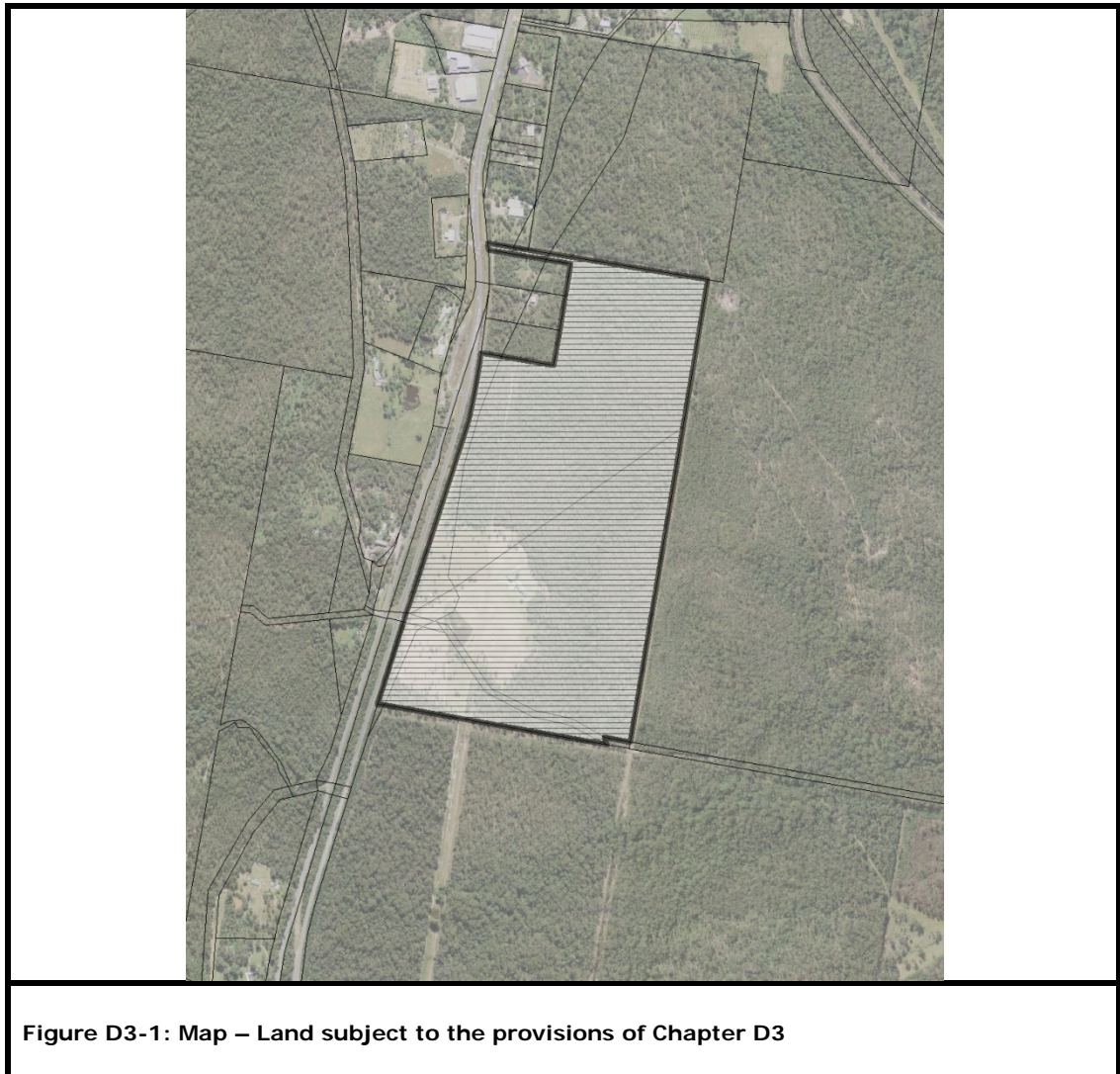


Chapter D3 – South Kempsey Industrial

1.0 Introduction

1.1 Scope of this Chapter

This DCP Chapter applies to development on the land with the real property description of Lot 100 on DP776239 (as at time of adoption of the DCP), as indicated by the bold outlines in the figures below.



The plan applies to all development requiring consent on the land to which the plan applies.

1.2 Relationship to Other Chapters of this DCP

The provisions of this Chapter override the provisions of any other Chapter of this DCP, to the extent of any inconsistency.

2.0 Chapter Objectives

The objectives of this Chapter are:

- a) To provide for employment generating development including a Highway Service Centre and industrial and business development in a manner which is consistent with the environmental characteristics and capability of the site.
- b) To preserve the visual integrity of the Pacific Highway corridor as a national highway.
- c) To facilitate the long term conservation and management of land with that part of the site that is zoned E2 - Environmental Conservation.
- d) To facilitate staged development of the site consistent with infrastructure capacity and in acknowledgement of the existing approved quarry operations.

3.0 Definitions

Terms used in this Chapter have the same meaning as those used in [Kempsey Local Environmental Plan 2013](#), with the exception of the following:

Initial subdivision plan means a plan of subdivision without physical works to create super-lots generally as shown on Plan 2 - Initial Subdivision (refer to Appendix A of this chapter).

4.0 Application Requirements

Development applications should include items and address matters as described below.

4.1 Statement of Environmental Effects

- a) All applications for development under this plan shall comply with the requirements of the *Environmental Planning and Assessment Act 1979* and *Environmental Planning and Assessment Regulation 2000* and shall include a Statement of Environmental Effects (SEE).
- b) In addition to a site plan, detailed development plans and elevations, the SEE must be accompanied by a Site Analysis Plan showing the context of the development relative to other existing or proposed development on the site and any special measures required as a consequence of the staging of development.
- c) The SEE should clearly address all relevant Council DCP and Policy requirements and where variations to those requirements are proposed provide a clear justification for the variation.
- d) Council encourages applicants to undertake a pre-lodgement consultation with Council planning staff prior to the finalisation of documentation for a proposed development.

4.2 Compliance with Management Plans

- a) All applications for development other than for an Initial Subdivision, shall clearly and concisely demonstrate as part of the SEE compliance with the Desired Outcomes and Development Requirements of this chapter and with the [Council's Koala Plan of Management](#).

4.3 Stormwater Management Plans

- a) The preparation of a 'Stormwater Management Plan' should address the following issues:
- site conditions and catchment context;
 - estimates of runoff where significant;
 - objectives and strategies for complying with water quality, water quantity, conveyance, discharge and flood protection criteria;
 - proposed layout and street design measures and incorporate stormwater source controls in street reserves;
 - provision of sufficient information to allow adequate assessment of the stormwater drainage system and its components; and
 - provide details as to the ownership of proposed water quality and quantity devices, i.e. Council owned or private allotment owned.
- b) The accompanying plan(s) should:
- demonstrate that Water Quality Treatment and Quantity Controls comply with the relevant 'Desired Outcomes';
 - demonstrate that the minor, major and allotment stormwater systems comply with the relevant 'Desired Outcomes';
 - demonstrate that the system can be installed, operated and maintained in a cost-effective manner;
 - provide details of any necessary covenants for the installation, operation and maintenance of the stormwater system; and
 - Address any other relevant measures required for the efficient operation, construction or maintenance of the proposed stormwater system.

5.0 Development Requirements

5.1 Development Staging

5.1.1 Access, Infrastructure and Land Use Conflict Factors

Desired Outcomes

DO1 - Site access is gained at only two points from the roundabout at the intersection of Macleay Valley Way and the Pacific Highway and development is staged to ensure that temporary access is not required.

DO2 - Development is staged so that it:

- Is consistent with any infrastructure servicing plan;
- Is consistent with the availability of services;
- commences with development adjacent to the roundabout at the intersection of Macleay Valley Way and the Pacific Highway;

- Accommodates areas of the site restricted for effluent disposal purposes, until such time that they can be rehabilitated to a developable standard; and
- Delays future development of the quarry site for subdivision and/or industrial purposes until all quarry operations have ceased and the land fully restored in accordance with the terms of any development consent for the quarry.

Development Requirements

Nil.

5.1.2 Development Stages

Desired Outcomes

- DO1 - Subdivision stages are provided with adequate sewer and water services to meet the needs of estimated future development within that stage.
- DO2 - Easements are provided for sewer and water services within subdivisions.
- DO3 - Roads are provided with each stage of subdivision commensurate with the needs of the proposed stages of subdivision and to facilitate connections to future subdivision stages.
- DO4 - Buildings are provided with essential infrastructure, prior to occupation.

Development Requirements

- a) Development applications for subdivision, with the exception of an Initial Subdivision, must demonstrate that the provision of water and sewerage services is an integral part of that subdivision proposal.

Note - An Initial Subdivision is a subdivision without physical works and separates the highway service centre area, industrial development area, quarry area and conservation area into super lots generally in accordance with Plan 2 - Initial Subdivision Plan (refer to Appendix A)

- b) The Initial Subdivision is to include appropriate easements to facilitate the future provision of water and sewerage services.
- c) Subsequent stages of development shall also take account of Plan 3 - Indicative Lot Layout (refer to Appendix A) and must include construction of the core road where relevant to any particular subdivision stage.
- d) Notwithstanding development requirement c) above, the lot layout and road pattern presented in Plan 3 Indicative Lot Layout and Plan 4 Masterplan (refer to Appendix A) may be varied as part of a development application for development after the Initial Subdivision where an alternative Masterplan is presented as part of the application and that alternative Masterplan demonstrates provision of suitable access for further stages of development and consistency with the objectives of this chapter.

5.2 Pacific Highway Frontage

Desired Outcomes

- DO1 - Subdivision and development is undertaken in a manner that mitigates adverse acoustic impacts on buildings from the Pacific Highway, to an acceptable level.
- DO2 - Development does not have an adverse visual impact as viewed from public areas and the Pacific Highway.
- DO3 - Where development is visible from the upgraded Pacific Highway, landscaping is provided to reduce the visual impact of future development adjacent to the highway corridor.

Development Requirements

5.2.1 Acoustic Buffer Setback

- a) No buildings are to be located closer than:
- (i) 65 metres to the nearest travelling lane of the upgraded Pacific Highway; and
 - (ii) 35 metres to the remaining industrial area boundaries.
- (iii) Development, including building and subdivision, achieves the following acoustic mitigation requirements:
- (i) Heavy industrial activities are avoided in the most eastern precincts of the industrial area to limit noise impacts the land within Zone E2 – Environmental Conservation;
 - (ii) Compliance with the *NSW Industrial Noise Policy* (NSW EPA, 2000); and
 - (iii) Compliance with the *NSW Environmental Criteria for Road Traffic Noise* (NSW EPA, 1999).
- (iv) Allotments created by subdivision are to be sized to accommodate both:
- (i) Sufficient land to accommodate projected development of the site; and
 - (ii) The acoustic buffer area as shown on Plan 4 Masterplan (refer to Appendix A).

5.2.2 Outdoor Storage

- a) Storage of materials and goods in external areas shall not occur within the front setback of any industrial lots nor in areas of any lot which are visible from the upgraded Pacific Highway, other than where the storage and display of such materials or goods is an integral component of the proposed use and the Council is satisfied that the outcome will not detract from the visual amenity of the locality.

5.2.3 Landscape Buffer

- a) Where industrial allotments are affected by the acoustic buffer requirement as indicated on Plan 4 Masterplan (refer to Appendix A) a minimum of 10 metres width of screen landscaping shall be provided along

the front setback area and shall be indicated by a restriction on title under section 88B of the *Conveyancing Act 1919*.

5.3 Traffic Management

Desired Outcomes

DO1 - No allotment has direct access to the upgraded Pacific Highway. All access to the subject area is gained from the 2 accesses from the RTA roundabout.

DO2 - Road and property access comply with the relevant requirements of:

- [Chapter B1 – Subdivision](#);
- [Chapter B2 – Access, Parking and Traffic Management](#);
- Section 5.10 of [Chapter C5 – Industrial Development](#); and
- [Council’s Engineering Guidelines for Subdivision and Development](#).

DO3 - Carparking, movement aisles, driveways and loading areas is provided in accordance with the relevant requirements of:

- [Chapter B2 – Access, Parking and Traffic Management](#); and
- Section 5.10 of [Chapter C5 – Industrial Development](#).

Development Requirements

5.3.1 Site Access

- a) All access for development within Stage 1 as shown on Plan 1 Staging Plan shall be via the link road to the RTA roundabout and all other development on the site shall have access via the core road providing the second link to the RTA roundabout.
- b) All allotments are to have direct access to a public road.

5.3.2 Road widths

- a) Roads are to be laid generally as shown in Plan 7 - Typical Road Cross Sections (refer to Appendix A).
- b) Roads and intersections shall be designed in accordance with [Council’s Engineering Guidelines for Subdivision and Development](#) but also with geometry which complies with engineering standards required for access by B-double trucks.

5.4 Infrastructure Servicing

Desired Outcomes

DO1 - Sufficient water supply and wastewater treatment infrastructure is provided commensurate with the requirement of that stage of subdivision and/or scale of development on the allotment.

DO2 - Water supply and wastewater treatment infrastructure complies with the relevant requirements of:

- [Chapter B3 – Engineering Requirements](#);
- [Chapter B8 – Onsite Sewage and Wastewater Management](#); and

- [Council's Engineering Guidelines for Subdivision and Development](#).

DO3 - Buffers required around sewer treatment systems do not unreasonably impact on the development potential of adjoining and neighbouring allotments.

Development Requirements

5.4.1 Water Supply

- a) Required water supply infrastructure for the site is to be provided and may comprise:
- (i) extension of an existing main from the Pacific Highway;
 - (ii) construction of an on-site reservoir; and
 - (iii) reticulated mains within internal subdivision roads.
- b) Development applications, other than for an Initial Subdivision, are to be accompanied with a full Water Servicing Plan that:
- (i) Details the proposed water demands of the development;
 - (ii) Considers the potential impacts on the existing supply;
 - (iii) Provides an overall water supply infrastructure plan for the whole site;
 - (iv) Demonstrates that sufficient fire fighting pressure will be provided throughout each stage of development;
 - (v) Details the water supply infrastructure required for each subdivision stage; and
 - (vi) Demonstrates that the required water supply infrastructure will be provided in conjunction with the development.

Note – A Water Servicing Strategy was prepared for the rezoning application which showed one way of providing water to the site.

Note – It may be necessary to include a draft Voluntary Planning Agreement in relation to the provision of water supply infrastructure.

- c) The Initial Subdivision is to include provision for easements for at least a water main extension and water reservoir, as applicable.
- d) The site for the water reservoir is to be dedicated to Council as part of any proposal for subdivision, with the exception of an application for Initial Subdivision.

5.4.2 Wastewater Treatment

- a) Other than an application for an Initial Subdivision, any application for development must include details of the applicable wastewater treatment system required to service the development or details of sewer connection to the property.

Note – a Wastewater Servicing Strategy, that was prepared in conjunction with a previous rezoning of the subject site, demonstrated that effluent disposal could be in the form of:

- Individual site wastewater treatment systems;

- A separate wastewater treatment system for the service centre and a centralised wastewater treatment system for industrial development;
- or
- Connection to Council's sewerage system, when available.

The recommendations of that Wastewater Servicing Strategy was for development to be serviced by individual wastewater treatment systems (package systems) installed on each individual lot and sized to accommodate the proposed developments wastewater usage.

- b) Any application for **subdivision** must include a Wastewater Management Plan for those lots which has been prepared by a suitably qualified consultant in accordance with the requirements of: AS1547 *Onsite Domestic Wastewater Management*; Environmental Health and Protection Guideline *Onsite Sewage Management for Single Households*; and DECC Environmental Guideline *Use of Treated Effluent for Irrigation*. The report shall address soil and environmental constraints on each site and provide details of measures which will be undertaken to ensure that the system has no negative impact on the surrounding environment.
- c) Applications for development on **individual lots** where a Wastewater Management Plan was not prepared at the subdivision stage shall include a Wastewater Management Plan prepared by a suitably qualified consultant in accordance with the requirements of: AS1547 *Onsite Domestic Wastewater Management*; Environmental Health and Protection Guideline *Onsite Sewage Management for Single Households*; and DECC Environmental Guideline *Use of Treated Effluent for Irrigation*. The report shall address soil and environmental constraints on the site and provide details of measures which will be undertaken to ensure that the system has no negative impact on the surrounding environment.
- d) Any application for development of the **Highway Service Centre** following the Initial Subdivision shall include a Wastewater Management Plan prepared by a suitably qualified consultant taking into consideration the requirements of: AS1547 *Onsite Domestic Wastewater Management*; Environmental Health and Protection Guideline *Onsite Sewage Management for Single Households*; and DECC Environmental Guideline *Use of Treated Effluent for Irrigation*. The report shall address soil and environmental constraints on the site and provide details of measures which will be undertaken to ensure that the system has no negative impact on the surrounding environment.
- e) No development shall be approved within Stage 3 or Stage 4 of the development unless:
- it can be demonstrated that there are currently no, or will not be, unacceptable cumulative impacts (eg odour, health, buffer intrusion) from on-site wastewater treatment systems associated with development undertaken within the subject area; or
 - reticulated sewerage services are available to the site.
- f) Buffers required around wastewater treatment systems are to be contained wholly on the lot that the system serves, so as to avoid sterilising development on neighbouring properties.

5.5 Stormwater Management

Desired Outcomes

- DO1 - A Stormwater Management Plan is submitted with any development application, except for Initial Subdivision, demonstrating compliance with the relevant Desired Outcomes of this section.
- DO2 - The stormwater system complies with the relevant requirements of:
- [Chapter B1 – Subdivision](#);
 - [Chapter B3 – Engineering Requirements](#);
 - [Chapter B5 – Stormwater Management](#);
 - [Chapter B6 – Water Sensitive Urban Design](#); and
 - The relevant requirements of [Council’s Engineering Guidelines for Subdivision and Development](#).
- DO3 - The stormwater drainage system is planned and designed to ensure that natural watercourses, associated vegetation and associated site topography are adequately considered and suitably maintained.
- DO4 - Stormwater planning, including site layout and building design, is undertaken to ensure:
- The design of the drainage system takes full account of the existing downstream systems;
 - A variety of controls (‘treatment trains’) are incorporated into the design of the system that minimise the impacts on water quality and quantity (where required) of stormwater runoff from the site;
 - The system is accessible and easily maintained, including ready access to system components located on private lands; and
 - The selection of materials, methodologies and mechanisms are based on their suitability, durability and cost-effectiveness, including ongoing maintenance costs.

Development Requirements

- a) The design protects natural watercourses and riparian corridors by avoiding disturbance, redirection, reshaping or modification of natural systems.
- b) A ‘Stormwater Management Plan’ (SMP) is submitted with any development application, except for Initial Subdivision, that demonstrates the development’s ability to meet the principles of Integrated Water Cycle Management in the design of the system and incorporates a variety of suitable:
- (i) Water sources;
 - (ii) Conveyance controls;
 - (iii) Discharge controls;
 - (iv) Water Quality Improvement Controls;
 - (v) Water Quantity Controls; and
 - (vi) Demand Controls.

Note – the remainder of this section provides detailed requirements to address the above.

5.5.1 Stormwater Runoff Quality

Desired Outcomes

- DO1 - Stormwater discharge to surface and underground receiving waters during construction activities and post-construction do not degrade the quality of receiving waters.
- DO2 - The stormwater management system optimises the interception, retention and removal of water borne pollutants before their discharge to receiving waters.
- DO3 - Point sources of pollution in the catchment are identified and their impacts minimised.
- DO4 - Water quality improvement devices are provided for the treatment of stormwater run-off before discharge from the site and are located to minimise negative impacts on both the natural and built (including traffic management) environments.

Development Requirements

- a) The development shall incorporate water quality treatment mechanisms designed in accordance with the CSIRO document "Urban Stormwater: Best Practice Management Guidelines" (published 1999), or latest equivalent, to ensure the following targets are met.

Table D3-1: Stormwater Treatment Objectives	
Pollutant	Removal Target
Total Suspended Solids (TSS)	80% retention of the average annual load
Total Nitrogen (TN)	45% retention of the average annual load
Total Phosphorous (TP)	45% retention of the average annual load
Litter (>50mm)	Provide mechanisms to retain litter from frequent flows.
Note – 'Average annual load' is the yearly weight of pollutants (kg/yr) from the developed site with no pollution controls installed.	

- b) A range of treatment technologies are to be used to meet the removal targets. A quantitative analysis demonstrating compliance with these targets is to be submitted with any development application, except for Initial Subdivision.

Note 1 - A number of software packages are available for this task, such as: MUSIC, SWMM, XP Storm, AQUALM XP, EMSS, AQUACYCLE and Switch. Some packages are more appropriate for different conditions.

Note 2 – Proprietary devices such as gross pollutant traps, pit inserts or filtration technology may be considered to supplement the treatment train at various stages. This may have benefits in terms of reducing land occupied by water treatment devices; however, they are not to be considered as a replacement.

- c) Development complies with the sediment and erosion control requirements of [Chapter B4 – Earthworks and Sediment Erosion Control](#).

- d) The design of any proposed bio-retention basins/wetlands shall:
- (i) have regard to the fact that Council will ultimately take ownership of the asset following construction; and
 - (ii) be generally aligned approximately parallel to the contours adjacent to existing catchment outlets.

5.5.2 Water Quantity

Desired Outcomes

DO1 - Natural water bodies, waterways and vegetation are retained and protected from degradation caused by increased stormwater flows where required.

Development Requirements

- a) A variety of suitable source, conveyance and discharge controls are provided and utilised to minimise the increase and impact of stormwater flows, both for smaller (5yr ARI) through to larger (100yr ARI) rainfall events. The design shall demonstrate that post-development peak flow does not exceed pre-development peak flow.

Note – The Stormwater Management Strategy included with the rezoning application for the subject land indicated that one way of achieving this requirement was for all new lots to be connected to their own detention tank/basin facility.

- b) Stormwater harvesting tanks shall be incorporated into future development in order to reduce potable water demand. Tanks shall be sized to accommodate the required onsite usage volume, and shall have a minimum volume of 5000L.
- (i) As a minimum, water from the roofwater collection tanks is to be used for toilet flushing and watering of landscaping.

5.6 Environmental Conservation Zone Management

Desired Outcomes

DO1 - Buffers are provided Zone E2 – Environmental Conservation part of the subject site that:

- Satisfy the remaining Desired Outcomes in this section; and
- Accommodate the Asset Protection Zones complying with 'Planning for Bushfire Protection 2006'; and
- Provide an appropriate level of acoustic attenuation between noise generating uses and the Zone E2 land.

DO2 - The following management strategies are implemented, where relevant and practicable, in relation to land zoned E2 – Environmental Conservation:

- A protective management regime that includes appropriate actions for the protection of Hunter-Macleay Dry Sclerophyll Forest;

- Appropriate fire regimes (in areas that do not conflict with asset protection) to allow build up of grass and litter layers to facilitate conservation of flora and fauna;
- Management regimes that promote the movement of fauna between connected landscape elements;
- Appropriate procedures to manage identified noxious weeds, namely *Lantana spp.*;
- Appropriate fire regimes in the peripheral asset protection zone to meet the required fuel standards for inner and outer protection areas in accordance with relevant bushfire protection legislation;
- Where possible, the retention of on-ground refuge consisting of rocks and logs, and wherever appropriate, dense under-storey native vegetation; and
- Strategies for reducing erosion.

DO3 - The following actions are implemented in relation to land zoned E2 – Environmental Conservation:

- A habitat management plan is implemented in order to stabilise and protect existing wildlife habitat;
- Grazing animals, such as cattle, are removed from the area to promote natural regeneration;
- Protective barriers are installed, as required, to promote the recovery of habitat for native fauna and flora species;
- Threatening processes are identified and, where required and as far as practicable, reduced or eliminated;
- Non indigenous vegetation is removed using bush regeneration techniques, in order to improve the structure and ecological integrity of vegetation;
- Any works within E2 Zone areas are designed to facilitate movement of fauna in an east-west movement;
- A maintenance plan is adopted and actioned for the control of weed species colonising the E2 zone;
- Stormwater is generally discharged away from bushland areas, but where discharge to bushland is unavoidable, measures are incorporated to mitigate the impacts of sediment and nutrient loads entering bushland and erosion;
- Soil erosion impacts are reduced through application of best practice controls on soil movement, transport and protection during any development works and increased vegetation cover;
- Establishment and maintenance of a bushfire trail and asset protection zones along the boundary of the E2 zone; and
- Minimise illegal tree felling activities within the E2 zone.

Development Requirements

5.6.1 Conservation Management Plan

- a) A Habitat Management Plan, demonstrating how DO2 and DO3 above will be satisfied, is to be submitted with a development application for subdivision, except for an Initial Subdivision or Stage 1 subdivision.

5.6.2 Acoustic Buffer to Zone E2 – Environmental Conservation land

- a) No building shall be located within 35 metres of the boundary of the Zone E2 - Environmental Conservation Zone or such distance required to establish any bushfire APZ to the E2 zone.

- b) Where a building is proposed to have an opening facing the Zone E2 – Environmental Conservation land (other than a pedestrian access door or fire escape door) applications must demonstrate that an additional buffer width is not required to meet the acoustic objectives of the setback to the environmental protection land.

5.7 Hazards Management

Desired Outcomes

- DO1 - Development complies with the relevant requirements of 'Planning for Bushfire Protection 2006.'
- DO2 – Developments adopt appropriate evacuation muster points and procedures for emergency situations.

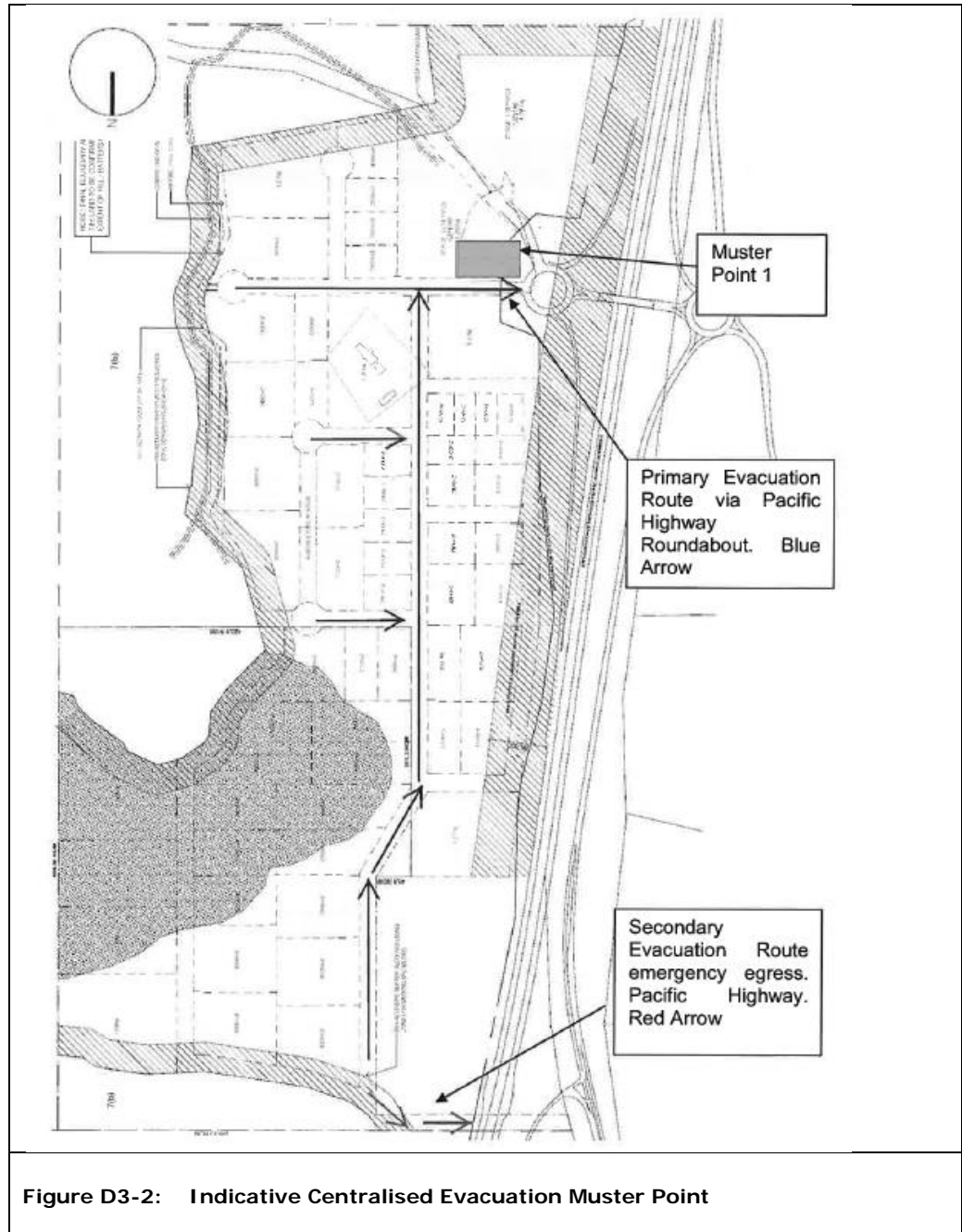
Development Requirements

5.7.1 Asset Protection Zones

- a) Asset Protection Zones (APZ) shall be provided generally as shown on Plan 4 Masterplan (refer to Appendix A) and maintained in accordance with the recommendations in Appendix B – Recommendations from Planning for Bushfire Protection Assessment, in particular, the Monitoring and Fuel Management Plan.
- b) Any perimeter fire trail shall be a minimum 6 metres wide and shall form an integral part of the APZ and shall be located adjoining the potential fire source with the remainder of the required APZ located between the fire trail and any buildings.
- c) APZ areas within industrial lots or the Highway Service Centre lots shall be secured by a restriction on title under section 88B.
- d) Where development is proposed on an industrial lot which is affected by or encompasses an APZ area, the development application shall include a hazard and risk assessment to determine whether the proposed development would unacceptably increase the risk of bushfire beyond that assessed at the subdivision stage.
- e) No APZ or any other fire protection measures shall be located within Zone E2 – Environmental Conservation.
- f) Development is to comply with the relevant recommendations contained in Appendix B – Recommendations from Planning for Bushfire Protection Assessment.

5.7.2 Industrial Hazards Management

- a) All developments are to have muster points for evacuation procedures.
- b) A central muster point/site evacuation point is to be provided at a highway service centre located generally as indicated in the diagram below.



- c) Where hazardous materials are involved, the subject business premises are to have a written premises-specific emergency evacuation procedure, prepared in accordance with 'AS3745-2010: Planning for Emergencies in Facilities'.

5.7.3 Emergency Access

- a) A perimeter fire trail for emergency access shall be provided around the interface between development on the site and the land within Zone E2 – Environmental Conservation. Access shall be provided to this fire trail from any proposed subdivision roads consistent with the principle reflected in Plan 4 - Masterplan (refer to Appendix A).
- b) The fire trail shall be located within the 10m Fire Trail Corridor which will form part of proposed Lot 2 as shown on Plan 2 - Initial Subdivision Plan

(refer to Appendix A), shall not be located on land zoned E2 – Environmental Conservation and shall form an integral part of the required APZ to adjoining development.

- c) Stage 5 of the development as indicated on Plan 1 - Staging Plan (refer to Appendix A), which may occur on cessation of quarry operations on the site, shall incorporate provision for an additional access to the Pacific Highway for emergency purposes only.

5.8 Lot Sizes and Boundaries

Desired Outcomes

DO1 - The subject land is subdivided generally in accordance with Plan 4 - Masterplan (refer to Appendix A).

DO2 - Allotments in industrial zones are designed to accommodate development that meets the requirements of [Chapter C5 – Industrial Development](#).

Development Requirements

5.8.1 Industrial Subdivision Lot Size

- a) A variety of lot sizes shall be provided for development on the site with larger lots where additional land is required for buffers or to address site constraints generally as indicated by Plan 4 – Masterplan (Appendix A)
- b) All industrial lots shall have a minimum frontage of 25 metres.
- c) Lot sizes shall generally be sufficient to ensure that all car parking, loading and unloading and manoeuvring of vehicles will occur on site.
- d) The useable area of any lot exclusive of areas affected by requirements for buffers under this DCP Chapter shall be not less than 1200 m².
- e) Minimum lot sizes shall be determined having regard to the requirements of Sections 5.4 - Infrastructure Servicing and 5.5 - Stormwater Requirements of this chapter.

5.8.2 Re-subdivision

- a) Future re-subdivision of the areas shown as Stages 3 and 4 on Plan 1- Staging Plan (Appendix A) may be approved where reticulated sewerage services become available to the site and these stages are not affected by requirements to maintain effluent disposal areas.
- b) Any future re-subdivision within stages 3 and 4 which proposes lots smaller than those shown on Plan 4 - Masterplan (Appendix A) must also include the provision of the possible future road links as shown on that plan.

5.8.3 Highway Service Centre

- a) Future re-subdivision of the Highway Service Centre lot shall only be permitted where appropriate easements for access and services are to be created as part of the new subdivision.

5.9 Public Domain Requirements

Desired Outcomes

DO1 - Street trees are provided in accordance with:

- a Street Tree Site Master Plan; and
- the relevant requirements of [Chapter B9 – Landscaping](#), particularly Section 5.0 of Chapter B9, as amended by the following requirements.

DO2 - On-site landscaping, particularly to the front of buildings and within large car parking areas, is provided in accordance with Section 7.1 of Chapter B9 – Landscaping.

Development Requirements

- a) A [Street Tree Master Plan](#) is to be submitted with the first application for subdivision development of the site and approved by Council. This requirement does not apply to an application for the Initial Subdivision Plan.
- b) Street trees shall be provided at a minimum average spacing of:
 - (i) one per 20 metres of frontage along the core roads shown on Plan 3; and
 - (ii) one per 30 metres of frontage for all other industrial subdivision roads.

5.10 Industrial Buildings

Desired Outcomes

DO1 - Industrial development complies with the relevant requirements of [Chapter C5 – Industrial Development](#), as amended by the following requirements.

Development Requirements

- a) Street setbacks for buildings shall be a minimum of 5 metres.
- b) There shall be no setback concessions for secondary street frontages.
- c) Where a building is proposed which will exceed a height of 10 metres, the development application shall demonstrate that the building will not be visible from the Pacific Highway or alternatively, provide evidence to the satisfaction of Council that the visible building elements will be visually acceptable in their context.

5.11 Signage

Desired Outcomes

DO1 - Advertising signs within the land subject to this chapter comply with the relevant requirements of [Chapter B18 – Advertising and Tourist Signs](#), as amended by the following requirements.

Development Requirements

- a) Individual site pole signs are only to be provided for development on lots:
 - (i) where the site is greater than 2000 m²; and
 - (ii) the sign is no more than 8 metres in height.
- b) Signage greater than 8 metres in height is restricted to signs relating to the Highway Service Centre and any combined directory sign for development which Council is satisfied will constitute a business park style development of industrial lots.
- c) Nothing in this plan prevents the erection of permanent estate entry signage within the road reserve entering the industrial subdivision from the RTA roundabout provided the estate entry sign forms an integral part of landscaping of the entry road and details are submitted to and approved by the Council.

Appendix A: Plans

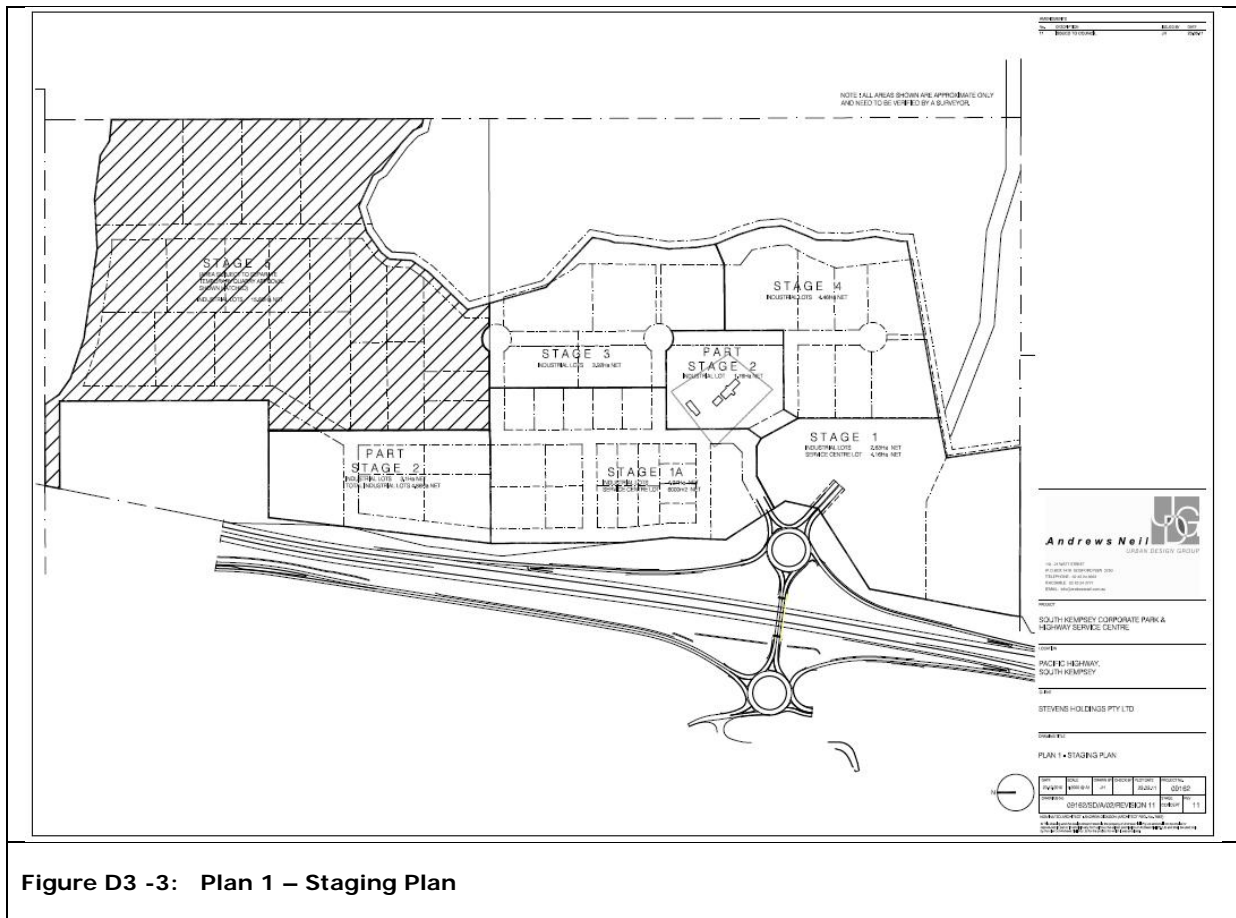


Figure D3 -3: Plan 1 – Staging Plan

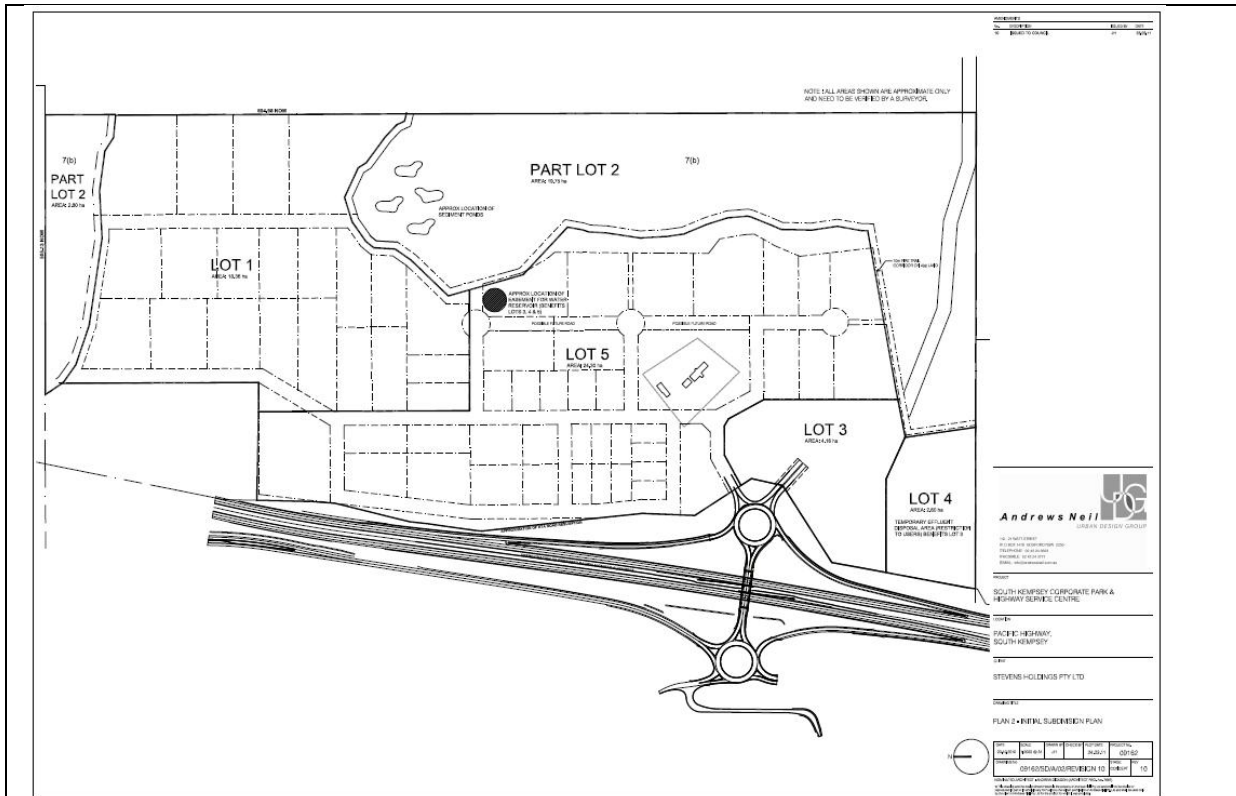


Figure D3-4: Plan 2 – Initial Subdivision Plan

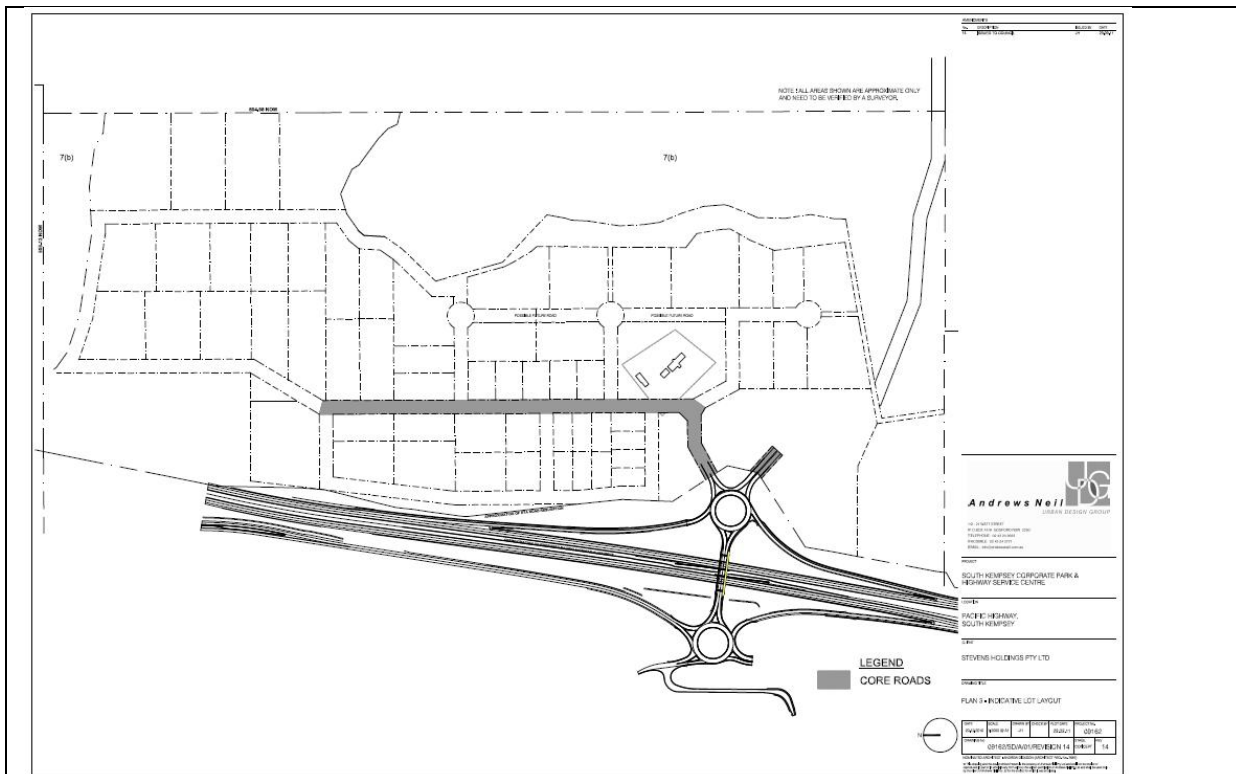


Figure D3-5: Pan 3 – Indicative Lot Layout

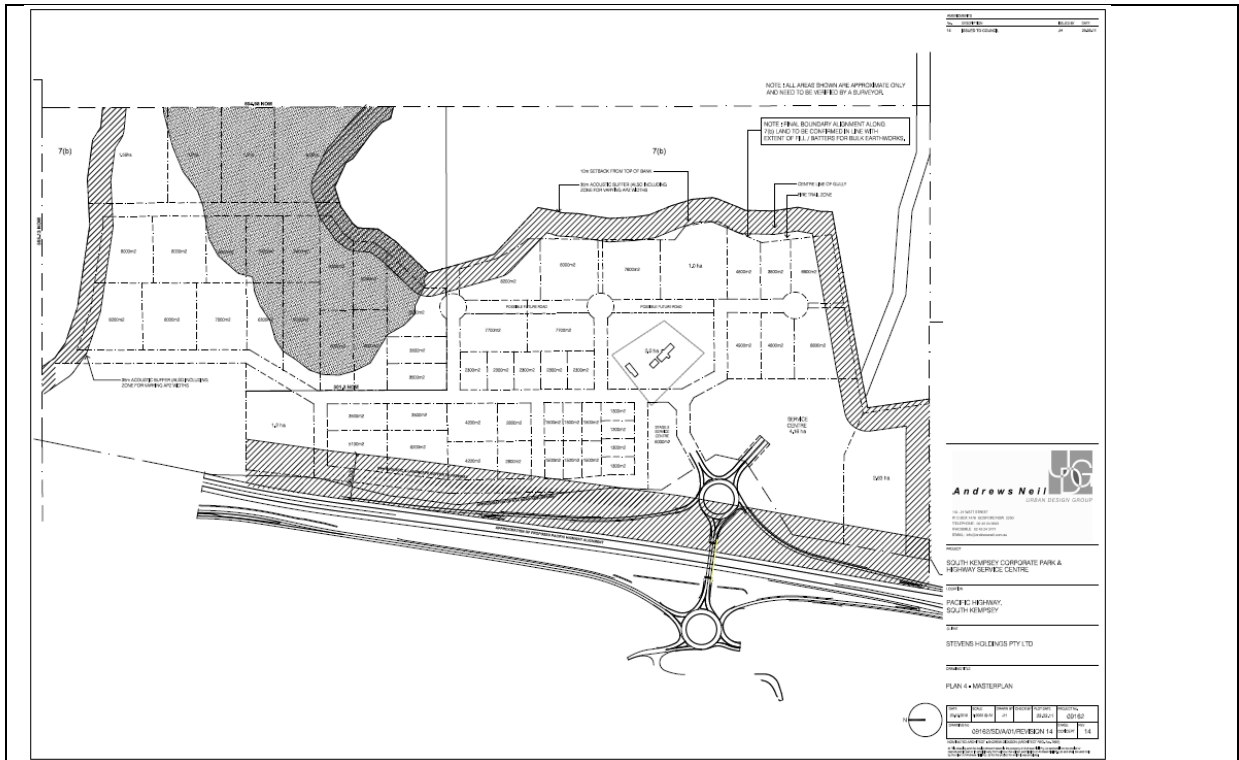


Figure D3-6: Plan 4 – Master Plan

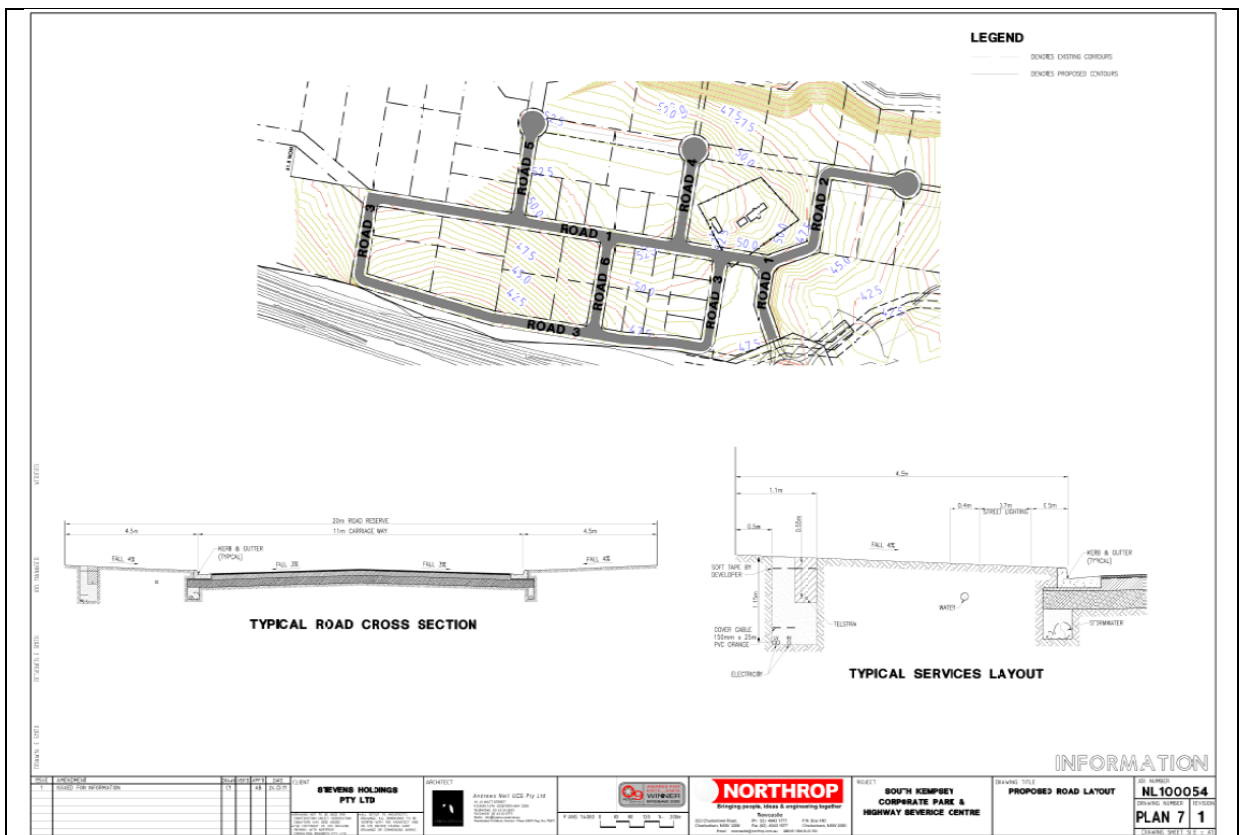


Figure D3-7: Plan 7 – Proposed Road Layout

Appendix B: Recommendations of Planning for Bushfire Protection Assessment.

5.0 RECOMMENDATIONS

5.1 LANDSCAPING MAINTENANCE

Vegetation onsite should provide a tree canopy cover of less than 15% and should be located greater than 2 metres from any part of the roofline of a building. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above the ground.

The landscaped area should be maintained free of leaf litter and debris. The gutter and roof should be maintained free of leaf litter and debris.

Landscaping should be managed so that flammable vegetation is not located directly under windows.

Ground fuels such as fallen leaves, twigs (less than 6mm in diameter) and branches should be removed on a regular basis, and grass needs to be kept closely mown and where possible green.

5.2 CONSTRUCTION STANDARDS

Construction of any buildings should be in accordance with AS3959 2009 Building in Bushfire Prone Areas, ranging from no level of construction to BAL-40 construction depending on the available Asset Protection Zone.

Evaluation of Building Shielding

In accordance with AS3959 (2009) Section 3.5 Reduction in Construction Requirements due to shielding; Any building facades facing away from the vegetation may be built one level of construction lower than the building facades having a view of the vegetation.

5.3 PLANNING FOR BUSHFIRE PROTECTION COMPLIANCE

Planning for Bushfire Protection (2006) Section 4.1.3 Standards for Bush Fire Protection Measures for Residential and Rural Residential Subdivisions is the basis for the assessment of compliance and non-compliance for this site.

Asset Protection Zones

- The Asset Protection Zones should not be located on slopes exceeding 18 degrees slope.
- The Asset Protection Zone should be contained wholly within the allotment, or be managed lands or road reserve identified as equivalence to an Asset Protection Zone.
- Asset Protection Zones for each allotment have been identified in Section 3.2 Bushfire Attack Assessment of this document.
- A Monitoring and Fuel Management Plan has been included in Appendix 7.

Compliance – *The acoustic buffer zone is identified as a major component of the Asset Protection Zone. An Outer Protection Area of 15 metres should be stabilised for the portion of the vegetation directly interfacing 7(b) environmental zoned lands to reduce ecological impact. The remainder of the acoustic buffer and Asset Protection Zone outside the acoustic buffer should be maintained as an Inner Protection Area. All core*

riparian zones appear to be located outside of the acoustic buffer and asset protection zones.

The proposal offers potential for full compliance with the Acceptable Solutions.

Public Roads

- Public roads are two-wheel drive, all weather roads.
- The perimeter road has a carriageway 8 metres kerb to kerb, allowing traffic to pass in opposite directions.
- Non perimeter roads comply with Table 4.1 – Road widths for Category 1 Tanker (Medium Rigid Vehicle).
- Traffic management devices are constructed to facilitate access by emergency services vehicles.
- Public roads have a cross fall not exceeding 3 degrees.
- All roads are through roads. Dead end roads are not recommended, but if unavoidable, dead ends are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end and direct traffic away from the hazard.
- Curves of roads (other than perimeter roads) are a minimum inner radius of six metres and minimal in number, to allow for rapid access and egress.
- The minimum distance between inner and outer curves is six metres.
- Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient.
- There is a minimum vertical clearance to a height of four metres above the road at all times.
- The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles (approximately 15 tonnes for areas with reticulated water, 28 tonnes or 9 tonnes per axle for all other areas). Bridges clearly indicate load rating.
- Public roads greater than 6.5 metres wide to locate hydrants outside of parking reserves to ensure accessibility to reticulated water for fire suppression.
- Public roads between 6.5 metres and 8 metres wide are No Parking on one side with the services (hydrants) located on this side to ensure accessibility to reticulated water for fire suppression.
- Public roads up to 6.5 metres wide provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression.
- One way only public access roads are no less than 3.5 metres wide and provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression.
- Parking bays are a minimum of 2.6 metres wide from kerb edge to road pavement. No services or hydrants are located within the parking bays.
- Public roads directly interfacing the bush fire hazard vegetation provide roll top kerbing to the hazard side of the road.

Table 4.1 provides the minimum widths for public roads that are not perimeter roads for the safe access of fire fighting vehicles in urban areas.

Curve radius (inside edge) (metres)	Swept Path (metres width)	Single lane (metres width)	Two way (metres width)
<40	3.5	4.5	8.0
40-69	3.0	3.9	7.5
70-100	2.7	3.6	6.9
>100	2.5	3.5	6.5

Source: AS 2890.2 – 2002.

Table 4.1 – Road widths for Category 1 Tanker
(Medium Rigid Vehicle)

Compliance – The subject site has the potential to satisfy all of the above acceptable solutions and a road design will be prepared complying with these measures.

Property Access

- At least one alternative property access road is provided for individual buildings (or groups of buildings) that are located more than 200 metres from a public through road
- Bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes
- Roads do not traverse a wetland or other land potentially subject to periodic inundation (other than a flood or storm surge).
- A minimum carriageway width of four metres is recommended for property accesses.
- A minimum carriageway width of four metres for rural residential areas, rural landholdings or urban areas with a distance of greater than 70 metres from the nearest hydrant point to the most external part of a proposed building (or footprint).
- A minimum vertical clearance of four metres to any overhanging obstructions, including tree branches.
- Internal roads for rural properties provide a loop road around any building or incorporate a turning circle with a minimum 12 metre outer radius.
- Curves have a minimum inner radius of six metres and are minimal in number to allow for rapid access and egress.
- The minimum distance between inner and outer curves is six metres.
- The crossfall is not more than 10 degrees.
- Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.
- Access to a development comprising more than three buildings have formalised access by dedication of a road and not by right of way.

Compliance – There is potential for full compliance

Fire Trails

- A minimum carriageway width of four metres with an additional one metre wide strip on each side of the trail (clear of bushes and long grass) is provided.

- The trail is a maximum grade of 15 degrees if sealed and not more than 10 degrees if unsealed.
 - A minimum vertical clearance of four metres to any overhanging obstructions, including tree branches is provided.
 - The crossfall of the trail is not more than 10 degrees.
 - The trail has the capacity for passing by:
 - reversing bays using the access to properties to reverse fire tankers, which are six metres wide and eight metres deep to any gates, with an inner minimum turning radius of six metres and outer minimum radius of 12 metres; and/or
 - a passing bay every 200 metres, 20 metres long by three metres wide, making a minimum trafficable width of seven metres at the passing bay.
- Note: Some short constrictions in the access may be accepted where they are not less than the minimum (3.5m) and extend for no more than 30m and where obstruction cannot be reasonably avoided or removed.*
- The fire trail is accessible to firefighters and maintained in a serviceable condition by the owner of the land.
 - Appropriate drainage and erosion controls are provided.
 - The fire trail system is connected to the property access road and/or to the through road system at frequent intervals of 200 metres or less.
 - Fire trails do not traverse a wetlands or other land potentially subject to periodic inundation (other than a flood or storm surge).
 - Gates for fire trails are provided and locked with a key/lock system authorized by the local RFS.
 - Fire trail design does not adversely impact on natural hydrological flows.
 - Fire trail design acts as an effective barrier to the spread of weeds and nutrients.
 - Fire trail construction does not expose acid-sulphate soils.

Compliance : *Proposed fire trails will offer compliance with the above requirements.*

Services

Water

- Fire hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles.
- Hydrants are not located within any road carriageway.
- All above ground water and gas service pipes external to the building are metal, including and up to any taps.
- The provisions of parking on public roads are met.

Compliance - *Currently there is no reticulated water supply servicing the majority of the site. As part of the development reticulated water within the site will comply with Macleay Water Services and Planning for Bushfire Protection Standards. The proposed development will include at least one drainage retention pond that represents a significant static water supply. It is recommend this be designed with suitable hardstand areas to allow draughting of water by Fire Fighting Services.*

Electricity

- Where practicable, electrical transmission lines are underground.
- Where overhead electrical transmission lines are proposed:
 - o lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and

- o no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).

Note: Vegetation separation distances from power lines have been provided in Appendix 5.

Compliance – *The proposed subdivision offers the potential for full compliance with the acceptable solutions.*

Gas Services

- Reticulated or bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities. Metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.
- If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal.
- Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used.

Compliance – *Any gas installed can comply with the acceptable solutions.*

Specific Objectives for a Service Station in Bushfire Prone Areas

Planning for Bushfire Protection (2006) Identifies Service Stations as a Controlled Development Type in a Bushfire Prone Area. In addition to the above Planning for Bushfire Protection compliance measures a review of the 6 key Bushfire Protection Measures are made:

- A) The provision of clear separation of buildings and bush fire hazards, in the form of fuel reduced APZ (and their subsets, inner and outer protection areas and defensible space).

Compliance - The majority of the subject site will be bitumen or hardstand areas. There will be minor landscaping onsite and no flammable landscaping should be located within fuel refilling points or fuel vent risers. The service station has good asset protection zones from the vegetation and surrounding industrial development. There is reduced potential for a building to building structural fire impacting on the site. The service station building is not the primary risk the fuel bowsers and fuel tanks are of primary concern. All fuel bowsers, fuel storage tanks and combustibles should be located away from the vegetation. The present design provides the below Asset Protection Zones and Radiant Heat levels

- Truck refueling - 80 metres – Radiant Heat Flux 5.88 kw/m²
- Car refueling 110 metres – Radiant Heat Flux 3.32 kw/m²

Refer to Appendix 7 for Bushfire Attack Assessment Calculations.

The above asset protection zones provide conservative radiant heat fluxes as the slope has been rounded up to 5 degrees downslope and the crown road intersects the vegetation. The forest/riparian corridor vegetation is moist and unlikely to burn at full intensity.

B) Construction standards and design

Compliance – The construction of the service station should be determined depending on the proximity to the vegetation. A minimum BAL12.5 Construction should be used even if the building is greater than 100 metres from the vegetation. The design should provide minimal vulnerable junctions on the proposed service station.

The design of the Truck Refueling areas closest the vegetation provides a suitable buffer to the vegetation and suitable access for emergency vehicles.

C) Appropriate access standards for residents, fire fighters, emergency service workers and those involved in evacuation;

Compliance - Access to the site exceeds deemed to satisfy provisions with the two access points affording good access and egress from the site. There is perimeter access around the entire site. Due to the potential number of people onsite at any time a full evacuation may lead to temporary congestion. The property access points are in different directions facing away from the vegetation.

Safe Defendable space is measured at 10kw/m² using a 1200 Kelvin flame is achieved at 74 metres from the vegetation. This allows firefighters where Personal Protective Equipment to operate between the service station bowsers and the forest is the fuel bowsers are shut off and isolated.

Refer to Appendix 7 for Bushfire Attack Assessment Calculations.

D) Adequate water supply and pressure;

Compliance – The future hydrant system should be designed to AS 2419.1 – 2005 and include adequate pressure testing.

E) Emergency management arrangements for fire protection and/or evacuation;

Compliance – The service station by nature has heightened risk awareness with numerous procedures already in place for structural fire, fuel leak and evacuation. It is recommended that the service station consider bushfire threat in its AS3745-2002 developed Emergency Control Procedures.

F) Suitable landscaping, to limit fire spreading to a building.

Compliance - The site management team should familiarize themselves with requirements of Asset Protection Zones outlined within Planning for Bushfire Protection (2006) section 4.1.3, Appendix 5 and the NSW Rural Fire Services "Standards for Asset Protection Zones".

Controlled Development Types

Developments which should not be permitted on bush fire grounds, including those that may start bush fires or are a potential hazard to adjacent areas or to fire fighters if they are impacted upon by a bush fire include:

- Power generating works
- Sawmills
- Junk yards
- Liquid fuel depots
- Offensive and hazardous industries
- Chemical industries

- Service stations
- Ammunition storage/manufacture
- Fire works manufacture/storage

Any future industrial development on the subject should not include the above development types unless a dedicated bushfire threat assessment addressing the 6 key Bushfire Protection Measures of Planning for Bushfire Protection (2006) is completed.

5.4 SUMMARY OF RECOMMENDATIONS

Based upon an assessment of the plans and information received for the proposal, Newcastle Bushfire Consulting Pty Ltd recommends the following conditions of development:

- A minimum 10 metre Asset Protection Zone is recommended surrounding buildings where the dominant vegetation is grassland.
- Asset Protection Zones and associated construction levels for each allotment have been identified in Section 3.2 Bushfire Attack Assessment of this document.
- Roads should be formed in accordance with Section 5.3 Planning for Bushfire Protection Compliance section of this report.
- The hydrant and services network should be in accordance with Section 5.3 Planning for Bushfire Protection Compliance section of this report.
- Future buildings should regard considerations enclosed within the Building Code of Australia, AS3959 (2009) and Planning for Bushfire Protection Amended Appendix 3 ember protection requirements.
- The 35 metre noise buffer zone should be maintained as an Asset Protection Zone Consisting of the below dimensions:
 - o Inner Protection Area – 20 metres
 - o Outer Protection Area – 15 metres
- Staged development should encompass asset protection zones surrounding the perimeter of developed lands. A minimum 26 metre asset protection zone should be maintained within future development stages where located adjacent the developed lands. Maintenance of Asset Protection Zones will be absorbed by future land owners.
- It is recommended that each future business consider bushfire threat in their AS3745-2002 Emergency Control Procedures.
- Any future controlled development should have a dedicated bushfire threat assessment prepared for the development type.

Service Station Specific Requirements

- A SEPP 33 Multi-Level Risk Assessment report should be prepared for the service station.
- Vapour recovery systems should be fitted to the service station fuel tanks and bowsers.
- Any venting and fuel storage should be located away from the forest vegetation.

Despite the recommendations in this report, it is impossible to remove the risk of fire damage to the building entirely. This report aims to reduce that risk to a manageable level. It is of paramount importance that the recommendations are adhered to for the life of the structure and that all maintenance is performed, to ensure the maximum amount of protection is provided to the building, occupants and fire fighters.

Planning for Bushfire Protection (2006) states that notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small always remains.

AS3959 (1999) Building in Bushfire Prone Areas states that the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.

5.5 FINAL RECOMMENDATION

The final recommendation is that there is scope to provide suitable building area and infrastructure for all proposed industrial allotments. It is believed the 6 key protection measures of a controlled development have been adequately assessed for the Service Station. There is potential for bushfire attack at this site and a list of recommendations has been included in the above assessment. The proposed development can comply with the requirements of "Planning for Bushfire Protection 2006" guidelines. This report being industrial subdivision does not require a Bushfire Safety Authority to be issued by Rural Fire Service.

7.6 APPENDIX 4 – OVERHEAD POWERLINE CLEARANCES

Table 1: Vegetation Trimming - Minimum Clearances

Conductor Type and Voltage	Clearances at pole to nearest conductor (metres)		Clearance along middle 2/3 of span to nearest conductor in rest position (metres)	
	Urban	Bushfire Risk Area	Urban	Bushfire Risk & Urban Spans > 100m
LV Aerial Bundled Cable (including XLPE Insulated Service Wires and Pilot Cables)	0.5 ^a	0.5 ^b	0.5 ^a	1.0 ^a
HV Aerial Bundled Cable	0.5 ^a	0.5 ^b	1.0 ^a	1.5 ^a
Up to 1000V - Bare and Covered Conductor	1.0	1.5	1.5 Horizontal & Vertical above mains 1.0 Vertical below mains	2.5 ^a
>1000V to 33 kV Covered Conductor	1.0	1.0	2.0	2.5
>1000V to 22 kV Bare Conductor	1.5	2.0	2.5	3.5 ^a
>22 kV to 66 kV Bare Conductor	2.0	2.0	3.0	4.0 ^a
> 66 kV to 132 kV Bare Conductor	3.0	3.0	4.0	5.0 ^a
Around supports (such as poles (all voltages)	2.0			
Around stay wires (all voltages)	2.0			

7.7 APPENDIX 5 – MONITORING AND FUEL MANAGEMENT PLAN

Fuel management plan

The asset protection zone extends from the building and should have vegetation maintained in accordance with an Inner Protection Area (IPA).

Inner Protection Area

An IPA should provide a tree canopy cover of less than 15% and should be located greater than 2.0 metres from any part of the roof line of a building. Garden beds of flammable shrubs should not be located under trees and should be located not closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2.0 metres above the ground.

Ground fuels such as fallen leaves, twigs (less than 6mm in diameter) and branches should be removed on a regular basis, and grass needs to be kept closely mown and where possible green.

Monitoring of Maintenance

Build-up of leaf litter and debris across the site will be monitored on a regular basis using visual estimation techniques. Grass should be maintained to a level of lower than 10 centimetres in length. Maintenance should increase over the summer months when peak fire weather occurs.

The estate management team should familiarize themselves with requirements of Asset Protection Zones outlined within Planning for Bushfire Protection (2006) section 4.1.3, Appendix 5 and the NSW Rural Fire Services "Standards for Asset Protection Zones".

The Monitoring and Fuel Management Plan should be updated annually in accordance with the development occurring throughout the subject site.