focused directly on the sign and is to prevent or minimise the escape of light beyond the sign.

Signage and Road Safety

(1) Signs are regarded as prejudicial to the safety of road users if they:

- obscure or interfere with road traffic signs and signals or with the view of a road hazard, oncoming vehicles, or any other vehicle or person, or an obstruction which should be visible to drivers or other road users,

- give instructions to traffic by use of the word ‘stop’ or other directions, which could be confused with traffic signs,

- are of such a design or arrangement that any variable messages or intensity of lighting impairs drivers’ vision or distracts drivers’ attention, and

- are situated at locations where the demands on drivers’ concentration due to road conditions are high such as at major intersections or merging and diverging lanes.

(Figure continued next page)

Figure 45: Preferred location of signage

6.2.4 Parking

Objectives

(1) To provide an appropriate level of on-site car and bicycle parking to cater for a mix of development types and location.

(2) To minimise the visual impact of on-site parking.

(3) To integrate parking facilities with the overall site planning and landscape.

(4) To encourage the use of bicycles.

Controls

(1) On-site car and bicycle parking for commercial and retail premises is to be provided in accordance with the standards set out in Table 12 and Table 13.

(2) The parking area per vehicle is to be in accordance with Australian Standard AS 2890:1.

(3) All outdoor parking areas shall be appropriately screened by planting and/or fencing.

(4) At grade car parks shall provide landscaping and tree planting and consider providing weather protection.

(5) Basement parking must not to be raised more than 1m above ground level.

(6) In the town centre and all village centres, parking is not permitted within the front setback or in front of the building line. Parking and servicing is to be located to the rear of buildings, or below grade, to minimise impacts on the streetscape and pedestrian amenity.

(7) Rear lanes should be utilised where possible to access parking areas.

(8) All bicycle parking is to be in secure and accessible locations. Bicycle parking for employees is to have weather protection.

Table 12: Car parking for commercial and retail premises

Use	Requirement
Retail uses	1 space per 25m^2 GFA for supermarkets and discount department stores 1 space per 50m^2 for main street, village centre and other retail
Commercial	1 space per 50m^2

Table 13: Bicycle parking for commercial and retail premises

Use	Requirement
Supermarkets	1 space per 750m^2 GFA for employees 1 space per 1000m^2 GFA for shoppers
Specialty stores	1 space per 300m^2 GFA for employees 1 space per 300m^2 GFA for shoppers
Commercial	1 space per 150m^2 GFA for employees 1 space per 750m^2 GFA for shoppers
Community centres	6 spaces at community centre

6.2.5 Site servicing

Objectives

(1) To ensure that site facilities are functional and accessible to all residents and are easy to maintain.

(2) To ensure that site facilities are thoughtfully integrated into the development and are visually and physically unobtrusive.

(3) To minimise the impact of service access on pedestrians and retail, commercial and residential frontage.

(4) To minimise the visual and acoustic impact of site servicing.

Controls

(1) Garbage, mail box structures, service meters and the like are to be integrated with the overall design of the buildings and/or landscaping. Garbage storage areas are not permitted along the primary street frontage.

(2) Provide adequate space within any new development for the unloading and loading of service vehicles.

(3) Loading facilities must be located to the rear of each development.

(4) Ventilation stacks are to be utilised wherever possible to vent shops and basements.

(5) All service areas are to be screened from existing developments.

(6) Service access is permitted from rear lanes, side streets or right of ways.

(7) Vehicles must be able to enter/exit in a forward direction.

(8) Provide truck turning facilities.

6.3 Town centre

Objectives

(1) To create a vibrant Town Centre that provides a high level of amenity.

(2) To ensure that the detailed design of the Town Centre is undertaken in a coordinated manner in order to achieve a high quality urban design outcome.

(3) To create a sense of place through the relationship of the Town Centre to the landscape.

(4) To promote a pedestrian friendly main street through the Town Centre.

(5) To ensure that the Town Centre is centrally located and easily accessible by pedestrians, cyclists and public transport users.

(6) To ensure that the Town Centre can be serviced by public transport.

(7) To provide a good range of retail and commercial services for the future communities.

(8) To promote a Town Centre that is financially viable and easy to stage.

Controls

(1) The Town Centre and its various land use types are to be located generally in accordance with Figure 46. An indicative layout plan of the Town Centre core retail area is shown at Figure 47.

(2) Any departure from Figure 46 or Figure 47 must demonstrate that the objectives for the Town Centre can be met, and show how the residual lots can be developed in the future.

(3) The Town Centre is to be consistent with the following principles:

<u>Function and uses</u>

(1) Incorporate a range of retail, commercial and community uses to serve the needs of the community.

(2) Incorporate higher density housing and mixed use development.

(3) Concentrate intensive retail uses along and fronting Main Street.

(4) Locate active uses at ground floor throughout the Town Centre, in particular fronting the Main Street.

(5) Provide a mix of uses that promote an active and vibrant town centre.

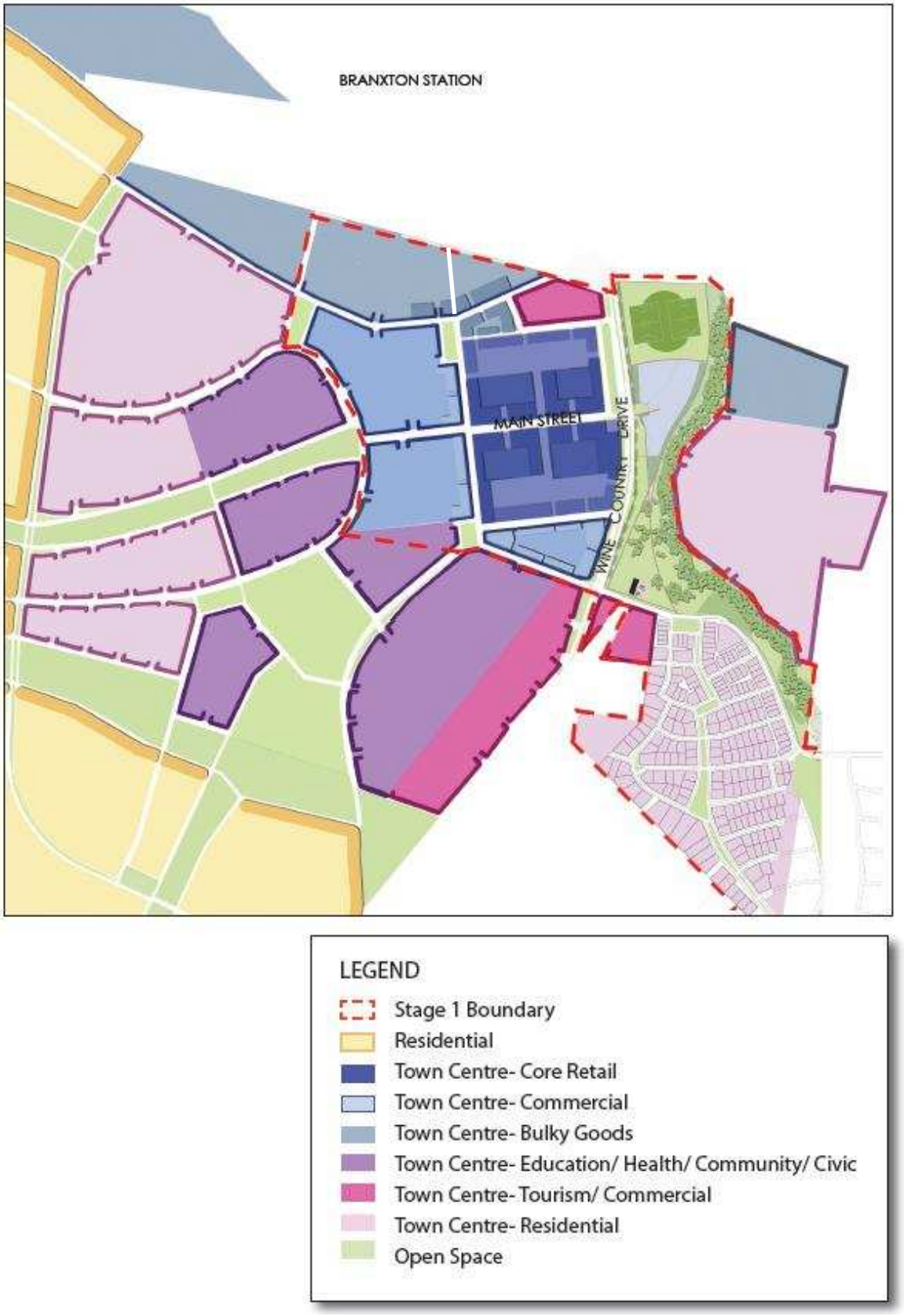

Figure 46: Huntlee Town Centre (indicative)

Figure 47: Huntlee Town Centre indicative retail core layout

Built form

(1) Provide a range of building heights, up to a maximum of six storeys with a transition in heights to surrounding residential areas.

(2) Relate building heights to street widths and functions to promote a comfortable urban scale of development.

(3) Define streets and open spaces with buildings that are generally built to the street edge, have a consistent street wall height and provide a continuous street frontage along all key streets.

(4) Sleeve all large format retail premises and decked parking areas with active uses. Blank walls visible from the public domain are to be avoided.

(5) Promote diversity and activity along the main street with a variety of frontage widths for retail shops.

(6) Building heights are to take into account view lines and solar access to the public domain.

(7) A high quality built form and energy efficient architectural design that promotes a 'sense of place' and modern character for the Town Centre.

(8) Waste storage and collection areas are to be accommodated and designed appropriately to minimise impacts, in particular within mixed use development.

Parking and access

(1) Access to parking, loading docks and waste collection areas must not be provided from Main Street frontages.

(2) At grade parking areas are to be generally located behind building lines and within the centre of street blocks away from street corners.

(3) On-street parking is to be provided on all streets within the Town Centre to contribute to street life and surveillance.

(4) Allowance should be made for potential direct pedestrian access to the train station from the town centre core retail area. Pedestrian access paths should be incorporated into the road layout for the service industry area north of the core retail area.

Public domain

(1) Parks and plazas are to act as a focal point for the Town Centre and community activities and are to be designed to ensure adaptability and flexibility in use and function over time.

(2) Incorporate a town square/civic plaza, adjacent to the main street which provides an urban landscape setting and a civic focus for the community.

(3) Provide high amenity, pedestrian streets with generous footpath widths.

(4) Incorporate the principles of 'Crime Prevention Through Environmental Design' and 'Safer by Design' into all development within the Town Centre.

(5) Weather protection for pedestrians is to be provided in key locations.

(6) Provide a high quality landscape design including a co-ordinated package of street furniture and lighting that enhances the character of the Town Centre.

(7) Provide street tree and open space planting that establishes generous shade for pedestrians.

(8) Design all signage and advertising in a co-ordinated manner.

(9) Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

6.4 Village centres

Objectives

(1) To create a vibrant village that provides a range of small-scale retail, business and community uses which serve the needs of people who live and work in the surrounding area.

(2) To ensure that the detailed design of the village is undertaken in a co-ordinated manner in order to achieve a high quality urban design outcome.

(3) To create a vibrant village adjacent to residential areas and schools.

Figure 48: Village 1 centre layout (indicative)

Controls

(1) The Stage 1 Village Centre is to be located generally in accordance with Figure 48.

(2) The village centres, including Stage 1 and the remaining precincts, shall be generally consistent with the following principles:

Function and uses

Incorporate a range of local retail, commercial and community uses to serve the needs of the local community.

Built form

(1) Provide a range of building heights, up to a maximum of four storeys.

(2) Buildings are to define the entry to the residential areas and open spaces adjacent to the village and are to be generally built to the street edge.

(3) Avoid blank walls visible from surrounding streets and the public domain.

(4) Establish a high quality built form and energy efficient architectural design that promotes a ‘sense of place’ for the village.

Parking and access

(1) Locate at grade parking areas behind building lines and screened from streets and public open space.

(2) Opportunities for shared parking provision for complementary uses within the village centre are to be provided.

(3) On-street parking is to be provided within the village centre.

Public domain

(1) Provide a high quality landscape design including a co-ordinated package of street furniture and lighting that enhances the character of the village.

(2) Provide street tree and open space planting that establishes generous shade for pedestrians.

(3) Incorporate the principles of Crime Prevention through Environmental Design (CPTED) and Safer by Design (NSW Police) into all development within the village centre.

(4) Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

7 Employment Areas

7.1 Introduction

This section applies to the non-residential, non-retail uses within the employment areas of Huntlee Town Centre such as service industry and bulky goods uses.

7.2 Landscape design

Objectives

(1) To ensure a balance between built form and landscaped elements

(2) To encourage landscaping as a means of screening industrial development.

(3) To enable landscaping to contribute to energy efficiency water management and amenity for employees.

(4) To encourage a high standard of landscape design that enhances the streetscape and amenity of the zone.

Controls

7.2.1 Allotment frontages

(1) Street tree planting is to be implemented at the subdivision stage to ensure plantings are visually consistent in height, spread and form across the zone.

(2) A minimum 7m wide landscape area must be provided along the street front.

(3) The selection of plant species for street tree planting must be in accordance with Table 4.

7.2.2 Allotment landscaping

(1) A Landscape Plan must be prepared for all new industrial subdivisions and new buildings.

(2) Landscaped areas are required between buildings.

(3) Allotment landscape design is to be integrated with site planning and building design to:

- reduce the perceived scale of built form from the street,
- reduce visual impact and the extent of continuous building facades,
- highlight architectural features and complement façade articulation,
- identify site and building entries, car park entries and parking areas, in coordination with signage,
- mitigate adverse site conditions through buffering of western sun, provision of shade, wind protection, and screening of poor views,

- maximise northern sun exposure, and
- integrate usable and attractive external seating and amenity areas for staff incorporating paved areas, soft landscape, and shade planting (and canopies where necessary).

(4) Allotment landscape should incorporate hard and soft landscape elements in pavements, retaining walls, low walls and terracing, trees, garden bed planting, turfed areas and irrigation.

(5) Indigenous species from the area are encouraged for all landscape plantings however, non native species may be considered in limited use to external courtyard areas to achieve seasonal climate management. Trees should be a minimum height of one metre at the time of planting. Mass plantings may use a variety of sizes including viro tubes.

(6) The allotment landscape is to be provided with an automatic trickle irrigation system installed below mulch level. The system is to be supplied by rainwater collected from the site.

(7) Landscaped areas are to be separated from vehicular access areas by an appropriate edge, preferably a raised kerb.

(8) Landscaped areas are to be separated from storage areas by an appropriate edge, preferably low walls. Signage and management strategies are to be put in place to ensure that storage activities do not impact on, or extend into, landscaped areas. No storage is allowed in landscaped areas.

7.2.3 Landscaping of car park areas

(1) Car parking areas are to be effectively landscaped to:

- reduce their visual impact,
- reduce heat generation and glare from hard paved surfaces,
- provide shade for parked vehicles, and
- maximise potential for soft drainage (non-piped) to soft landscaped areas or collection zones.

(2) Car park lighting design is to be coordinated with the preferred tree layout.

(3) Dividing zones between parking bays should be landscaped as applicable to specific site conditions:

- where pedestrian access will generate desire lines across the dividing zone, pedestrian trafficable wearing surface is required (eg. stabilised gravel),
- where pedestrian access is not required and some infiltration drainage may be provided, mass planted landscape areas (requiring flush kerb edge and wheel stops to car parking bays) must be provided, and
- where a major drainage role is envisaged and pedestrian access is not required, a gravel surfaced trench with collection pipework draining to on site storage or stormwater must be provided.

(4) Clearly defined and appropriately surfaced pedestrian access links from parking areas to building entry points must be provided, incorporating kerb crossing ramps as required.

(5) Car park landscaping is to be provided with an automatic trickle irrigation system installed below mulch level. Irrigation services provision must be implemented before car park surfacing. The system is to be supplied by the rainwater tanks on site.

7.3 Built form and streetscape

7.3.1 Building setbacks

Objectives

(1) To achieve attractive streetscapes by ensuring that buildings present an acceptable scale and bulk when viewed from the public domain.

(2) To provide appropriate setbacks to the proposed use and characteristics of the location of the land.

(3) To define building envelopes within each allotment by specifying minimum setbacks.

Controls

(1) All buildings erected in employment areas are to be set back a minimum of 2m from the front property boundary.

(2) All buildings are to be setback 3m from the side and rear property boundaries.

(3) No building or hardstand area (concrete or bitumen pavement) other than a public utility undertaking shall be erected within any setback.

(4) All setback areas should be landscaped and maintained in accordance with the landscape provisions in Section 7.2.

(5) Pedestrian access should be provided to all landscaped setback areas for maintenance and security purposes.

7.3.2 Building design and siting

Objectives

(1) To activate streets and the public domain with building frontages.

(2) To provide a variety of building orientations and create defined streetscapes that respond to site conditions.

(3) To ensure that building design enhances the existing and future desired built form character by encouraging innovation and quality architectural design.

Controls

(1) Blank building facades facing the primary street frontage are not permitted.

(2) The built form and architecture of buildings located at street corners should enhance its location and positively respond to and emphasize the street corner.

(3) Building orientation and siting should respond to natural elements such as topography, wind and sunlight.

(4) Parking is not permitted in front of the building line.

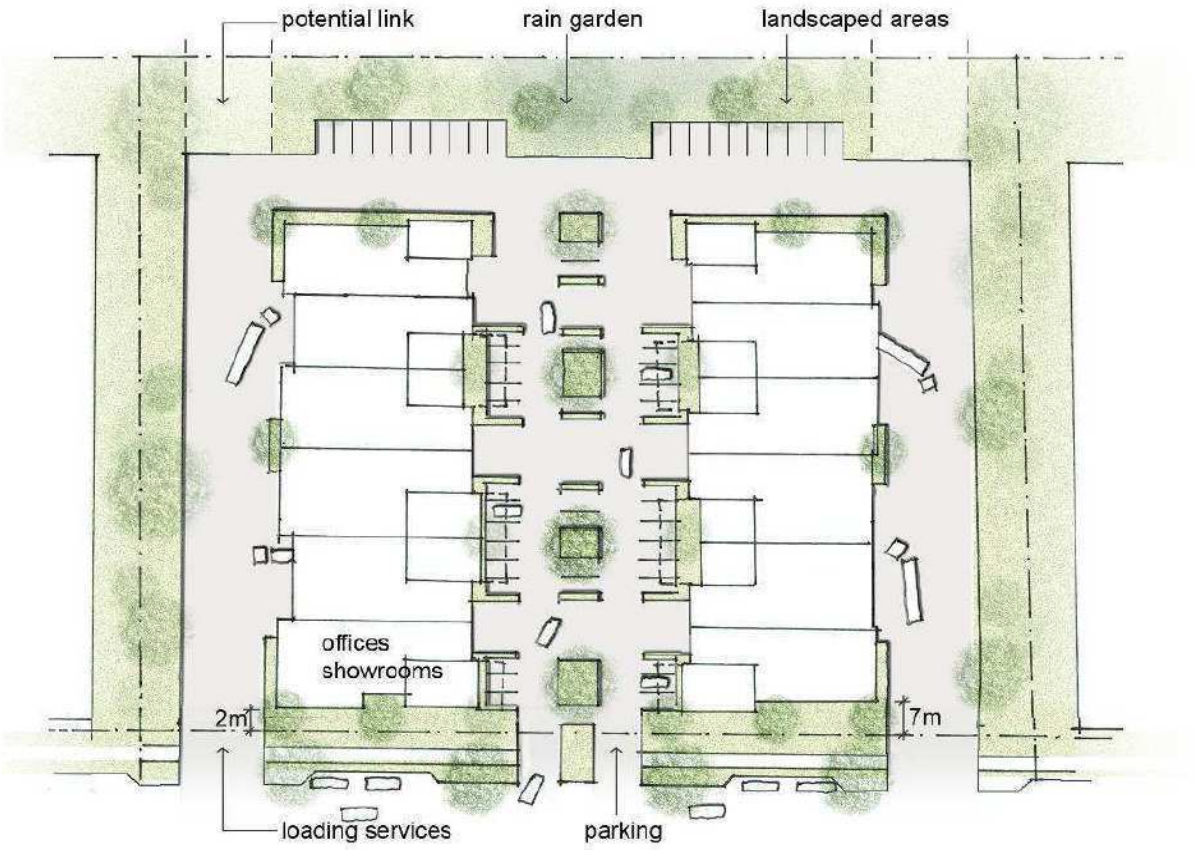

Figure 49: Typical building layout for light industrial area

(5) Buildings should provide variety to facades by the use of projecting upper storeys over building entries, upper storey display windows, emphasizing street corners and varying roof forms.

(6) Buildings should provide effective sunshading for windows, wall surfaces and building entries, (other than loading docks) by the use of design elements such as overhanging eaves and awnings, undercrofts, colonnades and external sunshading devices including screens.

(7) Building design should be integrated with landscape elements.

(8) The bulk and scale of the building should minimise impact on district views.

(9) Building facades should be articulated by elements such as:

- external structures, finishes, etchings and recessed patterns,
- decorative features, textures and colours,
- locating offices and highlighting entries within front facades,
- emphasized customer entries and service access doors, and
- protrusions and penetrations in building elements.

(10) Buildings with dual street frontage should be designed to ensure:

- the building addresses the primary street frontage, and
- distinctive identifying architectural elements are incorporated to provide sufficiently interesting and varied facades.

(11) The building design should consider the amenity of any landscaped or communal areas in adjoining properties.

(12) The location of roller shutters, loading docks and other building openings should be so that they do not detract from the overall appearance of the building. Where possible, roller shutters and the like should not be located on the primary street frontage.

(13) Roof design should be visually interesting and provide for natural lighting, and compatibility with the overall building design. Where visible from a public area, all rooftop or exposed structures (lift motor rooms, plant rooms etc), must be suitably screened and integrated with the building.

7.3.3 External building materials and colours

Objectives

(1) To enhance the visual quality of development through the selection of appropriate materials and colours.

(2) To encourage the use of materials that minimise impact on the environment.

(3) To ensure that any reflective materials are used with sensitivity to neighbouring development, vehicular traffic and public domain areas.

(4) Create identifiable, attractive and safe entrances to buildings.

Controls

(1) External finishes should be constructed of durable, high-quality and low maintenance materials.

(2) External finishes should contain a combination of materials and/or colours.

(3) Any wall visible from the public domain must be finished with a suitable material to enhance the appearance of that façade.

(4) Building materials should be selected to minimise reflection.

7.3.4 Entrance treatment

Objectives

(1) To create clear and legible entries that address the street.

Controls

(1) Entries to buildings should be clearly visible, well sign posted and lit to pedestrians and motorists.

(2) Architectural features are to be provided at ground level giving an entrance element to the building and addressing the primary street frontage.

(3) All entrance treatments, such as directory boards, must be located on private property, with appropriate positive covenants and restrictions on title to ensure the ongoing management of such treatments.

(4) No third party advertising will be permitted on any entrance treatment facility.

7.3.5 Ancillary buildings, storage and service areas

Objectives

(1) To ensure that ancillary buildings, storage and service areas are considered part of the overall design, and do not detract from the amenity and appearance of the development.

(2) To ensure that site facilities are functional and accessible and are easy to maintain.

(3) To ensure that site facilities are thoughtfully integrated into the development and are visually and physically unobtrusive.

(4) To minimise the impact of service access on pedestrians and industrial, commercial and retail frontage.

(5) To minimise the visual and acoustic impact of site servicing.

Controls

(1) Ancillary buildings and storage sheds are to be located behind the setback lines and be consistent with the design of the main building.

(2) Details of any proposed ancillary buildings, open storage and services areas must be submitted with all Development Applications.

(3) Storage areas should be located within the confines of the primary building. Appropriate screening must be provided where this can not be achieved.

(4) Above ground open storage areas visible from the public domain are not permissible.

(5) Above ground open storage areas should not compromise truck or vehicle maneuvering and car parking areas.

(6) Vehicular access to loading facilities is to be provided from secondary and tertiary streets.

(7) Rubbish and recycling areas must be provided. These areas must:

- be integrated with the development,
- minimise the visibility of these facilities from the street, and
- be located away from openable windows to habitable rooms.

(8) Sunken loading docks should be avoided.

7.4 Ecologically Sustainable Development

Objectives

(1) To improve energy efficiency through the design and siting of buildings;

(2) To ensure that developments are environmentally sustainable in terms of energy and water use, and management of waste and discharge.

(3) To encourage the utilisation of materials and construction techniques with low energy inputs in their production for construction energy systems.

Controls

(1) A Site Water Management Plan must be prepared.

(2) Development Applications are required to demonstrate consideration of:

- measures that will reduce waste and conserve water through water recycling,
- measures to minimise run-off and stormwater generation,
- implementing total water cycle management by including measures that reduce consumption of potable water for non-potable uses, minimise site run-off and promote stormwater re-use,
- utilising recycled materials and renewable building resources,
- promoting biological diversity through appropriate retention, planting and maintenance of indigenous flora of the area,
- implementing a waste management strategy that promotes the overall reduction of waste levels, and
- implementing energy conservation measures that include reducing energy consumption and increasing inherent energy efficiency through design and materials selection, and adopting energy management plans.

(3) Roof stormwater should be collected in tanks or street level reticulation which would serve as a retention system. The water in the retention system would be available for use for non-potable uses such as the watering of landscaped areas and use in toilet and hot water systems.

(4) Consideration should be given to the feasibility of any measures to substitute grid-source power with environmentally sustainable alternatives such as tri-generation (green transformers), co-generation (i.e. recovery of waste energy) or photovoltaics.

(5) Development shall incorporate water efficient fixtures such as taps, showerheads, and toilets. The fixtures must be rated to at least AAA under the National Water Conservation Rating and Labelling Scheme. Where the building or development is water intensive (ie. high water user), specific water conservation objectives must be resolved with the relevant council.

(6) Appropriate use of energy efficient materials during construction is to be demonstrated.

(7) Development should incorporate energy efficient hot water systems, air-conditioning, lighting and lighting control systems.

7.5 Waste water and sewage treatment

Objectives

(1) All sewage treatment plants should use best practice, and ensure design and capacity is adequate

(2) Appropriate use of grey water is encouraged in all new developments

7.6 Fencing, Signage and Lighting

Objectives

(1) To use fencing to define boundaries and provide security, as well as contribute to streetscape and amenity of the zone.

(2) To enhance pedestrian safety, security and amenity within the precinct.

(3) To ensure that signage and lighting supports the visual appearance of the building and the visual appeal of the zone.

7.6.1 Fencing

Controls

(1) Low feature walls are encouraged at entry driveways. These walls should be used for retaining purposes, as garden beds or as landscaped features and should be integrated into the overall design of the development.

(2) Front and side boundary fences forward of the building line should consist of an open style fence finished in a dark colour.

(3) Side fencing behind the building line may comprise chain wire mesh or similar open style fence, plastic coated in dark green or black.

(4) Pre-painted solid metal fencing and other solid fencing is not permissible.

(5) High fencing should be located behind the building line. Where high fencing in the front setback cannot be avoided, Fencing must be set back 1m from the front property boundary to allow for perimeter landscaping.

(6) Fencing should be sited so it does not impede sightlines for drivers.

(7) Fencing along boundaries should not exceed a height greater than 3m, measured from finished ground level.

7.6.2 Signage and Lighting

Controls

(1) Signage is to relate to the use occurring on the respective property, and should identify the relevant business name.

(2) Business identification signage should be attached to the wall of the main building and be designed to complement the architectural style of the building. Free standing signs will only be permitted where signs are integrated with the landscaping and visual character of the site and surrounding area.

(3) Directional signs for car parking areas, loading docks, delivery areas and the like should be located close to the main access of a development site. The design, colouring, type and scale of signage within individual properties should be consistent with signage across the zone as a whole.

(4) Signage is only to display corporate logos and company names and is not to occupy more than 10% of any façade or wall of a building, unless it can be demonstrated that characteristics of the site or the building require a larger area of signage.

(5) Details of all signage, including free standing, fascia, and wall signs must accompany Development Applications.

(6) The design and lux of any internal or spot lighting shall be designed to avoid off-site or traffic safety impacts.

(7) No form of moving or flashing signage or lighting is permitted.

(8) Signage is not to have a detrimental impact on the visual character of the site or surrounding area.

7.7 Access and Parking

7.7.1 Vehicular Access

Objectives

(1) To ensure that vehicles can enter and exit premises in a safe and efficient manner in a forward direction.

(2) To minimise the impact of vehicle access points on the quality of the public domain and pedestrian safety.

(3) To provide off-street manoeuvring, loading and docking facilities that are adequate for the operational needs of the activity and use.

Controls

(1) Applicants are required to submit plans and details of proposed vehicular access and circulation for the relevant council's approval with the Development Application. Details must specifically relate to vehicular movement, layout and turning circles.

(2) Adequate vehicular entrance to and exit from the development is to be provided and designed in order to provide safety for pedestrians and vehicles using the site and adjacent roadways. In some cases combined ingress and egress will be permitted.

(3) Vehicular ingress and egress to the site must be in a forward direction at all times.

(4) Driveway crossovers accesses by heavy vehicles should be a minimum of 9m wide, when measured at the kerb alignment.

(5) Turning circles will not be permitted to encroach upon any building.

(6) Adequate space is to be provided within the site for the loading, unloading and fuelling (if applicable) of vehicles. These areas are to be screened from the road.

(7) All parking areas and access roadways must be provided with a drainage system comprising surface inlet pits. Details of pipe sizes (with calculations) and drainage layouts (including discharge points) must be submitted with the Development Application.

(8) Vehicular access should be designed to avoid conflicts with pedestrians.

(9) Adequate space shall be provided within any development site for the loading and unloading of service vehicles. The standard of loading facilities required will depend upon the nature of the development and the uses to be carried out.

(10) The relevant council may require the provision of parking for courier vehicles. Loading facilities should be located at the rear of developments.

(11) Vehicular movements associated with loading facilities and customer/employee parking should be separated and all pedestrian movements should be segregated from vehicular movements to avoid possible conflict and congestion.

(12) Ingress to and egress from a site should be located where they will cause least interference with vehicular and pedestrian movement on public roads. Direct access will not be permitted off arterial and sub-arterial roads. Access to parking areas will not be permitted in close proximity to traffic signals, intersections or where sight distance is inadequate.

(13) The potential for on-street queuing should be eliminated by the provision of sufficient standing areas on-site for vehicles entering the car parking and loading areas.

(14) Provision is to be made for all vehicles to enter and leave a site in a forward direction.

7.7.2 Car parking

Objectives

(1) To provide an appropriate level of on-site car and bicycle parking.

(2) To minimise the visual impact of on-site parking.

(3) To integrate parking facilities with the overall site planning and landscape.

(4) To encourage the use of other modes of transport including bicycles and public transport.

Controls

(1) The provision of car parking in employment areas must comply with Table 14 and otherwise specified in the relevant Precinct Schedule.

(2) Secure bicycle parking is to be provided for employees at a rate of 1 space per 200m^2 GFA.

Table 14: Car and bicycle parking for employment areas

Use	Requirement
Light industrial	1 space per 75m^2 up to 7500m^2 GFA 1 space per 200m^2 thereafter 1 space per 40m^2 GFA (office component)
Bulky goods retailing	1 space per 45m^2 GFA
Business park / offices	1 space per 40m^2 GFA
Bicycle Parking for above uses	1 space per 200m^2 GFA

(3) At-grade parking areas are to be located so as to minimise visual impacts from the street, public domain and communal open space areas, using site planning and appropriate screen planting or structures.

(4) Parking areas are to be located generally behind front building lines.

(5) The car parking area should be accessible to all parts of the industrial development which it serves.

(6) The use of stack parking is not permitted.

(7) Parking facilities for commercial vehicles should be designed in accordance with Australian Standard 2890.2 to accommodate the largest type of truck which could reasonably be expected to park on the site.

(8) Sufficient spaces should be provided for disabled parking and shall be clearly marked and signposted for this purpose and located as close as possible to the building's entrance.

(9) All parking areas shall be constructed of hard-standing, all-weather material, with parking bays and circulation aisles clearly delineated.

7.8 Waste Management

Objectives

(1) To maximise opportunities for re-use through source separation and on-site storage.

(2) To minimise waste generation and maximise re-use and recycling.

(3) To minimise waste generation through design, material selection and building practices.

(4) To ensure efficient storage and collection of waste and quality design of facilities.

Controls

(1) Facilities to allow on-site source separation and re-use of materials on-site should be provided.

(2) The siting of any stockpile must take into account environmental factors such as slope, drainage, location of watercourses and native vegetation.

(3) Sufficient space must be provided for the storage of garden waste and other waste materials on site.

(4) Re-use of stockpile materials on-site should be facilitated.

(5) Sufficient space for storage of recyclables and garbage should be provided on-site.

(6) Adequate space should be provided for the temporary storage of recyclables, garbage and compostable materials in each unit.

(7) Waste cupboards should be designed and located so as to be accessible, useable and cater for change of use.

(8) The area or room allocated for garbage and recycling is to be of a sufficient size to store the relevant council's standard bins in an efficient manner.

(9) Garbage and recycling areas/rooms must be accessible to all users and have unobstructed access to the relevant council's standard bins in an efficient manner.

(10) Areas for the storage of bulky waste (eg. clean up materials) should be provided.

(11) Where the development is large or where the site characteristics warrant, multiple garbage and recycling areas should be provided.

7.9 Safety and Surveillance

Objectives

(1) To ensure personal safety for workers and visitors to the development.

(2) To ensure design minimises the opportunity for crime and maximises opportunities for passive surveillance.

Controls

(1) Buildings should be designed to overlook public domain areas and provide casual surveillance.

(2) Building entrances should be orientated towards the street to ensure visibility between entrances, foyers, car parking areas and the street.

(3) Appropriate lighting should be provided to all cycle and pedestrian paths, bus stops, car parks and buildings.

(4) Development should provide clear sight lines and well-lit routes between buildings and the street, and along pedestrian and cycle networks within the public domain.

(5) Consideration should be given to the use of landscape elements so as to not compromise the perceived level of safety.

7.10 Additional Land Use Controls

7.10.1 Neighbourhood Shops

Objectives

(1) To enable the provision of neighbourhood shops in business and industrial zones which serve the daily convenience needs of the local workforce, or for the benefit of the local workforce and businesses.

Controls

(1) Neighbourhood shops within the employment area should serve the daily convenience needs of the workforce in the zone, or be for the benefit of the local workforce and businesses.

(2) Neighbourhood shops must not detrimentally affect the viability of any other centre within a business zone.

7.10.2 Child Care Centres

Objectives

(1) To enable the provision of child care centres to address the needs of the local workforce within the zone.

Controls

(1) Due to the nature of the usage, such developments should be sited on allotments which provide buffering from adjoining developments so as to minimise possible conflicts such as noise and invasion of privacy.

(2) In order to ensure or protect the privacy of staff and children adequate noise abatement, site landscaping and fencing may be required. Such landscaping is to be in keeping with adjoining developments.

(3) An applicant should submit a signed statement with the application, stating that the building will be constructed in accordance with the *Children (Education and Care Services) Supplementary Provisions Act 2011, Children (Education and Care Services) Supplementary Provisions Regulation 2004* and the National Quality Framework.

7.10.3 Car Parking for Other Uses

Objectives

(1) To ensure appropriate provision of car parking for uses not outlined specifically within this Development Control Plan (DCP).

Controls

(1) The provision of car parking should generally be in accordance with the *RTA Guide to Traffic Generating Developments* (2002) where applicable.

(2) The provision of car parking for uses that are not outlined in this DCP and not listed in the RTA guide noted in (1) above, may be individually assessed by the relevant Council as part of the development application assessment.

Further information

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REF for the Huntlee Local Water Centre

North Rothbury

Executive Summary Report

Prepared by:

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Prepared for the proponent:

HUNTLEE WATER (A WHOLLY OWNED SUBSIDIARY OF FLOW SYSTEMS PTY LTD)

Level 2, 1 Alfred Street
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Executive Summary

The Proposal

Huntlee Water (a wholly owned subsidiary of Flow Systems) is proposing to construct and operate a water recycling facility at North Rothbury to facilitate residential development of the Huntlee development, south of Branxton. The proposal will be known as the Huntlee Local Water Centre (Huntlee LWC).

The proposal will utilise sewage from the future residential area to produce high quality water. The sewage will be treated at the Huntlee LWC through a multi-stage process of screening, anaerobic and aerobic processing, chemical treatment, membrane filtration, ultraviolet disinfection and chlorination. The refined water will be plumbed into houses for non-potable uses such as toilet flushing, washing machines, irrigation and car washing, thus reducing potable water demand. The facility, located upon Lot 211 DP 828787, Wine Country Drive, North Rothbury, as illustrated in **Figure 1**, is intended to operate 24 hours, 7 days per week, housed in a low-scale, single level building within an open space setting. An architectural drawing of the proposal as it would appear once constructed is provided in **Figure 2.**

The proposal will provide an alternative to the traditional sewage treatment plant usually required to service new residential developments. Off-site impacts of the proposal are limited and because it is scalable it allows supply to increase in line with the anticipated residential development of Huntlee and the volume of waste to be treated. The Huntlee LWC will also make a significant contribution to sustainability through the provision of recycled water back to the new residential areas.

Prior to commissioning and operation of the Huntlee LWC an interim arrangement for sewage disposal will be in place. This will utilise interim flow balance tanks to collect the sewage from the pressure sewerage network for subsequent collection by a licensed tankering contractor. The licensed tankering contractor will then transfer this raw sewage to an authorised receiving facility.

Statutory and planning framework

The Review of Environmental Factors (REF) for the Huntlee LWC has been prepared to provide the Independent Pricing and Regulatory Tribunal (IPART) and the NSW Minister of Finance and Services, with information to the fullest extent possible of all matters affecting, or likely to affect, the environment by the construction and operation of the Huntlee LWC. The proposal does not require development consent under Part 4 of the Environmental Planning and Assessment Act 1979 (EP& A Act) pursuant to *State Environmental Planning Policy (Infrastructure) 2007* and the proposed rezoning of the site to SP2 Infrastructure. Therefore the proposal is the subject of environmental assessment under Part 5 of the EP&A Act. This document is an executive summary of the REF prepared for the environmental assessment.

Environmental Impacts

The REF provides a detailed description of the potential environmental impacts associated with the proposal, during both construction and operation, and these include impacts associated with the:

- Application of recycled water around the Huntlee residential development;
- Removal of vegetation and habitat for fauna;
- Potential for the identification of Aboriginal objects;
- Increase in hardstand areas and associated runoff;
- Potential for increase in noise;

- Air Quality and odour;
- Potential for Bushfires;
- Increase in traffic movements;
- Potential for changes to visual character; and
- Potential for the generation of waste during the construction phase.

Noise Impacts

Operational noise associated with the equipment within the Huntlee LWC has been assessed against noise criteria set out in the NSW Environmental Protection Authority (EPA) NSW Industrial Noise Policy (INP). Noise monitoring to determine ambient noise was carried out as part of the specialist Noise Assessment contained within the REF and enabled the establishment of Project Specific Noise Criteria for daytime and night time operations. The noise monitoring and modelling used the $L_{Aeq,15min}$ criteria which is a common measure of environmental noise and road traffic noise. Criterion established were L_{Aeq} 41 dBA for day time and L_{Aeq} 39 dBA for night time. Under abnormal operating conditions involving the use of a back-up generator the INP allows for a positive adjustment of 5 dB to the criterion stated above.

Predicted noise levels from the proposed blowers and compressors room, recycled water pumps and potable water pumps indicate compliance with all criteria on all occasions at the closest identified noise sensitive receptors provided that a number of minor modifications to the building construction / treatment are implemented. The results of the modelling of the typical operation of the Huntlee LWC with recommended mitigation measures in place are presented in graphical form as a contour map in **Figure 3**. The results of the modelling of the Huntlee LWC under abnormal operating conditions involving the use of a back-up generator but with recommended mitigation measures in place are presented in graphical form as a contour map in **Figure 4.** Predicted noise levels from the back-up generator complies with the adjusted acceptable daytime noise level on all occasions except for a minor exceedance that may be found at the back corner of the nearest future residential lot.

Specific acoustic treatment for the Huntlee LWC is contained within the mitigation measures which will be implemented during the Huntlee LWC's construction and operation.

Odour and Air Quality

An Odour Impact Assessment having due consideration for the NSW Environmental Protection Authority guidelines was carried out as part of the REF.

The predicted odour concentrations for the fully operational plant are provided in **Figure 5**. Results from the modelling used in the Odour Impact Assessment predicted odour concentrations from the proposed facility would comply with the most stringent assessment criterion at all sensitive receivers. The predicted odour concentrations show that the 1 OU or 99th percentile threshold (the theoretical level at which odour becomes detectable but not necessarily distinguishable), is not predicted beyond the boundary of the proposal site.

The predicted odour concentrations during the use of the interim flow balance tanks was also modelled however the levels of 1 OU were not reached at any location, even within the boundary of the Huntlee LWC.

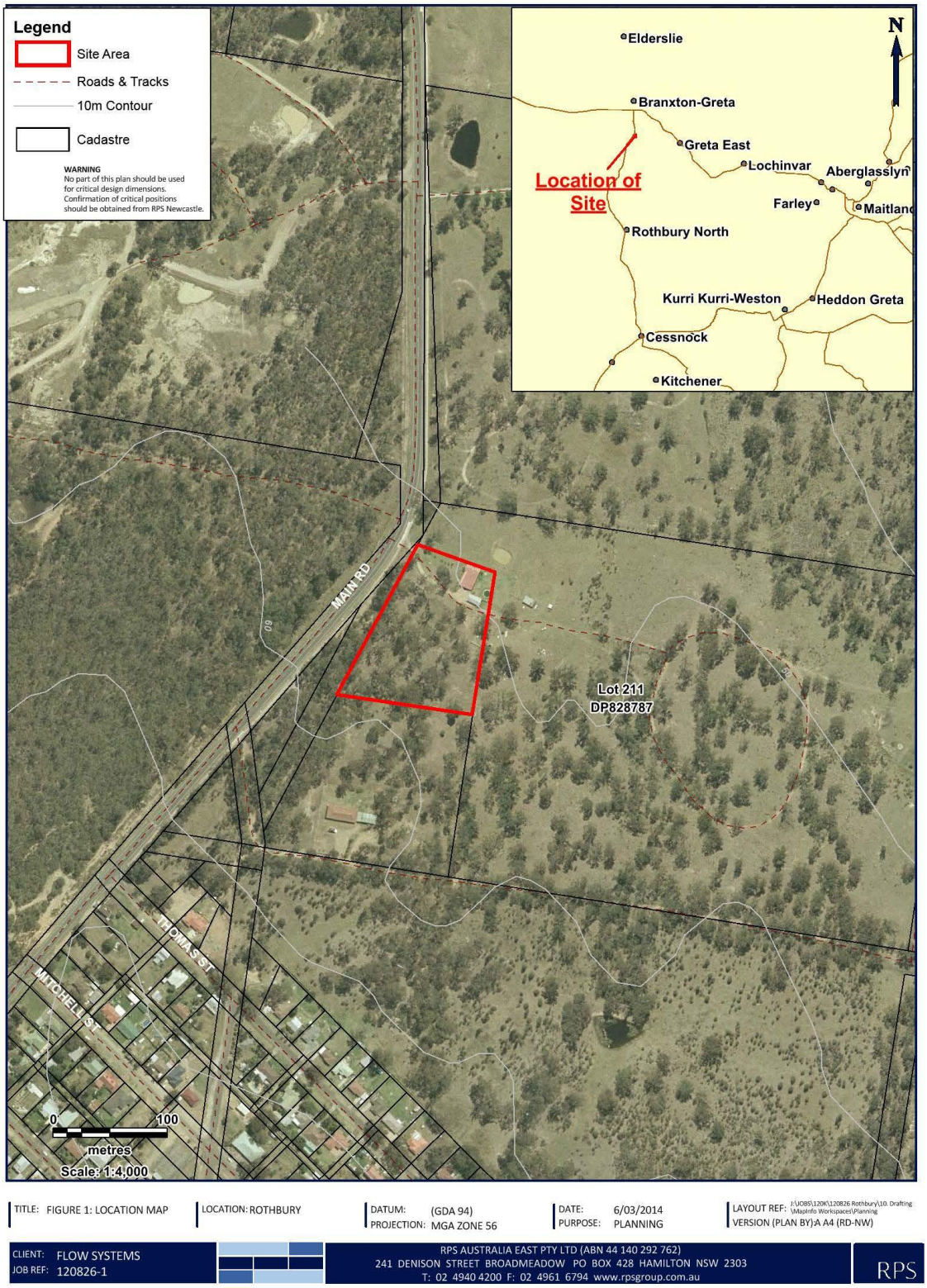

Figure 1 Location Plan

Figure 2 Architectural Drawing of the Huntlee LWC

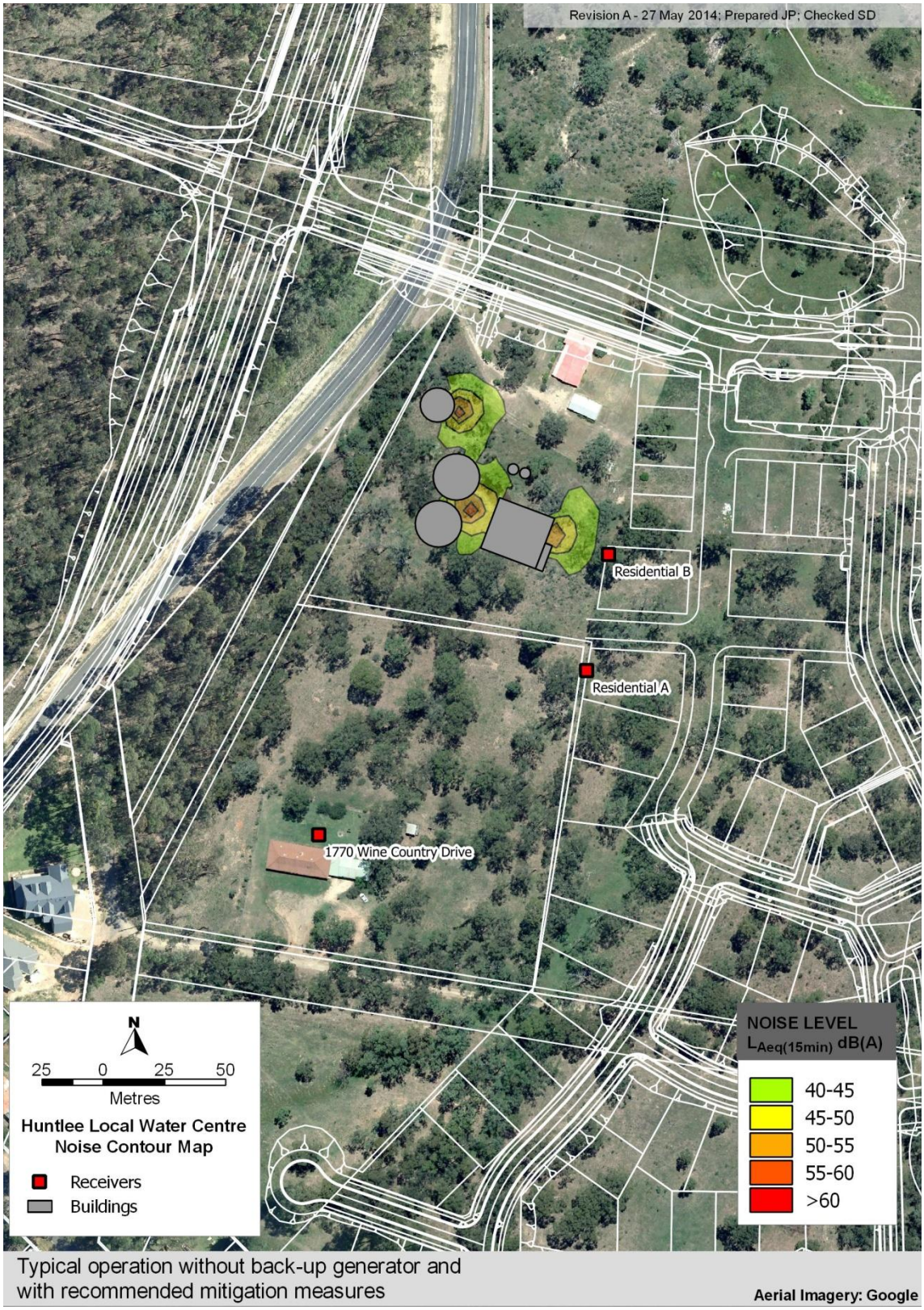

Figure 3 Noise Modelling - Normal Operation Without Back-Up Generator and with recommended mitigation measures

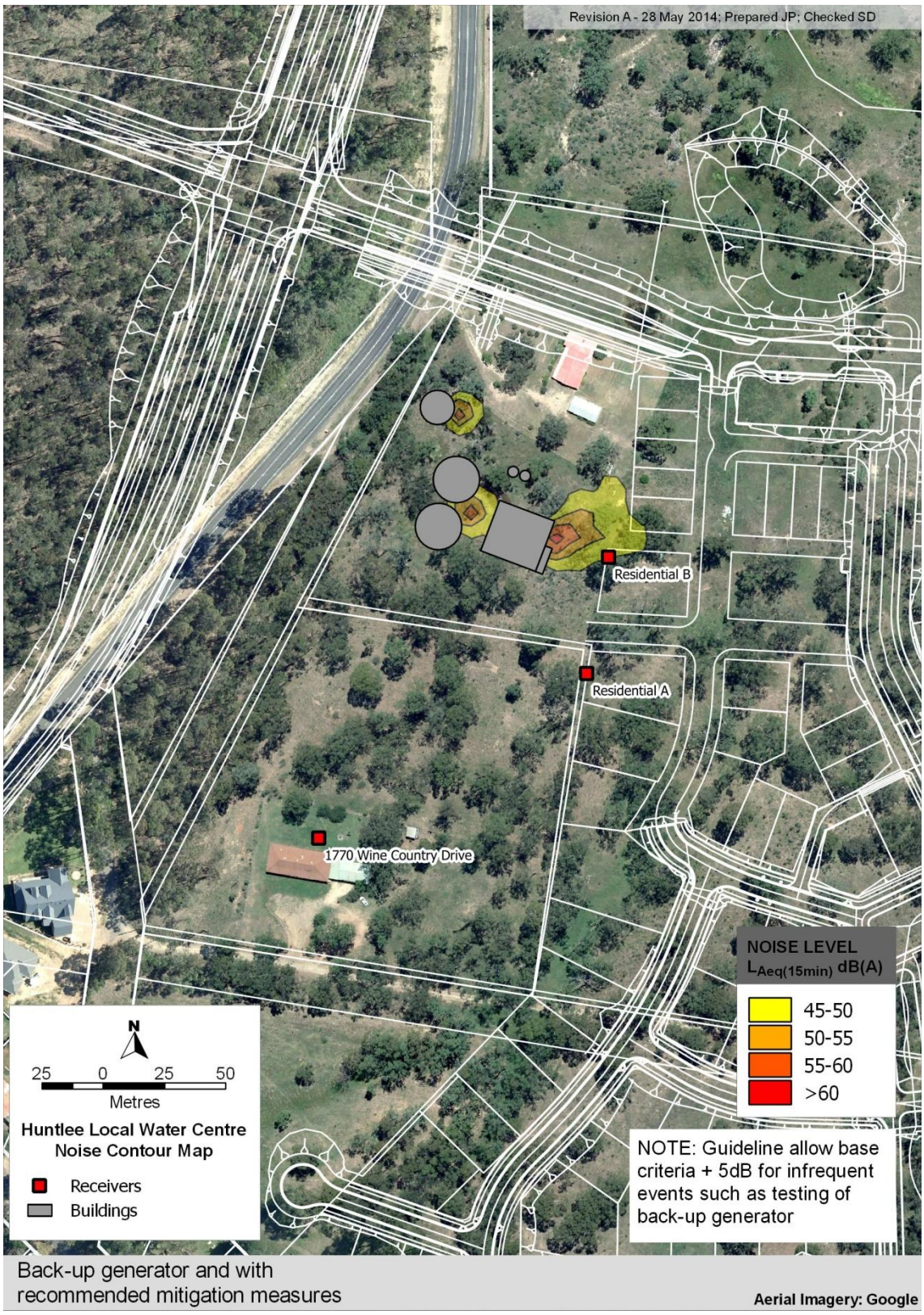

Figure 4 Noise Modelling – Abnormal Operation with back-up generator with recommended mitigation measures

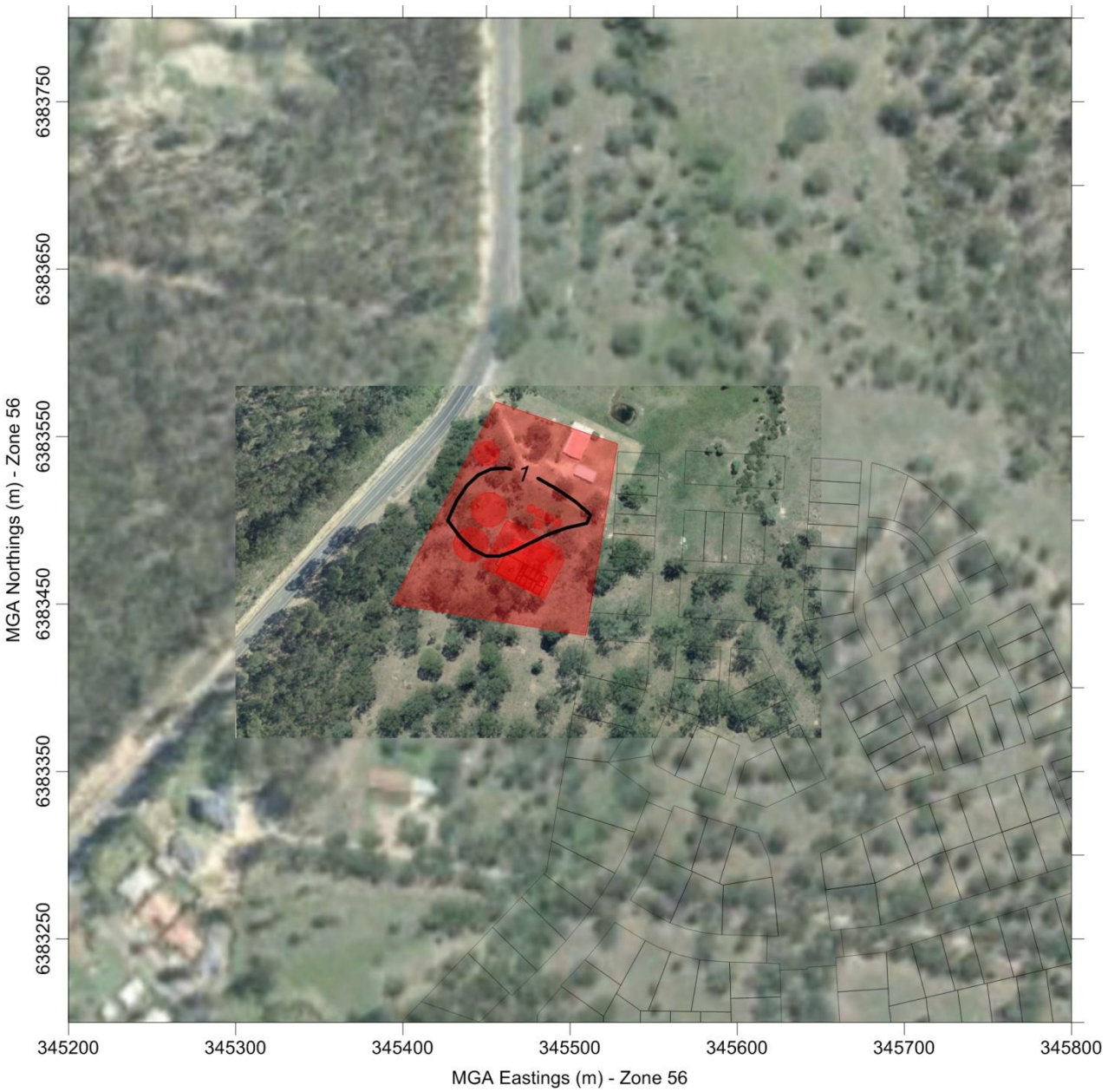

Figure 5 Odour Modelling - Predicted 99th percentile odour concentration (OU) when the Huntlee LWC is fully operational

Mitigation Measures

The REF provides a large number of mitigation measures that will avoid or reduce the potential impacts of the proposal. These mitigation measures have been designed to minimise and or mitigate, as far as practical, the potential impacts. A summary of the mitigation measures can be viewed in **Table 1** below.

Table 1 Impact and Mitigation Measures – Huntlee Local Water Centre

Impact	Mitigation Measures
General	All contractors and machine operators will be inducted on the environmental sensitivities of the work site(s) and relevant safeguards.
Land Capability, Erosion and Sediment Control	Sediment and nutrient controls will be implemented to reduce the impacts of stormwater, erosion and sedimentation on water quality. Specific erosion and sediment controls are to be contained within the site Construction Environmental Management Plan (CEMP).
	All erosion and sediment control measures will be established before excavation and vegetation clearance begins. Control measures are to remain in place until all surfaces have been fully restored and stabilised.
	Sandbags will be placed at the entry points to any culverts and stormwater channels to prevent sediment entering the stormwater system.
	Any spoil storage areas or temporary stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.
	Sediment control devices (e.g. silt fences, straw bales wrapped in geotextile etc will be installed parallel with the contours of the site and immediately down slope of any areas where the natural ground surface has been disturbed.
	Any spoil storage areas or stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.
	Sediment and erosion control devices will be inspected regularly, maintained to ensure effectiveness over the entire duration of the project, and cleaned out before 30% capacity is reached.
	Disturbed areas will be stabilised by revegetation within 10 days after completion of construction.
	The natural landform of the site will be restored as closely as possible to the pre-works condition.
Flora and fauna	The full extent of any vegetation clearance will be clearly documented and mapped in the site's CEMP. The CEMP will prepared by the Huntlee LWC construction contractor prior to the commencement of construction.
	Materials/equipment lay-down areas will be shown in the CEMP and located in cleared or degraded areas to prevent any damage to the surrounding plants or habitat.
	Materials, plant and equipment will not be stored within the drip-lines of any trees at the site.
	To prevent damage to vegetation outside the boundaries of access tracks, vehicles and machinery will be restricted to designated access tracks.
	Where access tracks run alongside areas of natural bushland, protective fencing or paraweb fencing is to be installed along the boundaries of the track to prevent vehicles from inadvertently entering/damaging bushland.
	Degradation or disturbance to areas of water-side (riparian) vegetation will be avoided to the greatest possible extent. Any such areas will be clearly identified in the CEMP.
	Where excavated soil is to be used in site restoration, it will be excavated and stockpiled in sequential layers corresponding to the existing soil profile. Topsoil and leaf litter is to be removed first and windrowed in separate stockpiles of less than 1m in height on the upslope side of excavations. Soil layers will be replaced sequentially so that the soil profile is restored as closely as possible to its pre-work status.
	All temporary erosion and sediment control devices such as silt-stop fencing will be removed from the site at the completion of the works or when the site is stabilised.

Impact	Mitigation Measures
Heritage (Aboriginal and non-Aboriginal)	All relevant Huntlee Water staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*, which may be implemented as a heritage induction.
	This Due Diligence Assessment Report must be kept by Huntlee Water so that it can be presented, if needed, as a defence from prosecution under Section 86(2) of the *National Parks and Wildlife Act 1974*.
	If unrecorded Aboriginal object/s are identified on the site during works, then all works in the immediate area must cease and the area should be cordoned off. OEH must be notified by ringing the Enviroline 131 555, so that the site can be adequately assessed and managed.
	In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area must be cordoned off. The proponent must contact the local NSW Police who will make an initial assessment as to whether the remains are part of a crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, OEH must be contacted by ringing the Enviroline 131 555. An OEH officer will determine if the remains are Aboriginal or not; and a management plan must be developed in consultation with the relevant Aboriginal stakeholders before works recommence.
	If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The OEH (Enviroline 131 555) should be notified, and works are only to recommence when an approved management strategy has been developed.
Stormwater and water quality	Mulch bunds up slope of the proposed disturbance areas.
	Hay Bales at 15m centres within the proposed road side swales.
	Sediment fences down slope of all disturbed areas and material stockpile areas.
	Disturbed areas will be stabilised by revegetation within 10 days after completion of construction.
	Site disturbance will be minimised by containing machinery access to site areas required for approved construction works.
	Erosion potential would be limited by managing runoff fetches and velocities, with measures such as contour drains, silt fences and level spreaders
	Sediment filters such as silt fences, straw bales, or turf strips will be located downstream of disturbed areas.
	The storage and handling of fuels and chemicals shall comply with Australian Standard AS1940.
	No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces.
	A 'spill kit' will be kept on site at all times for potential chemical or fuel spills.
	Refuelling, fuel decanting and vehicle maintenance work will take place in a designated sealed and bunded area.
	An Incident Management Plan (IMP) will be prepared as part of the CEMP and will include a contingency plan and emergency procedures for dealing with the potential spillage of fuel or other environmental incidents that may occur on the work site. The IMP should also contain procedures dealing with the unexpected onset of rainfall during the work period.
	Drainage systems will be checked at regular intervals and maintained to ensure they are operating at full capacity (eg clearance of debris from drainage lines).
Noise	Additional lining of colorbond on the internal face of the plant room with appropriate air gap to accommodate 50mm thick polyester insulation of density 14kg/m3
	Erection of a wall at least 1m above the exhaust at the eastern and northern face of the back-up generator platform. The wall is to be constructed of 75mm Hebel panel or masonry structure or modular wall system lined on the inside with polyester acoustic insulation of density 14kg/m3 faced with perforated foil.
	All equipment used will comply with AS2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.
	Work and deliveries will only occur during the following times: Monday to Friday 7am to 6pm, Saturday 7am to 6pm. No construction work or deliveries will occur on Sundays or public holidays.

Impact	Mitigation Measures
Noise (continued)	Regular and effective maintenance of all equipment, including vehicles moving on and off the site, will be conducted.
	Plant and equipment which is used intermittently will either be shut down in the intervening periods between works or throttled down to a minimum.
	Any portable equipment with the potential to create high levels of noise (e.g. compressors, generators) will only be selected for use if it incorporates effective noise control. This equipment should be located, where practical, so that natural ground barriers are between it and the nearest potentially affected receivers.
Odour and Air Quality	All vehicles and machinery will be fitted with approved exhaust systems to maintain exhaust emissions within accepted standards.
	Machinery and vehicles will not be left running or idling when not in use for long periods.
	Odour or air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable
	All loads of excavated material, soil, fill and other erodible matter that are transported to or from the work site will be kept covered at all times during transportation and will remain covered until they are unloaded either for use at the work site, reuse or disposal at a OEH licensed waste disposal facility.
	All work sites, general work areas and stockpiles will be closely monitored for dust generation and watered down (with clean water) or covered (via seeding or tarpaulins) in the event of dry and/or windy conditions.
	Rehabilitation of disturbed surfaces would be undertaken within 10 days of completion of construction on site.
Bushfire	A 10 m wide Asset Protection Zones (APZ) is recommended to the south of the site between the hazards and proposed development.
	A temporary 10 m wide APZ is recommended to the east of the site between the hazard and the Huntlee LWC. Once subdivision occurs immediately to the east the temporary APZ will no longer be necessary as the hazard will be removed.
	All new buildings and structures are to be constructed in accordance with AS3959 – 2009.
	Internal road networks should be designed and constructed in accordance with Section 4.1.3 of PBP 2006.
	Any proposed development is to be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005. Alternative water supplies may be considered where the proponent accepts that an adequate supply of water for firefighting operations can be provided.
Traffic and access	Any impact upon Wine Country Drive associated with the works will be remediated to the satisfaction of the RMS.
	The Contractor will maintain a complaints register. Any complaints received will be responded to as soon as possible.
	A traffic control plan prepared by a suitably qualified person will be submitted to Huntlee Water for approval prior to commencement of work on the site.
Visual character	On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works will be removed from the work site(s) and any adjacent affected areas.
	Work sites will be restored as close to their original condition as possible following the completion of the proposed works.
Waste generation	All waste generated during the course of the works will be reused or removed from the work areas as soon as practicable and disposed of in accordance with the waste disposal safeguards.
	All vessels used for contaminated or hazardous waste should be sealed, labelled according to their contents, and stored within bunded areas until their removal from the work site.
	Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at an OEH licensed waste depot.

Impact	Mitigation Measures
Waste generation (continued)	The work site will be left clean and free of weeds, debris and other rubbish at the end of works.
	All hazardous wastes on site will be removed and disposed in accordance with the state and national regulations and guidelines and best practice for the removal of these materials.
	The Contractor's recycling and reuse proposal will be detailed in the CEMP.
	Excess spoil material that cannot be reused on site will be utilised in the ongoing earthworks as part of the adjacent subdivision works.
	Green waste from vegetation clearing will be either chipped for reuse; retained for rehabilitation; or mulched and spread immediately after the trench has been covered to prevent encroachment by weed species and minimise erosion. NB: where mulched vegetation is to be used measures to prevent organic material entering the local waterway shall be installed.
	Off-cuts of piping and other construction material will be recycled where possible.
Amenity and public information	The Contractor will maintain a complaints register. Any complaints received will be responded to as soon as possible.
	Accurate public information signs will be displayed while work is in progress and maintained in presentable manner.

Conclusion

Construction of the Huntlee LWC will allow the provision of reticulated sewer services to the Huntlee residential development. Following the assessment of potential environmental impacts through the work of various specialists the REF demonstrates that the proposal will result in no impact beyond relevant guidelines and legislation.

Various minor environmental impacts have been identified in this REF and these are generally temporary in nature. Specifically, it is unlikely that the proposal will have a significant impact on threatened species, populations and ecological communities listed pursuant to the Threatened Species Conservation Act, 1995 or impact on matters of National Environmental Significance pursuant to the Environmental Protection and Biodiversity Conservation Act, 1999. There are no long term adverse effects created by the construction or operation of the proposal. The mitigation measures contained within the REF, which will be implemented, will avoid or reduce the potential impacts of the proposal.

The proposal will provide a service essential for the development of the approved Huntlee residential development which greatly benefits the community by ensuring supply of affordable housing for the Cessnock and Singleton areas and provide recycled water to the new development.