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Subdivision design guidelines



Aerial of orange harvesting

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5.1 Planning your subdivision

These subdivision design guidelines outline the objectives for planning a subdivision within the precinct.



Figure 14: Render view looking Northwest over the early stages of the Special Activation Precinct subdivision (illustrative built form only).

These subdivision design guidelines ensure ordered and timely subdivision within the precinct and infrastructure is planned, designed and implemented in advance of need.

These subdivision design guidelines provides the design objectives for subdivision within the precinct including design objectives for topography, environment, environmental hazards, design and landscaping, stormwater and drainage, accessibility and infrastructure and services.



5.1 Planning your subdivision



This section provides the design objectives for planning your subdivision. This includes objectives for topography, environment, environmental hazards, design and landscaping, accessibility and infrastructure and services.

The design objectives should be applied to the context of the development proposal. Where a specific design objective cannot be met, then applicants should demonstrate how the proposed design of the development will achieve the relevant precinct design principles in Chapter 2.

5.1.1 Topography

The natural landform and setting contribute to a sense of place. Subdivision is responsive to the setting and natural site features, and established subdivision patterns.

The Moree Special Activation Precinct is a flat and expansive site where the sky meets the productive landscape in every direction. Vertical variation is achieved through minimal established dhulu-trees and large buildings and silos on site or immediately surrounding that provide locational markers and legibility. Creeklines and the travelling stock route (TSR) intersect the flat lands and provide important traces on the otherwise consistent terrain.

It is important that the design and landscape of the subdivision considers the precinct's rural outlook and setting. The considered location of revegetation and further large format buildings will continue to contribute to the character.



Topography objectives

- 01** provide a framework that promotes agricultural and industrial clustering as well as service expansion for manufacturing, processing and packing facilities
- 02** sensitively integrate with creeks, drainage lines and waterways and maintain visual and physical connectivity wherever possible
- 03** ensure subdivision and street pattern considers appropriate location and land take for swales and minor earthworks to facilitate drainage.

5.1.2 Environment

Environmental values and constraints across the site include vegetation, biodiversity corridors, and cultural heritage, as shown in the Master Plan - Structure Plan. These values and constraints should be considered and either avoided or appropriately incorporated into the subdivision design.



Objectives

- 01** Development avoids impacts to Aboriginal cultural heritage and is undertaken in accordance with the precinct's Cultural Heritage Management Plan.
Note: Access to the precinct's Cultural Heritage Management Plan can be obtained from the corporation.
- 02** The design and layout of streets, lots, landscaping and infrastructure:
 - retains in place and integrates scarred dhulu-trees, identified artefact sites and other Aboriginal cultural heritage places of importance within areas of environmental significance that are publicly accessible; and the TSR which is Crown Land
 - considers the Gamilaroi/Gomeroi planning principles provided in the master plan and incorporates storytelling and memory, through means including interpretative signage.
- 03** Seek to retain areas of high value biodiversity and integrate precinct biodiversity and green corridors, riparian corridors and strategic revegetation sites.
- 04** Minimise the need for vegetation clearing within the private lot.
- 05** Does not detrimentally impact the region's groundwater resources and groundwater dependent ecosystems.

5.1.3 Environmental hazards

This section applies to land on the Constraints Map 8.1 subject to environmental hazards and conditions of bushfire (as shown in the Moree Special Activation Precinct Master Plan – Bushfire Protection Measures map) and flooding (Wugawa-Flood Prone Land Map 8.5 which shows flood-prone land largely associated with the flooding of tributary creeks of the Mehi River, including Halls Creek and Clarkes Creek, where flooding can be widespread but relatively shallow) and areas of contaminated land recorded on the Moree Plains Shire Council’s Contaminated Lands Register. The design and construction of a subdivision should recognise, and be designed within, the environmental hazards of the site.



Objectives

- 01** Avoid increasing the risks associated with natural hazards including bush fire and flooding.
- 02** Ensure subdivision for commercial or industrial purposes provides suitable building areas outside the 0.2% AEP event, referred to as the Flood Planning Area (FPA) (as shown in Wugawa-Flood Prone Land Map 8.5). Where subdivision is proposed within the extent of the FPA, a wugawa-flood impact assessment comparing wugawa-flood behaviour of the proposed development (including any landform change such as cut to fill earthworks, changes in surface conditions and proposed buildings), shows that:
 - wugawa-flood function can be maintained
 - there is no impact on adjacent properties and
 - the finished floor level of any proposed building or operational area can be located above the 0.2% AEP wugawa-flood level.
- 03** Subdivision layout does not result in isolation or create evacuation challenges for users when a natural hazard occurs. The issuing authority may require a site-based wugawa-flood emergency response plan for all development within the land affected by wugawa-flooding, being that land as shown as the extent of the Probable Maximum Flood, the Special Flood Considerations (SFC) area, prepared by a suitably qualified person.
- 04** Minimise the risk to life, property and the environment in the event of a bush fire, including the lives of emergency services personnel and make adequate provision for access for emergency personnel, vehicles and equipment.
- 05** Lot sizes and dimensions can accommodate development and minimise risk to life and property from environmental hazards, including bush fires. Each lot created contains a suitable area for the development, including an appropriate asset protection zone to protect the property from the threat of bush fire.
- 06** Development on bush fire prone land to which these objectives apply comply with the requirements of:
 - Planning for Bush Fire Protection 2019 (or as updated) and
 - AS 3959:2009 (or as updated) – Construction of Buildings in Bush Fire Prone Areas or the NASH Standard for Steel Framed Construction in Bush fire Prone Areas.
- 07** Recognise that land not classified as bush fire prone land or a bush fire hazard area may still be subject to the impact from adjacent bush fire prone land, particularly through radiant heat exposure and ember attack.

5.1.4 Design and landscaping

Subdivision design can influence the ability of future development, built form and productive landscape, to achieve the desired microclimate for optimum productivity. The orientation of lots can inform the preferred location of future buildings to maximise solar access, optimise access and parking arrangements, facilitate expansion and growth of services and strategically co-locate noise and odour to minimise conflict.

Site landscaping should be informed by the site's natural features and landscape and, where possible, retain and protect existing areas of remnant vegetation. Landscaping should contribute to shade and cooling to combat the high temperatures of Moree and seek opportunities to improve legibility and wayfinding through streetscape and gateway planting. It should reflect the bioregion and vegetation typologies of the precinct and assist broader efforts to enhance habitat and biodiversity across the precinct in accordance with Chapter 3 – Precinct revegetation strategy.



Objectives

- 01** Create a range and mix of allotment sizes that respond to existing vegetation, waterways, and other landscape features including the TSR, cultural sites, fauna movement corridors, and important physical connections.
- 02** Lot orientation, size and frontages should be suitable to accommodate gali-water and energy efficient development, setbacks, landscaping, storage space, vehicle access and manoeuvring and parking.
- 03** Use vegetation to provide shade to the northerly and westerly elevations of buildings during summer, outdoor common areas, carparking areas, whilst ensuring adequate solar access during winter.
- 04** Provide flexibility in lot access arrangements to facilitate specific industrial, agribusiness, crops and productive landscape growth requirements.
- 05** Achieve good public domain outcomes through attractive and sufficient landscaping and emphasis on shade amenity, consistent with species lists included in Chapter 3 – Precinct revegetation strategy.
- 06** Limit overall impervious areas to a maximum of 60% for commercial lots and 80% for industrial lots (calculations to be inclusive of all impervious areas, including internal roads). Where practical, integrate stormwater management systems within the design of landscaped areas.
- 07** Integrated gali-water cycle management and gali-water sensitive urban design principles should be incorporated into developments including vegetated swales, natural drainage corridors, sand filters, gross pollutant traps and constructed wetlands. Subdivision design should make provision to ensure roof runoff capture and re-use can occur for all sites to reduce the volume of additional runoff generated.

Figure 15: Illustrative rendering of the revegetated riparian buffer to Clark's Creek and future development interface.



Case study:
Voyager Craft Malt in Barellan, NSW

Barellan is situated in the heart of the NSW grain belt in the Riverina and has a rich history of producing some of the finest malting barley in the world. In 2012, Voyager Craft Malt started producing a series of experimental malts from selected grains sourced from their farm and other growers in the region. Over the years this led to move to a neighbouring farm, which enabled a greater level of environmental sustainability through an onsite biochar facility and the reuse of irrigation gali-water.

The company continued to grow and by 2019 had outgrown the site, seeking further expansion a new greenfield site was developed with a custom designed state of the art on-farm malt processing facility, situated alongside a malt tourism destination complex.

Increasing capacity and providing an opportunity to showcase their product, educate visitors on the vital role that agriculture plays, and further promote and support the local community.



This development demonstrates the importance of land for business expansion and subdivision controls that streamline sale and development of adjoining land for related uses, and flexibility to allow for innovation and ongoing co-location of mutually benefiting businesses.

The Moree Special Activation Precinct endeavours to learn and leverage from examples like this by promoting opportunities to minimise waste, carbon footprint and facilitate local business expansion, jobs, and upskilling through circular economy initiatives. Facilitating the growth of primary industry and agriculture, and realising opportunities for manufacturing, processing, packing, and exporting to regional and international markets.

Whitten Malt House aerial



5.1.5 Stormwater and drainage

Industrial sites have high impervious area ratios which result in greater runoff volumes. Consider existing downstream drainage systems and their capacity to receive the changed runoff volumes and patterns from the site, while maintaining existing flows to support habitats.



Objectives

- 01** Provide stormwater detention facilities to capture rainwater and surface runoff to ensure post development flows do not exceed pre-development flows, for storm events up to and including the 1 in 100 AEP storm event with climate change.
- 02** All new and existing roads have roadside swale drainage and where required an underground pipe system to carry gali-water to the discharge point for each lot. Drainage will also be required to collect drainage from higher lots and avoid uncontrolled discharge onto lower lying properties.
- 03** Lots are designed to allow for appropriate stormwater conveyance by swale drainage and where required either kerb and gutter or trench drainage.
- 04** Gali-Water sensitive urban design measures that also meet integrated gali-water cycle management objectives are incorporated to ensure the stormwater continues to flow to receiving waters in a sustainable fashion. The target is less than a 10% change in the modelled annual runoff from each site and in the aggregate in wet, dry and average rainfall conditions (being 90th percentile, 10th percentile and 50th percentile rainfall years for the nearest relevant rainfall gauge with at least 50 years of rainfall records).
- 05** Gali-Water sensitive urban design measures that also meet integrated gali-water cycle management objectives are incorporated to ensure gali-water pollution is avoided and contribute to the following Moree Special Activation Precinct Master Plan precinct-wide pollution load reduction targets:
 - Total Suspended Solids (TSS) by 70%
 - Total Phosphorus (TP) by 45%
 - Total Nitrogen (TN) by 45%
 - Gross pollutants by 90%.

Any future development of water quality targets, at a precinct-wide scale, should be set out using the *Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land Use Planning Decisions (2017)* to help guide design.

5.1.6 Accessibility

Good subdivision offers connectivity and has a legible hierarchy of roads and through routes whilst also providing a framework for functional drainage. The nature of the SAP will require the ongoing and increasing priority of large and heavy vehicles and freight movements within the internal street network. Additionally, the SAP should maintain and enhance connectivity with the Moree township and surrounding existing and future development areas. The SAP thoroughfare network, not limited to vehicular roads, should offer a choice of routes for pedestrians and vehicles, and integrate to adjoining streets, neighbourhoods and local facilities or shops. Public corridors including creeklines and vegetation can supplement the thoroughfare network in providing movement opportunities where possible and logical.



Objectives

- 01** Local roads should connect to the broader precinct road network. Local roads are designed and constructed in accordance with Table 4.2 in Chapter 4 –Infrastructure (Roads).
The issuing authority may require a traffic impact assessment prepared by a suitably qualified person which considers impacts of the proposal in terms of the design and location of the roads, and the likely nature, volume or frequency of traffic generated by the development.
- 02** Provide logical and legible connection to Moree Town Centre, Council’s Gateway (SAP Gateway North) and future residential to the northwest of the SAP.
- 03** Use creek and public vegetation buffers and top of bank setbacks as opportunities to connect into regional systems and communities for habitat and pedestrians, also ensuring that public access is maintained to Moree Water Park
- 04** Provide all lots with safe, legal and practical vehicle access and manoeuvring areas for the largest design vehicle anticipated to require access to the subdivision
- 05** The use of well designed cul-de-sacs, consistent with performance criteria, should be considered to respond to site constraints, minimise unnecessary expanses of pavement where access is not required and optimise development and expansion areas.
- 06** Services corridor must be easily accessible as required by Chapter 4 –Infrastructure.
- 07** Integrate public transport stops at appropriate locations.
- 08** Road reserves, road carriage way and road verges are sized and designed to the relevant road function in accordance with Chapter 4 –Infrastructure and “Guide for Traffic Generating Development”, Roads and Traffic Authority of NSW, October 2002.
- 09** Swales and grass are preferred within road verges in accordance with Chapter 3 –Precinct revegetation strategy.
Alternate species for roadside vegetation within a development can be accommodated if it can be demonstrated that alternate species:
 - are native to the area
 - have similar gali-water consumption and drought tolerance characteristics to the equivalent vegetation type and
 - will not obstruct or impede large vehicle movements.

5.1.7 Infrastructure and services

The road network and a dedicated utility corridor forms the basis of infrastructure and services to connect subdivisions. Map 8.3 and 8.4 shows the location of infrastructure and services for complementary subdivision design.



Objectives

- 01** Use of easements to:
- protect and maintain existing services (i.e. electricity, gali-water and sewer) and
 - ensure protection of new private and public assets (road, drainage, rail) and connections to services in the public road corridor or the trunk services corridor.
- 02** Services easements are to be provided on each lot to allow for the connection to the following services, as appropriate to the proposed development:
- gali-water connections
 - future recycled gali-water connection
 - gravity and/or pressure sewer connections
 - electrical connections (except where this is provided overhead)
 - telecommunications
 - provision for future recycled gali-water pipe
 - provision for medium pressure gas pipe
 - provision for future hydrogen
 - spare space in the corridor for unknown future pipes/conduits
- Provision for a circular economy easement for intra-lot (within the subdivision) and interallotment connections (to all adjacent lots) should also be made.
- 03** Services corridor must be easily accessible as required by Chapter 4–Infrastructure.
- 04** The developer shall be responsible for providing utilities and services connections to allotments including:
- gali-water
 - wastewater
 - electrical
 - telecommunications.
- Note: The relevant utility suppliers should be consulted at the earliest possible time in relation to providing utilities and service connections to allotments.
- Note: Council should be consulted on connections to utility services including for sewerage, drainage and approval under section 68 of the *Local Government Act 1993*. The process for seeking approval from the Council should commence at the earliest possible time and should run in parallel with the Activation Precinct Certification Process where possible.
- 05** Stormwater infrastructure includes on-site measures for the management of stormwater quantity and quality that form part of the precinct stormwater strategy provided in Chapter 4–Infrastructure.
- 06** The location of infrastructure does not adversely impact other properties or public land.