

Coal & Allied

NORTHERN ESTATES

MINMI - LINK ROAD

APPENDIX A ■ CONCEPT PLAN DESIGN GUIDELINES

DATE ■ MAY 2014
PREPARED BY ■ RPS and JMD

Contents

Introduction	1		
A.1 Urban Design Concept Plan	2		
A.1.1 Background	2		
A.1.2 Site Constraints & Opportunities	4		
A.1.2.1 Site Opportunities	4		
A.1.2.2 Site Constraints	6		
A.1.3 Concept Plan Overview	11		
A.1.4 Indicative Lot Layout	19		
A.1.5 Lot Typologies	20		
A.1.6 Building Heights	21		
A.1.7 Proposed Precincts	22		
A.1.7.1 Minmi East Precinct	25		
A.1.7.2 Minmi Extension Precinct - Heritage Character	26		
A.1.7.3 Village Centre Precinct - Activity Hub	27		
A.1.7.4 Link Road North Precinct - Bushland Character	29		
A.1.7.5 Link Road South Precinct	31		
A.1.8 Proposed Character Areas	33		
A.1.8.1 Village Centre Character	34		
A.1.8.2 High Street Character	36		
A.1.8.3 Traditional Housing Character	38		
A.1.8.4 Conservation Heritage Character	40		
		A.1.8.5 Park Side Character	42
		A.1.8.6 Lake Side Character	44
		A.1.8.7 Creek Side Character	46
		A.1.8.8 Hill Side Character	48
		A.2 Landscape Concept Plan	50
		A.3 Development Staging Plan	52
		A.4 Concept Plan Land Use Budgets	54
		A.4.1 Land Use Summary	54
		A.4.2 Character Areas & Yield by Precinct	55
		A.4.3 Average Lot Size & Range by Precinct	56

Figures

Figure A.1.1 Minmi and Link Road Conservation and Development Area	3	Figure A.1.8.5 Indicative Concept - Park Side Neighbourhoods	43
Figure A.1.2.1 Indicative Site Opportunities	5	Figure A.1.8.6 Indicative Concept - Lake Side Neighbourhoods	45
Figure A.1.2.2 Indicative Site Constraints - Drainage and Open Space	7	Figure A.1.8.7 Indicative Concept - Creek Side Neighbourhoods	47
Figure A.1.2.3 Indicative Site Constraints - Mining	8	Figure A.1.8.8 Indicative Concept - Hill Side Neighbourhoods	49
Figure A.1.2.4 Indicative Site Constraints - Slope	9	Figure A.2 Landscape Concept Plan	51
Figure A.1.2.5 Indicative Site Constraints - Slope Constrained Land	10	Figure A.3.1 Indicative Staging Plan	53
Figure A.1.3 Indicative Concept Plan	13		
Figure A.1.4 Indicative Lot Layout	19		
Figure A.1.6 Indicative Building Heights	21		
Figure A.1.7 Indicative Proposed Precincts Plan	22		
Figure A.1.7.1 Minmi East Precinct	24		
Figure A.1.7.2 Minmi Extension Precinct	26		
Figure A.1.7.3 Village Centre Precinct	28		
Figure A.1.7.4 Link Road North Precinct	30		
Figure A.1.7.5 Link Road South Precinct	32		
Figure A.1.8 Allocation of Typical Lot Types	33		
Figure A.1.8.1 Indicative Concept - Village Centre Neighbourhoods	35		
Figure A.1.8.2 Indicative Concept - High Street Neighbourhoods	37		
Figure A.1.8.3 Indicative Concept - Traditional Neighbourhoods	39		
Figure A.1.8.4 Indicative Concept - Conservation Neighbourhoods	41		

Introduction

This Concept Plan forms the basis of a major development application by Coal & Allied for the future development of land at Minmi in the Lower Hunter. It forms Appendix A to the Environmental Assessment (EA) prepared by Urbis, which provides a review of the Concept Plan in relation to relevant planning provisions and other general requirements.

Appendix A is structured as follows:

A.1 Urban Design Concept Plan

Summarises the key design elements and principles. The concept plan describes the development footprint, defined by the site boundaries and existing site attributes.

The concept plan is divided into five urban precincts. Each precinct is distinguished by a different urban character in response to housing density, mix of land uses and the precincts context within the site and its surrounds.

A.2 Landscape Concept Plan

The landscape strategy plan identifies the site's key features. These features are recognised in the design of the development in the broad scale pattern of land use and down to the detailing of streetscapes and public spaces.

A.3 Development Staging Plan

Describes the intended development sequence and timing.

A.4 Concept Plan Land Use Budgets

Outlines the indicative lot yields.



A.1 Urban Design Concept Plan

A.1.1 Background

The Minmi/Link Road site (the subject land) is located in the Lower Hunter Region of New South Wales within both Lake Macquarie City Council and Newcastle City Council. The subject land extends both north and south of the Newcastle Link Road, and sits east of the F3 Freeway and immediately west of Blue Gum Hills Regional Park.

The subject land surrounds but is buffered from the existing township of Minmi and adjoins the existing residential areas of Cameron Park, The Outlook, The Sanctuary, Hidden Waters and Kingston Fletcher.

The subject land has been identified as future urban area, within the Lower Hunter Regional Strategy.

The development footprint has been modified from that originally prescribed, after detailed analysis of the opportunities and constraints associated with the subject site. The visual impact of the development on the adjoining Minmi settlement was one of the key factors influencing the final development footprint, together with ecological, flooding, slope and geotechnical constraints.

The Concept Plan has been developed on the basis of five distinct precincts. These link the existing Minmi Township to the neighbouring residential estates of Cameron Park, The Outlook, The Sanctuary, Hidden Waters and Kingston Fletcher. The key features and form of these precincts are discussed in detail in this document.

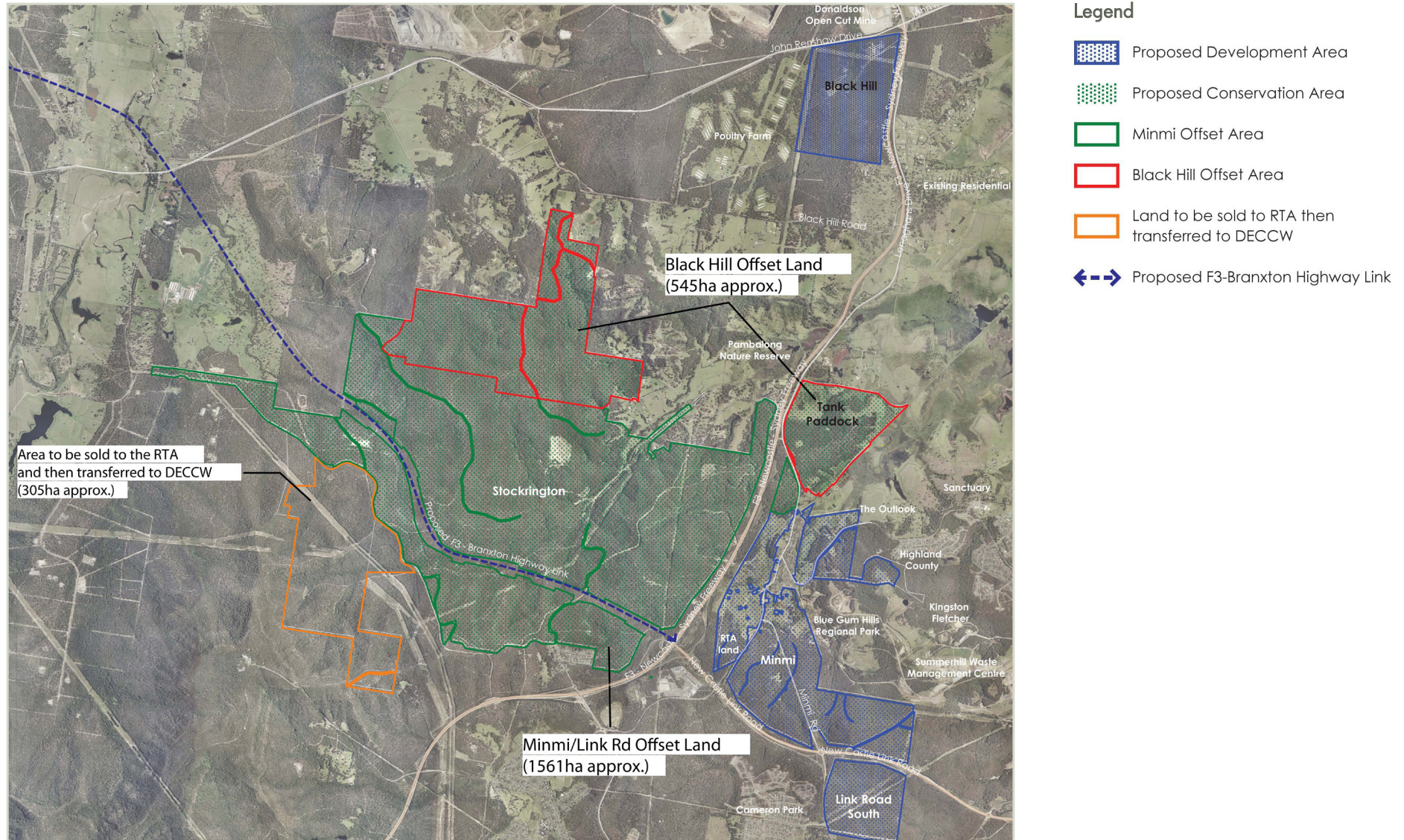


Figure A.1.1 Minmi and Link Road Conservation and Development Area

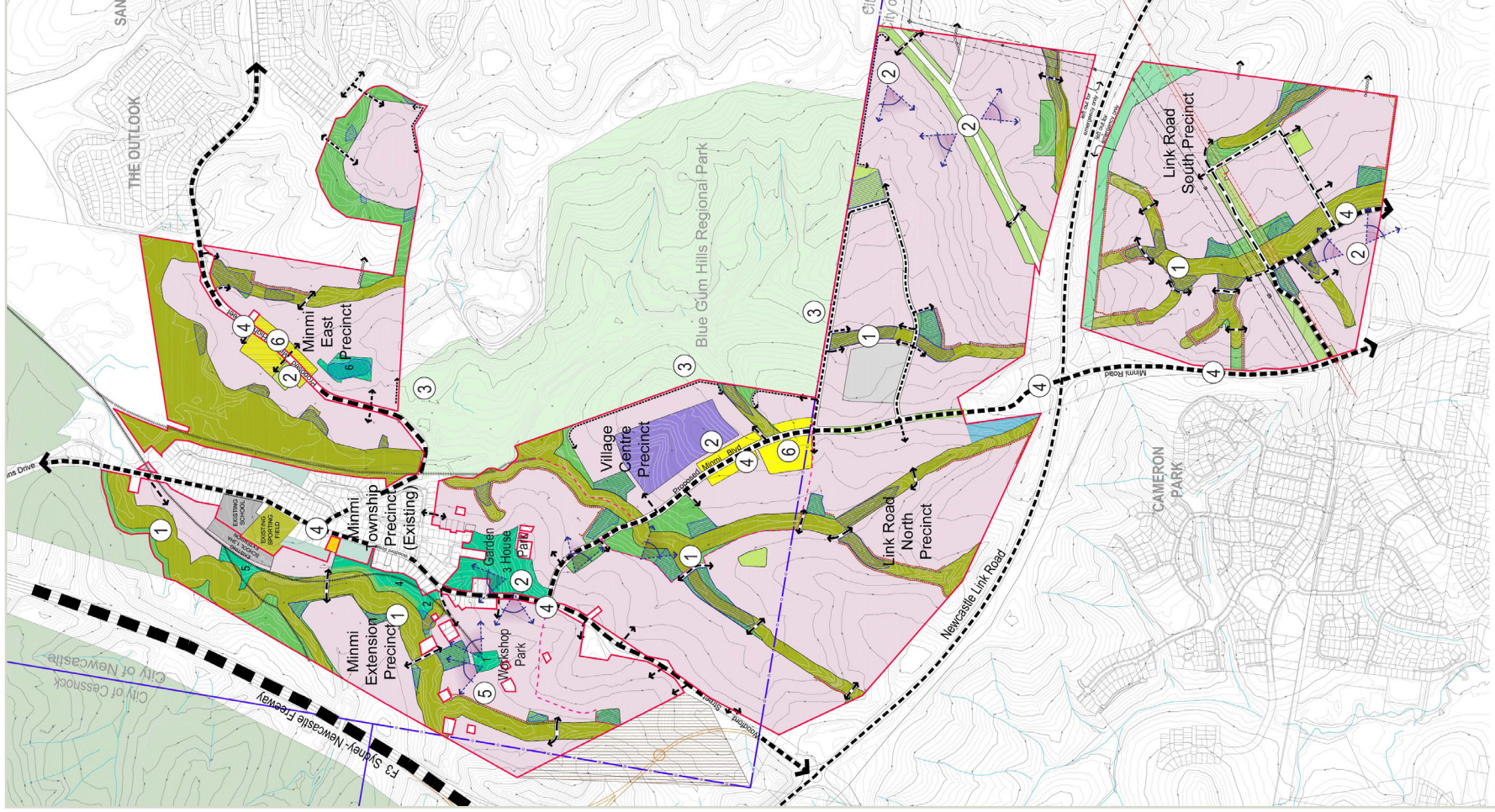
A.1.2 Site Constraints and Opportunities

A.1.2.1 Site Opportunities

There are a number of key development constraints and opportunities associated with the site that have been identified through the concept planning process:

Development Opportunities

- Create open space areas on land mildly constrained by past mining activity;
- Include local vegetation, interpretation of Minmi's mining heritage, and landscape elements in the design of proposed neighbourhoods;
- Establish wildlife corridors through the site, via riparian corridors and linking Blue Gum Hills Regional Park to Hexham Swamp;
- Improve existing public transport services by providing opportunities for more accessible and more frequent bus services;
- Improve existing road access to Minmi and surrounding residential areas and open space by upgrading and increasing access points, and by providing a network of cycle and pedestrian pathways;
- Increase the range and quality of social infrastructure, including outdoor recreation opportunities available to the local community; and to meet demands associated with additional population;
- Reinforce the economic vitality of the existing township and the range of services available there.



Legend

- Site Boundary
 - Existing Major Contour (10m Interval)
 - Existing Minor Contour (2m Interval)
 - Development Precinct Boundary
 - Existing Heritage Railway Tracks
(proposed alignment of shared pedestrian/cycle pathways)
 - Proposed F3 motorway RTA Extension
 - Proposed RTA Land
 - Existing Transgrid Easement
 - Existing Energy Australia Easement
 - Existing Dual Power Pole Position
(Monteath, 2005)
 - Existing Electricity Transmission Lines
(Monteath, 2008)
 - Existing Creek Line
 - Blue Gum Hills Regional Park
 - Coat & Allied Conservation Area
 - Existing Open Space
 - Indicative Proposed Bus Stops with
800m Walking Radius
 - Indicative Viewing Points
- Proposed Land Uses**
- Proposed Village Centre Mixed Use / Retail (incl Community Facilities)
 - Proposed Mimmi High Street Mixed Use / Retail
 - Proposed Mimmi Township Mixed Use / Retail
 - Proposed Independent Living Units
 - Proposed Residential (includes Local Roads)
 - Proposed Water Reservoir Lot
 - Existing School Extension
 - Proposed School
 - Proposed Landscape Road Corridor
- Major Roads**
- F3 - Sydney-Newcastle Freeway
 - Newcastle Link Road
 - Collector / Spine
 - Road Bus Route on Local Road
 - Esplanade Road to Regional Park
 - Indicative Local Access Road Connections
 - Potential Local Road Connection to east if required
- Open Space**
- Neighbourhood Parks
 - Drainage Corridors
 - Passive Open Space
 - Link Road Edge

NOTES

- 1 Creek Lines as potential key component of open space network, wildlife corridors and Water Sensitive Urban Design initiatives across the site.
- 2 Opportunities to link into adjoining Blue Gum Hills Regional Park as per BGHRP Plan of Management.
- 3 Opportunities to capitalise view corridor within hilly site and existing heritage conservation area.
- 4 Opportunities to introduce an integrated road system, improving accessibility for pedestrian and cyclist, and also introducing public transport route within the main road system.
- 5 Opportunities to utilise open space integrated with interpretation of existing Mimmi mining heritage whilst improving social infrastructure requirements.
- 6 Opportunities to introduce new centres within the sites to enhance economic vitality.

Figure A.1.2.1 Indicative Site Opportunities

A.1.2.2 Site Constraints

Development Constraints

- Past mining activities have impacted upon the development potential of the land, thereby constraining development footprints, building heights and structure type;
- Management and planning for riparian zones and flood prone land;
- Noise buffering and mitigation along the F3 Freeway and the Newcastle Link Road;
- Electricity transmission easements traversing the Link Road North and Link Road South Precincts;
- Development on areas with slope greater than 20% gradient;
- Heritage conservation requirements and maintaining view corridors;
- Bushfire impacts of surrounding vegetation and vegetation retained within the site.

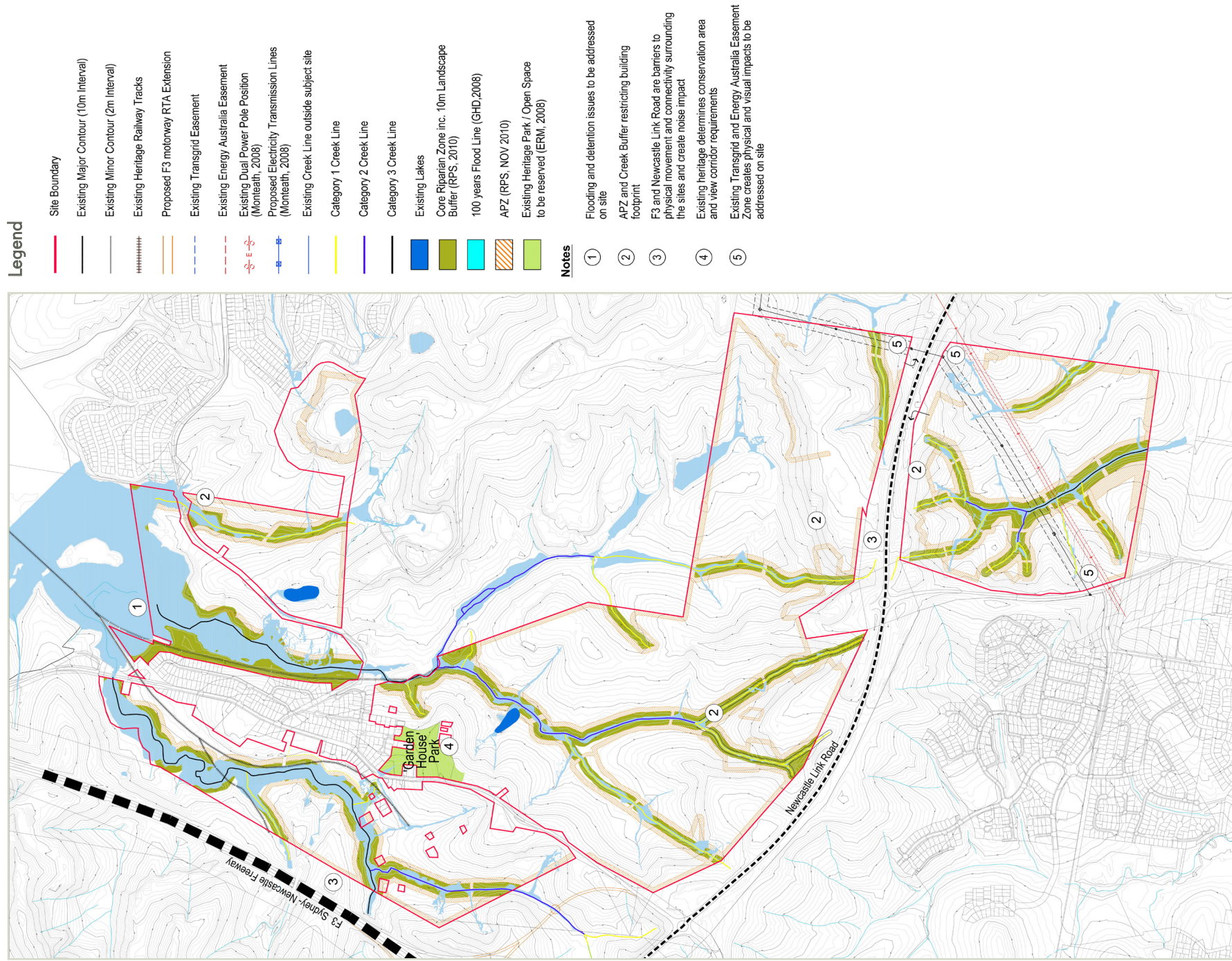
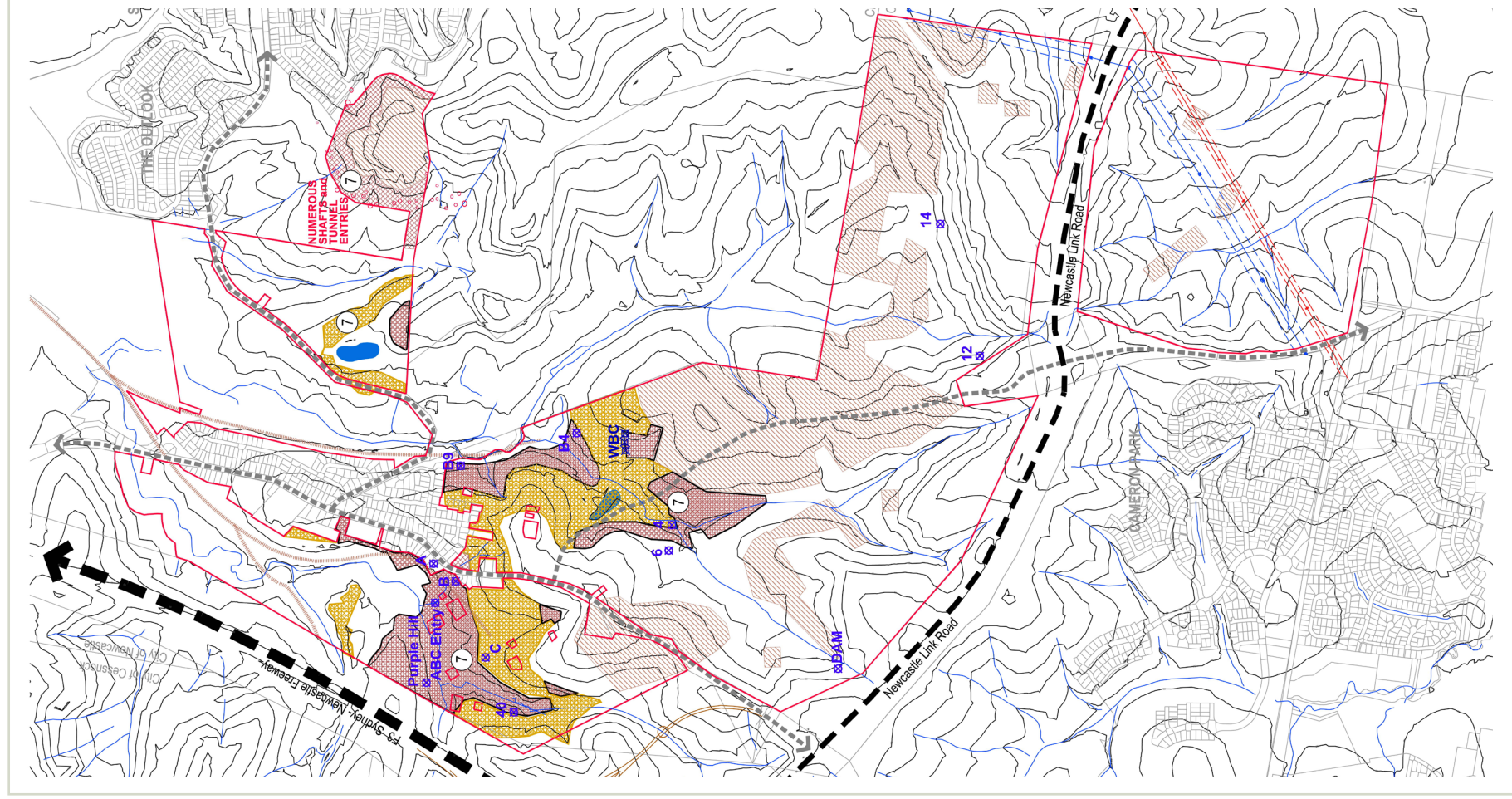


Figure A.1.2.2 Constraints - Drainage and Open Space



Legend

- Site Boundary
- Existing Major Contour (10m Interval)
- Existing Minor Contour (2m Interval)
- Existing Heritage Railway Tracks
- Proposed F3 motorway RTA Extension
- Existing Transgrid Easement
- Existing Energy Australia Easement
- Existing Dual Power Pole Position (Monteath, 2008)
- Proposed Electricity Transmission Lines (Monteath, 2008)
- Existing Creek Line
- Existing Lakes
- Single Storey - Specialised design required (Douglas Partners, 2008)
- High Risk Pot Hole (Douglas Partners, 2008)
- Single Storey - Low Risk Pot Hole (Douglas Partners, 2008)

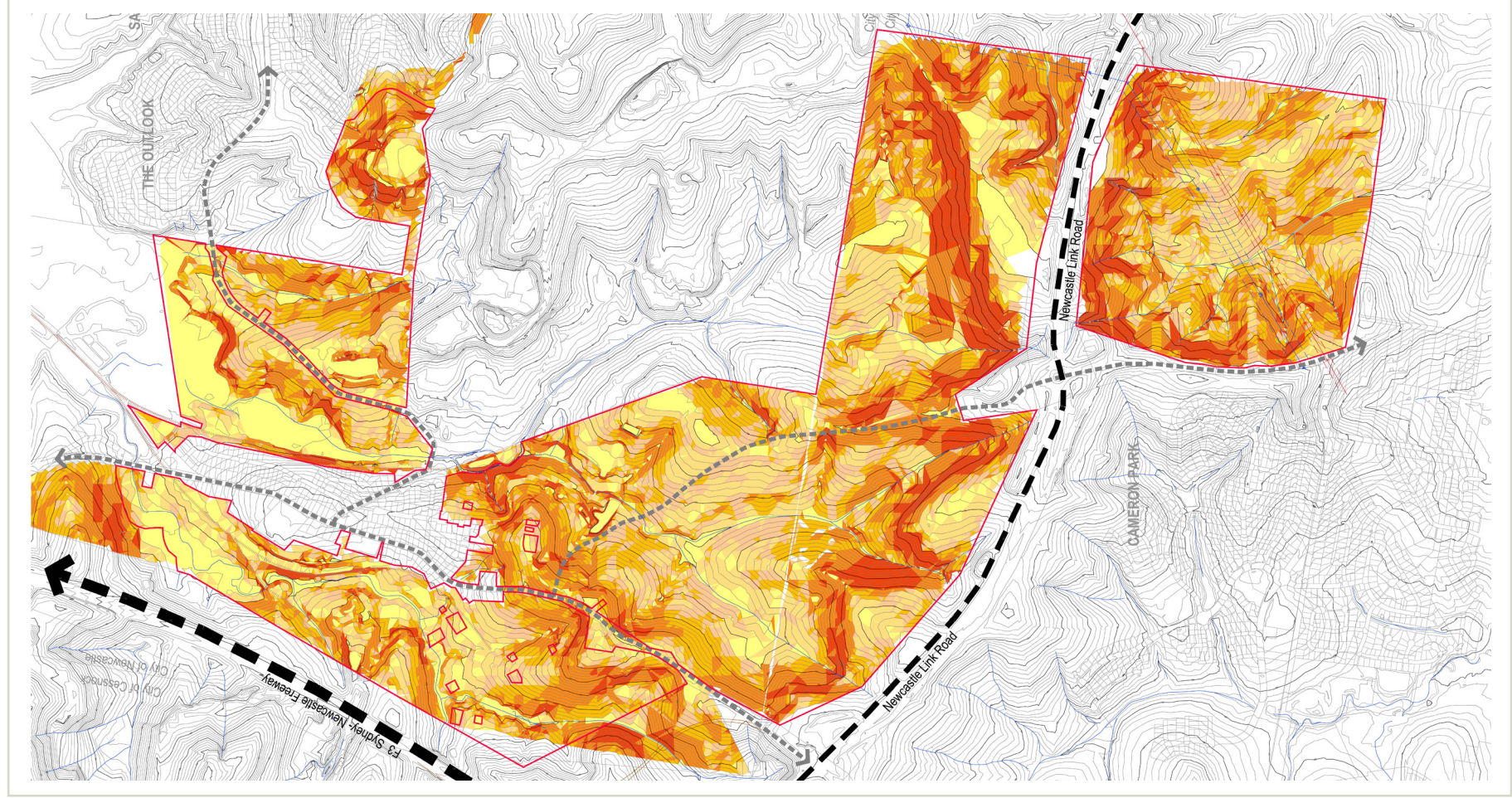
Existing Mining Shafts

- ☒ Shaft Locations (Located)
- ☒ Wallisend Borehole Colliery (WBC) Entry Location
- Shaft Locations (Uncertain)

Notes

- ⑦ Special consideration required prior to building in this area due to mining constraints

Figure A.1.2.3 Constraints - Mining



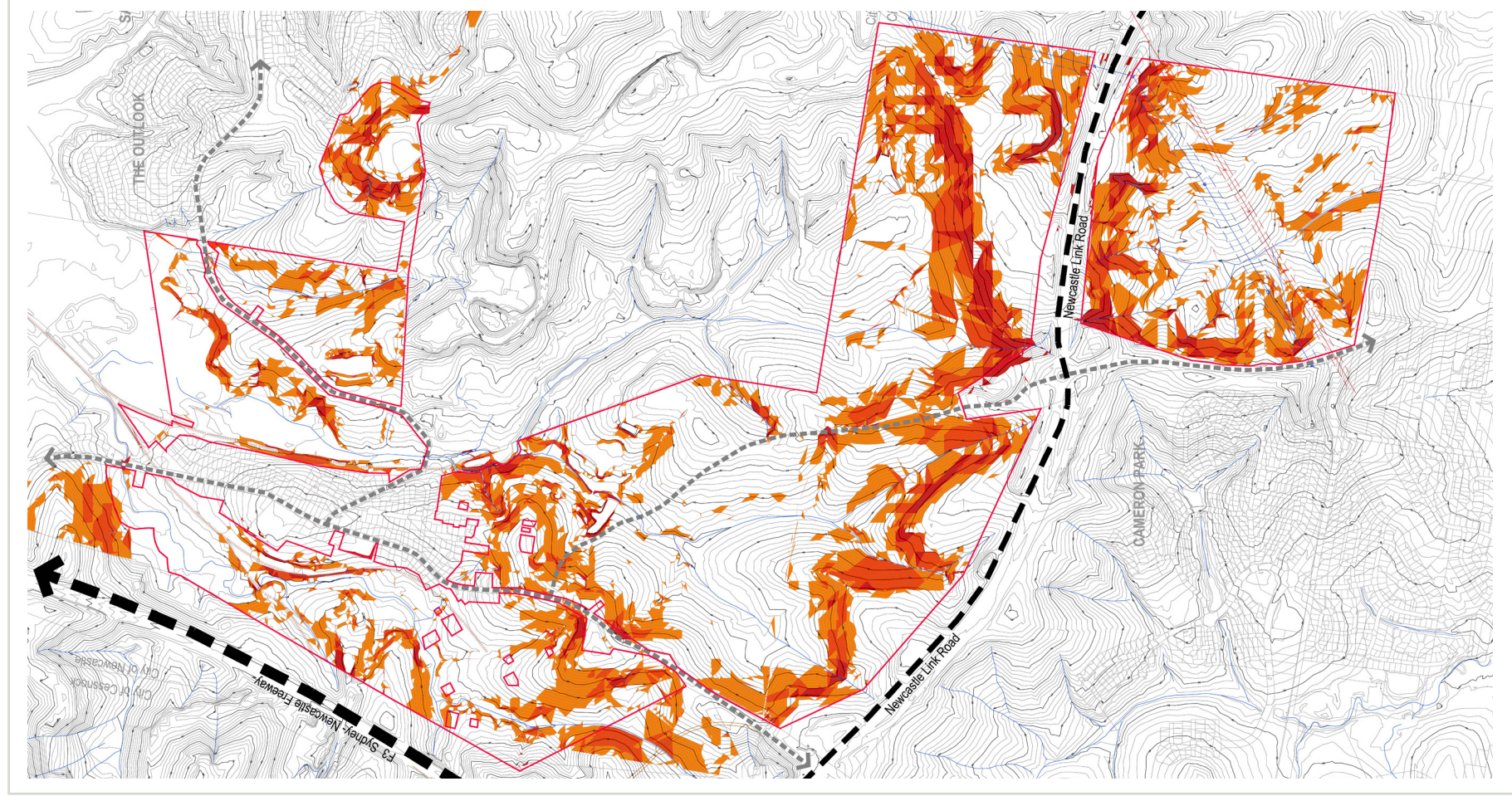
Legend

- Site Boundary
- Existing Major Contour (10m Interval)
- Existing Minor Contour (2m Interval)
- Existing Heritage Railway Tracks
- Proposed F3 motorway RTA Extension
- Existing Transgrid Easement
- Existing Energy Australia Easement
- Existing Dual Power Pole Position (Monteath, 2008)
- Proposed Electricity Transmission Lines (Monteath, 2008)
- Existing Creek Line

Slope Classes

- Slope 0 - 6% (0 - 1:16)
- Slope 6 - 10% (1:16 - 1:10)
- Slope 10 - 12% (1:10 - 1:8)
- Slope 12 - 16.6% (1:8 - 1:6)
- Slope 16.6 - 25% (1:6 - 1:4)
- Slope 25 - 100% (1:4 - 1:1)

Figure A.1.2.4 Constraints - Slope



Legend

- Site Boundary
- Existing Major Contour (10m Interval)
- Existing Minor Contour (2m Interval)
- Existing Heritage Railway Tracks
- Proposed F3 motorway RTA Extension
- Existing Transgrid Easement
- Existing Energy Australia Easement
- Existing Dual Power Pole Position (Monteath, 2008)
- Proposed Electricity Transmission Lines (Monteath, 2008)
- Existing Creek Line

Slope Constrained Land

- Slope 16.6 - 25% (1:6 - 1:4)
- Slope 25 - 33.3 (1:4 - 1:3)
- Slope 33.3 - 100% (1:3 - 1:1)
- slope limit for APZs

Figure A.1.2.5 Slope Constrained Land

A.1.3 Concept Plan Overview

The Concept Plan has been developed in response to the opportunities and constraints posed by the site. The proposed urban structure has been influenced strongly by the proximity of the site to the existing Minmi township and the need to integrate the future neighbourhoods with the existing township, including its heritage. Key principles used to guide preparation of the Concept Plan were developed in the early phases of the project. They include:

- Protecting creeks and drainage lines within riparian corridors;
- Protecting the scale and character of housing near to Minmi village;
- Incorporating heritage items and places of significance within the overall concept design;
- Ensuring a permeable network of streets and pathways;
- Ensuring that the majority of dwellings are within a 400m radius of a local park or recreation area and are close to local public transport;
- Minimising potential stress on existing education infrastructure through the introduction of a new school precinct outside of Minmi;

- Providing mixed-use and higher residential densities around the existing township of Minmi and the proposed school south of the proposed Village Centre;
- Retaining Woodford Street and Minmi Road as the primary streets servicing the area;
- Minimising cut and fill through inclusion of street and block patterns that follow contour lines;
- Ensuring a range of housing types are provided within each precinct.

These principles have been translated into a Concept Plan that seeks to achieve a balance between environmental, social and economic issues. Key features of the Concept Plan include the following:

Urban Precincts and Characters

Five unique precincts have been identified within the development footprint. These precincts have been defined based on their relationship with existing urban areas and the surrounding environment. The urban structure and form of these precincts have been designed to ensure key attributes and features of the existing landscape will be incorporated into any future development. The five precincts are:

1. **Minmi East:** located between existing Minmi township and The Outlook, will act as a “gateway” to the Minmi area from the east.

2. **Minmi Extension:** located west of existing Minmi township incorporating existing heritage Garden House and Workshop Parks.
3. **Village Centre:** located in the centre of the site, proposed as a new activity hub for the area.
4. **Link Road North:** located along the northern boundary of the Newcastle Link Road, acting as a “gateway” to Minmi and future development to the north.
5. **Link Road South:** the only precinct located south of the Newcastle Link Road, including a connector road linking the proposed development with Cameron Park and other future developments.

Connectivity, Access and Movement

The main access to the development will be via the proposed Minmi Boulevard, which links with Newcastle Link Road at the southern end and Woodford Street at the northern end. Minmi Boulevard will cater for the majority of north-south through traffic. The proposed intersection of Newcastle Link Road and Minmi Boulevard will provide access for the Link Road North Precinct and then continuing south to the Link Road South Precinct via Minmi Road.

Open Space Network

A large proportion of the 520Ha site will become new public parkland comprised of:

- Three neighbourhood parks located within the proposed precincts;
- Two historically significant parks located in the Minmi Extension Precinct adjacent to the existing village, identified on the Concept Plan as “Workshop Park” and “Garden House Park”;
- A linear park incorporating the heritage walk that aligns with the former railway line located west of the existing Minmi township.
- Garden House Park is located along Woodford Street in an existing clearing and will include public art that interprets the mining history of the area;
- An open space network of riparian corridors;
- Bushland reserves dedicated in periphery areas around the development footprint, combining buffer zones, conservation lands and bushfire asset protection zones.

A.1.3 Indicative Concept Plan

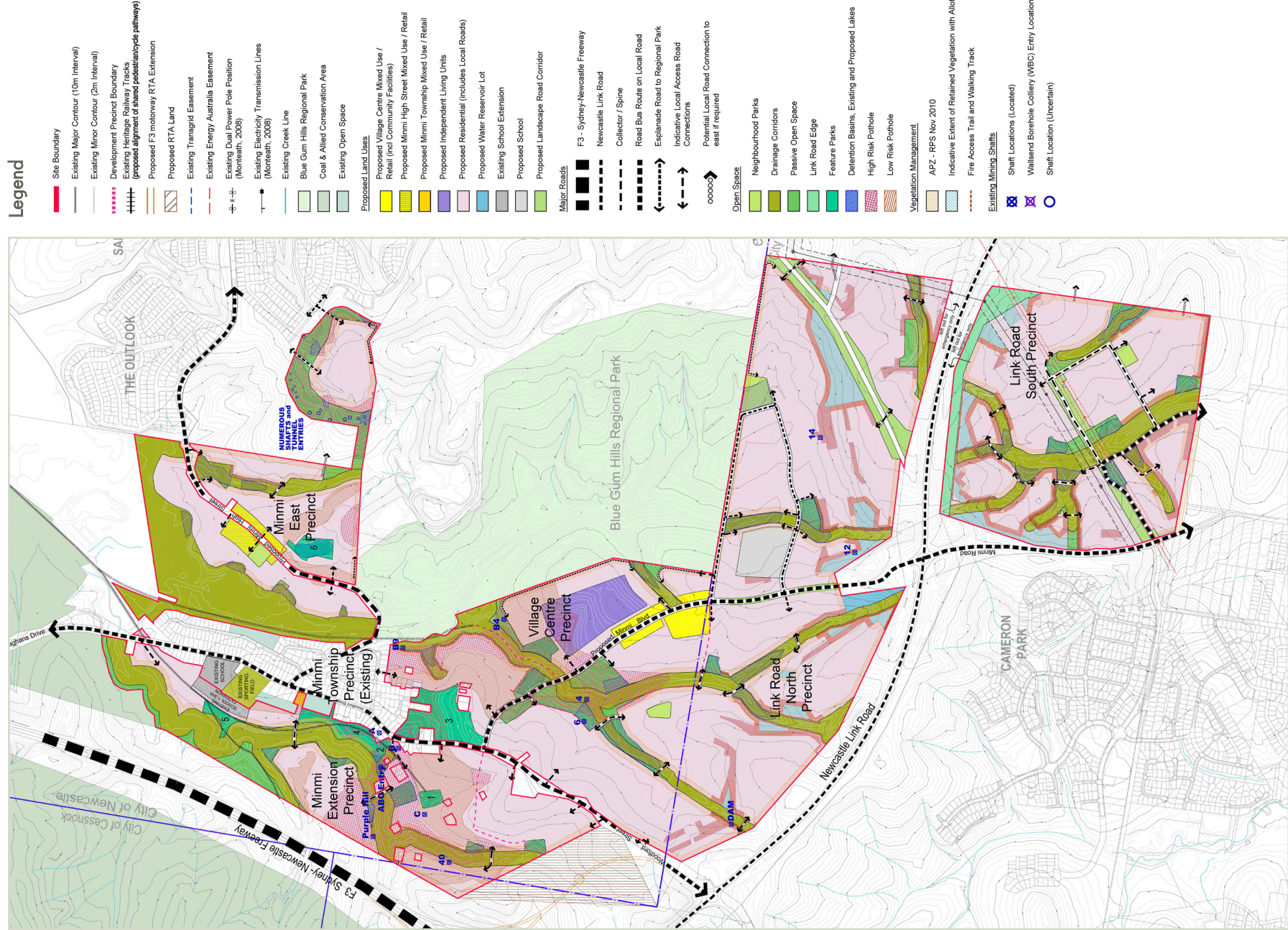


Figure A.1.3 Illustrative Concept Plan

Visual Amenity - Development Principles

The visual amenity of the proposed development, particularly when viewed from existing major roads that surround and bisect the site has been addressed in a number of ways. These major roads are: the F3 Sydney to Newcastle Freeway, the Newcastle Link Road, Minmi Road south of the Link Road and Woodford Street in Minmi township. A discussion of the Visual Impact of the proposal when viewed from the Blue Gum Hills Regional Park, the proposed conservation lands and the existing Minmi Village also follows.

F3 Sydney to Newcastle Freeway

Views from the Freeway to the Minmi Village Extension precinct will be interrupted by noise barriers, roadside cuttings and existing trees located within the current road reserve. These features limit views into the site to oblique glimpses. The concept plan has adopted the following principles to lessen impact upon these brief and indirect view lines:

- Larger lots are proposed in the Minmi Extension Precinct to ensure that tree cover is retained within lots, and that gardens will grow in time to soften the appearance of housing. Housing particularly that close to the Freeway will therefore sit in a landscaped setting;
- Wide bands of vegetation will be retained within riparian corridors framing the development areas and dividing them into smaller pockets of housing. Existing vegetation along drainage corridors will

be supplemented by regeneration of parts of those corridors cleared by previous land use activities. Large areas of open space run adjacent to the freeway corridor preserving existing vegetation and screening out any views of housing closer to Woodford Street.

- Housing in steeper areas through this precinct will respond to the slope reducing disturbance of the existing landform.

Therefore views into the development from the Freeway will be glimpses through retained trees towards a residential area largely screened by existing topography (the precinct occupies the sides of a gully network and therefore slopes down away from the road), and by a mix of retained trees and cultivated planting.

Newcastle Link Road

Views into both the Link Road North and South Precincts from the Link Road are interrupted by existing heavily vegetated embankments by the roadside with brief views down into gully/creek systems within the site. In both precincts vegetation has been preserved within these gullies/creek corridors in public open space. Asset protection zones along the creek corridors push housing further back from the creek lines and the view lines down the gullies.

Areas of retained vegetation on steeper slopes within the site will further interrupt views.

- The Concept Plan has provided a 40m wide

vegetation corridor along the southern edge of the Link Road reserve which adds to the already significant width of the road corridor, thus providing a continuous buffer of existing trees along the road corridor. An acoustic barrier will also be located at the edge of the residential development further screening proposed housing from view.

- The future upgrade of the Link Road (shown in the Link Road cross-sections in the PPR response) will have minimal impact on the cleared width of the road corridor and therefore is unlikely to greatly reduce the depth of existing vegetation in the corridor.

- Finally the major entries into the site from the Link Road (Woodford Street and Minmi Boulevard) are made through areas of significant tree retention thus filtering views into the site and providing green gateways at the beginning of these roads.

As a result views into the site from the Link Road are either blocked by existing cut embankments, retained vegetation and acoustic barriers, or are down tree lined gully systems. Therefore the visibility of proposed housing will be low.

Minmi Road (South of Link Road)

- Views east into the Link Road South Precinct are either along cleared, maintained electricity easements or into the backs of large lots accessed from internal roads at a lower level than Minmi Road. The steep topography along the site boundaries ensures housing

will be located lower down into the site, away from the road.

- The main entrance into the precinct is through retained vegetation between the two electricity easements. This boulevard will also be planted with large trees to reduce the visual impact of the transmission line infrastructure.
- Further views into the Link Rd South Precinct are limited by a foreground of existing trees within the Minmi Road reserve. The development area is also dissected by wide riparian corridors, reducing the apparent mass of housing within the site.
- Some oblique views into the site along the power easements are inevitable and are a result of the existing use of the site.

Woodford Street

This road runs along a ridge heading north from the Link Road into the existing Minmi township. This is a transitional area from the tree lined Link Road into a progressively more urban environment. This implies a significant change from the current undeveloped situation.

However the experience is mitigated by:

- Preserving areas of existing vegetation at the entry into Woodford Street;

- Providing screen fencing and landscape buffering along the road corridor thus containing views into the site to the foreground;
- The addition of Garden House Park, another significant green relief in the experience of driving into the Minmi township;
- That the topography recedes/ descends either side of the road allowing oblique views over housing down to the open space and riparian corridors to the west of the Minmi township;
- Much of the housing near the top of the slopes either side of the road is lower density and slope responsive;
- Part of Woodford Street is lined by the existing low density housing of Minmi township.
- Over time cultivated planting within lots will help to soften the appearance of the housing on the slopes either side of the road; and
- The major collector roads in the Concept Plan run along ridgelines wherever possible helping to preserve vegetation through buffering along more visible ridgelines and pushing housing further down the slopes and away from the road.

As a result the views into the site will be limited to foreground views of retained trees, new parkland or landscape buffering. Distant views are across lower density housing areas broken by vegetated riparian corridors. This provides a softer

transition into the current township and toward the proposed Minmi Village and Minmi East High Street.

In summary the limited visual impact of the proposed development will be minimised from these road corridors by:

- The placement of large lots on steep slopes and the retention of vegetation on these slopes;
- The retention of vegetation on major ridgelines in Link Rd North;
- The retention of drainage corridors and vegetation that in the long term will continue to mature;
- Existing fringe vegetation along major thoroughfares such as Link Rd, and the F3.
- Existing trees retained within Asset Protection Zones;
- Landscape buffering and screen fencing along lower density areas of Woodford Street and Proposed Minmi Boulevard;
- The application of slope responsive housing types on steeper and more elevated parts of the site which are closest to the existing major road corridors;
- Over time as street trees are planted and mature, as well as trees in private lots, views into the development will become softened.

Blue Gum Hills Regional Park

Currently the Regional Park is developed only in the north, in an area near the cemetery. This development is comprised of car-parking, some picnic shelters and a cleared kick'n'throw area. This combined use area (or 'Picnic Area') occupies a west facing slope above Back Creek, the Category 3 stream that runs along the regional park boundary to Hexham Swamp in the north.

The picnic area occupies the more gently sloping, lower part of the hill side, and adjoins the creek. In elevation, the picnic area occupies the lowest third of the slope, running from RL 10 to RL 26 (14m) with the top of the hill side at RL 50. The location has no outlook to the east or north-east, however it does have views north to the Minmi East precinct, West towards the existing Minmi township and the Extension Precinct; and south-west to the Village Centre and Link Road Precincts.

The outlook from the picnic area can be divided into four distinct views:

- 1: North across Minmi Road to the Minmi East Precinct;
2. West to north-west to Minmi township and the Minmi Extension Precinct;
3. South to the Village Centre Precinct located on a broad ridgeline; and
- 4: South-west along existing creek lines to the Link Road North Precinct.

The likely amenity impacts on each of these view-sheds are discussed below:

1: View north to Minmi East Precinct

This view is confined to due north, by the extension of the ridgeline on which the picnic area sits, the ridgeline curving slightly to the west to limit this view.

As such, only a small area of the Minmi East development footprint will be visible. This area of the development sits at the same level as the picnic area and is at least 200m away. Between the picnic area and Minmi Road, an area of existing mature trees surrounds the cemetery, blocking views to the development from both the picnic area and its access road. Riparian vegetation is regrowing and will be supplemented by further revegetation and will close any further views of this precinct. Therefore the visual impact of this part of the development when viewed from the picnic ground and its entry road will be negligible.

2: View west to North-west to Minmi and Minmi

Extension Precinct

The existing Minmi township is not part of the proposal and is currently visible from the picnic area. However revegetation of the banks of the creek running along the Park boundary will help to filter or screen any views from lower elevations. The elevated knoll, due west of the picnic area, has on its crest, three existing residences accessed via Reservoir Road, and the site of Garden House Park. These uses pose no worsening of the existing view from the park.

The east facing slopes of this knoll are visible from the picnic area. Lots are proposed on this slope,

close to the existing track (a proposed road) running around the slope. On the high side of this road houses are likely to extend up to RL 50, though these will be few in number, with most at a much lower level. Those lots on the downhill side of the new road will contain extensive areas of revegetation managed as APZs in the lots (extending from approx. RL 22 to RL 24/28) and a 40m wide revegetated riparian corridor (extending from approx. RL 10 to RL 22). This area contains trees at present and with revegetation will provide a vegetated cover on the slope 14 to 18m in height plus the height of the vegetation. The top of the picnic area is around RL 26. Given the mature height of the vegetation, views to the houses will be filtered or heavily screened by vegetation depending on the viewing level in the picnic area. Locating Garden House Park on the crest of the hill has also mitigated further impact there.

3: View south to the Village Centre Precinct

Views into this precinct will be limited by existing vegetation along the Back Creek Corridor together with revegetation of a widened riparian zone, and by existing vegetation within the Regional Park itself.

Immediately south of the picnic ground is a small vegetated rise that is higher than most of the picnic ground limiting views to the foreground and further screening the development.

Given the Village is elevated there may be some limited views of the upper most parts of the retirement site. However this is a very small area of the development

and being located on a hill helps to screen out views of the development beyond. The Village is also in excess of 500m from the picnic ground and therefore not likely to be prominent in the view. The village will be single storey buildings only and will contain perimeter landscape and amenity landscape within the site that will soften its appearance.

4: View south-west to the Link Road North Precinct

This view is made along the creek line/gully system extending back into the development site (the western branch of Back Creek). The view corridor is constrained by the Reservoir Road knoll, described in 2 above, and by the ridge on which the Village Centre precinct lies. These landforms, located 600m from the picnic area, limit views in this area to the western-most tributary of Back Creek. This area will have housing on slopes either side of the creek. The views of this area are oblique and limited to the middle to upper parts of the slopes by existing vegetation retained along the creekline and further revegetation of the riparian corridors. The small rise described in 3 above, and its vegetation will further limit views west from lower levels of the picnic area. Therefore views south-west into the development will be apparent only in the more elevated areas of the picnic ground and are distant views, 1.3 to 1.4km away. Visual impact on the view corridor is likely to be minor and lessening as vegetation planted through the development grows to maturity.

Potential Impact on further recreation areas recognised in the Regional Park Plan of Management

The Plan of Management identifies a number of primary use areas for development within the park. These areas are the picnic ground discussed above, the event space in the existing quarry, the adjoining lookout, picnic areas (parkland settings) and a lookout in the centre of the park. The main focus of activity is the event space and playground, both located in the north of the park. The majority of the park is comprised of various revegetated habitats intersected by walking trails. The topography of the park is a basin with an array of minor tributaries to Back Creek. Elevation increases towards the eastern, southern and south-western edges of the park.

Views from walking trails through the park will therefore be contained within the park and the experience will be unaffected by the proposed development. Adjoining development will become apparent as paths leave the park. Initially while vegetation regrows, parts of the development area south of the park may be visible from the more disturbed/degraded areas of the park. Given this area is not planned for development for 14 to 21 years, the vegetation will have time to establish and to screen these views.

The event area is located in a quarry and therefore its views are contained, and not toward the site. Limited, filtered views may be had of the eastern most area of the Minmi East Precinct adjoining Kinston Fletcher.

The adjoining lookout will have expansive views in

all directions, including the western urban areas of Newcastle and out to the western ranges. These views will include existing urban areas, rural paddocks, and natural forested conservation areas. The proposed development will form an immediate foreground to views west to Stockrington and the forested hills. The site's topography means that views of the site will be broken by the Woodford Road ridgeline, obscuring housing to the west of this road. Housing areas east of Woodford Road will be visible and will comprise the foreground of the view west. The impact on the view to the ranges has been reduced by wide riparian corridors, retaining vegetation on steep slopes, and softening of the appearance of housing over time by estate landscaping. The character of the view will be similar to that of existing suburban areas to the north-east.

Two other lookouts are located on the Eastern Perimeter of the park, these are higher than the lookout adjoining the event space (RLs 92 and 100, instead of RL 62), but are further away from the development site.

The park itself forms the foreground for these views and the development site, part of the middle ground, 1.5km away. As the topography rises up from the park to the southern and western site boundaries the Link Road North Precinct will be clearly visible from these lookouts. The site is intersected by Riparian Corridors and retained vegetation on steeper slopes. This will serve to break up the visual mass of the development, and its effect on the view. The eastern most area of Minmi East will be visible from the northernmost lookout but its impact will be small, having a small footprint,

with a small number of houses surrounded by a band of existing trees.

Picnic areas/parkland settings are scattered throughout the central and western parts of the park. These sit at lower elevations and are likely to have views contained within the park. Those settings along the western edge of the park adjoin the proposed Village Centre Precinct, and sit in a transitional area from an urban to a natural character. These spaces are an extension of the urban areas rather than being purely natural. Given they are highly accessible from surrounding neighbourhoods and likely to be well used, it is important that these spaces are visible from adjoining urban areas (for passive surveillance/safety reasons). Therefore housing will be visible from these settings.

Proposed Conservation Lands

Views of the proposed residential development will be available from ridgetops in the proposed Stockrington conservation lands. Elsewhere views will be blocked or filtered by landform and existing tree cover. On the ridgetops, views are likely to be obstructed by trees. Again, the breaking down of the development's visual mass by wide riparian corridors and retained vegetation on steeper slopes, and the growth of cultivated plantings in parks, streets and private gardens will soften the appearance of the housing from the ridgetops.

Views from the proposed conservation land north of the existing Minmi village will be confined to the existing Minmi village as the proposed residential development is located beyond that part of the existing village east of Woodford Street. A small number of large lots in the Minmi Extension Precinct, immediately south of that conservation land will be screened by riparian and estate vegetation.

The Existing Minmi Village

Minmi village occupies the northern slope at the end of the ridgeline along which Woodford Road runs. This ridgeline and the knoll discussed above obstruct views of the development. Garden House Park ensures the top of this ridge is occupied by green space with development restricted to the slope behind.

The Minmi Extension Precinct is visible from the village, however lot sizes in this precinct are larger and housing is to be sympathetic in character to the existing village. The precinct is intersected by riparian corridors that will in time obscure the view of proposed housing. The Extension Precinct has been specifically designed to address the view shed from the existing village and to ensure development is sympathetic to the existing character.

The Minmi East Precinct will also be visible from the village but will be largely screened by revegetation of the riparian corridor of Back Creek, over time.

In summary we consider the development has sought to mitigate impact of the development on the visual amenity of the adjoining public spaces, and given its size will integrate well with the existing Village setting.

A.1.4 Indicative Lot Layout

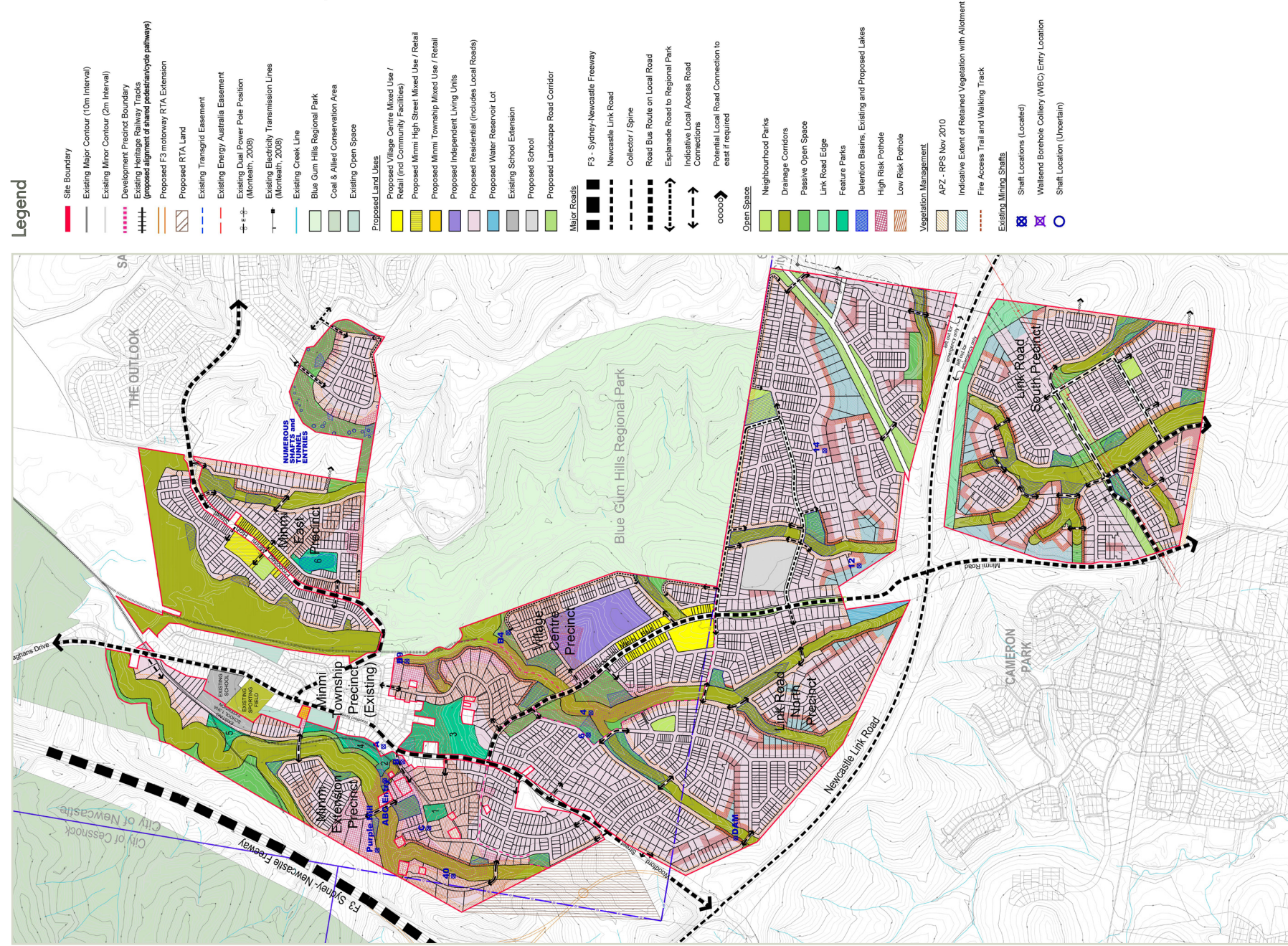


Figure A.1.4 Indicative Lot Layout

A.1.5 Lot Typologies

Residential

The following lot typologies have been developed in response to the natural characteristics of the site, the existing built form evident within the Minmi township, and nearby heritage items. Each precinct will accommodate a variety of lot typologies, which will facilitate a diverse range of housing. Housing diversity will assist in creating a vibrant and

sustainable community, and will also promote housing choice and therefore affordability. The indicative controls identified for these lots aim to ensure that future housing responds to the desired character of the overall development. Further discussion in relation to desired future character is provided in the following sections.

Lot Typology	Frontage Range	Minimum Lot Size	Minimum Lot Depth	Housing	Storeys	Vehicle Access	Site Cover
Townhouse	7m - 10.4m	175m ²	25m	attached, semi detached, detached	single or two	front or rear lane	60%
Small Courtyard	10.5m - 13.5m	262m ²	25m	detached single dwelling	single or two	front or rear lane	60%
Large Courtyard	13.6m - 15.0m	387m ²	28.5m	detached single dwelling	single or two	front	60%
Traditional	15.1m - 17.5m	450m ²	30m	detached single dwelling	single or two	front	50%
Lifestyle Lots	17.6m +	800m ²	30m	detached single dwelling	single or two	front	40%

Allotment frontage is the primary variable to determine an allotments classification for setbacks and building type. Where an allotment's depth results in a larger than typical total lot area the frontage will still be the determining factor to classify setbacks and building type. To be assessed as a Lifestyle Lot, the allotment must meet both the Minimum Lot Size and Minimum Frontage. Battleaxe allotment classification is determined by width, to apply the appropriate frontage category above take the sum of the front and rear boundary and divide by 2 to determine an average allotment width.

Mixed Use

Mixed use will typically be based on two lot typologies. Smaller fine grained mixed use developments such as SOHO's and larger format integrated shopping centres. Lot sizes will therefore vary and will need to address the performance controls in Appendix B.

A.1.6 Building Heights

The adjacent plan identifies maximum number of storeys for development on the site and applicable building conditions. These building heights are a response to geotechnical and slope constraints.

Urban design principles in relation to bulk and scale have also been considered in establishing the final plan. The prescribed heights aim to:

- ensure houses are designed in proportion to allotment area;
- allow house designs that optimise cross ventilation and solar access;
- minimise overshadowing of private open space within lots and on adjacent lots;
- ensure solar access to principal living areas and facilitate energy-efficient design; and
- distribute building heights across the site to maximise solar access, having regard to lot orientation and slope.



Figure A.1.6 Indicative Building Heights

A.1.7 Proposed Precincts

The Concept Plan divides the subject area into five precincts: Minmi East, Minmi Extension, Village Centre, Link Road North and Link Road South. The precincts consist of a balanced mix of urban characteristics, which will assist in the delivery of a cohesive but diverse built landscape that will define the new township of Minmi. The natural features of the landscape, including topography, riparian zones and significant vegetation formed the basis for the identification of each of the five precincts. The layout and design of each precinct has also been directly influenced by the physical attributes of the land. Consideration has been given to the relationship between future development and these attributes. The following sections provide an overview of the defining characteristics of each of the precincts.

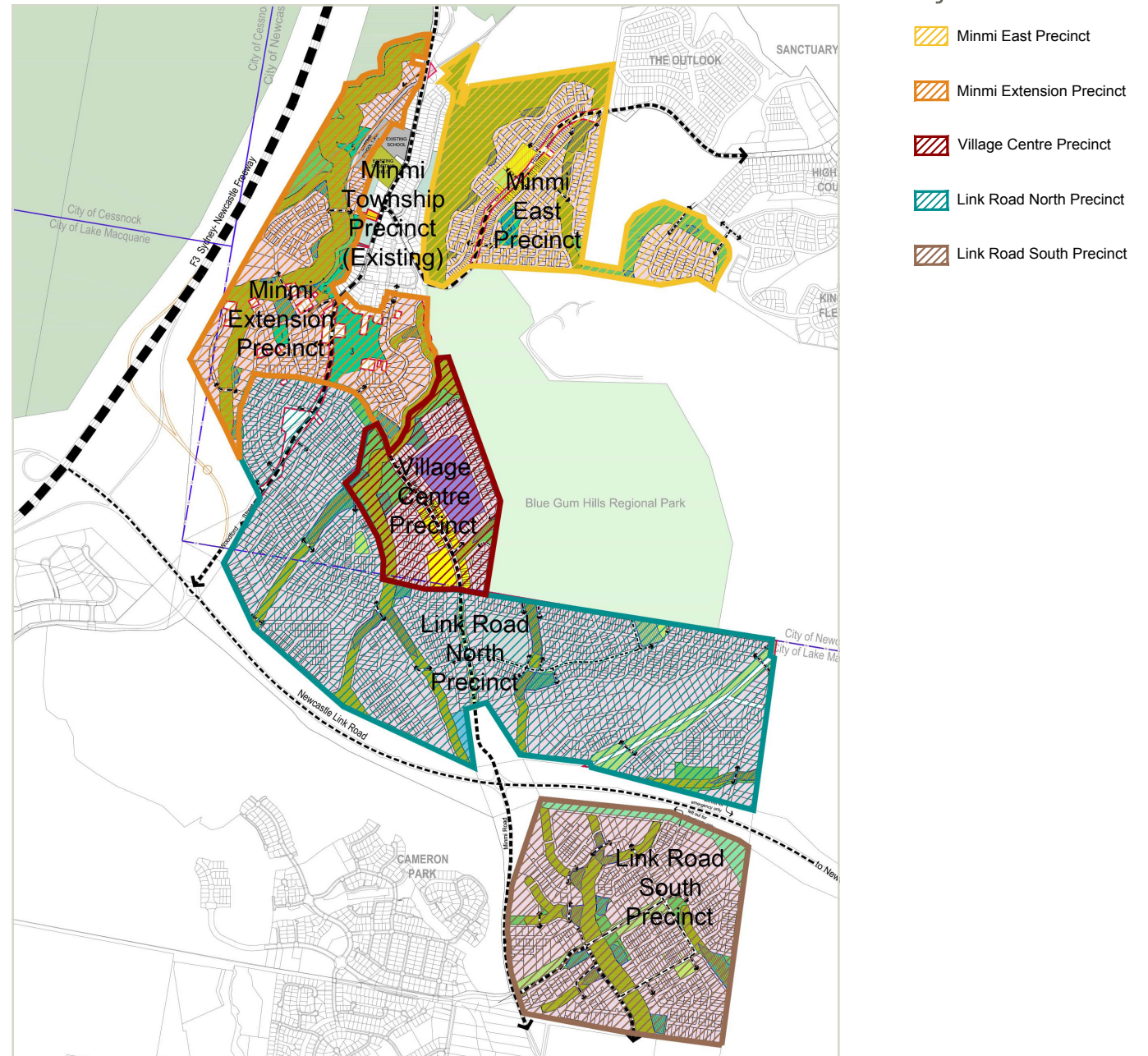


Figure A.1.7 Indicative Proposed Precincts Plan

A.1.7.1 Minmi East Precinct

Minmi East Precinct (approx 80 ha) adjoins the existing Minmi township and extends either side of Minmi Road connecting the existing Minmi township with the new estates of The Outlook, Hidden Waters and Fletcher. The precinct is bounded by the existing Minmi township to the west, Blue Gum Hills Regional Park and Summerhill Waste Management Centre to the south, Fletcher to the east and Hexham swamp to the north.

The Concept Plan has identified and given consideration to the key attributes of the existing landscape within the Minmi East precinct, including riparian corridors, visually prominent ridge lines and the existing lake. These features have been incorporated into the overall structure of the precinct and will assist in strengthening the local 'sense of place'.

Future development within parts of the precinct is constrained by geotechnical issues resulting from previous open cut mining activities along the southern side of Minmi Road and the riparian corridor and flood plain in the north.

To ensure a village character that sits within the landscape of the region, it is proposed that the existing Minmi Road become a village High Street. This will provide identity to the Minmi East Precinct and enhance connectivity with the existing developments to the west and north-east. The general character of the precinct is to be contemporary urban, within a setting characterised by natural water bodies and native vegetation within the area. The precinct will provide for greater density (in comparison to the other precincts) offering a diversity of lot sizes to cater for a range of household types. Lot sizes will range in area from 175m² to 900m², with a mix of dwelling types, including town houses; courtyard houses; shop-top apartments and detached traditional housing types. The absence of geotechnical constraints in parts of the precinct will enable development of up to 2-3 storeys. However, the predominant building height will be 2 storeys with a maximum of 3 storeys along proposed High Street.

Connectivity between the lake, Blue Gum Hills Regional Park, High Street and the sporting complex has been achieved through the network of open spaces and pedestrian routes within the site.

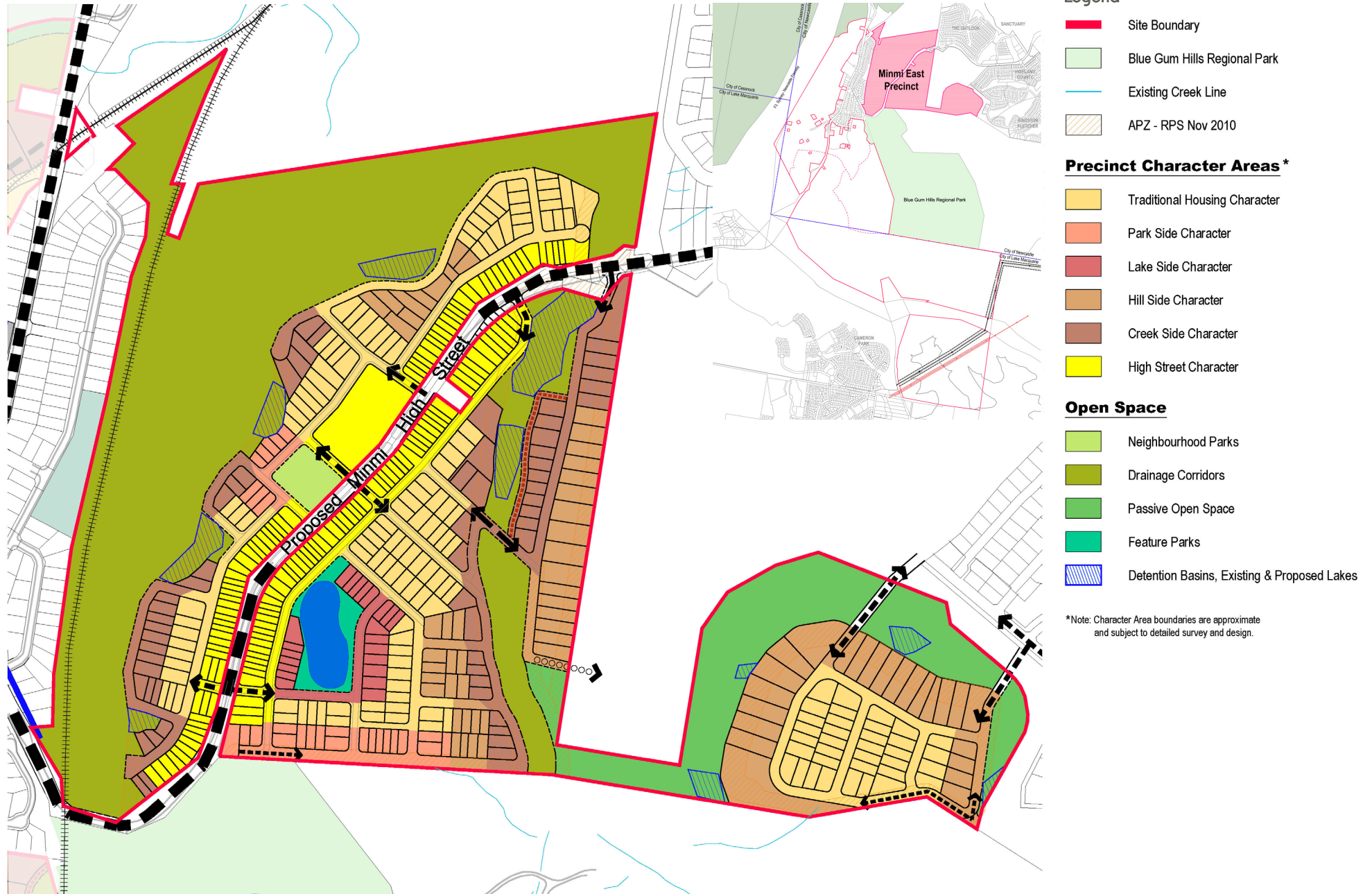


Figure A.1.7.1 Minmi East Precinct

A.1.7.2 Minmi Extension Precinct – Conservation Heritage Character

Minmi Extension Precinct (approx 87ha) is located southwest of the existing Minmi township. The proposed new settlement is bounded by the F3 motorway to the west, Minmi township to the north east, Blue Gum Hills Regional Park to the east and Woodford Street to the south east. Future development within the precinct is constrained by geotechnical constraints, riparian zones and flooding. The Garden House Park and Workshop Park heritage areas are key attributes that have been capitalised on in the overall layout of this precinct.

The relationship between future development in Minmi Extension and existing development within the Minmi township has influenced the overall urban form and structure of this precinct. Protecting the heritage character of the existing Minmi township has been a key consideration in its design. Integration with the existing settlement pattern has been achieved through careful consideration of the existing built and natural landscape, and enhanced through the use of complementary materials, forms and landscape elements. Existing footpaths, streets and road linkages have been retained. Heritage items and places of historical significance have been incorporated into the passive open space network. The disused railway corridors are to be used for pedestrian and cycle links.

The relatively low density lot yield and proposed built form, including generous setbacks, will assist in protecting the heritage setting of the existing urban area, and views and vistas to and from the township. Lot sizes will range in area from 600m², which is consistent with the existing scale and character of the Minmi township.

Constraints in relation to topography on the western slopes of the precinct have resulted in larger lot sizes (800m²+) in these areas. The Minmi Extension Precinct will combine an eclectic mix of traditional and contemporary built forms, resulting in a pattern of development that is sympathetic to the heritage significance and historical character of the surrounding area. The natural setting of the precinct combined with lower densities will result in a rustic suburban character.

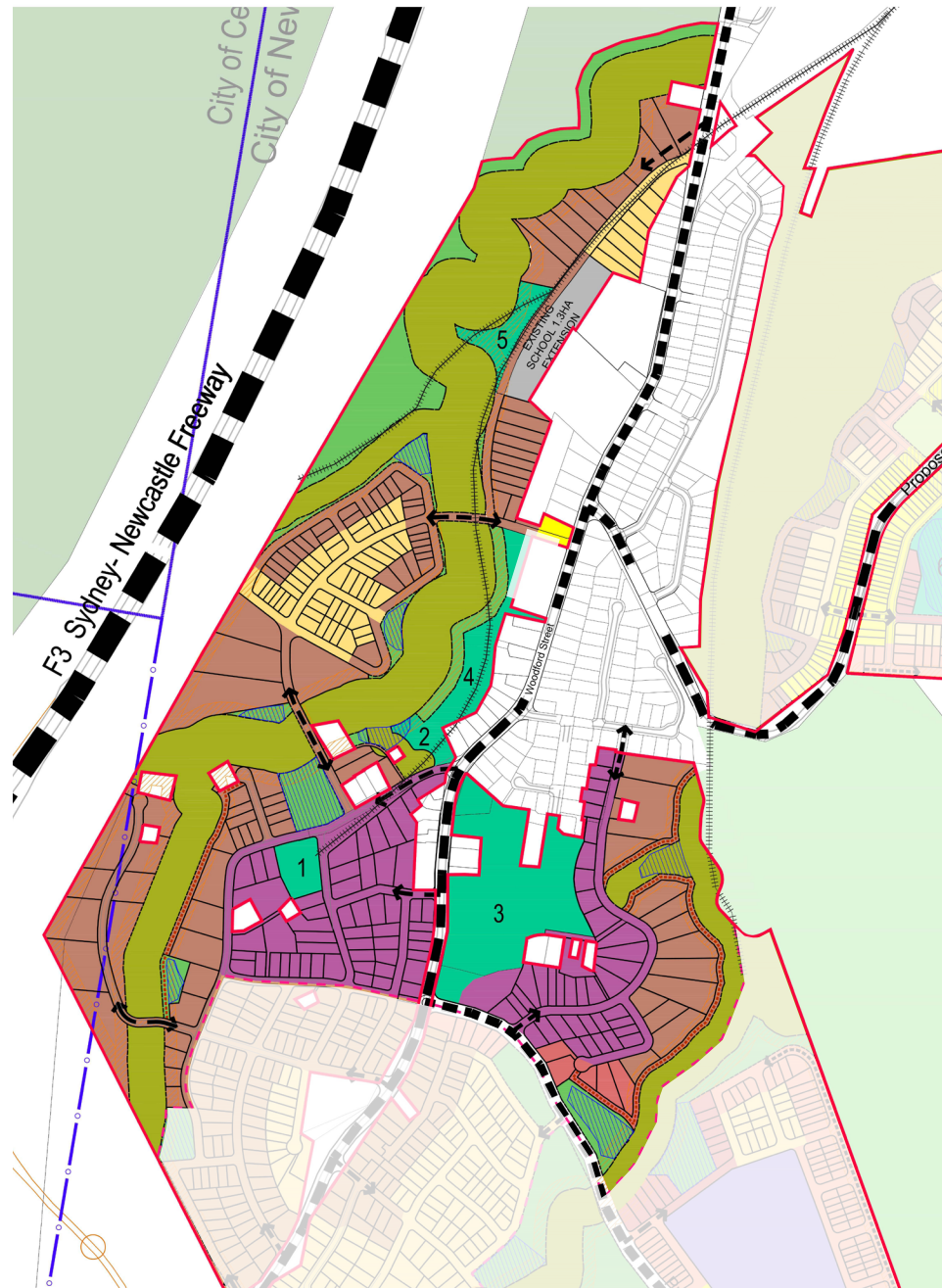
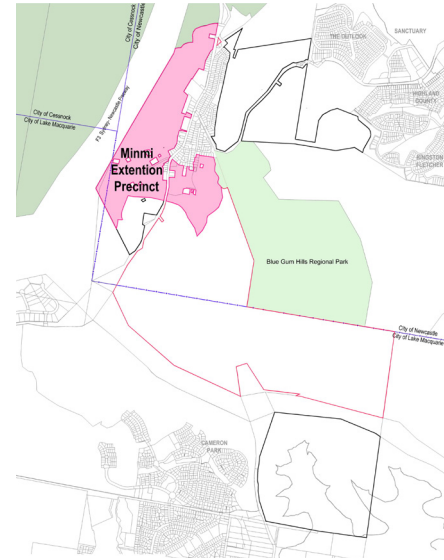


Figure A.1.7.2 Minmi Extension Precinct



Legend

- Site Boundary
- Blue Gum Hills Regional Park
- Existing Creek Line
- APZ - RPS Nov 2010

Precinct Character Areas *

- Traditional Housing Character
- Park Side Character
- Lake Side Character
- Hill Side Character
- Conservation Heritage Character
- Creek Side Character
- High Street Character

Open Space

- Neighbourhood Parks
- Drainage Corridors
- Passive Open Space
- Feature Parks
- Detention Basins, Existing & Proposed Lakes

Feature Parks

1. Workshop Park
2. Coke Oven Park
3. Addition To Garden House Park
4. Minmi Edge & Entry Parks
5. Minmi Edge Parks

*Note: Character Area boundaries are approximate and subject to detailed survey and design.

A.1.7.3 Village Centre Precinct – Activity Hub

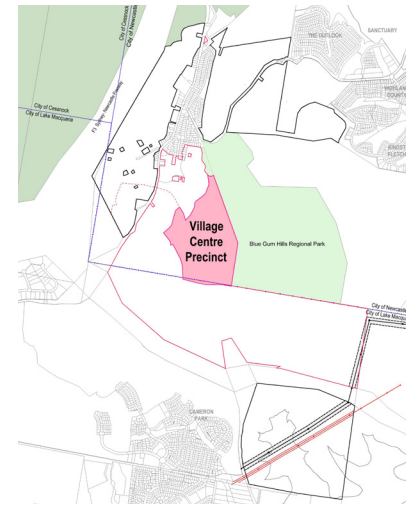
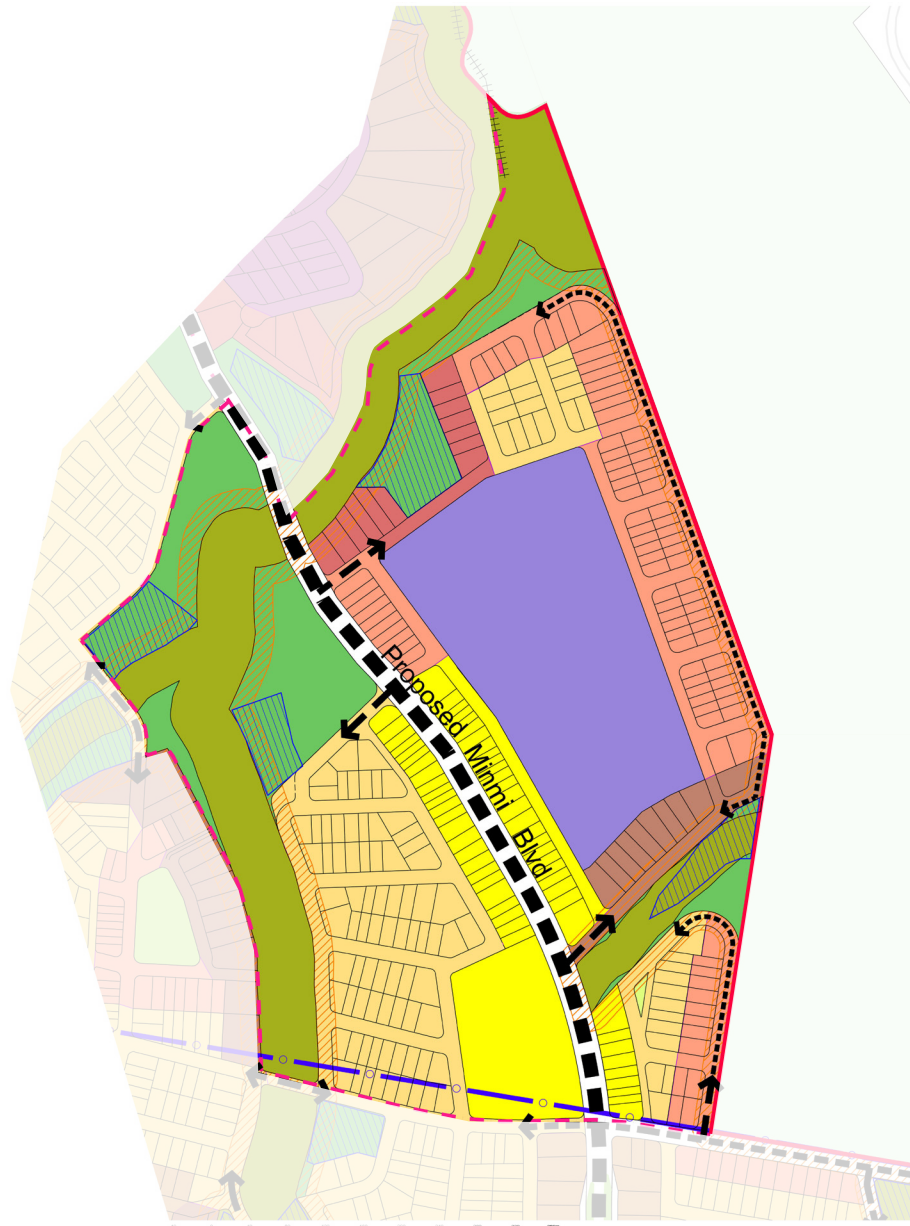
Village Centre Precinct (approx 45 ha) is located in the heart of the subject site, between the Garden House Park and Blue Gum Hills Regional Park. The precinct contains significant areas of riparian corridor which are to be utilised as open space affected by geotechnical constraints. The Village Centre will be a dynamic and vibrant urban hub, providing a range of services for adjacent precincts and the wider locality. The centre will contain higher order retail, office, public transport, cultural facilities, and residential uses. The design of the precinct has aimed to create an area that is attractive, sustainable and accessible to future residents.

The mixed use nature of the precinct will assist in creating an area that remains active at all times of the week and caters for a broad range of users. A retirement village is to be located immediately east of the Village Centre. The central location will ensure future residents of the retirement village have good access to necessary services. The mixed use built form is to be concentrated along proposed Minmi Boulevard, creating a cohesive streetscape combining public domain within the surrounding open space network. A bus route is proposed along this boulevard, which will assist in achieving a vibrant and active village centre.

Given geotechnical constraints as a result of previous mining activities, development will be limited to predominantly single storey. Lot sizes range from approximately 175m², with increased density expressed through the built form along the proposed Minmi Boulevard. A mix of housing types is to be included within the precinct - with townhouses, courtyard housing and traditional housing typologies.

Senior Living Area

A retirement village is proposed adjacent to the proposed Village Centre and main future public transport routes. The site topography here is predominantly 1:10 slopes (about 80% of the seniors living site) which is appropriate for domestic and commercial construction without creating major retaining walls over 1.2m. The site has a small drainage gully and low ridge which will allow minor cut to fill earthworks solutions without requiring major retaining walls at the external site boundary. The contours run in a south west to north-east direction across the site which means in detailed design phases, access to the external surrounding roads and the village can be gained along the contour without exceeding wheelchair grades.



LEGEND

- Site Boundary
- - - Precinct Boundary
- LGA Boundary
- Blue Gum Hills Regional Park
- Creek Centreline
- APZ - RPS 2010

Precinct Character Areas *

- Traditional Character
- Park Side Character
- Lakeside Character
- Creek Side Character
- Village Centre Character
- Independent Living Units

Open Space

- Drainage Corridors
- Passive Open Space
- Detention Basins, Existing & Proposed

*Note: Character Area boundaries are approximate and subject to detailed survey and design.

Figure A.1.7.3 Village Centre Precinct

A.1.7.4 Link Road North Precinct – Bushland Character

Link Road North Precinct (approx 200 ha) is located along the northern side of Newcastle Link Road. The precinct is bounded by Blue Gum Hills Regional Park to the north, Xstrata owned lands to the east, Newcastle Link Road to the south and Woodford Street to the west.

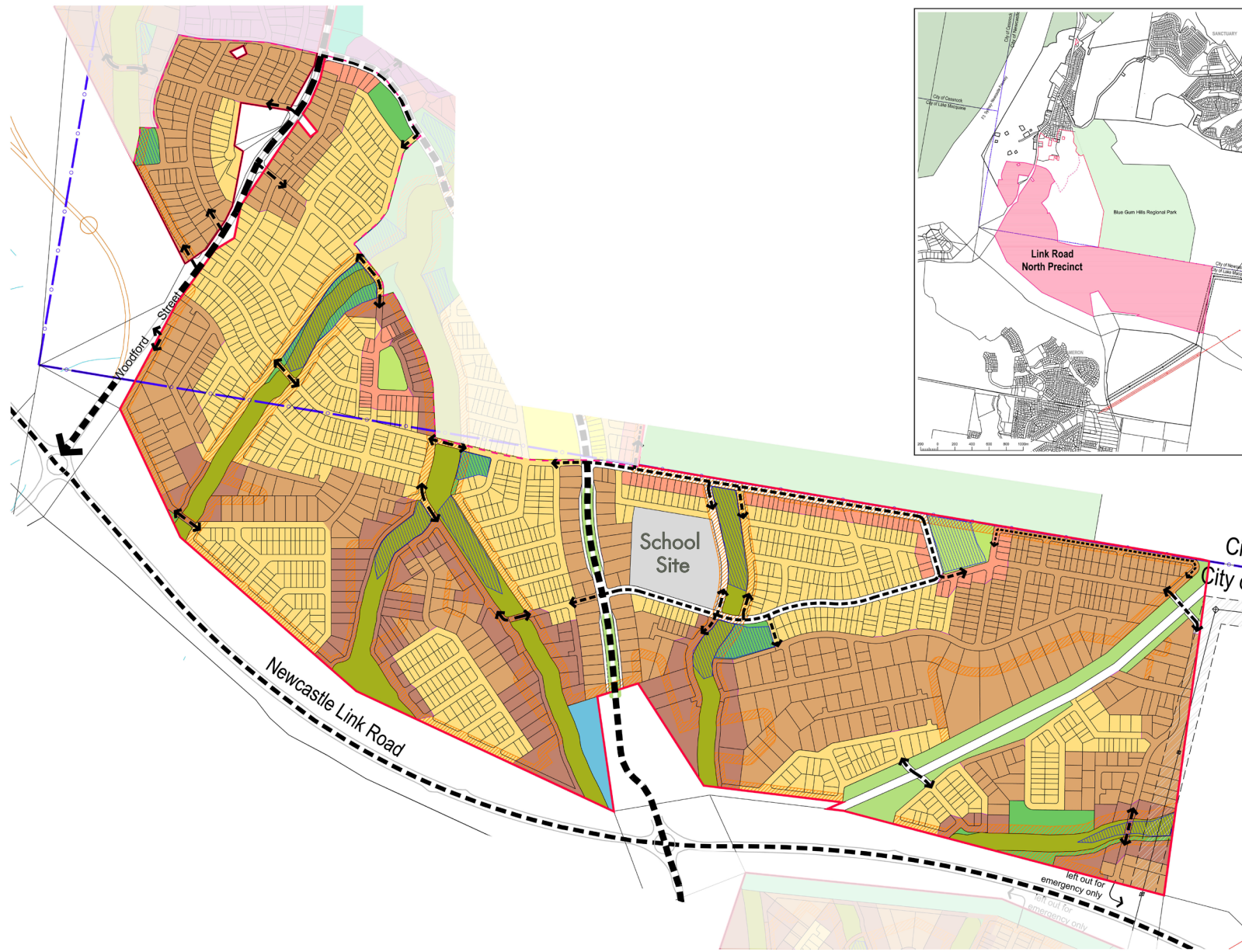
The precinct is characterised by its undulating topography, with slopes and valleys defined by local creek lines. A number of riparian corridors traverse the precinct, providing access from Link Road to Blue Gum Hills Regional Park. These will form significant areas of public open space. In addition, further open space is proposed in the eastern portion of the precinct which incorporates items of aboriginal heritage.

The precinct will act as the southern gateway to the future community, providing direct access from Newcastle Link Road. The proposed Minmi Boulevard divides the precinct, providing access to Link Road South precinct and the Village Centre precinct.

The unique natural setting, including the topography, riparian zones and native vegetation, has determined the character of this precinct. The overall design has attempted to capitalise on the natural beauty of the area to create a precinct in which future development will relate well to the existing landscape. The southern portion of the precinct will be predominantly low density, with mixed use and medium density located in the northern area, close to the Village Centre precinct.

A key feature of this precinct will be the proposed primary school located just south of the Village Centre.

The precinct will cater for a range of household types, with lot sizes from 175m². Housing typologies are to be a mix of medium and low density; including townhouses, courtyard housing, traditional and lifestyle housing. Development will be predominantly limited to single storey given geotechnical constraints, with up to 2 storeys possible on hillside areas. The style of development on the hillsides will be influenced by topographical constraints. Built form will capitalise on the extensive views and vistas to the Blue Gum Hills Regional Park. The majority of vegetation in these areas will be retained, with an emphasis on protecting the ecology within the precinct. The future subdivision layout will take advantage of a vegetated outlook and good solar access. Traditional character areas are generally located along the edge of riparian corridors within valleys.



Legend

LEGEND

- Site Boundary
- Blue Gum Hills Regional Park
- Precinct Boundary
- LGA Boundary
- Creek Centreline
- APZ - RPS 2010
- School Site

Precinct Character Areas *

- Traditional Character
- Park Side Character
- Hill Side Character
- Creek Side Character

Open Space

- Neighbourhood Parks
- Drainage Corridors
- Passive Open Space
- Detention Basins, Existing & Proposed Lakes

* Note: Character Area boundaries are approximate and subject to detailed survey and design.

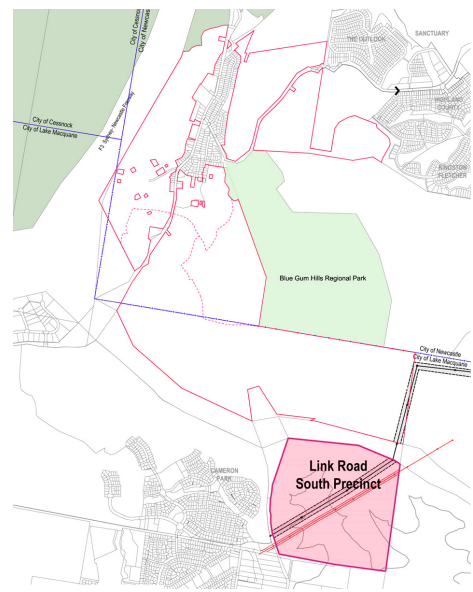
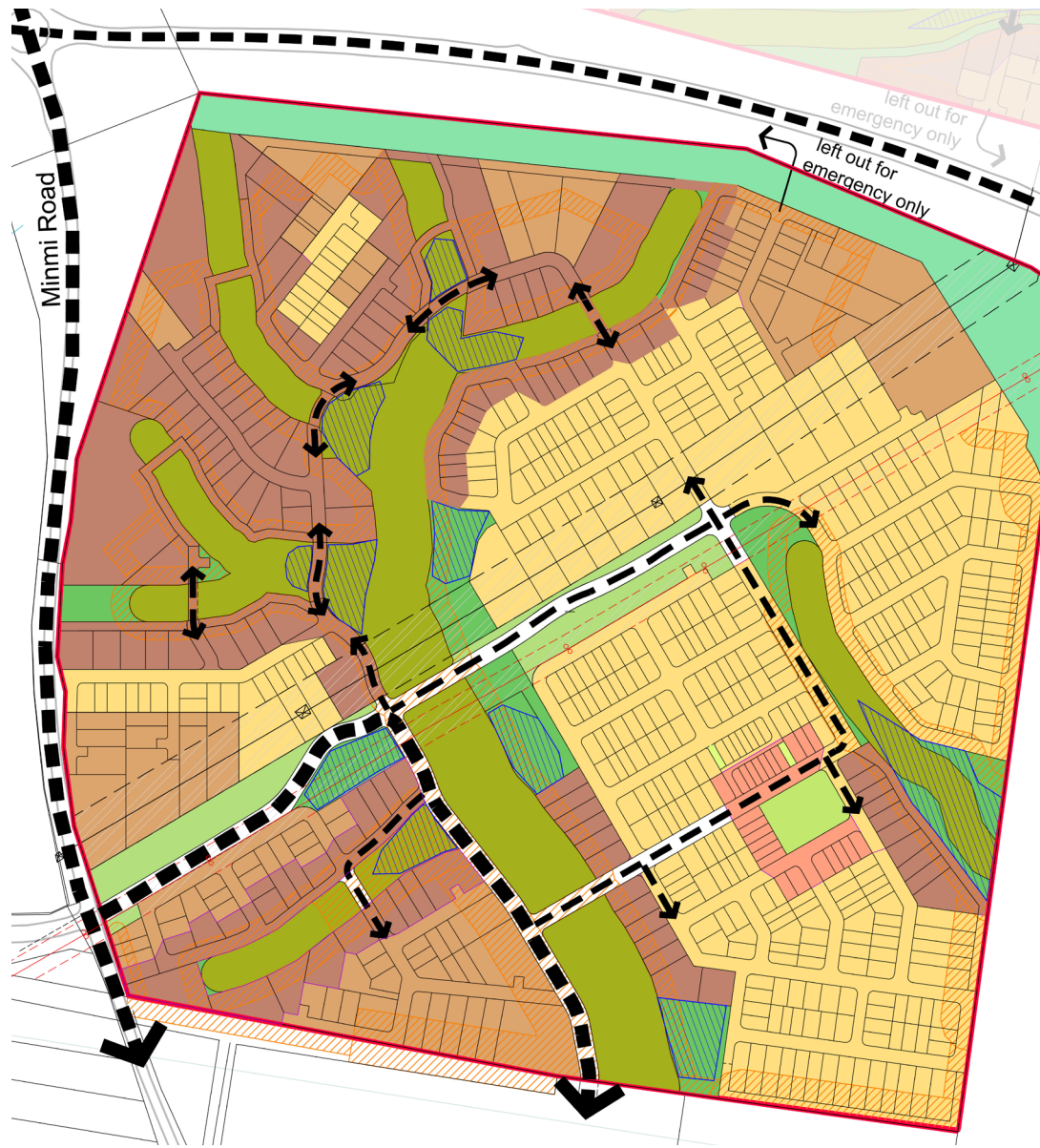
Figure A.1.7.4 Link Road North Precinct

A.1.7.5 Link Road South Precinct

Link Road South Precinct (approx 101 ha) is located on the southern side of Newcastle Link Road. The precinct is bounded by Minmi Road to the west, Newcastle Link Road to the north, Xstrata owned lands to the east and future urban lands to the south.

Link Road South Precinct is characterised by sloping topography and native vegetation, and is traversed by a riparian corridor and two electrical easements. The precinct adjoins Cameron Park to the west and is separated from the other precincts by Newcastle Link Road along its northern boundary. As the precinct is located in close proximity to Cameron Park and the existing Edgeworth Village Centre, it is expected that future residents will have a strong connection to these existing developments. The proposed entry boulevard acts as a collector road, connecting this precinct to the other precincts north of the Newcastle Link Road as well as Cameron Park, and providing a connection point for any future development to the south.

Lower density development will be located around the precinct perimeter. Lots from 175m² will provide for a diverse range of future housing typologies including town houses, courtyard housing, traditional and lifestyle housing. Future development will be predominantly 2 storey.



Legend

LEGEND

- Site Boundary
- Creek Centreline
- APZ - RPS 2010

Precinct Character Areas *

- Traditional Character
- Park Side Character
- Hill Side Character
- Creek Side Character

Open Space

- Neighbourhood Parks
- Drainage Corridors
- Passive Open Space
- Link Road Edge
- Detention Basins, Existing & Proposed Lakes

*Note: Character Area boundaries are approximate and subject to detailed survey and design.

Figure A.1.7.5 Link Road South Precinct

A.1.8 Proposed Character Areas

Development within the precincts is made up of a variety of character areas, which are discussed in further detail in the following sections.

The Character Areas are defined by intent statements relating to such elements as density of housing types, built form and scale and streetscapes. To assist in defining character, Figure A.1.8 demonstrates how typical lot types maybe allocated to character areas.

Figure A1.8 Allocation of typical lot types within character areas

Proposed Character Areas	Typical Lot Types					
	Mixed Use	Town House	Small Courtyard	Large Courtyard	Traditional	Lifestyle Lots
High Street Character	◇	◇	-	-	-	-
Traditional Housing Character	-	◇	◇	◇	◇	-
Conservation Heritage Character*	-	-	-	-	◇	◇
Park Side Character	◇	◇	◇	◇	◇	-
Lake Side Character	◇	◇	◇	◇	◇	-
Creek Side Character#	-	-	◇	◇	◇	◇
Hill Side Character	-	-	-	-	◇	◇
Village Centre Character (Mixed Use)	◇	◇	-	-	-	-

Notes:

* min. 600m² lots only

additional rear yard required

A.1.8.1 Village Centre Character

Located along the proposed Minmi Boulevard within the Village Centre Precinct, the village centre will form a central gathering point for the adjacent communities. A range of building types and densities are proposed within the centre, which will assist in the creation of a centre that caters for a range of cultural needs and lifestyles.

Density

Densities within the village centre will be relatively high, although development will be constrained to single storey. Future community facilities will be also included in the Village Centre.

Housing Types

Housing within the village centre character area will include attached townhouses, and courtyard and traditional housing. The table below summarises the housing types expected to occur in each character area. These housing types are defined in Appendix B of these guidelines.

Built Form and Scale

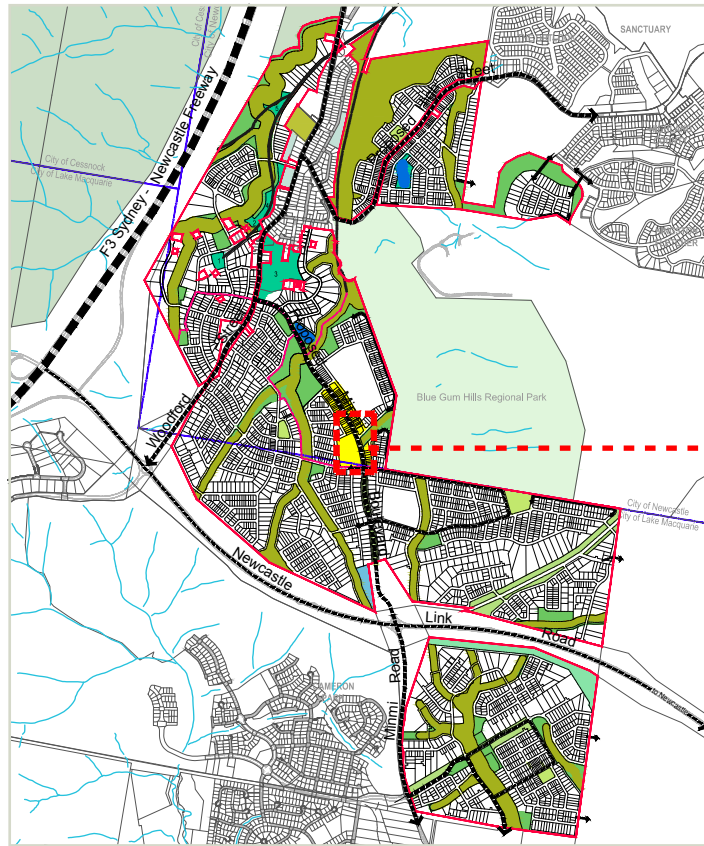
The built form will be uniform in bulk and scale. Buildings are to be single storey with a relatively continuous street frontage. The village centre will be framed by mixed use frontages and single storey townhouses and courtyard lots. Future development will be constructed using lightweight materials and simple detailing, with a variety of building elements such as porches, verandahs, entrances and roof forms.

Floor Space Ratio

The allowable Floor Space Ratio (commercial floor space to site area) is 1:1 for all commercial/mixed use areas. Non-commercial space is in addition to this ratio.

Streetscapes

In order to ensure a vibrant and active street frontage, zero setbacks and higher densities are proposed along Minmi Boulevard. Building facades in this area are to be of a high architectural standard in order to enhance the public domain and achieve the desired streetscape character. Awnings that continue around corner buildings are to be provided along the street frontage. Minmi Boulevard will be a broad street, with shared paths and a vegetated buffer on both sides. Planting along both the median strip and the verges, combined with on street parking, will assist in achieving an active and vibrant street setting.



Indicative Concept Layout - Village Centre Character ■



Illustrative Snap Shot of Village Centre Neighbourhoods



Figure A.1.8.1 Indicative Concept - Village Centre Neighbourhoods

A.1.8.2 High Street Character

High Street will form the transition between the new community and the existing development of The Outlook at the north east end of the site. Higher density development will be concentrated in areas surrounding proposed public transport nodes.

Density

High Street is to be characterised by higher density development. The concentration of the density, expressed through two and three storey townhouse and mixed use development, will support public transport and create a walkable neighbourhood. To the rear of the buildings, a distinctive private realm will create courtyards for houses plus access to live/work accommodation.

Built Form and Scale

High Street is to be a mixed use area, characterised by buildings of predominantly 2 and 3 storeys. In order to activate the street frontage and promote a sense of urbanity, minimal setbacks combined with a consistent wall height will create a strong street edge. To reflect the desired contemporary nature of High Street, roofs are to be metal and predominantly hipped or gabled.

Floor Space Ratio

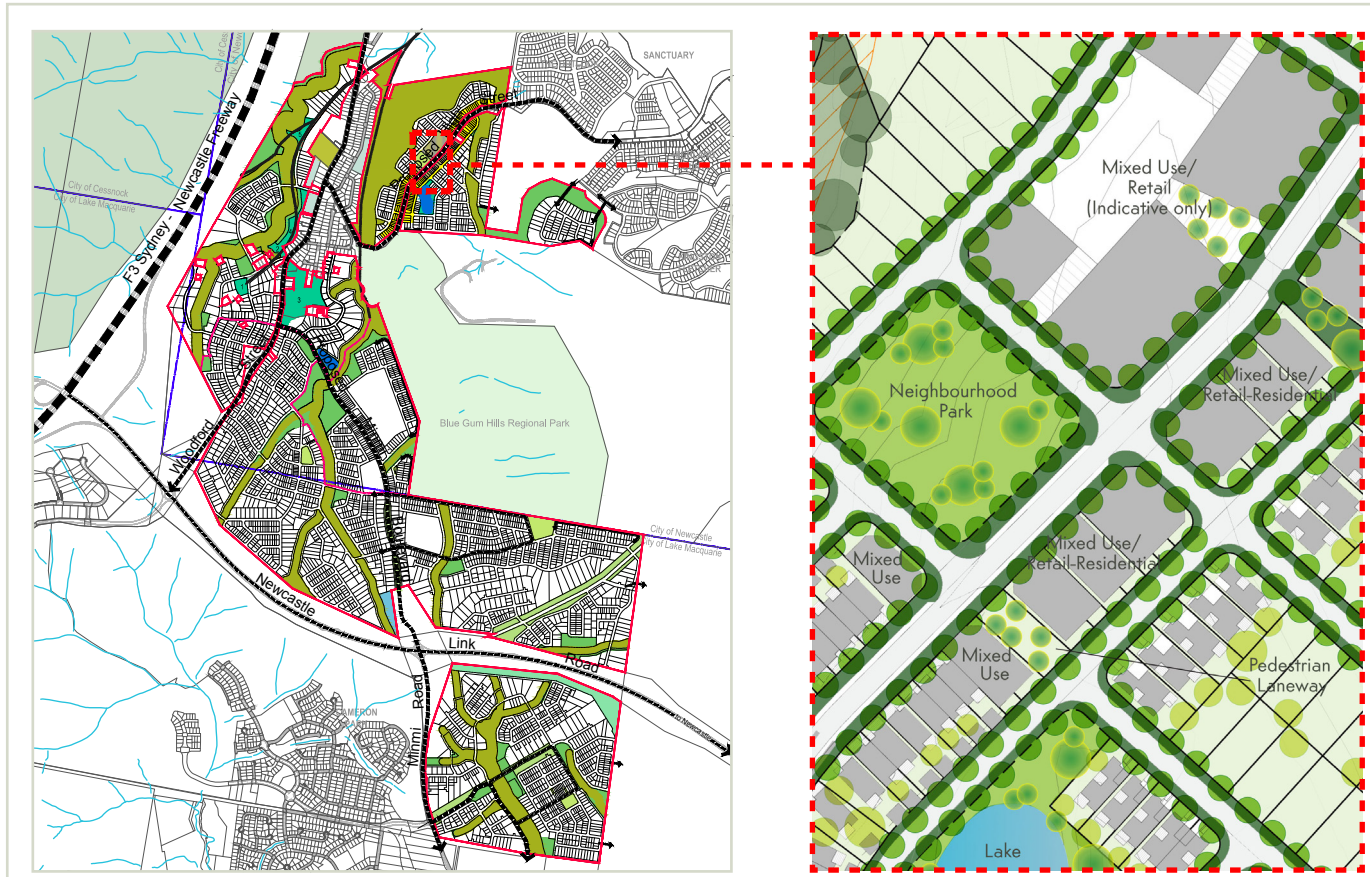
The allowable Floor Space Ratio (commercial floor space to site area) is 1:1 for all commercial/mixed use areas. Non-commercial space is in addition to this ratio.

Streetscapes

High Street is to be a vibrant retail precinct, with shops and commercial premises at street level and residential development above. It will consist of a significant road reserve, including large verge with shared paths on both sides and on street parking. A high level of architectural quality is to be utilised in buildings fronting the street. Awnings that continue around corner buildings are to be provided along the street frontage.

Housing Types

A range of housing such as attached townhouses, courtyard housing and some apartments are to be provided within the High Street character area. This variety in housing will cater for a range of household types and will promote a vibrant retail precinct. Retail premises are to be located at ground floor with residential above.



Indicative Concept Layout - High Street Character

Illustrative Snap Shot - High Street Neighbourhoods



Figure A.1.8.2 Indicative Concept - High Street Neighbourhoods

A.1.8.3 Traditional Housing Character

The Traditional Housing character area is represented in each of the precincts and reflects current trends and market demand. Traditional detached housing is the most common built form represented in suburban Australia.

Density

Densities within the Traditional Housing character area are to be lower to reflect the suburban character of these areas. Larger lot sizes will provide adequate land area for detached dwellings.

Built form and scale

Given the geotechnical constraints affecting substantial parts of the estate, dwellings within this character area will be predominantly single storey, although some areas along Link Road and High Street have the ability to support 2 storey dwellings. In order to promote a more suburban character, moderate front and side setbacks are to be utilised in this character area. Garages are to be set back further than the dwelling so they do not dominate the street frontage and allow for landscaping. A sensitive climatic response is to be articulated through building form and layout and through building elements, such as eaves and horizontal sunshades. Metal roofing, which is to be utilised in this character area is to consist of predominantly pitched or gabled forms. Given the geotechnical constraints affecting much of the estate, the majority of dwellings are to be constructed utilising a suspended floor construction method. Colours are to be recessive to complement any existing vegetation. Dwellings are to reflect the area's historical and industrial past through the inclusion of simple building elements and light weight construction materials.

Streetscapes

The lower densities and setbacks will result in a suburban streetscape character. Streets will include pedestrian footpaths on either side and street trees for privacy and amenity.

Housing

Housing will be predominantly low density detached housing.



Figure A.1.8.3 Indicative Concept - Traditional Housing Neighbourhoods

A.1.8.4 Conservation Heritage Character

The Conservation Heritage Character areas are situated adjacent to the existing Garden House Park. The mining heritage and natural setting of the locality have been the predominant issues considered in determining the desired character of these areas.

Density

The Conservation Heritage character areas are to be low density, which is consistent with the existing Minmi township. Large lot sizes will enable generous curtilages on each lot.

Built Form and Scale

The built form and scale within this character area is to reflect the existing heritage and natural setting. This will be achieved through utilisation of contemporary design and inclusion of generous setbacks and elevated verandas. Garages are to be set back from the street frontage. Geotechnical constraints mean that the majority of housing is to be single storey.

A sensitive climatic response is to be articulated through building form and layout and through building elements, such as eaves and horizontal sunshades. Metal roofing which is to be utilised in this character area and is to consist of predominantly pitched or gabled forms.

Given the geotechnical constraints affecting much of the subject site, the majority of dwellings are to be constructed utilising a suspended floor construction method. Colours are to be recessive to complement any existing vegetation. Dwellings are to reflect the area's historical and industrial past through the inclusion of simple building elements, such as porches, verandahs etc, and utilisation of light weight construction materials.

Streetscapes

Large lots and generous setbacks will result in the creation of a formal urban character. Streets are to include parking and a pedestrian footpath on one side. Street trees will help to create a formal urban character and balanced streetscape.

Housing

Dwellings are to be predominantly detached single storey.



Indicative Concept Layout - Conservation Heritage Character

Illustrative Snap Shot of Conservation Heritage Neighbourhoods

Figure A.1.8.4 Indicative Concept - Conservation Heritage Character Neighbourhoods

A.1.8.5 Park Side Character

Neighbourhood parks located throughout the proposed development are designed to be the focal point for the surrounding residential development. The vitality and vibrancy of these areas is to be enhanced through the inclusion of medium density housing in close proximity to the parks.

Density

Development in this character area will be medium density, with both courtyard and townhouse lots.

Built form and scale

A visually interesting built edge will define the boundary of the adjoining public parkland. Setbacks are to provide separation between the proposed building forms. Clearly defined pedestrian entrances are to be accentuated by design features such as porches. A sensitive climatic response is to be articulated through building form and layout and through building elements, such as eaves and horizontal sunshades. Metal roofing which is to be utilised in these character areas is to consist of predominantly pitched or gabled forms. Dwellings are to be constructed utilising either a suspended floor or slab on ground construction method, depending on geotechnical constraints. Heights are to be predominantly 2 storey. Colours are to be recessive to complement any existing vegetation. Dwellings are to be predominantly traditional brick veneer with light weight construction elements and simple detailing.

Streetscapes

Compact and varied medium density housing contributes to a visually interesting urban streetscape character. This is achieved through modulated and articulated building facades, in combination with landscape treatment. Streets within this character area are to include parking and a pedestrian footpath on one side.

Housing

A range of housing such as townhouses and courtyard housing will cater for a range of household types, such as young families or 'empty nesters'.



Indicative Concept Layout - Park Side Character

Illustrative Snap Shot of Park Side Neighbourhoods



Figure A.1.8.5 Indicative Concept - Park Side Neighbourhoods

A.1.8.6 Lake Side Character

Three feature lakes are located within the subject site; Minmi East, Minmi Extension and the Village Centre. These lakes provide the opportunity for increased density to be located on their periphery, which will promote these landforms as integral features of the landscape.

Density

Development in this character area will be medium density, with the inclusion of both courtyard and townhouse lots.

Built form and scale

A visually interesting built edge will define the boundary of the adjoining lakeside parkland.

Setbacks are to provide separation between the proposed building forms. Clearly defined pedestrian entrances are to be accentuated by design features such as porches. A sensitive climatic response is to be articulated through building form and layout and through building elements, such as eaves and horizontal sunshades. Metal roofing which is to be utilised in this character area is to consist of predominantly pitched or gabled roof forms. Dwellings are to be constructed utilising either a suspended floor or slab on ground construction method, depending on geotechnical constraints. Heights are to be predominantly 2 storey, with some single storey. Colours are to be recessive to complement any existing vegetation. Dwellings are to be predominantly traditional brick veneer with light weight construction elements and simple detailing.

Streetscapes

Streetscapes are to capitalise on the natural lakeside setting, with street planting to complement the natural landform and existing vegetation. Streets within these character areas are to include parking and a pedestrian footpath on one side.

Housing

A range of housing such as townhouses and courtyard housing will cater for a broad range of household types.



Figure A.1.8.6 Indicative Concept - Lake Side Neighbourhoods

A.1.8.7 Creek Side Character

The subject site is affected by a significant network of creeks and waterbodies, which have been incorporated into the various open space areas within the development footprint. Development adjoining these areas needs to address security and privacy issues associated with their location. Bushfire Asset Protection Zones (APZs) will be required in the rear portions of lots adjoining riparian vegetation, which will affect the siting of dwellings and ancillary structures, as well as future construction materials.

Density

A mix of medium and low density forms such as courtyard and detached housing is to be utilised in these character areas. Lot dimensions will be dependent on APZs.

Built form and scale

The proposed street and block pattern has been designed to retain the existing natural vegetation on steeper slopes and close to creek corridors, and to reduce the visual impact of development from the riparian areas. Given that bushfire APZs will affect the rear portions of lots adjoining riparian areas, dwellings are to be sited in the front of lots which will also assist in minimising adverse impacts on the creek areas. The grid street and block pattern defines the edges of the development and provides a distinct separation between private property and riparian open space via a series of esplanade roads running along the open space corridors where slope allows. In steep areas adjoining the creeks, a network of fire access trails will be created allowing walking trail access alongside the creek corridors.

A sensitive climatic response is to be articulated through building form and layout and through building elements, such as eaves and horizontal sunshades. Metal roofing which is to be utilised in this character area is to consist of predominantly pitched or gabled roof forms. The majority of dwellings are to be constructed using a suspended floor construction method, given the geotechnical constraints affecting the area. Heights are to be predominantly up to 2 storey, with some single storey in areas affected by slope or geotechnical constraints. Colours are to be recessive to complement any existing vegetation.

Streetscape

The creek side housing built form will create the opportunity to retain the informal bushland character within these areas. Streets fronting riparian areas are to be relatively narrow, with a shared pathway to be located on the housing side of the road.

Housing

A range of detached and courtyard housing is to be utilised, with backyards that capitalise on their proximity to creeks and associated open space.

Living areas, including verandahs and front porches will open out onto views of the creek corridors, providing passive surveillance of the shared paths running within and along the creeks. The scale of the housing will, overtime, become overshadowed by that of the riparian vegetation.



Figure A.1.8.7 Indicative Concept - Creek Side Neighbourhoods

A.1.8.8 Hill Side Character

The undulating topography of the subject site has provided an opportunity for the creation of distinct character areas on the slopes of the subject site. Development within the Hill Side character areas will be designed to capitalise on the extensive views and vistas from the slopes and will be sympathetic to the natural landscape. Future development will essentially form a transition between the urban and rural form.

Density

Given topographical constraints, densities in the Hill Side character areas are lower than other character areas, as larger lots are required to enable the construction of detached dwellings.

Built Form and Scale

Development in these areas will respond to the natural landscape, in particular the sloping topography. Proposed built form will be a mix of traditional masonry and contemporary lightweight architecturally designed housing types. A combination of 2 storey and single storey detached built forms are proposed, depending on the location and topographical constraints. The overall massing of the proposed built form and building height is in response to the topography of the locality, proposed street widths, existing stands of vegetation and the alignment of the Creek. The proposed built form includes design elements such as eaves and horizontal sunshades which allow for a sustainable climatic response. Predominantly hipped or gabled sheet metal roof forms and simple lightweight skillion roofed additions have been influenced by existing built forms within the township. External colours are to be recessive to complement the landscape setting.

Streetscape

The streetscape will convey a transition between urban and rural or bushland character reflecting the existing landscape setting and township settlement pattern and its streetscapes. Garages will be located so as not to dominate the street frontages of individual dwellings. Larger lot sizes will provide greater separation between dwellings and opportunities for tree retention and landscape planting. Light weight construction materials and the use of suspended floors will help dwellings integrate with the existing landform and complement the informal bushland character.

Housing

Proposed dwellings in this character area will be single and two storey detached houses. Housing on steeper slopes has been sited in relation to access streets to allow slope responsive housing to be accessed from above. This allows houses to be built without the need for excessive cut and fill and associated retaining walls, and to allow living areas to open onto views of nearby creek corridors, retained vegetation and distant hills. Housing will be stepped to respond to slope and height limits, have smaller footprints and/or use suspended floors.

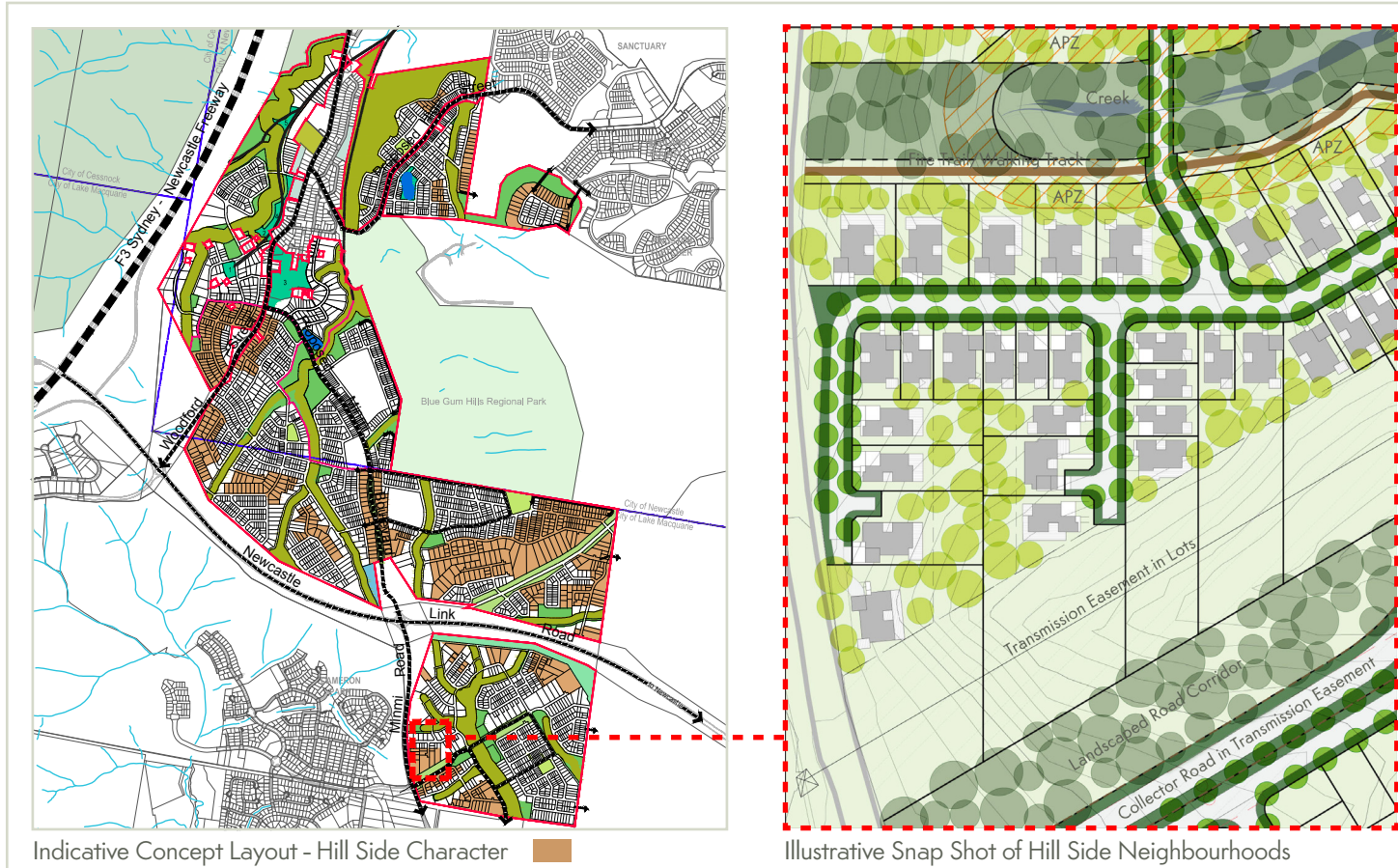


Figure A.1.8.8 Indicative Concept - Hill Side Neighbourhoods

A.2 Landscape Concept Plan

The landscape character of the Lower Hunter North Lands is derived from a combination of its fundamental physical characters such as geology, topography, vegetation and the history of land use that has modified these characteristics. In broad terms four landscape character types have been identified across the site.

The Heritage Character of Minmi

Landscape Curtilage

The landscape character of the village is a reflection of past land use of farming and coal mining. Clearing of the land for development to support the coal mining industry has necessitated the removal of much of the natural vegetation leaving the village surrounded by large allotments and open fields establishing a strong rural character. A number of items of heritage significance add to the charm and character of the village and present themselves in a culturally sensitive setting e.g. Courthouse and Duckenfield railway embankment. The village of Minmi itself is characterised by freestanding hip and gable roofed cottages of which only a few remain in their original late 19th century state. The surrounding natural bush land setting is a strong characteristic of distant views from the village.

Hexham Swamp Edge Character

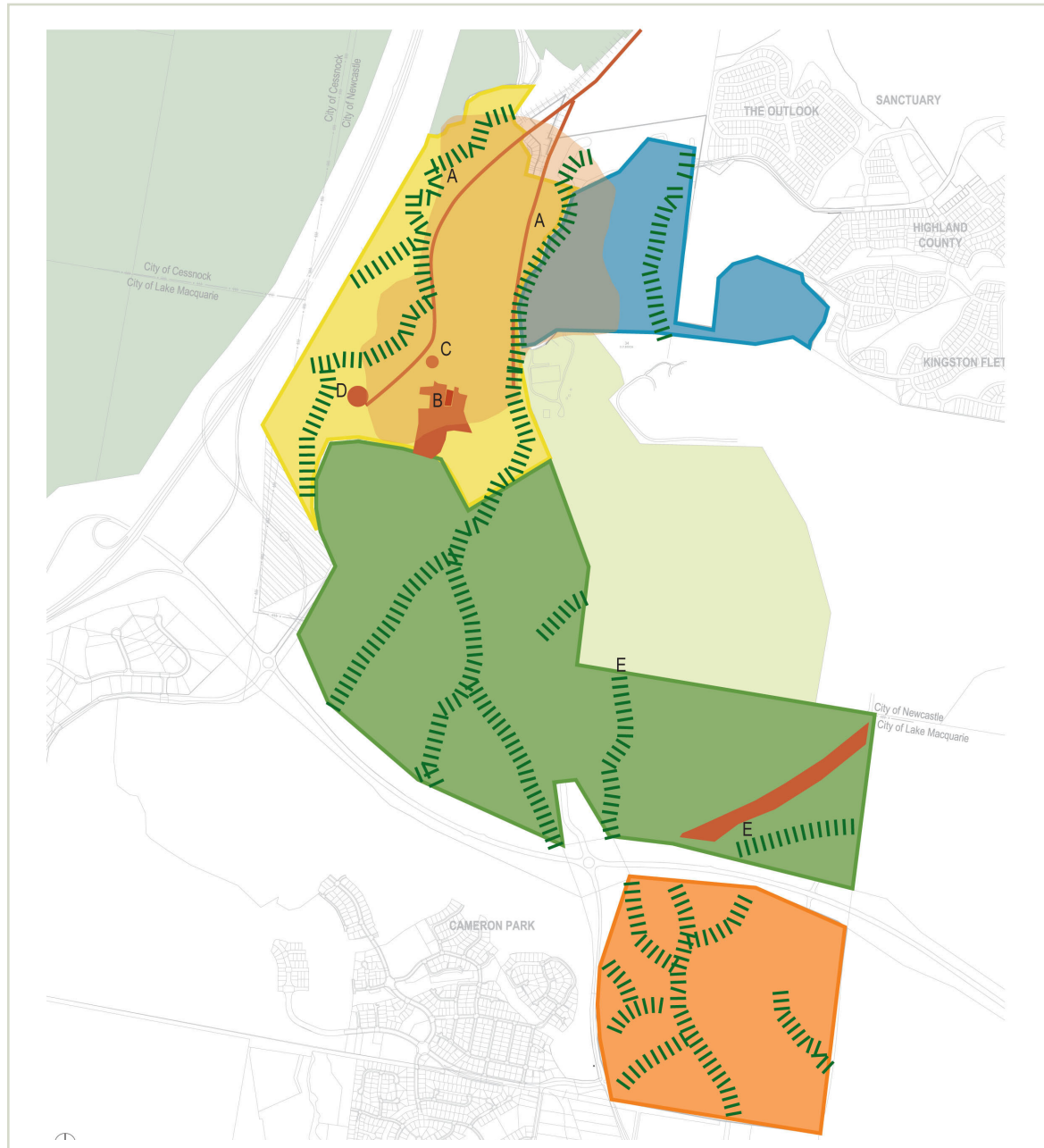
The landscape character of this precinct is defined by a subtle undulating topography generally sloping to the North West. It is a transition landscape between the flat plains of Hexham Swamp and Spotted Gum Forest to the south. Open Woodland species dominate the landscape allowing natural light to penetrate the canopy and clear views out to the open sky. The distant views to the north across the broad flat landscape shaped by intermittent flooding reinforce the unique character of this area.

Forest Character

The Forest Precinct is characterised by dominant ridgelines, generally north facing valleys with steep east and west facing slopes. Valley creek lines are moist and enclosed, housing the Alluvial Tall Moist Forest species that create the dense tree canopy which characterises this precinct. Tall clear stemmed tree species dominate the upper canopy in the gullies and valley slopes. The eastern and western slopes are vegetated with Coastal Foothills Spotted Gum – Ironbark Forest. The western slopes tend to be warmer, drier and slightly more open in character due to their aspect and solar exposure. Towards the ridgelines a more open landscape character prevails with the increased transparency of the canopy exposing more sky.

Lake Macquarie Catchments Character

This precinct is separated from the rest of the development by its aspect and hydrology as well as the physical barrier of the Link Road. This portion of the site forms part of the Lake Macquarie catchments. It comprises land sloping south with steeply incised valleys descending from the ridge on which Link Road runs. Vegetation tends to be wetter and denser, particularly in the steeper south and east facing areas. The character of the precinct is impacted by the transmission lines which bisect the precinct, and the adjacent developments.



Legend

- MINMI LANDSCAPE CURTILAGE**
Minmi historic township gains much of its character from its landscape curtilage. As such carefull attention needs to be taken to not intrude upon the landscape curtilage with any unsympathetic development or landscape treatment.

- RIPARIAN/ VEGETATED/ RECREATION CORRIDORS**

- REGIONAL PARK/ CONSERVATION AREA/ RECREATION AREA**

- PRINCIPAL HERITAGE ITEMS**
- A Historic Railway
- B Court House and J. Brown Garden House Park
- C Coke Ovens
- D Workshop area
- E Aboriginal & Archeological Heritage

- LANDSCAPE CHARACTER AREAS**
- Heritage Character of Minmi Landscape Curtilage
- Hexham Swamp Edge character.
- Forest Character
- Lake Macquarie Catchment Character

Figure A.2 Landscape Concept Plan

A.3 Development Staging Plan

The development is intended to be staged:

- There will be five development stages within the proposed township development. These stages relate to the precincts within the development footprint and existing occupant arrangements with Coal & Allied.
- The provision of infrastructure is to be undertaken in five packages that service each of the precincts.
- Delivery of the public domain and infrastructure in five stages is intended to be a robust mechanism for development. This ensures integrated delivery of services, roads and public open space.

Staging the development in this regard will ensure that each precinct will have access to an growing open space network.

Stage 1 – Minmi East Precinct:

- Residential dwelling units ranging from townhouse, courtyards, traditional and lifestyle lots;
- Medium density/Mixed use development;
- Delivery of public domain and infrastructure, sporting and community facilities; and

- New local streets network, proposed sporting field and recreational park and associated infrastructure.

Stage 2 – Link Road South Precinct

- Residential dwelling units; ranging from townhouse, traditional, courtyard and lifestyle lots;
- Proposed Landscaped Collector Road corridor running between easement line;
- Delivery of public domain including the landscape tree retention zone; fauna corridor, local park line and associated infrastructure required for development; and
- New local streets network and associated infrastructure.

Stage 3 – Minmi Extension Precinct:

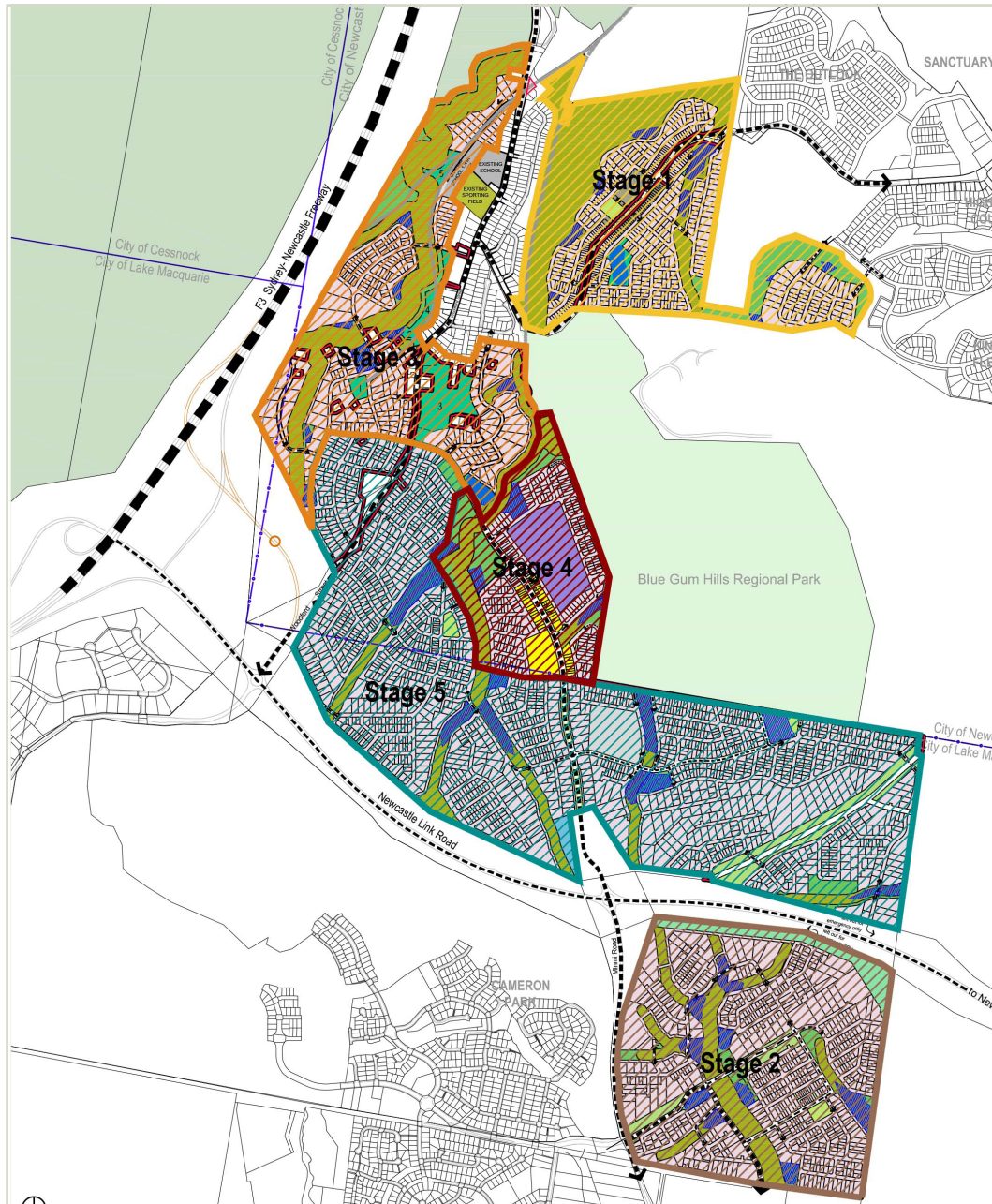
- Residential dwelling units ranging from traditional, courtyard and lifestyle heritage lots;
- New Minmi Boulevard and associated infrastructure;
- Delivery of public domain including Workshop Park and Garden House Park, the linear park and part of the heritage walk and associated infrastructure required for development; and
- New local streets network and associated infrastructure.

Stage 4 – Village Centre:

- Residential dwelling units ranging from townhouse, courtyard and traditional lots;
- Mixed Used development including community facilities;
- One super lot for independent living units on a total area of 7.6ha (approximate);
- Delivery of public domain and associated infrastructure required for development;
- New local streets network and associated infrastructure; and
- One lot for commercial and fire station use.

Stage 5 – Link Road North Precinct:

- Residential dwelling units ranging from courtyard, traditional and lifestyle lots;
- Delivery of public domain including the landscape tree retention zone; heritage open space; water reservoir area, two local parks and associated infrastructure required for development; and
- New local streets network and associated infrastructure.
- School Precinct; total of 4.0 ha (approximate);
- Proposed bus route linking from the school zone to Newcastle Link Road;



Legend

-  STAGE 1 - Minmi East Precinct
-  STAGE 2 - Link Road South Precinct
-  STAGE 3 - Minmi Extension Precinct
-  STAGE 4 - Village Centre Precinct
-  STAGE 5 - Link Road North Precinct

Figure A.3.1 Indicative Staging Plan

A.4 Concept Plan Land Use Budgets and Indicative Lot Yields

A.4.1 Land Use Summary

Land Use Category	Total Area (Ha)
Total Site Area	519.26
Open Space	137.42
Neighbourhood Parks	3.10
Riparian Corridors	89.88
Passive Open Space	29.75
Link Road Edge	5.34
Feature Parks	9.35
Proposed Roads	13.96
Proposed Land Use	367.88
Village Centre (Mixed use/retail)	4.00
Minmi Township (Mixed Use/Retail)	0.20
Minmi High Street (Mixed use/retail)	2.35
Independent Living Units	7.64
Residential Areas*	340.12
Primary School	4.02
Minmi School Extension	1.32
Potable Water Reservoir Lot	1.16
Landscaped Road Corridor	7.07

Notes:

* Residential area includes lots and local roads,

Areas above are approximate and not based on field survey.

A.4.2 Distribution of Character Areas and Indicative Yield by Precinct

Land Use Category	Land Area and Dwelling Yield by Precinct																					
	Minmi East				Minmi Ext				Village Centre				Link Road North				Link Road South				Total	
	ha	% local road	density dw/ha	dw	ha	% local road	density dw/ha	dw	ha	% local road	density dw/ha	dw	ha	% local road	density dw/ha	dw	ha	% local road	density dw/ha	dw	ha	density dw/ha
Total Residential Area (TRA)	41.66	26.7%	13.8		46.15	19.3%	6.6		29.84	24.8%	19.3		166.79	22.5%	12.4		69.87	22.7%	11.1		354.31	12.1
Proposed Character Areas																						
High Street Character	7.81	26.7%	15.7	90	0.2	19.3%	24.8	4	-	-	-	-	-	-	-	-	-	-	-	-	8.01	94
Traditional Housing Character	13.65	26.7%	15.8	158	4.96	19.3%	13.7	55	9.10	24.8%	14.8	101	68.52	22.5%	16.5	876	32.49	22.7%	16.2	406	128.72	1,596
Conservation Heritage Character	-	-		-	14.09	19.3%	9.7	110	-	-		-	-	-		-	-	-		-	14.09	110
Park Side Character	2.27	26.7%	20.4	34	-	-		-	6.51	24.8%	19.0	93	4.99	22.5%	24.8	96	1.32	22.7%	25.5	26	15.09	249
Lake Side Character	1.41	26.7%	20.3	21	0.99	19.3%	17.5	14	1.14	24.8%	19.8	17	-	-		-	-	-		-	3.54	52
Creek Side Character	7.44	26.7%	9.9	54	25.91	19.3%	3.0	63	1.45	24.8%	9.2	10	21.94	22.5%	14.5	246	22.05	22.7%	5.9	100	78.79	473
Hill Side Character	9.08	26.7%	9.5	63	-	-		-	-	-		-	71.34	22.5%	6.9	384	14.01	22.7%	6.3	68	94.43	515
Village Centre Character (Mixed Use)	-	-	-	-	-	-	-	-	4.00	24.8%	19.6	59	-	-	-	-	-	-	-	-	4.00	59
Independent Living Units	-	-	-	-	-	-	-	-	7.64	-		152	-	-	-	-	-	-	-	-	7.64	152
Precinct Total	41.66			420	46.15			246	29.84			432	166.79			1,602	69.87			600	354.31	3,300
Estimated Local Roads (x% of TRA)	11.11	26.7%			8.91	19.3%			7.42	24.8%			37.45	22.5%			15.84	22.7%			80.73	22.8%

Note:

- Total Residential Areas include local roads (exclude open space)
- Local Road percentages are estimates only .
- Number of Dwellings are calculated by subtracting estimated local road from TRA and multiplying the density.
- Dwellings per hectare applied to residential land excluding road and open space.
- Approximate land use area based on indicative lot layout.

A.4.3 Average Lot Size and Range by Precinct

Proposed Character Areas	Lot Size Range by Precinct									
	Minmi East		Minmi Ext		Village Centre		Link Road North		Link Road South	
	Lot size range	Avg lot size	Lot size range	Avg lot size	Lot size range	Avg lot size	Lot size range	Avg lot size	Lot size range	Avg lot size
	m2	m2	m2	m2	m2	m2	m2	m2	m2	m2
High Street Character	175-470	350	175-470	400	-	-	-	-	-	-
Traditional Housing Character	300-900	450	300-900	550	300-900	450	300-900	550	300-900	550
Conservation Heritage Character	-	-	525-900+	750	-	-	-	-	-	-
Park Side Character	175-900	350	-	-	175-900	400	175-900	350	175-900	350
Lake Side Character	175-900	400	175-900	450	175-900	400	-	-	-	-
Creek Side Character	300- 900(+50% for APZ)	725	300- 900(+50% for APZ)	2500	300- 900(+50% for APZ)	725	300- 900(+50% for APZ)	650	300- 900(+50% for APZ)	1500
Hill Side Character	525-900+	750	-	-	525-900+	750	525-900+	1250	525-900+	1400
Village Centre Character (Mixed Use)	-	-	-	-	175-470	350	-	-	-	-

Note: excludes large mixed use sites such as integrated shopping centres and retirement village.