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1 INTRODUCTION

The purpose of this Area Plan is to guide the redevelopment of the former Pasminco Cockle Creek Smelter site and the former Incitec Pivot Fertilizer site. The Pasminco and Incitec sites are located north of the historic village of Boolaroo, between Cockle Creek and Munibung Hill.

1.1 EXTENT OF AREA PLAN

This Area Plan applies to land shown in Figure 1.

Figure 1 - Extent of Area Plan
1.2 HISTORY

The Pasminco Cockle Creek Smelter site and Incitec Pivot Fertilizer site are located within the traditional country of the Awabakal people. European settlement of the land began in the 1830-40s and consisted of small-scale agriculture and coal mining. Industrial activities commenced in the 1890s and included lead smelting and fertiliser production. Industrial activities ceased on the Pasminco site in 2003, and the Incitec site in 2009.

1.3 EXISTING CHARACTER

Topography

The topography varies between 1.5m to 160m above sea level and includes low-lying land adjacent to Cockle Creek and ridgelines associated with Munibung Hill. Cockle Creek and Munibung Hill are both culturally important landscapes to the Awabakal people. Munibung Hill also has high scenic values.

Activities and Uses

The Pasminco Cockle Creek Smelter site and Incitec Pivot Fertilizer site predominantly consist of cleared, former industrial land. Part of the Pasminco Cockle Creek Smelter site includes remnant native vegetation with significant biodiversity values.

Built form

The majority of the industrial buildings and equipment associated with the two sites has been demolished. The only exception is the former Pasminco laboratory building which is a listed heritage item.

Transport Network

Main Road, T.C. Frith Avenue and Munibung Road provide vehicle access to the Pasminco Cockle Creek Smelter site. First Street provides vehicle access to the Incitec Pivot Fertilizer site. The Cockle Creek railway station is located north of the Pasminco Cockle Creek Smelter site and provides train services to Newcastle and Sydney. Bus services to Warners Bay and Newcastle (via Glendale) are accessible from Boolaroo.

A pedestrian link is located along Main Road and T.C. Frith Avenue (north of Main Road), and provides access between Boolaroo and Argenton. However, the pedestrian link is not completely paved along T.C. Frith Avenue and pedestrian access from Main Road to T.C. Frith Avenue is constrained by high traffic volumes. A road refuge to facilitate road crossings is not provided.

1.4 ENVIRONMENTAL CONSTRAINTS

Land Contamination

The Pasminco Cockle Creek Smelter site and Incitec Pivot Fertilizer site are declared ‘remediation sites’ under the Contaminated Land Management Act 1997. Remediation will include excavation of contaminated material and placement into a containment cell (hazardous waste storage facility) on the Pasminco site. The containment cell will store the contaminated material indefinitely and will require long-term management and maintenance. Several bushland areas (Angophora inopina Reserve and Munibung Hill Reserve) will not be completely remediated and will also require long-term management and maintenance. Restrictions on the use of ground water may also apply across the site.

The containment cell will be retained in private ownership, and Angophora inopina Reserve and Munibung Hill Reserve are anticipated to be retained in private ownership. Implementation of long-term management plans for the containment cell, Angophora inopina Reserve and Munibung Hill Reserve are necessary to ensure that these areas do not re-contaminate the surrounding land, proposed to be used for residential housing and business development.

Note: Council will not accept ownership or management responsibility for the containment cell, or any land that is contaminated, including roads or stormwater infrastructure. Council will not consider accepting ownership or management responsibility of Angophora inopina Reserve and Munibung Hill Reserve unless management plans have been prepared and implemented to the satisfaction of Council.
2 DESIRED FUTURE CHARACTER

Desired Urban Structure

It is envisaged that the site will be remediated and redeveloped to provide residential and employment areas which:

- respect the cultural value of Munibung Hill to the Awabakal people;
- recognise the history of the industrial activity in the area;
- integrate future development into the existing urban and natural environment;
- reinforce the existing character of Main Road and the village of Boolaroo;
- enhance the natural environment such as watercourses and biodiversity values including native flora species *Angophora inopina*;
- retain and enhance the scenic amenity and significance of Munibung Hill;
- provide a range of choice in housing types; and
- encourage walking and cycling and facilitate the use of public transport.

An urban structure map and a cycleway, heritage and open space map outlining the desired future character is presented in Figure 2 and Figure 3. The key elements of the urban structure map include:

- integration industrial heritage values, the containment cell and remediated land into the existing urban fabric;
- a range of residential lands consisting of low to medium density residential development, and employment lands for mixed use and light industrial development;
- new environmental conservation and Aboriginal heritage areas including the establishment of *Angophora inopina* Reserve and Munibung Hill Reserve; and
- transport upgrades and linkages within the site and surrounding area.

Desired Urban Character (Key transport and landuse interface areas only)

**The intersection of Main Road and First Street:** Residential development located adjacent to the intersection of Main Road and First Street should complement the streetscape and built form of the Boolaroo Heritage Precinct. Residential development should be two storeys high to match the scale of adjoining commercial development. Residential development should be designed with building frontages and entries clearly addressing either Main Road or First Street. Windows of habitable rooms should overlook Main Road or First Street. Front fencing should not exceed 1.2m high.

**Main Road:** Residential development should be designed with building frontages and entries clearly addressing Main Road. Windows of habitable rooms should overlook Main Road. Front fencing should not exceed 1.2m high.

If site grades on the western-side of Main Road constrain development from addressing the street, a landscaped buffer area should separate residential development from Main Road. The indicative location of the landscape buffer is shown in Figure 2. An indicative cross section of Main Road with a landscape buffer is provided in Figure 4. Rear fencing of residential development adjoining Main Road must be consistent along the entire length of Main Road. Sheet steel fencing is not acceptable. The fencing design must be resolved at subdivision stage and be compatible with noise attenuation requirements.

**T.C. Frith Avenue and Munibung Road:** Residential development along T.C. Frith Avenue and Munibung Road should be separated by a landscaped buffer and local road as shown indicatively in Figure 2. Building frontages and entries should clearly address local road. Windows of habitable rooms should overlook the local road. Front fencing should not exceed 1.2m high. An indicative cross section of T.C. Frith Avenue and Munibung Road is provided in Figure 4.

**Residential / Industrial Interfaces:** Residential development south of Munibung Road should be separated from light industrial development by a landscape buffer and a local road as shown indicatively in Figure 2. Building frontages and entries should clearly address the local road. Windows of habitable rooms should
overlook the local road. An indicative cross section of the landscape buffer and local road is shown in Figure 4. Rear fencing of industrial properties must be consistent. Sheet steel fencing is not acceptable.

Residential / Riparian and Detention Basin Interfaces: Residential lots should be separated from riparian linkages and detention basins by a local road as shown in Figure 5. Residential buildings should be designed with windows of habitable rooms overlooking riparian linkages and detention basins. Residential lots must not be designed with rear boundaries and fences adjoining riparian linkages and detention basins. Riparian linkages and detention basins should be landscaped and provide opportunities for passive recreation and vehicle access for ease of maintenance.

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Figure 2 - Urban Structure Map
Figure 3 - Cycleway, Heritage and Open Space Map
Figure 4 - Indicative Cross-sections of Selected Roads

Note: Landscape buffer plantings should consist of large trees, with a low maintenance understorey or grass, and must be determined in consultation with Council.
Figure 5 - Indicative residential development interface with riparian linkages and detention basins
3 CONTAMINATION

3.1 CONTAMINATED LAND

Objectives

a. To ensure land surrounding the containment cell, Angophora inopina Reserve and Munibung Hill Reserve is not subject to contamination risk and is suitable for development in accordance with s4.15 of the EP&A Act 1979.

Note: ‘Contamination risk’ includes contaminating substances moving from the containment cell, Angophora inopina Reserve and Munibung Hill Reserve onto surrounding land. Refer to Section 4.3 of the Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land for further details on ‘contamination risk’.

Controls

1. Consent to subdivide land surrounding the containment cell into standard mixed use, commercial or residential lots must not be granted until a long-term management plan for the containment cell has been prepared and implemented to the satisfaction of Council.

2. Consent to subdivide residential land located adjacent to Angophora inopina Reserve and Munibung Hill Reserve into standard residential lots must not be granted until long-term management plans for these areas have been prepared and implemented to the satisfaction of Council.

Note: Controls 1 and 2 do not apply to the subdivision of land into super lots.

3.2 CONTAINMENT CELL

Objectives

a. To provide physical separation between the containment cell and adjacent land uses.

b. To provide an access road around the cell.

c. To provide passive surveillance of the containment cell.

d. To prevent erosion on the site and promote visual integration of the containment cell into the landscape character of Munibung Hill.

e. To ensure appropriate levels of public access and signage to the containment cell.

f. To ensure the public are not exposed to contaminated material.

Controls

1. A road must be provided around the perimeter of the containment cell.

2. The perimeter road must not be located within the containment cell lot.

3. The perimeter road must be located on a separate road reserve in public ownership.

4. Buildings adjacent to the containment cell must be oriented and designed to provide passive surveillance of the containment cell.

5. A landscape master plan must be prepared for the containment cell and should be consistent with the following requirements:

   i. the top of the containment cell should be grassed;

   ii. the slopes of the containment cell should be vegetated with dense shrubs;

   iii. a band of informally planted trees should be planted along the perimeter edge of the top of the containment cell;

   iv. any containment cell infrastructure such as detention basins or swales should be landscaped; and
v. details of proposed maintenance access points, public access points, public signage and fencing must also be included in the landscape master plan.

6. Any excavation within the containment cell site must be performed in consultation with an accredited land contamination site auditor under the NSW site auditor scheme.

3.3 ANGOPHORA INOPINA RESERVE AND MUNIBUNG HILL RESERVE

Objectives

a. To ensure biodiversity values, bushfire risk and land contamination issues associated with *Angophora inopina* Reserve and Munibung Hill Reserve are appropriately managed.

b. To enhance the existing landscape and scenic qualities of Munibung Hill.

c. To ensure residential development is separated from land with bushfire risk, land contamination and biodiversity values.

Controls

1. Management plans for the *Angophora inopina* Reserve and Munibung Hill Reserve must address the following matters:

   i. the proposed land tenure and managing body for the reserves;

   ii. the rehabilitation and ongoing management of native vegetation areas;

   iii. bushfire control, fire trails, weed and feral animal management measures;  
      
      **Note:** The location of fire trails should utilise the alignment of existing trails where possible, and connect to the local road network to enable emergency vehicle access.

   iv. the management and stabilisation of any contaminated soil to prevent public contact and contaminated soil leaving the site including in the event of fire or in stormwater runoff;

   v. stormwater treatment to ensure contaminated material does not leave the site and contaminate off-site stormwater infrastructure and residential areas;

   vi. the identification of areas suitable for public access and recreation;

   vii. proposed buffers, edge treatments and management measures to reduce ongoing impacts and management costs at the interfaces between the reserves, and urban areas; and

   viii. the establishment of a ridge line native vegetation regeneration link 50m wide as shown in Figure 3.

2. A road must separate residential development from the *Angophora inopina* Reserve and Munibung Hill Reserve.

3. The road must be located on a separate road reserve in public ownership.
4 SITE ACCESS, MOBILITY AND CONNECTIVITY WITH ADJOINING AREAS

Objectives

a. To create a transport network that provides access, mobility and connectivity within the site and to adjoining areas with regards to vehicles, pedestrians and bicycles.

b. To promote development that integrates with the existing subdivision pattern of Boolaroo, the Cardiff Industrial area and Munibung Hill.

c. To encourage safe and effective pedestrian and cycle networks.

Controls

1. Road links and cycleways should be provided in accordance with Figure 2 and Figure 3.

2. Primary road linkages must be designed in accordance with the following requirements:
   i. Munibung Road extension (road reservation and carriageway) must be an industrial road and must include footpaths;
   ii. All other primary roads are collector roads and must cater for buses; and
   iii. The proposed intersection between Munibung Road, Main Road and T.C. Frith Avenue must be designed to accommodate safe vehicular, pedestrian and cycle movements.

3. An underground water main located along the eastern side of Main Road (within lot 2 D.P. 1127713) should be:
   i. incorporated into the front setback area of residential development addressing Main Road (the front setback should not be greater than 11m); or
   ii. relocated into the existing Main Road, road reserve.

4. The local road network in residential areas should be designed to achieve:
   i. a subdivision pattern consistent with the existing grid subdivision pattern of Boolaroo residential lots and with good solar access;
   ii. connections with existing local roads to Council’s satisfaction;
   iii. a low speed environment (50 km/h speed zoning); and
   iv. a walkable and permeable street network avoiding long street blocks.

5. Pedestrian links and cycleways must connect with Cockle Creek Station and the Lake Macquarie bicycle network. A safe pedestrian / cyclist crossing must be provided across T.C. Firth Avenue at a location and type to be determined by Roads and Maritime.

6. The implications of the proposed road network on the efficiency and safety of traffic movement in Boolaroo must be investigated and mitigation measures must be included in any development application that proposes changes to the existing road network.

Note: To limit adverse impacts on the existing local road network, traffic management measures may be required to limit traffic volumes entering existing local roads during peak periods.
5 EMPLOYMENT LANDS

Objectives

a. To ensure development on employment related land does not result in unacceptable amenity impacts on surrounding residential or conservations areas.

Controls

1. Light industrial development adjacent to residential areas must comply with the following requirements:

   i. development must not have an unacceptable adverse impact on the amenity of surrounding residential areas by virtue of noise, vibration, air / odour pollution, traffic generation and/or hours of operation;

   ii. development must be designed to promote the protection of the amenity of surrounding residential areas through a range of measures including appropriate land uses, location of access and parking, use of acoustic screens, and controls on hours of operation;

   iii. development applications must be accompanied by an acoustic and vibration study establishing that noise criteria for residential amenity and intrusive industrial noise specified in the NSW Industrial Noise Policy (INP) will be achieved at the boundary of the nearest residential property;

   iv. development proposals must ensure that lot size and dimensions are adequate to enable implementation of noise controls; and

2. development adjacent to the *Angophora inopina* Reserve must incorporate measures that prevent encroachment of industrial activities, weed invasion, and access into the reserve.
6 NOISE ATTENUATION

Objectives

a. To ensure development achieves acceptable levels of amenity in relation to road and rail traffic noise and vibration.

b. To ensure any noise walls do not compromise pedestrian / bicycle links and are not a maintenance liability to Council.

Controls

1. Subdivision applications for the creation of residential or commercial / mixed use lots adjoining T.C. Frith Avenue, Munibung Road, Main Road and the Great Northern Railway must be accompanied by a detailed acoustic and vibration study prepared to the satisfaction of Council. Acoustic modelling must be based on the proposed subdivision pattern and finished ground levels and include:
   i. the location and the elevation of noise sources such as vehicles; and
   ii. the location and elevation of noise receptors such as building windows of new development.

2. Noise acoustic treatments should consist of:
   i. a continuous building frontage comprising of building facades connected by solid fencing located at least 1m behind the front building line;
   ii. acoustic treatments to building facades and windows; and
   iii. the placement of noise sensitive rooms and private outdoor areas away from noise sources.

3. Noise walls should only be provided where the above acoustic treatments cannot achieve levels of acoustic amenity to the satisfaction of Council.

4. Any proposed noise walls must be designed to the satisfaction Council and accompanied by a funded maintenance plan where the noise wall is proposed to be maintained by Council.

5. Bicycle / pedestrian links must be provided through any proposed noise walls.
7 HERITAGE CONSERVATION AND INTERPRETATION

Objectives

a. To acknowledge the value of Munibung Hill to the Awabakal people.

b. To conserve, interpret and incorporate industrial heritage as part of future development.

c. To encourage development that respects the history of the site’s development and former industrial use.

d. To retain and adaptively reuse the Old Laboratory Building as a landmark within the site.

e. To integrate interpretative material with the emerging urban form.

Controls

1. Development must be in accordance with the Heritage Interpretation Plan and the Conservation Management Plan - Former Sulphide Corporation Assay Building, prepared by Graham Brooks and Associates Pty Ltd, November 2009.

   Note: An electronic version of the Heritage Interpretation Plan and the Conservation Management Plan is available on request from Council.

2. A site wide Heritage Interpretation Masterplan must be prepared prior to superlot subdivision to ensure a meaningful and consistent approach to the interpretation of heritage matters is achieved across the Pasminco Cockle Creek Smelter site and Incitec Pivot Fertilizer sites. The Heritage Interpretation Strategy must include:

   i. a schedule of plaques, public artworks, and commemorative displays to be provided across the site;

   ii. a list of Aboriginal names prepared in consultation with local Aboriginal stakeholders to be used in the naming of parks and reserves;

   iii. a list of former long serving workers at the Pasminco Cockle Creek Smelter site and Incitec Pivot Fertilizer site to be used in the naming of local streets; and

   iv. a schedule of salvaged materials from the Pasminco Cockle Creek Smelter and Incitec Pivot Cockle Creek sites that must be incorporated into the design of the landscaping and the public domain in consultation with Council.

3. Development must be in accordance with the site wide Heritage Interpretation Masterplan.

4. Development should ensure that:

   i. the Old Laboratory building is retained in a prominent location in the site layout and with an appropriate curtilage;

   ii. the alignment of the former Cockle Creek spur railway line is maintained over most of its length as part of the movement system of the site; and

   iii. the public domain includes salvaged items from the Pasminco and Incitec sites in landscaping.

   Note: Refer to Figure 3 for the location of the Old Laboratory building and former Cockle Creek spur railway line.

5. Development that includes plaques, public artworks, commemorative displays and salvaged items must be accompanied by a schedule outlining the ongoing maintenance activities for the items, and the funding arrangements for lifecycle management of the items to the satisfaction of Council.

6. Development of the land associated with the Old Laboratory building must be accompanied by a Heritage Assessment and Statement of Heritage Impact, and must outline:
i. appropriate curtilage for the Old Laboratory Building site; and

ii. appropriate setbacks and building heights for development adjacent to the Old Laboratory Building.
8 LANDSCAPING AND THE PUBLIC DOMAIN

Objectives

a. To ensure that landscaping recognises and enhances the local character of the area.

Controls

1. A landscape plan must be prepared for any landscape buffer between residential development and T.C. Frith Avenue.
2. A streetscape master plan must be prepared for Main Road upgrade and Munibung Road extension.
3. Landscaping adjacent to the *Angophora inopina* Reserve is to consist of native species grown from local seed.
4. Landscaping should include salvaged materials from the Pasminco Cockle Creek Smelter site and Incitec Pivot Fertilizer site.

Note: For containment cell landscaping requirements refer to Section 3.1.

9 LOCAL PARK

Objectives

a. To establish a local park in accordance with the desired urban structure for the area.
b. To provide for the local recreational needs of future residents and workers.

Controls

1. A local park must be established as part of the subdivision of 13A Main Road (Lot 2, D.P. 1127713) into standard mixed use, commercial or residential lots.

   Note: Control 1 does not apply to the subdivision of the land into superlots.

2. The local park must be established to the satisfaction of Council and should be:
   i. located in the vicinity of the location shown in Figure 3;
   ii. 5000m² area and be square or rectangular in configuration;
   iii. consist of flat land or land with a gentle slope;
   iv. have street frontage extending along at least two of the side boundaries; and
   v. be fit for purpose for development as a local park and not have any constraints.