

CHAPTER 5.51 MARDI - RURAL RESIDENTIAL DEVELOPMENT

5.51.1 INTRODUCTION

The purpose of this Chapter is to provide subdivision and development requirements for certain land within Mardi, specifically, land identified within Figure 1.

5.51.1.1 Objectives of this Chapter

- To provide guidance for the orderly subdivision and development of the site.
- To appropriately integrate development with the existing built and natural environment.
- To enable development of the land to proceed in a manner that is sensitive to the environmental characteristics of the area.
- To ensure that the land is adequately serviced.

5.51.1.2 Land to which this Chapter Applies

This Chapter applies to land as shown edged heavy black in Figure 1.



Figure 1 Land to which this Chapter applies (not to scale)

5.51.1.3 Using this Chapter

In the event of an inconsistency between this Chapter and the provisions of the Central Coast Local Environmental Plan (LEP) 2018, the provisions of the LEP shall prevail.

This Chapter should be read in conjunction with other relevant Chapters of this Development Control Plan and other Policy Documents of Council, including but not limited to:

- Chapter 2.1 – Dwelling Houses Secondary Dwellings and Ancillary Development
- Chapter 2.2 – Dual Occupancies and Multi-Dwelling Housing
- Chapter 2.3 – Residential Flat Buildings and Shop-Top Housing
- Chapter 2.4 - Subdivision
- Chapter 2.15 – Signage and Advertising
- Chapter 2.13 – Transport and Parking
- Chapter 2.14 – Waste Management
- Chapter 3.1 – Floodplain Management
- Chapter 3.5 – Tree and Vegetation Management
- Civil Works Specification
- Flora and Fauna Guidelines

Where any inconsistencies arise with the provisions contained in this Chapter, this Chapter shall prevail.

5.51.2 DEVELOPMENT PRINCIPLES

5.51.2.1 Subdivision Design

OBJECTIVES

- To ensure that any future subdivision of the site is sympathetic to site constraints.
- To encourage subdivision design of high quality, which controls and mitigates potential environmental impacts arising from development.
- To ensure that subdivision design has regard for and responds to the amenity and character of existing development and land uses immediately adjoining and those in close proximity to the land, including residential dwellings and existing agricultural operations.
- To encourage subdivision design which enhances liveability and sense of community and wellbeing for future residents and the broader community.
- To ensure that any subdivision design meets the appropriate standards of Council.
- To ensure that land ownership patterns facilitate the active management of biodiversity values and risks which may be associated with the site.

REQUIREMENTS

- a Any application for the subdivision of the site is to demonstrate how the application addresses the provisions of Chapter 2.4 – Subdivision of this DCP (DCP 2018 – Central Coast Development Control Plan 2018) and Council’s Civil Works Specification, in addition to any other requirements of this Chapter.
- b Applications for subdivision are to provide supporting designs, plans, layouts and specifications for any additional water, sewer, stormwater and/or traffic infrastructure required to service the development. Any such infrastructure is to be provided in accordance with Council’s Civil Works Specification, at the expense of the developer.
- c To avoid the prevalence of long and narrow allotments, all lots must have a minimum frontage of 25m, measured at the building line.
- d Any future subdivision must be in the form of Community Title.
- e Areas nominated for ownership by the Community Association should be clearly documented within the Masterplan submitted for the subdivision of the site.
- f A Community Plan of Management must be submitted with any application for the subdivision of the site. This Plan must apply to any land zoned E2 Environmental Conservation which is not already subject to a Biodiversity Banking Agreement or other formal in perpetuity conservation arrangement. The Plan must also apply to any riparian corridors established on the site. The Plan:
- i must not incorporate development controls which are inconsistent with the provisions of DCP 2018.
 - ii May include additional design controls relating to architectural form and landscaping, such as materials, colours etc.
 - iii Must include the management strategies to be implemented to manage land in Community Ownership and private ownership in relation to (but not limited to) the following:
 - keeping of animals;
 - access to community facilities by the broader community;
 - biodiversity protection and conservation;
 - riparian corridors and flooding;
 - a complaint management process and information package for residents about living and working in rural areas;
 - bushfire risks; and
 - emergency evacuation measures.
- g Any application for the subdivision of the site is to be supported by a Masterplan.
- h The Masterplan is to identify and demonstrate compliance with the following:

NOTE: Documentation produced by Department of Primary Industries (Agriculture) may be utilised as a basis for the establishment of a complaint management process, including the 'Living and Working in Rural Areas Handbook' (2007).

- i Identification of locations and lot layouts for future land uses on the site, including large lot residential and any smaller lot residential development;
 - ii Justification that the proposed residential allotments are sited to avoid potential conflicts with existing agricultural or rural landscape land uses (including dwellings) or values, including scenic amenity and privacy;
 - iii Location of riparian and/or green corridors and/or areas proposed for environmental protection;
 - iv Relevant requirements set out within any Voluntary Planning Agreement relating to or affecting the land.
 - v Identification of street layouts and hierarchies. The road layout (horizontal and vertical alignments) shall consider the final development upon the land in regards to flood storages, floodway cross sectional area within the watercourses and flow paths;
 - vi The creation and justification of drainage/riparian corridors and flow paths that include WSUD technologies to ensure the treatment of stormwater in accordance with Council's Civil Works Specification and *Australian Runoff Quality: A Guide to Water Sensitive Urban Design* stormwater treatment objectives and targets;
 - vii Multiple emergency access and egress routes within the site and to Old Maitland Road having consideration for safe and efficient evacuation during high intensity floods and bushfire events.
 - viii Active and passive open space areas and facilities and provision of spaces for residents to come together;
 - ix Pedestrian and cycle pathways and linkages within and around the estate to connect open space; and
 - x Internal linkages (between residential areas) and external linkages (to facilities and services beyond the site boundaries).
- i For road safety purposes, the following elements are to be considered and incorporated during the preparation of any future subdivision design or layout to enable improved road safety. Other elements that improve road safety which are not identified below should also be considered and incorporated.

Design Element	Requirement
Intersections	<ul style="list-style-type: none"> ▪ Four way uncontrolled cross intersections should be avoided to reduce vehicular conflict points. Signage is not considered to be an appropriate control.
Road hierarchy and layout	<ul style="list-style-type: none"> ▪ Lot accesses onto collector roads as well as pedestrian and cycle conflicts should be limited ▪ Modified grid systems with staggered T-intersections should be utilised where practicable ▪ Cul-de-sacs and layouts that promote or encourage 'rat runs' are to be avoided.

Road design	<ul style="list-style-type: none"> ▪ Street leg lengths should be limited to a maximum of 200-250m between controlled intersections, changes in direction or other speed control mechanism ▪ Steep grades are to be avoided, particularly on longer street leg lengths ▪ Wider road widths and areas that do not define travel paths are to be avoided. ▪ Combination of geometric design elements such as crests and bends should be avoided
Landscaping & Lighting	<ul style="list-style-type: none"> ▪ Location and placement of street trees should consider sight distances for all road users, including pedestrians and cyclists ▪ Location, placement and type of street trees should consider proximity and speed of adjacent vehicles ▪ Location and placement of landscaping features should seek to reduce needs for ongoing maintenance, particularly where such works are required to be undertaken close to travelling vehicles ▪ Lighting categories should be increased to assist more vulnerable road users (pedestrians, cyclists, motorcyclists, elderly, children etc) and reduce the likelihood of incidents

- j In addition to the above, Road Safety Audits will be required to be undertaken to identify potential road hazards for all road users. These audits are required to be undertaken (at minimum) at the feasibility and detailed design stage of the subdivision planning. A pre-opening audit may be required, subject to the scale of the proposed development.

5.51.2.2 Staging

OBJECTIVES

- To ensure that the site is developed in a logical, economic and coherent manner, with appropriate supporting infrastructure.
- To ensure that the impacts of the rural residential development of the site can be monitored and assessed over the staged development of the site.
- To minimise impacts to amenity for existing residents of the site.

REQUIREMENTS

- a Any proposal for staging of development of the site is to be supported by a Staging Plan. The Staging plan is to:
- i identify the order of staging of the subdivision/development of the site.
 - ii Identify the expected population density of the site, per stage;
 - iii address the impact of construction traffic on road networks and the community within the vicinity of the development and identify measures to minimise any impacts, including the nomination of selected routes for construction traffic access which avoids completed stages where possible;

- iv provide details of how complaints (if any) from existing developed stages regarding existing adjoining or local agricultural land uses have been managed and what measures have been implemented;
- v address the impacts of the subdivision/development upon water quality within each stage. Each subdivision stage shall incorporate WSUD technologies to ensure the treatment of stormwater in accordance with the current pollution reduction targets set within Council's Civil Works Design Specification
- vi Provide for the provision of services (including drainage and transport infrastructure) for completed stages, including provision of turning circles for road based services (e.g. garbage trucks);
- vii Identify emergency access and evacuation arrangements for completed and future stages.

5.51.2.3 Servicing

OBJECTIVES

- To ensure that any future development of the site is connected to Council's reticulated water and sewer system.
- To minimise potential for sewage contamination of land and water.

REQUIREMENTS

- a All development within the site is to be connected to Council's reticulated water and sewerage systems. On-site wastewater management systems will not be permitted.
- b A hydraulic assessment of the site at capacity occupancy on completion is to be submitted with any application for the subdivision of the site.
- c A single point of connection to Council's reticulated water and sewerage systems to service the site including associated pipework, mains, pump stations and meters are to be provided by the developer (at no cost to Council). For the avoidance of doubt, Council will not be responsible for providing water or sewer services to the site.
- d The sewer pump station and single water meter servicing the site are to be transferred into the ownership of Council.
- e The sewer pump station is to be located within a suitably sized bund to enable storage of potentially contaminating material in the event of a pump failure.
- f The route for the connection to Council's reticulated water and sewerage systems is to be provided via Collies Lane or McPherson Road. Any shared trench approach is to achieve the minimum offsets between water and sewer mains as detailed within the Water Services Association of Australia design documents.
- g Design and construction of the water and sewer infrastructure, is to be in accordance with the requirements of Council and the Roads and Maritime Service (RMS).
- h Any water and sewerage infrastructure within the site is to be provided by, and is the responsibility of, the developer and is to be in accordance with Council's requirements.

5.51.2.4 Biodiversity Protection and Management

OBJECTIVES

- To ensure the protection and maintenance of the integrity of State and Federally listed threatened species, population and ecological communities, or their habitats within and adjoining the site.
- To minimise the impacts of construction and occupation of future developments on native vegetation and fauna, including habitat, within and adjoining the site.

REQUIREMENTS

- a Any application for subdivision of the subject site is to be accompanied by the relevant requirements set out within any Voluntary Planning Agreement relating to or affecting the land.
- b Any application for subdivision of the site and/or construction of any requisite off site infrastructure (e.g. water and sewer infrastructure) must be accompanied by a comprehensive Flora and Fauna Assessment Report which complies with the requirements of Council's Flora and Fauna Survey Guidelines.
- c Flora and fauna surveys are to accurately identify and map areas of the site which are considered to be wetlands in accordance with the definition of the NSW Wetlands Policy. Any wetlands identified should be protected by appropriate riparian buffers in accordance with the NSW Office of Water '*Guidelines for Riparian Corridors on Waterfront Land*'.
- d Management plans must be submitted with any application for the subdivision of land to which this chapter applies. The plans must apply to the E3 Environmental Management zoned portion of the site and any other riparian land within the R5 Large Lot Residential zone, and any land which is not subject to the provisions of any Voluntary Planning Agreement relating to or affecting the land.
- e The objectives of the plans are to:
 - i in relation to any E3 Environmental Management zoned portion of the site and any other riparian or waterfront land within the R5 Large Lot Residential zone, to detail ongoing management arrangements for water quality, enhancement of ecological functions and management of bushfire risk; and
 - ii in relation to any land which is not subject to the provisions of any Voluntary Planning Agreement relating to or affecting the land, to protect and reinstate the native vegetation and fauna habitats in the applicable areas, and provide for ongoing management arrangements.
- f The plans must be registered on the title of any lot created which is fully or partially zoned E3 Environmental Management or is identified as Waterfront land within the R5 Large Lot Residential zone.
- g The plan applying to any land which is not subject to the provisions of any Voluntary Planning Agreement relating to or affecting the land is to:
 - i describe the existing ecological features of the land, including but not limited to topography and soils, drainage, flora and fauna (including endangered ecological communities, populations and/or species);
 - ii establish the regulatory framework and specify the lifespan and review mechanisms for its operation;
 - iii establish the management strategies for (but not limited to) the following matters to land to which the plan relates:
 - vegetation clearing;
 - weed management;

- bushfire management;
 - feral and domesticated animals;
 - rubbish dumping;
 - firewood collection
 - prohibited uses, public access, fencing and signage;
 - the management of stormwater structures;
 - fauna habitat enhancement;
 - revegetation and rehabilitation of cleared land and
 - habitat tree retention.
- iv Detail the monitoring program and reporting framework to assess the adequacy of the adopted management strategies.
- v Be prepared in accordance with Council's *Flora and Fauna Survey Guidelines* and the NSW Office of Water's *Guidelines for Vegetation Management Plans on Waterfront Land*.
- vi Address all recommendations contained in the flora and fauna assessment prepared by Biosis (2015) to support the rezoning.

NOTE: If a "significant" impact on threatened species, populations, ecological communities, or its habitat is likely to occur, the application will be required to be supported by a Species Impact Statement and will require the concurrence of the Office of Environment and Heritage which may result in the modification of the proposal.

The Water Management (WM) Act 2000 considers that wetlands are waterfront land. Any works or activities which may impact on such land or riparian corridors may be subject to additional approval requirements under the WM Act. This may result in an impact on potential lot yields.

5.51.2.5 Flooding, Drainage, Stormwater and Water Cycle Management

OBJECTIVES

- To recognise the differing level of flood hazard across the site associated with both overland flooding from the local catchment and mainstream flooding from Wyong River.
- To manage the risk to human life, damage to property and provision of essential services by ensuring development on all areas of the site is appropriately sited and designed such that it is compatible with the flood hazard.
- To ensure negligible flood impacts on adjoining property or infrastructure as a result of any development.
- To ensure that any future subdivision development incorporates an Integrated Stormwater Management Strategy
- To provide riparian corridors through the site and to protect the integrity of ecosystems, vegetation and fauna habitats within and adjoining the site so as not to adversely impact upon aesthetic, recreational and ecological values

REQUIREMENTS

- a The provisions of Chapter 3.1 – Floodplain Management of this DCP apply.
- b Any development proposal or subdivision application is to be supported by a performance based assessment demonstrating that the proposed development is compatible with the flood characteristics of the site.
- c Any proposed intersection with Old Maitland Road must be located above the applicable Flood Planning Level (FPL) to enable safe vehicle ingress/egress and facilitate evacuation during flood events.
- d In order to achieve (b), a detailed site-specific overland flood study and flood impact assessment of any proposed development is required. The flood study and flood impact assessment must:
 - i Be based on recently acquired ground survey data acquired via traditional ground survey or GPS (less than 2 years from date of lodgement of a development application)
 - ii Be produced from a two-dimensional (2D) flood model (such as TUFLOW, SOBEK or MIKE-21)
 - iii Assess various flood sizes, including at least 10% AEP, 1% AEP and PMF
 - iv Assess various flood durations to determine critical duration for flooding at various locations; include longer duration flood events as part of the consideration of any retarding basins
 - v Be prepared consistent with the most recent NSW Office of Environment & Heritage *Consultant Flood Study Brief, the Floodplain Development Manual (2005)* and related Guidelines, *Australian Rainfall and Runoff (2001)*, and Council's Civil Works Specification unless directed otherwise by this Chapter or any other Chapter of DCP 2018.
 - vi Be inclusive of a written report with mapping, plans and figures detailing:
 - All data, parameters, and any assumptions
 - Hydrologic results from at least two methods, including sub-catchment layout, including contribution of the area from the farms south of Yarramalong Road, and peak flow comparisons at several locations.

- Figures and tables (showing comparisons of results at several locations) of Flood extents, velocities, depths, and hazards for each sized flood, both for pre-development and post-development, and for the relative differences, both on the site and beyond.
 - Flood planning area (1% AEP + 0.5m freeboard) both pre-development and post-development
 - All mapping to be also provided for Council's ongoing use in GIS Shp file format for inclusion on Council's GIS
- vii Address the following for pre and post development scenarios:
- Pre development:
 - Evaluation of site conditions: natural water courses, constructed channels, soil type, groundwater, vegetation, stormwater quality
 - Assessment of flood hazard, access & evacuation, and consideration of constraints and opportunities for development
 - Discussion of the hydrology of the site: flow patterns, velocity distribution, sedimentation and erosion potential, flood storage areas, points of discharge from the site, including peak flows and discharge volumes.
 - Post Development:
 - Evaluation of changes to site conditions: natural water courses, constructed channels, soil type, groundwater, vegetation, stormwater quality
 - Assessment of changes to flood hazard, access & evacuation, and the compatibility of various types of development to the flood hazard at specific locations, including impacts at properties beyond the site
 - Discussion of changes to the hydrology of the site: flow patterns, velocity distribution, sedimentation and erosion potential, flood storage areas, points of discharge from the site, including peak flows and discharge volumes.
- e Any development proposal or subdivision must include:
- i An Integrated Stormwater Management Strategy applying to the entirety of the site. The strategy must include detention and retention facilities providing for water reuse/harvesting while ensuring water quality targets are met and contained within the development site, in accordance with Council's Civil Works Design Specification and *Australian Runoff Quality: A Guide to Water Sensitive Urban Design*.
 - ii Identification of relevant objectives (including but not limited to water quality, public safety, serviceability and biodiversity preservation) and demonstration through modelling results using Council's MUSIC link as to how these objectives have been satisfied.
 - iii Concept plans and associated calculations for any proposed:
 - Alterations to existing watercourse (demonstrate a suitable sizing, predominantly low hazard, low erosion potential, appropriately shaded and vegetated, including details of adjacent riparian zones).
 - Riparian zones (whether modified or constructed, including widths)

- Water quality control measures (gross pollutants and sediments, nutrients) to achieve Council's Civil Works Specifications and *Australian Runoff Quality: A Guide to Water Sensitive Urban Design* stormwater treatment objectives and targets.
 - Concept details and sizing of stormwater piped systems, pits, road crossings / culverts, detention basins, overland flow paths
 - Earthworks (cut and fill plan)
 - Other infrastructure (roads, footpaths, building footprints, water, sewer, telecommunications, public buildings and community facilities),
 - Access and evacuation routes (for pedestrians and vehicles) from the site to flood free ground
 - Sedimentation and erosion control
 - Landscaping plan
 - Vegetation management plan
 - Details of the proposed staging and sequencing of any supporting infrastructure works
 - Maintenance Management Plan for all asset components including: maintenance access, procedures, frequency, safety issues, equipment required, and whole-of-life cost estimates.
- f Any application for subdivision must provide for at minimum, one (1) riparian corridor within the central portion of the R5 zone within the subject site. The corridor must be retained under the ownership of the Community Association and designed and managed in a manner which is consistent with the NSW Office of Water 'Guidelines for Riparian Corridors on Waterfront Land' and the NSW Rural Fire Service 'Planning for Bushfire Protection, 2006'
- g A primary flow channel of a sufficient width for the conveyance and containment of storm and/or flood waters during the 1% AEP, sized in accordance to meet the minimum depth and velocity specifications of Part 10 of Council's Civil Works Specification, including freeboard;
- h The total width of the flow channel is to be validated by the outcomes of the flood study and flood impact assessment which addresses the relevant requirements of Central Coast LEP 2018 and Chapter 3.1 Floodplain Management.
- i Encroachment into any riparian corridor, inclusive of riparian buffers, by urban development is unlikely to be supported.
- j Any proposed detention basins may incorporate pollution retention systems provided it is demonstrated that the basin is sized appropriately and achieves the minimum pollutant reduction targets of generated stormwater discharges in accordance with Council's Civil Specifications and *Australian Runoff Quality: A Guide to Water Sensitive Urban Design*.
- k Any subsequent Development Application for the site which proposes a variation from a previous subdivision of the site which has obtained Development Consent must provide updated modelling, assessments and plans consistent with the above requirements.

NOTE: The Water Management (WM) Act 2000 considers that wetlands are waterfront land. Any works or activities which may impact on such land or riparian corridors may be subject to additional approval requirements under the WM Act. This may result in an impact on potential lot yields

5.51.2.6 Traffic and Transport

OBJECTIVES

- To ensure that future development of the land will have a negligible traffic impact on the existing road network and infrastructure.
- To provide an efficient internal road network addressing safe system principles that respond to the topography of the site and integrates with the external road network system, including the existing road network's environmental capacity.
- To provide for alternate transport including viable links with existing public transport services and collection points.
- To provide appropriate access for larger and special purpose vehicles including construction traffic, garbage trucks, emergency service vehicles, delivery vehicles and buses
- To establish a road layout which maximises convenience, connectivity, transportation amenity and road safety for vehicles, pedestrians and cyclists whilst minimising congestion, and traffic amenity for all users, including existing road networks.
- To ensure 'Safer by Design' principles are implemented for personal and property safety and security.
- To promote 'Healthy By Design' principles in subdivision design, in accordance with the guidelines issued by the Premiers Council for Active Living (PCAL), the NSW Heart Foundation and NSW Health

REQUIREMENTS

- a Any application for subdivision of the site is to include a street and lot layout plan consistent with the requirements of Part 4 Subdivision of this DCP and Council's Civil Works Specification.
- b No access to individual allotments from Old Maitland Road is to be provided.
- c Any application for subdivision of the subject site is to be accompanied by the relevant requirements set out within any Voluntary Planning Agreement relating to or affecting the land.
- d Any application for subdivision of the site is to be supported by a traffic study prepared in accordance with the Roads and Maritime Services (RMS) 'Guide to Traffic Generating Developments 2002', and RMS Supplement TDT 2013/04a, which is to include, but is not limited to:
 - i Current traffic counts for the Old Maitland Road/M1 Pacific Motorway, Old Maitland Road/Yarramalong Road and Yarramalong Road/Hue Hue Road intersections inclusive of all proposed and approved developments.
 - ii The anticipated additional vehicular traffic generated from the proposed development.
 - iii The distribution on the road network of the trips generated by the proposed development. It is requested that the predicted traffic flows are shown diagrammatically to a level of detail sufficient for easy interpretation.
 - iv Consideration of the traffic impacts on existing and proposed intersections and the capacity of the local and classified road network to safely and efficiently cater for the additional vehicular traffic generated by the proposed development. The study shall also give consideration to the cumulative traffic impacts of other proposed and approved developments in the area.
 - v Identifying the necessary road network infrastructure upgrades that are required to maintain existing levels of service and road safety on both the local and classified road

network. In this regard, preliminary concept drawings shall be submitted with the development application for any identified road infrastructure upgrades. However, it should be noted that any upgrades will need to be to the satisfaction of Roads and Maritime Services and Council.

- vi Traffic analysis of any major / relevant intersections, using SIDRA or similar traffic model, including:
 - Current traffic counts and 10 year traffic growth projections (inclusive of proposed and approved developments in the area),
 - With and without development scenarios considered 95th percentile back of queue lengths,
 - Electronic input/output data files.
- vii Provides a comprehensive assessment of the transport impacts on local, state and regional road networks in the vicinity of the development (addressing both the movement of people and goods).
- viii Incorporates conceptual intersection and cross section designs of the proposed intersections (minimum of two) to the site from Old Maitland Road and any internal intersections. Intersections are to be designed to cater for traffic volumes and vehicle types (e.g. buses) and must demonstrate compliance with sight distance requirements of Austroads 2009 (as updated). A reaction time of 2.0s is to be used for the Old Maitland Road intersections and 1.5s for the internal intersections.
- ix Incorporates a 'Preliminary Design Stage Audit' which addresses road geometry, alignment, grades, speed (i.e. 80km/hr), existing accesses and the safety of all road uses adjacent to this site.
- x Identifies how residents from the proposed development are encouraged to walk, cycle and use Public Transport in lieu of the motor car.
- xi Identifies:
 - appropriate transport measures (including infrastructure, services and demand management initiatives) for the proposed development which will help to manage the demand for travel to and from the proposed development.
 - existing and proposed bus stops, shelters and routes. Provides pedestrian/cycleways with logical and coherent internal and external linkages to open space facilities, Public Transport nodes, schools, shops, parks etc and distances to these facilities.
 - recommended actions/facilities required to encourage walking, cycling and use of Public Transport in lieu of the motor car and if possible reduce the demand for travel by commercial vehicle. Documentation is to be provided which demonstrates consultation with the local Bus Company has been undertaken and the proposed network is serviceable by busses.
- e The design and construction of for roads, drainage, cycleways and or shared pathways and pedestrian paths is to be in accordance with Chapter 2.4 Subdivision of this DCP, Council's Civil Works Specification and any relevant Austroads Standards.
- f Documentation is required which demonstrates how overland flows and drainage associated with roadworks will be managed to a standard acceptable to Council.

5.51.2.7 Open Space, Community Facilities and Landscaping

OBJECTIVES

- To provide open space for the active and passive recreational needs of residents
- To assist in the integration of the development in the local area.
- To maintain the environmental and visual character of the existing landscape, including the amenity of adjoining landholders.
- To encourage, promote and provide social interaction, health and well-being, equity and accessibility and to build connectivity.

REQUIREMENTS

- a Public access to the road network and open space areas should be available at all times.
- b The layout and design of recreation community facilities should be inclusive of all members of the community, having consideration for specific age requirements and abilities.
- c Any proposed walking or cycling facilities must not be located within 200m of adjoining landholdings where they are in private ownership
- d Subdivision design should consider options to maximise and enhance liveability, connectivity and a sense of community and well-being for residents.
- e Subdivision design should integrate physical geographic features and retain and extend the existing natural values of the site.
- f Crime Prevention Through Environmental Design (CPTED) principles are to be applied to the design and operation of any recreation and community facilities to enhance safety and encourage evening use.

5.51.2.8 Potential Site Contamination

OBJECTIVE

- To ensure that land proposed for development does not prevent a risk to future occupants and is of a suitable quality for the intended purposed.

REQUIREMENTS

- a Any application for the subdivision of the land to which this plan applies is to be accompanied by a Stage 2 Detailed Investigation Report and a Stage 3 Site Remedial Action Plan, both prepared by a suitably qualified consultant, having regard for the finding of previous investigations (*JBS&G (May 2014) "Acid Sulphate Soils Review and Preliminary Site Investigation, 414 Old Maitland Road, Mardi"*). The reports are to be consistent with the requirements of the Managing Land Contamination planning guidelines, 1998 (as updated) prepared by the (then) Department of Urban Affairs and Planning.
- b A Stage 4 Validation and Monitoring report prepared by a suitably qualified consultant is to be submitted prior to a Subdivision Certificate being issued.
- c Any application for the subdivision of the land to which this plan applies is to be accompanied by a Hazardous Building Material Survey and Management Plan, prepared in accordance with AS 2601:2001 (*The demolition of structures*), and by a suitably qualified consultant.

Note: All development proposals must consider all relevant Council and State Government Policy including SEPP 55- Remediation of Land.

Note: An accredited site auditor must validate that the actions required by a Remedial Action Plan have been completed, prior to the commencement of the construction of the development.

5.51.2.9 Bushfire Management

OBJECTIVES

- To minimise the risk of adverse impact of bushfires on life, property and the environment.
- To ensure that development in bushfire prone areas is accessible by emergency services at all times.
- To enable appropriate bushfire protection without unreasonably compromising the biodiversity and landscape values of the area.
- To implement an ongoing maintenance regime to manage surrounding vegetation and asset protection zones to reduce possible bushfire risks and protect development.

REQUIREMENTS

- a Any application for subdivision of the subject site is to be accompanied by the relevant requirements set out within any Voluntary Planning Agreement relating to or affecting the land.
- b Any application for subdivision is to include a Bushfire Risk Management plan. The plan is to be consistent with the provisions and requirements of the following:
 - i *Planning for Bushfire Protection (PBP) 2006;*
 - ii *Australian Standard 3959:2009 (as updated); and*
 - iii Chapter 2.4: Subdivision of this DCP.
- c Any riparian corridor on the subject land is to provide for adjoining bushfire management zones to be retained in the ownership of the Community Association. The zones must provide for a minimum 10m bushfire management zone, generally in accordance with Figure 2. The purpose of such zones is to provide protection against possible bushfire risks from vegetation within the riparian corridor. The management of such zones is to be documented within the Bushfire Risk Management Plan.

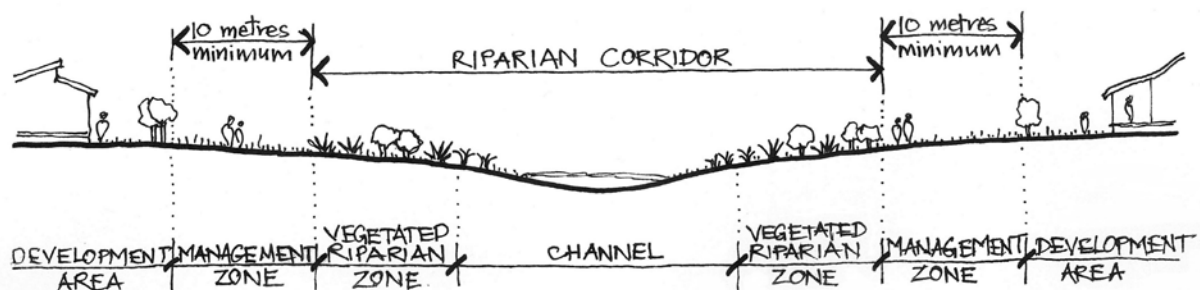


Figure 2 Generalised riparian corridor cross section

- d The Bushfire Risk Management Plan is to incorporate the following minimum requirements:
 - i Identification and details of proposed points of access to the site for emergency access and point of egress both during construction and occupation.

- ii Provide for a fire trail, constructed in accordance with the Council's *'Fire and Land Management Trail Construction Guidelines'* wholly within the subject site, adjacent to that land which incorporates Mardi Dam, located as generally indicated in Figure 3;
 - iii Identify any necessary upgrades and approval requirements to the Potters Gully Fire Trail, located as generally indicated in Figure 3, for the trail to meet the relevant performance criteria for fire trails as prescribed by PBP 2006;
 - iv Specification of the management regimes to ensure the ongoing maintenance of fire trails to a reasonable standard (where they are located on the subject land) that will be undertaken by, and the responsibility of, the future Owners' Association.
 - v Specification of the management regimes to ensure the ongoing maintenance of any APZs to a reasonable standard. Any perimeter APZs will be the responsibility of the future Owners' Association. The developer must undertake any maintenance and/or management of any Fire Trails and APZs until such time as the Owners Association has been established, operational and/or has sufficient capital to undertake this requirement.
 - vi Identification of the requirements for the provision, construction, maintenance and/or management of fire trails and/or APZs. Such requirements are to be registered on the title of the land.
- e Any application for subdivision must provide for an APZ around the perimeter of the central and western development area within the R5 Large Lot Residential zone.
- f The perimeter road must be two-way with a minimum carriageway width of eight (8) metres, exclusive of any APZ requirements or on-street parking areas. Perimeter road designs are to ensure that any on-street parking does not obstruct the minimum carriageway width, in accordance with section 4.1.3(1) of PBP 2006.
- g Two vehicular access links to the western development area (as zoned R5 Large Lot Residential) are to be provided to create an effective perimeter road for APZ purposes for development in this locality.
- h All APZs must enable dwellings to achieve a deemed to satisfy Bushfire Attack Level (BAL) rating under Australian Standard AS3959 *Construction of buildings in bushfire prone areas*, not exceeding BAL 29.
- i APZs are not to be located on slopes greater than 18 degrees.
- j All allotments are to incorporate nominated building envelopes, to be registered on title, which comply with the above requirements.

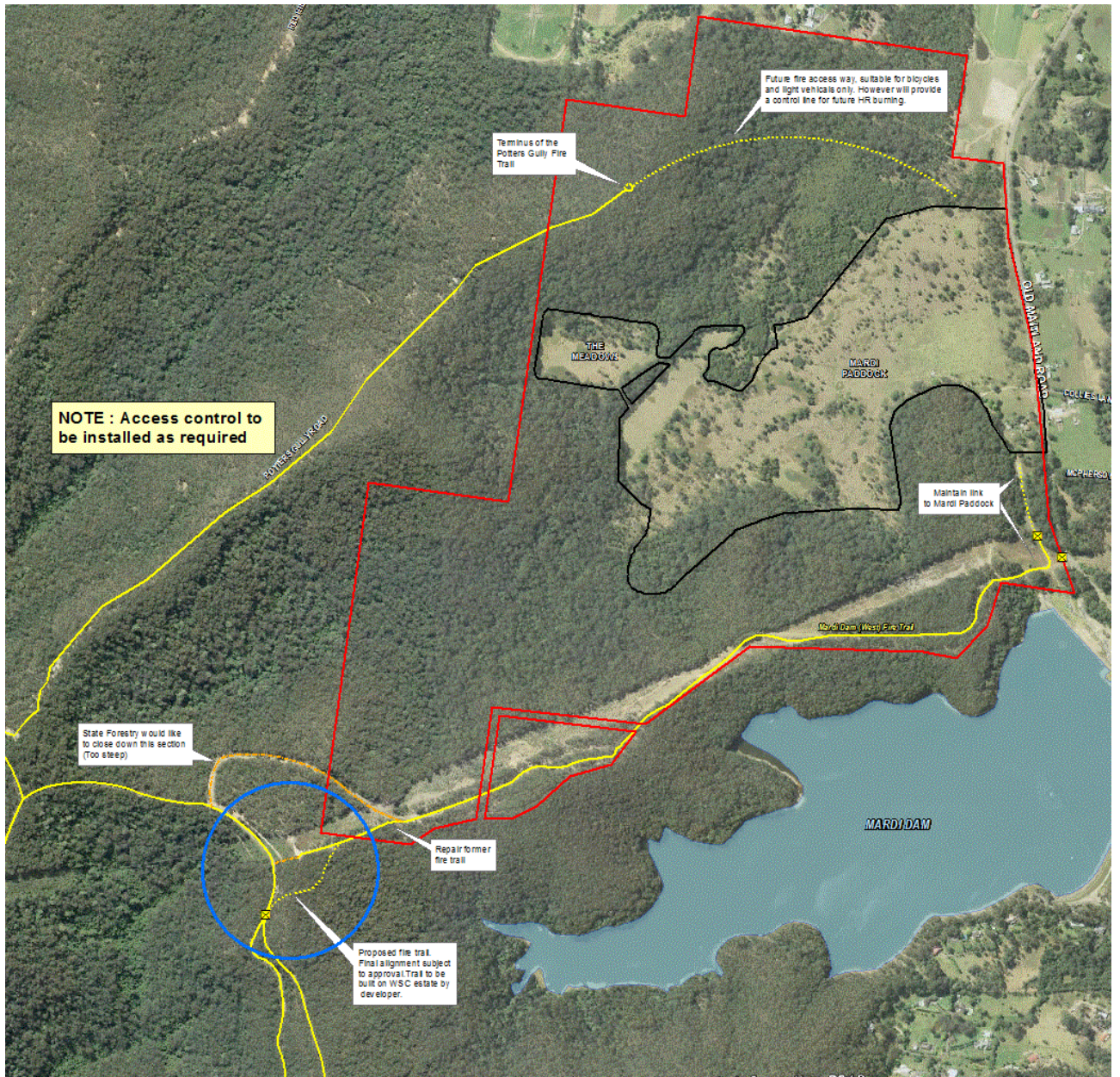


Figure 3 Generalised Location of Fire Trails (not to scale) (Source: Travers Consulting 2016)

5.51.2.10 Aboriginal Heritage

OBJECTIVE

- To provide Applicants with information that can be used to supplement the requirement to consider Indigenous Heritage in preparing a development application.

REQUIREMENTS

- Any application for subdivision of the site is to be accompanied by an Aboriginal Heritage Management Plan (AHMP) for the AHIMS sites #45-3-1103, #45-3-1276 and #45-3-1104. The plan is to be prepared by a suitably qualified archaeologist in consultation with the Office of Environment and Heritage (OEH) and local Aboriginal groups, including but not limited to the Darkinjung Local Aboriginal Land Council (DLALC) and Guringai Tribal Link Aboriginal Corporation (GTLAC).

- b Any application for subdivision of the site and the assessment thereof is to consider the need for an induction of site workers on Aboriginal Heritage and associated procedures and protocol of the *National Parks and Wildlife Services (NPWS) Act, 1974*.
- c Any application for subdivision of the site and the assessment thereof is to consider the need for a post-earthwork site inspection, undertaken by a suitably qualified archaeologist, in the presence of local Aboriginal groups, including but not limited to the DLALC and GTLAC.

5.51.2.11 Community Engagement

OBJECTIVE

- To assist in the management of enquiries and enable mitigation of issues during the development of the locality.

REQUIREMENTS

- a During planning and construction, the applicant and/or developer of the locality should maintain contact with adjoining landholders to relay information and enable identification and mitigation of potential issues (noise, construction traffic etc.) as they arise.

5.51.2.12 Odour, Noise & Acoustics

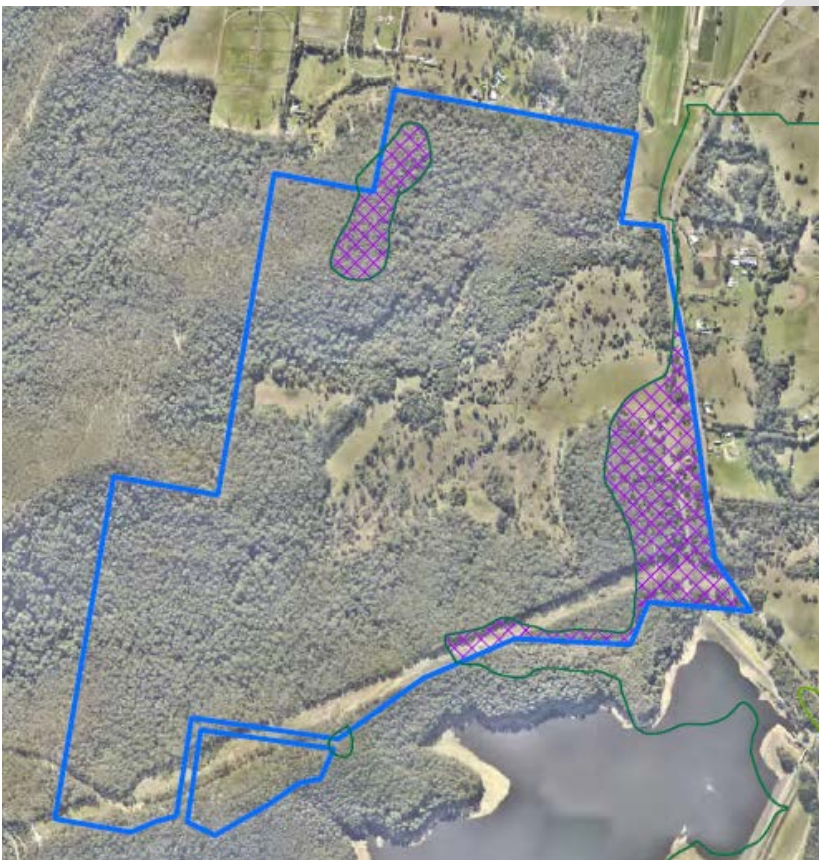
OBJECTIVES

- To manage land use conflicts that may arise due to neighbouring turf farms and agricultural operations.
- To ensure that traffic noise impacts on adjoining land holdings arising from the development and occupation of the subject land are minimised.
- To mitigate traffic noise impacts on future residential dwellings on the subject land arising from the M1 Motorway.


REQUIREMENTS


- a Any habitable or public buildings or places must be located at a distance no less than 100m from any operational turf farm or adjoining agricultural land use.
- b Vegetative screens should be utilised in areas identified for habitable or public buildings or places in areas adjoining any operational turf farm or adjoining agricultural land use to assist to capture wind-blown dust and/or chemical particles.
- c Any application seeking subdivision of the land must demonstrate compliance with noise assessment criteria detailed in Table 3 (*Road traffic noise assessment criteria for residential land uses*) of the NSW Road Noise Policy. This demonstration must undertake cumulative assessments for each proposed stage of the subdivision and must be undertaken in accordance with the provisions of Appendix B of the NSW Road Noise Policy.
- d Any residential dwellings located within 60m of the Old Maitland Road frontage must be of a construction standard which is in accordance with Category 3 of AS 3671-1989 (*Acoustics: road traffic noise intrusion – Building siting and construction*)
- e Any other residential dwellings located beyond 60m of Old Maitland Road and located in areas hatched purple in the figure 3 below must be of a construction standard which is in accordance with Category 2 of AS 3671-1989 (*Acoustics: road traffic noise intrusion – Building siting and construction*).

- f For all other areas, the following general design considerations should apply:
- Dwellings are to be located as far as possible from the traffic noise source.
 - The size and number of windows facing the traffic noise source are to be minimised.
 - Noise insensitive areas such as the kitchen, storage areas and laundry should be located toward the traffic noise source.
 - Construction techniques that focus on sealing gaps around windows, doors, ceiling spaces, etc. are to be utilised
 - Thick glass or double glazing should be utilised.
 - Solid core doors and appropriate door seals should be used.



LEGEND

 Site Boundary

 Construction Category 2

Road Traffic Noise Levels (dBA)

2014 Night $L_{Aeq}(9hour)$ - 4.5m above ground level - 2.5dBA façade correction

 45 dBA


 50 dBA

Figure 3 Areas subject to additional acoustic construction standards (Source: SLR 2014)

APPENDIX A

Ecological Feature	Implications of Development	Recommendations
Native vegetation including trees	Clearing or disturbance of generally disturbed native vegetation from several plant communities.	<p>The primary mechanism to offset the losses of native vegetation including EECs is to reserve and protect adequate areas of the non-developed areas of vegetation in the study area. At a minimum, standard management measures (according to the BioBanking methodology) should be applied within those areas.</p> <p>Ideally, locate services infrastructure such as roads and utilities in and through areas that are already cleared and highly degraded. Individual building pads should similarly be located in disturbed areas of lower ecological value. Clusters of native trees and shrubs that are currently included in the clearing calculations (Figures 3 and 4) could be retained to the extent that bushfire asset protection is not compromised, thus reducing the biobanking ecosystem credit deficit for the floodplain communities.</p> <p>Where avoidance is not feasible, minimise impacts to native vegetation by storing soil/fill, fuel, other materials or machinery within the existing clearings and only removing vegetation that is required for the actual subdivision and associated services. Trim branches rather than removing trees for access where possible.</p> <p>Designate areas outside of native vegetation in a construction environmental management plan for storage of soil/fill, fuel, other materials, machinery and vehicular access.</p>
Introduction or spread of plant pathogens	Potential for introduction and /or spread of root or leaf fungal pathogens (root rot or myrtle rust) resulting from the clearing, soil filling, construction, landscaping and revegetation works.	<p>During vegetation clearing and construction, ensure that a protocol is in place to minimise the risk of importation to the site of root-rot fungus (<i>Phytophthora cinnamomi</i>) or myrtle rust via the transport of contaminated soil on machinery or footwear, any importation of contaminated soil for fill, or myrtle rust spores in imported plant material or on clothing. These protocols should follow recognised guidelines (such as those set out by OEH).</p> <p>Where possible, machinery and footwear should be free of soil or washed clean and free of any soil before arriving on site. Any soil imported onto the site for fill should be sourced from root-rot fungus free areas or certified to be free of the pathogen. Ensure excavated soil is not distributed around the study area and that all machinery and equipment is washed and free of soil before being moved offsite. Ensure that any nursery stock imported into the site for planting from the family Myrtaceae (mainly eucalypts, callistemons, melaleucas and leptospermums) are certified free of myrtle rust.</p>
Biconvex Paperbark Melaleuca	Removal of a portion of the local population of	Design the subdivision layout such that as much of the Biconvex Paperbark habitat as possible can be retained and protected within the larger lots.

Ecological Feature	Implications of Development	Recommendations
<i>biconvexa</i>	<i>Melaleuca biconvexa</i> or indirect disturbance to adjoining retained patches.	<p>Designate No Go Zones consisting ideally of 5m buffers immediately adjoining the edges of mapped occurrences of the species to be retained (Figure 4). Fence these buffers to avoid accidental intrusions into retained habitat by machinery. The No Go Zone is to be implemented for the construction phase of the proposal and be shown clearly on construction environmental management plans. No access is allowed into No Go Zones during construction. No fuel, machinery or other equipment, material or soil is to be stored in No Go Zones. Indicate these zones clearly on site maps showing the mapped extent of retained patches of the species and ensure that construction personnel are fully aware of the presence and locations of retained patches of the species before site work commences.</p> <p>Implement hydrological and runoff controls in the vicinity of the retained patches of the species to ensure that any changes in hydrology or groundwater due to nearby fill placement or water management works are minimal.</p> <p>Monitor the abundance and health of retained patches of the species as part of the Biodiversity Management Plan.</p>
Riparian and aquatic areas	Potential contamination of downstream aquatic environments within Deep Creek and associated drainage lines traversing the central portion of the R5 zone within the site. Removal or disturbance to native flora and fauna habitat within riparian areas.	<p>Identify riparian and aquatic areas of highest ecological value along the creek and develop measures to protect these values as far as possible within the Biodiversity Management Plan. Key areas occur at the eastern end of the rainforest community and the eastern end of the paperbark community. These should be delineated on a map within the plan.</p> <p>Wherever possible, minimise disturbances to native vegetation and soil disturbances within or adjacent to riparian areas along the creek and major drainage lines.</p> <p>Install current best practice sediment control measures downstream of any works involving soil disturbance or placing of fill prior to the commencement of works.</p> <p>Design any new detention basins or dams to provide aquatic fauna habitat (see below)</p>
Noxious and Environmental Weeds	Potential spread of noxious and environmental weeds as a result of the proposed works: Bitou Bush, Lantana, Privet, Camphor Laurel, exotic grasses, escaped garden plants.	<p>Control noxious weeds in the study area according to the legal requirements set out in section 3.7. For all noxious and environmental weeds, refer to local and regional control plans and measures as provided by Wyong Shire Council, and the DPI Guidelines for individual species.</p> <p>Note that since some native fauna species are reliant on dense understorey vegetation it is important to not clear weed species in a manner that opens up the understorey too dramatically, without replacing the shrub layer first. (i.e. cut lantana branches left in place until other shrub species are established).</p>

Ecological Feature	Implications of Development	Recommendations
		<p>A weed management strategy should be included as part of the Biodiversity Management Plan that addresses control and management of noxious and environmental weeds, with particular emphasis on separate removal and disposal of vegetation containing bitou bush. Other considerations specific to particular species, particularly lantana, blackberry, exotic perennial grasses and camphor laurel should be included in the plan based on measures recommended for the local area by Council or DPI. Control at cleared edges with retained native bushland should be a primary focus of the strategy, including prevention of garden refuse dumping into bushland by new residents of the subdivision by:</p> <ol style="list-style-type: none"> i. Information leaflets and education/awareness, appropriate signage; ii. Promoting co-operation; iii. Monitoring compliance; iv. Warnings in the event of non-compliance; and v. Imposition of fines and penalties as a last resort.
<p>Hollow-bearing Trees</p>	<p>Removal or disturbance of potential roosting or nesting habitat for threatened hollow- dwelling fauna.</p> <p>It is recommended that a development area hollow tree survey be carried out before final plan / layout of development is designed.</p>	<p>Any hollow-bearing trees found present within the development area should be retained where possible. A minimum buffer of three metres around hollow bearing trees to be retained should be implemented for the construction phase of the proposal and show these clearly on construction environmental management plans. The buffer has been applied to each tree to ensure plant and equipment does not accidentally damage the tree and disturb fauna. No Go Zones are to be clearly marked onsite using high visibility para webbing or similar. No access is allowed into No Go Zones during construction. No fuel, machinery or other equipment, material or soil is to be stored in No Go Zones.</p> <p>If these trees cannot be avoided, a Nest Box Management Plan should be developed, which may include series of stag watching to determine occupancy prior to the commencement of works. The Nest Box Management Plan should also include additional avoidance options, tree felling requirements and a safe construction protocol for hollow-dwelling fauna, if located.</p> <p>Any removal of hollow-bearing trees within the development area should be completed under the supervision and guidance of a qualified ecologist.</p> <p>Tree hollows removed for the proposal should be salvaged and relocated within adjacent bushland.</p>
<p>Artificial lakes and other water sources / aquatic habitat</p>	<p>Current dams and wet areas within the development area will be removed. However there are plans for</p>	<p>Artificial lakes and other water sources should be designed to maximise potential habitat for local fauna (i.e. shallow edges and vegetation for wetland birds and frogs,) minimise chances of introduction of predatory fish. This may actually increase the habitat on site for some species.</p>

Ecological Feature	Implications of Development	Recommendations
	an artificial lake/s	
Koala feed trees	Some koala feed trees will be removed	Landscaping within the development should include Koala feed trees.
Domestic pet (competition and predation)	Some of the threatened species, as well as many common species of native fauna are injured and killed by domestic dogs and cats	Dogs and cats need to be on a lead or confined to the yards of future residences and not permitted to roam the riparian area and reserved areas within and around the development. A Community Plan of Management needs to identify how domestic animals are to be managed.
Riparian Zone buffer	The riparian area provides important habitat for many species and also provides a corridor to further riparian habitat outside of the development.	A larger buffer zone is recommended, where the APZ should be located entirely within the already cleared area and should not encroach on the riparian vegetation by the creekline through the rainforest or paperbark community adjacent to the development area. The crossing through the rainforest community should be in the form of a bridge to minimise impact to the creek.
General fauna habitat	Fauna falling within trenches and becoming trapped during construction Removal of nesting habitat Removal of fauna sheltering habitat	All excavation including trenching must be capped and sealed on the same day, prior to leaving the site and left in place until works recommence. Avoid tree removal during peak breeding season, between August and January. If clearing works are undertaken in spring, a qualified ecologist should inspect the study area prior to tree felling to provide recommendations that ensure no bird nests or possum dens are harmed during the process. Should any fauna be discovered or injured, a suitably qualified wildlife carer would be contacted. Contact details for WIRES would be kept onsite. Prior to removal of bushrock or woody debris, a pre-clearance check of sheltering habitat should be undertaken by an Ecologist. Bushrock and woody debris removed for the proposal should be salvaged and relocated within adjacent areas of bushland. An education program for new residents should be prepared and implemented highlighting the ecological values of the site outside the development area and notifying them that pets are not to be allowed to roam through that area and that bushrock and firewood collection is not permitted. Erect signage in several locations on the boundary of the retained lands reiterating the restrictions on use of the area that are also highlighted in the community education program.
Other threatened flora and fauna	Unexpected threatened flora or fauna are located during	Should unexpected threatened flora or fauna be located at any time during the proposed activities, all works should cease immediately in the area to prevent any further harm to the individual. A suitably qualified ecologist should be

Ecological Feature	Implications of Development	Recommendations
	construction. Changes o dams and ponds or new wet areas to be constructed	contacted to determine if further assessment may be required. Include in the design provision for some shallow banks and naturally vegetated margins that will provide improved habitat for frogs and other semi- aquaticspecies

(Source: Adapted from Biosis (2015) Proposed Subdivision of The Old Farm, Mardi: Flora and Fauna Assessment)

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