



SOUTH JINDERA RESIDENTIAL MASTER PLAN

GREATER HUME SHIRE COUNCIL

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Executive Summary

The South Jindera Master Plan sets out a consolidated growth and development framework for a low density residential precinct comprising existing landholdings of Lots 4 & 6 in DP240938 and Lots 30 & 31 on DP1062153. The Master Plan will inform and guide the release of this land in the short to longer term, ensuring the delivery of a consolidated urban development and associated infrastructure.

The land is relatively unconstrained for future development, is zoned for future urban purposes and its location on the immediate urban fringe means that it is attractive to the market as an immediate growth area. Council have recognised the need to ensure that the future development of the study area is undertaken in a coordinated and efficient manner.

The study area and surrounds have been assessed in terms of existing lot configuration, existing conditions, State and local planning policy, physical constraints, linkage opportunities and servicing capacities. Information has also been collected from consultation and discussion with landowners and Council staff.

Strategic planning for Jindera has identified the study area as being preferred for short term urban growth at a larger lot density than the conventional urban zoning north of Pioneer Drive. Strategically, the intention for the study area is to provide a transition between conventional residential land to the north and rural zoned land to the south. There is however, no specific direction provided in Council's strategic planning framework regarding optimum lot sizes, other than for the LEP minimum lot size controls.

The present minimum lot size of 4,000m² was adopted as the default minimum lot size at the introduction of the Greater Hume Local Environmental Plan 2012 for land zoned R2 Low Density, however is reflective of land which may not provide all residential services, such as reticulated sewer or water. The Master Plan has determined that in a fully serviced residential environment, such as the study area, a 2,000m² minimum lot size is generally considered a default density.

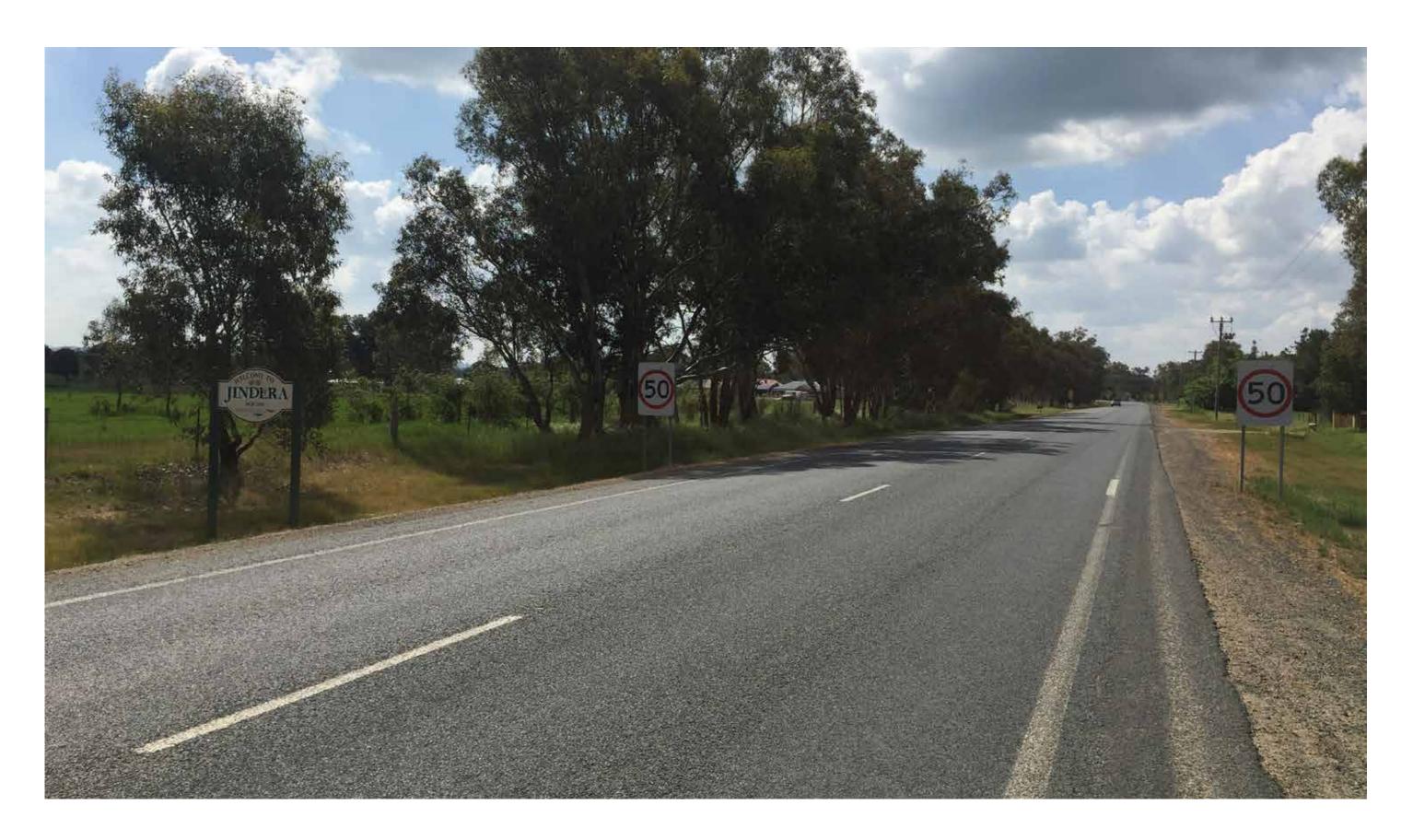
In order to properly consider the optimum lot size for the study area, the Master Plan considers the potential low density outcomes for the study area, being a retention of the 4,000m² density or a reduced 2,000m² density.

Both density outcomes are found by the Master Plan to be achievable within the parameters of the study area, and can deliver upon the intended outcome of an integrated residential development between the existing landholdings. It has been determined that future infrastructure costs to be apportioned on a 'per lot created' basis would be potentially cost prohibitive for future development given that all urban services, including a new sewer trunk main, would be provided to the study area.

Council have also committed to provide initial infrastructure for the development of the study area, including external road intersections, drainage provisions, sewer trunk main extension and water supply. These ingfrastructure costs are to be recovered via a new site specific Section 94 Development Contributions Plan. This would include an equitable spread of infrastructure costs by Council as well as contributions towards open space, including new footpaths at Pioneer Drive and Urana Road, and costs incurred by Council during the Master Plan preparation.

While an existing Section 94A plan applies across the Greater Hume Shire generally, the proposed Development Contributions Plan would apply only to the study area, in lieu of the Section 94A plan. A works schedule within the contributions plans will set out the estimated costs for development of the infrastructure to be delivered by Council as well as other costs incurred by Council in preparing the Master Plan. The applicable contributions will subsequently be derived by calculating the total cost of providing each item and dividing it by the potential lot yield from the subject land.

The Master Plan recommends that the study area be developed at a 2,000m² lot size as it represents a more efficient framework for the study area, will be more cost effective and maintain a suitable urban density transition from the township. This recommended outcome will require an amendment to the minimum lot size map applying to the subject land, however the zoning and other elements of the LEP will be unaffected. It is considered that a reduction of the minimum lot size is justified and appropriate, based on the strategic directions for Jindera, and analysis provided as part of the Master Plan preparation.



01 Introduction

The South Jindera low density residential precinct ("the study area") comprises a prominent future growth area of the township which is expected to be subject to short term growth demands. The study area is defined by four existing larger properties described as Lots 4 & 6 in DP240938 and Lots 30 & 31 in DP1062153. The study area is a highly prominent location on the immediate fringe of the Jindera township, addressing Pioneer Drive to the north and Urana Road to the east. The land also forms a southern 'gateway' to the township

Greater Hume Shire Council have resolved to prepare a Master Plan for future development of the study area, to be used as a guidance and development control document for any future development.

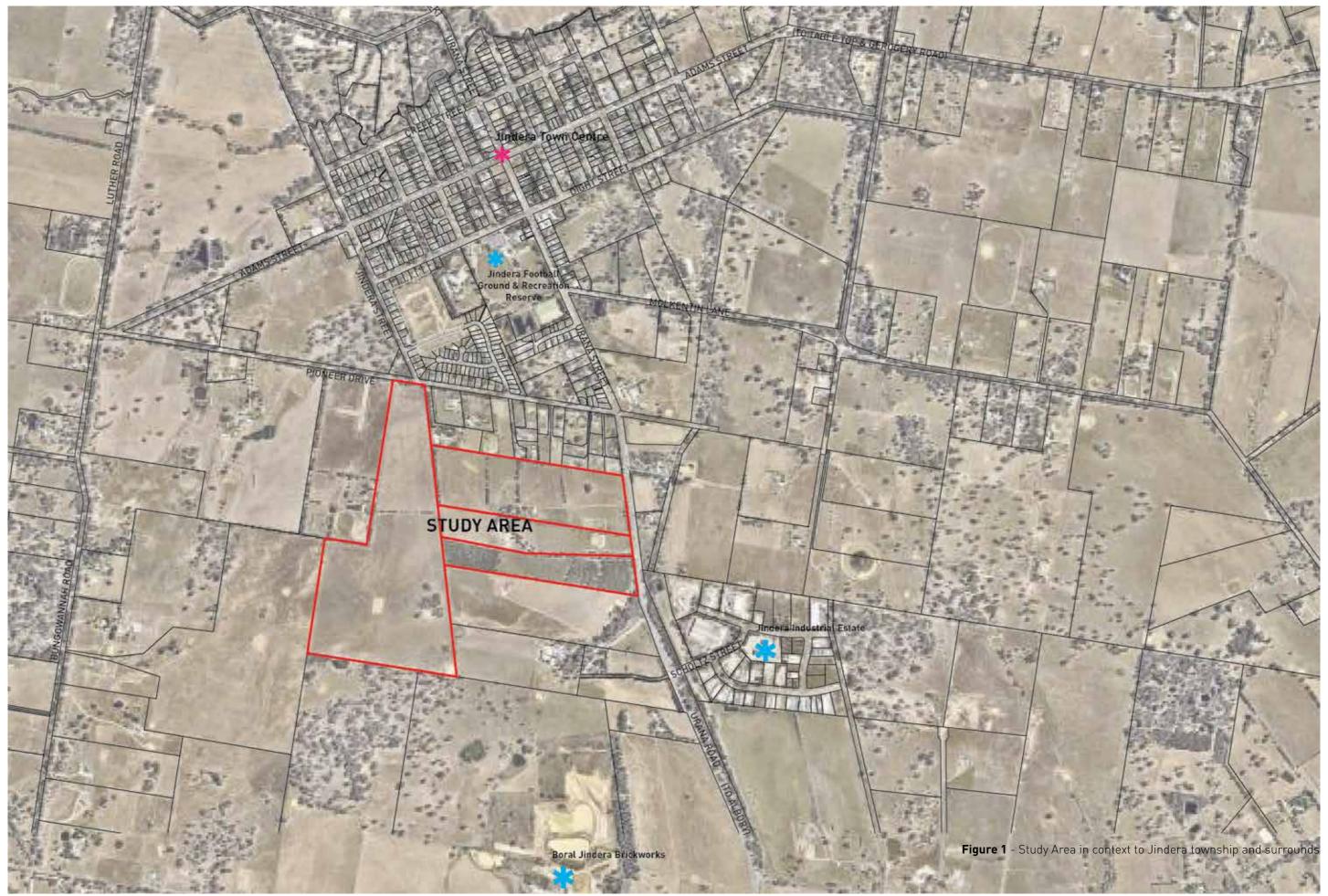
Jindera is a growing village within the Greater Hume Shire, and is located approximately 15 kilometres north of the Albury city centre. The Jindera suburb has shown steady growth over the past 10 years and had a population of 1,809 as of the 2011 census, although it is estimated that the population has further increased since this period owing to steady release and development of residential land. Given the close proximity to Albury and the generally affordable nature of land, it is expected that demand for residential land will continue to grow and that target market will be varied. Increased demand for lower density residential land is also expected based on the recent trends in land release and uptake for Jindera.

Zoned residential land for future conventional lots is identified on the northern urban area of Jindera, with zoned low density land on the southern side of the township. The study area represents an area which is expected to be subject to growth pressures in the short to medium term, as the township continues to expand beyond its existing fringes.

The study area is presently in four allotments, each being separately owned. This presents a challenge to future development of the study area, as landowner's intentions for the future use and development of each parcel vary. A key requirement of the Master Plan process is to establish a framework for the property to allow each existing lot to be developed separately of one another, while ensuring the future resultant outcome will be an integrated low density urban development.

The primary objective of the Master Plan is to set out a conceptual framework for the low density residential precinct to facilitate future integrated development of all existing englobo lots. The recommendations within this Master Plan are intended to form a site specific chapter of the *Greater Hume Development Control Plan 2012*, to ensure that development of the study area will be considered against the recommendations of this Plan.

Council have also committed to provide initial infrastructure for the development of the study area as detailed elsewhere within the Master Plan. A site specific Development Contributions Plan will also support the recommendations of the Master Plan, and set out a regime to recoup costs of physical infrastructure, community infrastructure, water and sewer and other relevant works.



02.1 General Context

The study area comprises four existing lots on the immediate southern urban fringe of Jindera, occupying an irregular area of land between Pioneer Drive and Urana Road. The study area comprises a total area of 68.75 hectares.

The study area is 1 kilometre south of the Jindera town centre and 16.5 kilometres north of the Albury CBD, which serves a primary regional centre role to Jindera and much of Greater Hume Shire.

Existing low density properties define the northern boundary of the study area, above Lot 4 DP240938, and address Pioneer Drive. These adjoining properties to the north comprises a variety of larger and irregular shaped lots with established single dwellings and associated outbuildings. Conventional residential lots are established further north beyond Pioneer Drive, with this area subject to ongoing development of predominantly single detached dwellings.

Land to the west of the study area comprises larger lot semi-rural properties, which are expected to be developed for rural residential opportunities given the current R5 zoning. The immediately adjoining property to the west has an approved low density residential subdivision which has been commenced but not completed.

The eastern boundary of the study area is defined by Urana Road, which serves as the primary road access to Jindera from the south. The study area is highly visible to this interface, and three of the existing lots presently obtain road access from Urana Road.

Land to the south of the study area again comprises a mix of rural residential properties, some of which are presently used for smaller scale rural activities. The Boral Brickworks are located further south towards Hueske Road, some 800 -1000 metres from the study area.



Figure 2 - Existing Lot configuration

02.2 Topography

The topography of the study area is varied, with gentle undulations throughout. The highest points are located in the south west, with the land sloping north and north east across, as well as the south part of Lot 4 and the neighbouring property to the south. Figure 3 indicates the existing topographical conditions (1m contour intervals) across the study area. The changes in grade across the study area are not significant, and there are no major topographical constraints to future development of the study area.

02.3 Environmental Conditions

The study area represents fringe urban land which has historically been used for agricultural purposes, representing highly modified conditions. It presently comprises some small scale agricultural activities. Two of the lots are presently vacant, with one containing areas of densely planted trees.

Given the historical use of the study area for agriculture, the properties have been substantially cleared and modified. A number of remnant species are scattered across the properties, with the most prominent grouping being to the far southern corner of Lot 6 surrounding a dam.

Rows of planted trees are noted along of lot boundaries and internal fence lines defining paddock areas. A driveway within Lot 30 is also provided with well established planted trees. As noted above, further areas of densely planted native trees have been established at either end of Lot 31.

Current overland flow is collected by stock dams or drained to Pioneer Drive in the north and Urana Road in the east. Two large dams are established in the south eastern part of Lot 4, with a further large dam immediately south within Lot 30. These collect overland flow from a large proportion of the southern study area. A second narrow dam is located in the north western extent of Lot 4. Lot 6 contains a small peak in its centre, with a number of dams established in the southern portion of the lot collecting overland flow from this area.

02.4 Environmental Hazards

The subject land is not mapped as having any bushfire hazards. The land surrounding the property has been extensively cleared and now exists primarily as vacant paddocks and/or improved pastures.

The recent Jindera Flood Study 2015 notes minor risks (low hazard areas) in the south east corner of the study area at Urana Road, within existing Lots 30 and 31 and north west corner at Pioneer Drive, within Lot 6. A further low hazard area is noted the far south east corner of Lot 6, within the RU4 zoned land.

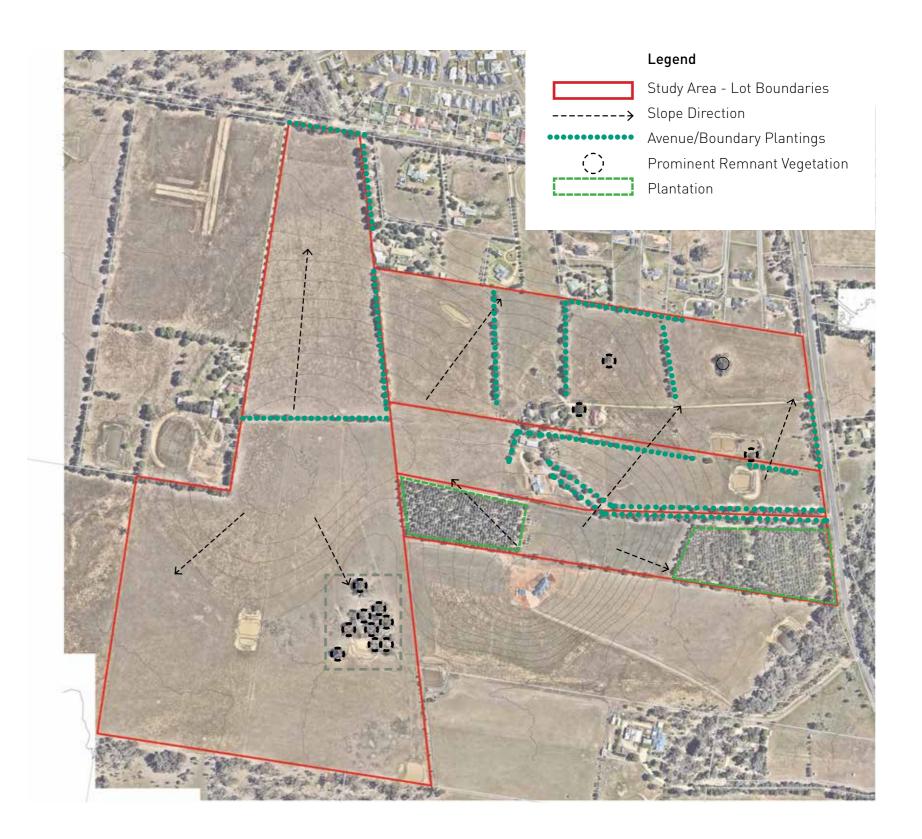


Figure 3 - Existing topography and natural features

02.5 Infrastructure

As the study area is located on the urban fringe, residential infrastructure is provided to land within close proximity. Further, recent service extensions have been undertaken to provide new urban services to the nearby Jindera Industrial Estate.

Existing water mains are established along both the Pioneer Drive and Urana Road reserves. The main continues west along Pioneer Drive servicing recent residential development and future low density properties beyond the study area. Likewise, the Urana Road main continues south to the Jindera Industrial Estate. No mains are identified within the existing lots.

A sewer trunk main pump station is established along Pioneer Drive and properties along the southern side of the road. Council have recently constructed an extension of the sewer main from Pioneer Drive into Lot 4 of the study area, before continuing along the northern boundary and south across the frontages of Lots 4, 30 and 31. The sewer extension has been undertaken to service the existing and future stages of the Jindera Industrial Estate, but also offers additional capacity for other urban development in South Jindera.

No formal constructed drainage services are established within the study area, however swale drains exist along both Urana Road and Pioneer Drive, as part of the wider network for Jindera.

Electricity is provide by way of overhead supply from Urana Road and Pioneer Drive. The supply from Pioneer Drive extends along the northern boundary of Lot 30, to service both existing dwellings on Lots 4 and 30. A supply is also provided from Pioneer Drive into Lot 6, however terminates just inside the boundary.

02.6 Existing Development

A number of existing habitable and non-habitable buildings are contained within the study area.

Lot 4 contains a recently constructed large dwelling approximately 360 metres from Urana Road and 18 metres from the southern boundary. A second smaller dwelling is located west, along with several associated sheds.

Lot 30 also comprises a recently constructed large dwelling approximately 460 metres from Urana Road and 15 metres from the southern lot boundary. Two large sheds are also constructed north of the existing dwelling, and approximately 20-25 metres from the northern boundary (common boundary with Lot 4)

Lot 6 and Lot 31 do not comprise any habitable and non-habitable buildings.

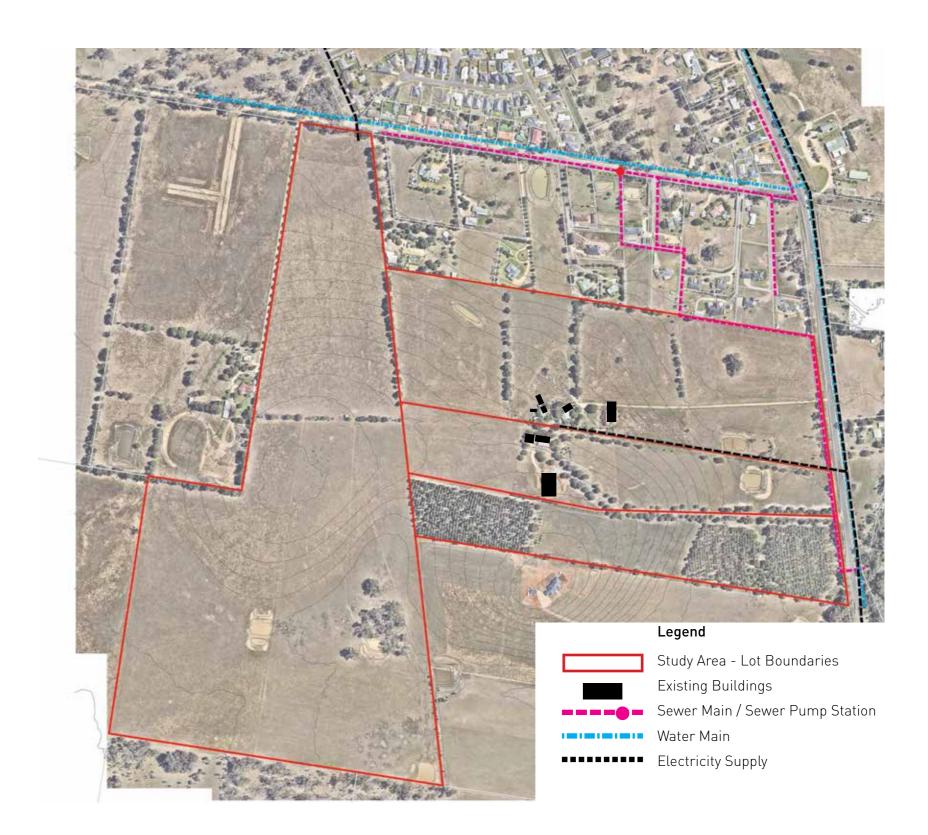


Figure 4 - Existing infrastructure and buildings

02.7 Access

The land has two primary road frontages being Urana Road to the east, addressing Lots 4, 30 and 31, and Pioneer Drive to the north addressing Lot 4. Urana Road serves as the higher order road and also maintains the longest distance of frontage. It is a sealed major road, providing arterial road service to Albury.

02.8 Easements

Existing easements are located within Lot 30 DP1062153 along the northern and southern boundaries. Specifically, the northern easement, identified as E1 on the title, provides a 10 metre wide electricity easement.

Easement identified as E2 on the southern boundary provides a 9 metre wide carriageway easement, which presently contains the existing unsealed driveway benefiting both Lot 30 and 31. The existing dwelling on Lot 30 is accessed via this easement.

No other easements or restrictions are noted within the study area.



Figure 5 - Access and easements

03 Planning Considerations

03.1 Statutory Planning Context

The relevant local and state planning framework relevant for the study area is discussed below.

Local Planning Framework

The majority of the study area is within the R2 Low Density Residential zone (R2 Zone). However a 22.3 hectare southern portion of Lot 6 DP240938 is within the RU4 Primary Production Small Lots zone (RU4 Zone).

The R2 zone represents a residential zone however provides for a lower density of development than would be expected in conventional residential zones. The intended character in the R2 zone is single dwellings within a large lot or landscape setting. The objective of the zone are to provide for the housing needs of the community within a low density residential environment, and to enable other land uses that provide facilities or services to meet the day to day needs of residents.

The RU4 zone is principally a rural zone, and caters for small scale rural activities. It is generally the most appropriate zone for rural areas surrounding townships where this is a need to retain the rural focus, while providing for a suitable transition. Expected rural activities in the RU4 zone are therefore at a lower intensity than the primary rural zones. While it does allow for residential activities, it is not intended to be used principally for residential development. The objectives of the RU4 zone are to enable sustainable primary industry and other compatible land uses; encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature and minimise conflict between land uses within this zone and land uses within adjoining zones.

The LEP also sets out prescribed minimum lot sizes across the Greater Hume area. The minimum lot size serves a dual purpose, being that the land cannot be subdivided to create a lot of less than the minimum lot size and that a dwelling may not be constructed on a lot unless it is at least the minimum lot size. A 4,000m² minimum lot size presently applies to the extent of land zoned R2. The southern section of Lot 4 within the RU4 zone is applied with a minimum lot size zone of 80,000m².

There are no overlays, such as environmental protection, biodiversity or the like identified over the subject land. An area of mapped terrestrial biodiversity is identified immediately south of Lot 6.

State Environmental Planning Policies

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 ("the Codes SEPP") sets out exempt and complying development codes for a variety of residential, commercial and rural development. The SEPP allows development which is of minimal environmental impact to be carried out without the need for development consent, and those types of complying development that may be carried out in accordance with a complying development certificate. It is understood that a large proportion of residential dwellings are approved via the Codes SEPP in Greater Hume Shire, and would be expected to be the case with future development of the study area.

State Environmental Planning Policy (Infrastructure) 2007 ("SEPP Infrastructure") provides a consistent planning regime for infrastructure and the provision of services across the state. It also sets out a framework for consultation with relevant public authorities regarding infrastructure development and proposals affecting state infrastructure. Subdivision 2 of Division 17 of the SEPP refers to development in or adjacent to road corridors and road reservations. Road is identified as a classified road pursuant to the Roads Act 1993, and therefore future development of the subject land will be required to consider the SEPP. Clause 101 of this part sets out the matters that a consent authority must take into consideration when determining an application for development with frontage to a classified road. Clause 104 also sets out the types of development which must be referred to the NSW Roads and Maritime Service for comment.

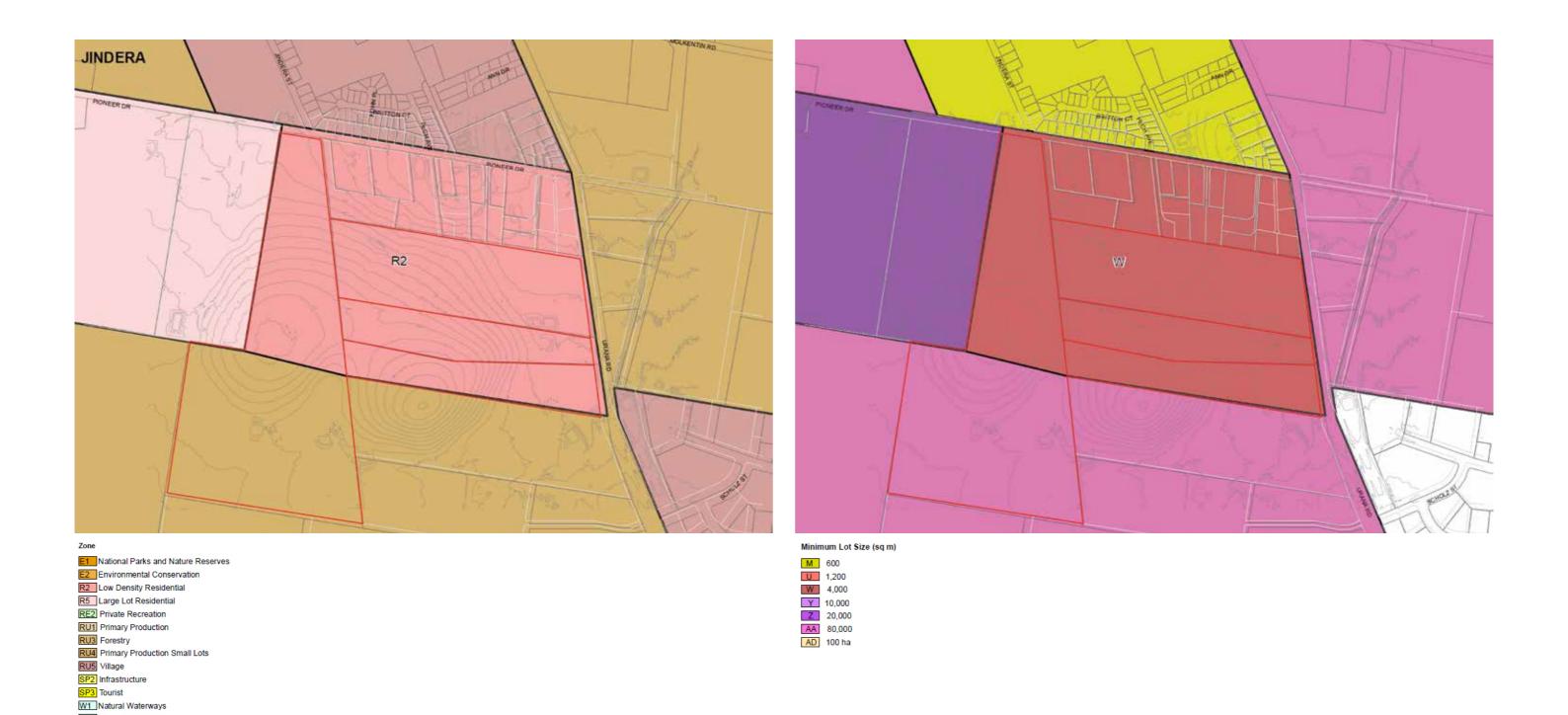


Figure 6 - Extract of Land Zoning Map showing the study area and immediate surrounds

W2 Recreational Waterways

Figure 7 - Extract of Lot Size Zone Map showing the study area and immediate surrounds

03 Planning Considerations

03.2 Strategic Planning Context

The strategic planning context comprises policies and studies which seek to inform or guide the land use and development of the study area.

The Greater Hume Shire Strategic Land Use Plan 2007-2030 ("the SLUP") was prepared in 2007 as a document to draw together the amalgamated Shires of Hume, Holbrook and Culcairn within a consolidated strategic plan. The SLUP served to guide the eventual application of zoning and overlays within the Greater Hume Local Environmental Plan 2012.

The SLUP identifies that Jindera has sustained strong residential growth and that at the time demand for vacant residential lots in the township was estimated to be approximately 15 per annum. Key outcomes identified for residential growth of Jindera was the need for sufficient zoned land in the right location, and recognising the various infill opportunities for residential land. The following recommendations in the SLUP are noted in the context of the study area:

- create greater opportunity for development of a range of residential lot sizes by varying development control provisions and zoning appropriate land
- maintain forward supply of residential land
- provide a number of development fronts
- investigate future options to augment sewer
- consider preparing an infrastructure strategy linked to sustained growth

A Strategic Land Use Plan for Jindera is also reproduced within the *Greater Hume Shire Development Control Plan 2013* and identifies the study area within a residential growth front of Jindera. The Land Use Plan for Jindera is shown at Figure 6, and makes the following comments for the study area:

- expand existing low density residential with urban services
- emphasise entrance point to town

The Land Use Plan also indicates a desire to expand the nearby industrial estate and allow for continued rural living development (i.e. lots greater than 2 hectares) to establish further south beyond the low density precinct.

The other issue of emphasis is the need to enhance the entry gateway of the township. Neither the SLUP or strategic plan within the DCP provide direct guidance of proposed development or interface treatments at Urana Road.

Jindera

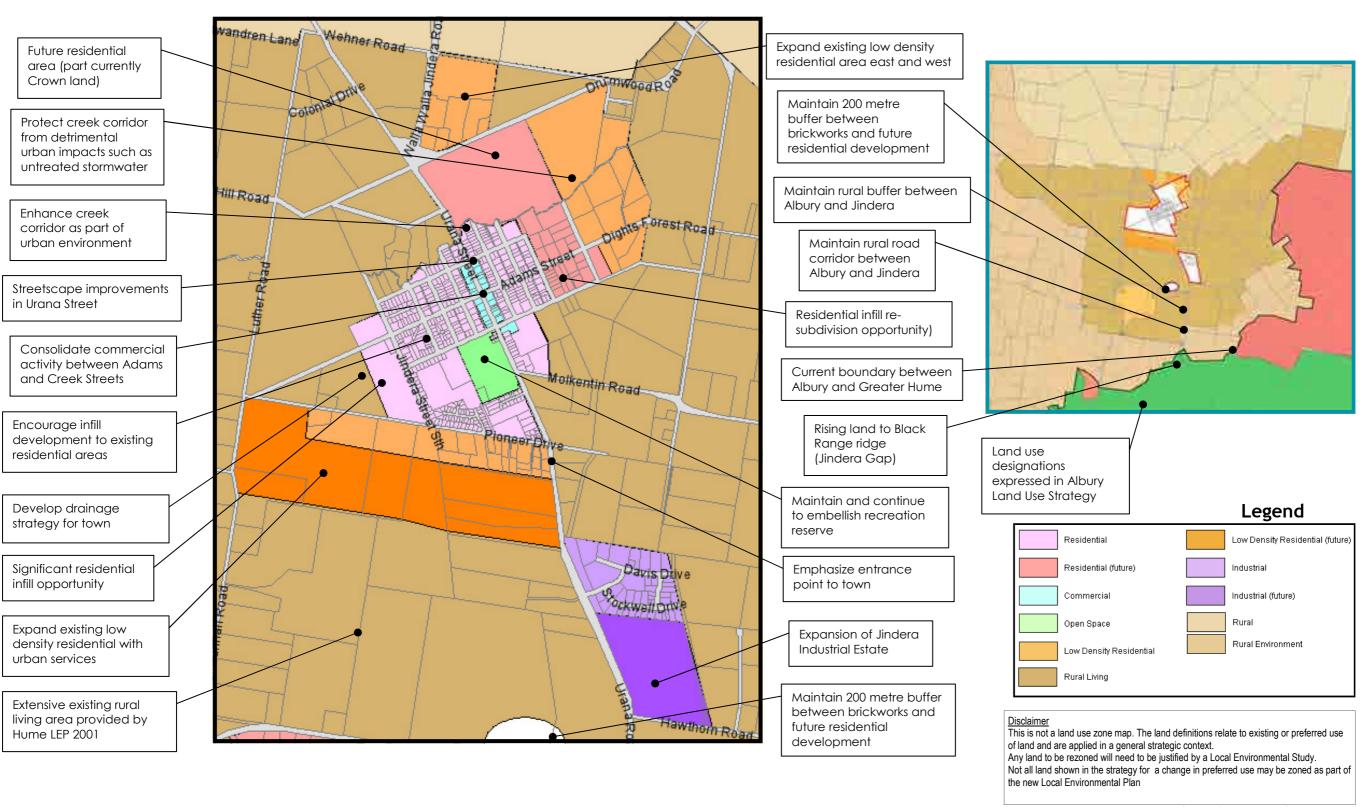


Figure 8 - Jindera Strategic Land Use Plan

04.1 Overview

The Master Plan represents the intended future framework for the study area and is developed through consultation with relevant stakeholders, a thorough site analysis and identification of opportunities and constraints.

It is considered importrant to establish a Master Plan for the study area given the short term growth potential of the land and the fragmented ownership. The plan will provide the long term vision for the study area and a functional structure, ensuring efficient future growth of the township and maintaining a consistency with the surrounding context.

The key objectives of the Master Plan are:

- Establish a framework for development of the study area which will result in a continuous and connected low density precinct;
- Ensure opportunity for each existing englobo parcel to be developed separately of other properties while retaining the overall network;
- Appropriate integration with the surrounding urban context and road network;
- Ensure the future framework can accommodate existing dwelling and associated buildings within each of the existing lot boundaries;
- Provision of safe and efficient new traffic infrastructure to service the future development;
- Provision of a consolidated infrastructure regime, including efficient extension of existing urban services which benefit the wider urban area;
- Recognition of the location of precinct within an important 'gateway' location for Jindera; and
- Encourage formation of a high quality interfaces to surrounding roads.

04.2 Design principles

The primary design principles which have informed the preparation of the Master Plan are:

- Consideration and testing of appropriate future urban density
- Internal movement corridors through the study area
- Development potential of existing properties
- Efficiency of infrastructure
- Road and infrastructure integration between englobo parcels

These design principles are largely interrelated in that they also combine to define the framework and strategic intent for the study area.

The focus of the Master Plan is on the need to properly integrate each of the existing land parcels within an overall development framework. This must also be responsive to a variety of potential growth scenarios, dependent on future intentions of individual landowners.

Given each of the existing parcels are held in separate ownership, the Master Plan sets out a framework in which each of the parcels could be developed separately. This does not prevent the existing parcels being developed in conjunction with one another, but ensures there will be no potential disruptions to landowners who may not wish to develop in the short term.

It has been assumed by the Master Plan that two existing parcels will provide for the initial access opportunities into the development, with the remaining properties to link with the 'lead in' infrastructure. Internally, the road network is to be designed to ensure that roads can easily extend between land parcels as part of future development.

Primary access to the precinct will be made via two new intersections, with one in the north west and one in the south east. These locations represent the preferred locations in a spatial planning and traffic engineering context, and therefore provide opportunity for two of the existing land parcels to be developed in the short term.

04.3 Master Plan Options

Existing planning controls applicable to the subject land promote future development for lower density urban uses, with a lot size density of 4,000m².

The current density provisions are representative of default controls for low density areas of Greater Hume Shire. However, in a fully serviced urban environment it is not considered uncommon for a 2,000m² density to be provided, in recognition of the need for less land to accommodate on-site services and the increased cost of providing greater capacity within new infrastructure and services. Further, the location of the land on the fringe of the Jindera township represents a significant opportunity for growth of the township.

The Master Plan therefore considers both a 4,000m² minimum lot size scenario, representing the 'status quo', and a 2,000m² minimum lot size scenario, representing a higher but equally suitable low density residential lot size. Importantly, both identified options would result in transitional densities for the township.

Option 1 - Retain minimum lot size at 4,000m²

This option establishes a framework with a minimum lot size of $4,000 \, \mathrm{m}^2$ reflecting the existing density controls applicable to the land. It assumes an initial development/s of either Lot 31 or Lot 6 which will provide for the external connections to Urana Road and Pioneer Drive respectively. The network also retains the existing primary dwellings on Lot 4 and 30, although assumes demolition of the second dwelling and associated shedding on Lot 30.

Aside from the existing dwellings and outbuildings, there are limited physical constraints to establishing a larger lot subdivision. Topography is not a limiting factor, as the gradients are generally minimal, and appropriate drainage and gravity sewer could be established within the proposed framework.

Option 1 estimates a lot yield of 83 lots in the R2 zone, if the majority of land is developed to the minimum lot size, and a further 2 lots within the RU4 zone. This also assumes that existing dwellings and outbuildings are retained on single large lots within the framework.

Some initial infrastructure requirements are to be funded by Council, and recovered via Development contributions. The extent infrastructure to be funded by Council would be new internal drainage (retardation basins), construction of new intersections at Urana Road and Pioneer Drive and construction of new piped drainage from the subject along Urana Road to an approved outfall into the watercourse further east of the Urana Road/Pioneer Drive intersection. As reticulated sewer has been provided to the north eastern corner of the study area, a proportional contribution towards this infrastructure would also be included within the Development Contributions Plan. Additional headworks contributions towards the sewer and water infrastructure would also be collected per each lot created, as is presently the case across the Shire.

In addition to the infrastructure costs to be borne by Council, new internal roads would be required to be constructed by future developers of the land. Infrastructure which would be delivered by developers would comprise new sealed urban low density roads, being sealed 6 metre carriageways, 1.5 metre shoulders and swale drains, as well extension of reticulated water, electricity, telecommunications and gas.



Figure 9 - Conceptual Framework Plan with 4,000m² minimum lot size

Option 2 - Amended minimum lot size at 2,000m²

As discussed above, it is considered that a 2,000m² density is also an appropriate density for fully serviced low density residential land. There is considered to be merit in a reduced lot size in this location Jindera given the recent demand for larger lot development in and around the Jindera township.

Option 2, with a minimum lot size of 2,000m², estimates a lot yield of 180 lots in the R2 zone, if the land was developed to the minimum lot size, and a further 2 lots in the extent of RU4 zone. Potential for increased lot areas generally and/or larger lots to contain existing dwellings and sheds may reduce the lot yield further.

As with Option 1, some of the required infrastructure for the precinct will be funded by Council, and recovered via a new Development Contributions Plan. The extent of this infrastructure would comprise new internal drainage (retardation basins), intersection construction at Urana Road and Pioneer Drive and construction of new piped drainage from the subject along Urana Road to an approved outfall point into the watercourse further east. As reticulated sewer has been provided to the north eastern corner of the study area, a proportional contribution towards this infrastructure would also be included within the Development Contributions Plan. Additional headworks contributions towards the sewer and water would also be collected per each lot created, as is the case across the Shire.

It is estimated that there would be some increased infrastructure costs to Council under this option, being attributable to a need for increased drainage reserves to accommodate higher expected stormwater flows than the lower density option 1. However it should be noted that road intersection infrastructure would be unchanged despite the increased lot yield. While the infrastructure costs are anticipated to be slightly higher, the higher maximum potential yield allows the costs to be shared across a much greater number of new lots.

Establishment of remaining infrastructure would be required to be constructed and funded by future developers of the land. Infrastructure to be delivered by individual developers would comprise new sealed urban low density roads, extension of reticulated water, electricity, telecommunications and gas.



Figure 10 - Conceptual Framework Plan with 2,000m² minimum lot size

04.4 Option Analysis

Both options represent achievable development frameworks within physical parameters of the study area, and could deliver an integrated residential outcome across all existing land parcels. The difference between the options considered is the potential lot yield, with option 2 likely to result in approximately 100 additional lots over option 1.

It is important to consider the two options in the context of the land being fully serviced with reticulated water and sewer provisions, which have been provided at some expense to Council, as well as the proposal for total contribution towards the initial delivery of infrastructure and subsequent developer contributions to be levied upon future lots.

Outside of the infrastructure and servicing availability of the study area, a low density residential outcome is considered important for the fringe of Jindera given it will provide a suitable transition zone and will be reflective of the surrounding context. However, an increased density of 2,000m² is not considered inconsistent with the achievement of the transitional density and would also reflect current trends for Jindera, which has established a stronger residential market, particular for larger urban lots since the completion of the Strategic Land Use Plan.

The estimated infrastructure costs for the study area overall to be delivered by Council and the developers are high given that most residential services will be established for the study area. If the density is to be retained at 4,000m², the per lot rate contributions in Option 1 are likely to be unreasonable and potentially cost prohibitive to both Council and future developers. This may disadvantage the potential for the study area to be developed for residential purposes, as developers and landowners will seek other opportunities where costs are more reasonable.

Overall, option 2 provides a greater yield while still ensuring that it does not compromise the viability of the conventional residential area of Jindera (i.e. generally lots of less than 1,000m²). The southern fringe of the township also represents the likely longer term growth area, with the Jindera Industrial Estate and rural living opportunities in this area expected to continue to increase demand for urban development further south over the longer term. It is prudent in a planning context not to constrict the fringes of the township with a lot density which may be out of character in a long term scenario.

Given the location of the land adjacent to the higher density urban area of Jindera, it is considered that an increased density would be consistent with the strategic vision of the Jindera. It is also considered that an increased density will make more efficient use of the residential infrastructure and reduce the per lot contribution costs for the study area to a more acceptable level.

Having regard to the options presented, Option 2 is considered to be the more efficient development outcome of the study area, specifically that the density will result in greater financial and physical efficiency of infrastructure while ensuring an outcome which is responsive to the township fringe.

The preferred option will require an amendment to be made to the minimum lot size map of the LEP as it applies to the study area, however the zoning and other elements of the LEP will be unaffected.

04.5 Preferred Master Plan

The Master Plan framework will ensure the delivery of an integrated low density urban extension of Jindera which is responsive to the site context, existing conditions and preferred infrastructure servicing regimes.

Within the broad preferred framework identified in Figure 11 opposite, there are a number of key outcomes achieved, which are discussed below.

Development density

As discussed through the consideration of options earlier, the availability of high capacity existing and proposed infrastructure as well as the close proximity to the existing township fringe, an increased residential density is considered to be a preferred outcome for the study area. The additional density will allow infrastructure to be delivered in a more cost-effective manner for both Council and landowners/developers.

Importantly, the proposed density is reflective of a serviced low density residential environment and a transitional urban area. The framework will not prejudice opportunities for longer term urban growth of the township.

Integrated development precinct

Continuous integration between the existing parcels is a key future outcome which is reflected by the Master Plan framework. Integration refers broadly to internal road circulation, lot configuration and infrastructure.

The internal road network is the main structural element and the link between the existing properties. The road network is identified with regard to ensuring a suitable flow of traffic, responding to existing physical constraints (particularly existing dwellings and outbuildings) and ensuring best possible future alignments of new infrastructure and services.

Given each of the land is presently held in separate ownership, the Master Plan also ensures each existing parcel could be developed in its own right. This responds to the potential for a variety of development scenarios which may occur in the precinct.

Initial development of the study area is however contained to the two parcels (existing Lot 31 and Lot 6) which will contain new intersection works. Internally, the road network has been designed to ensure that roads and lot layouts can be established and function without impact on adjacent lots, but also easily integrate as development progresses.

Delivery of safe intersection design

The new intersection locations are identified in context to the most efficient internal access points for the land, with regard to projected timing, safety and traffic flows.

Urana Road represents a main arterial road, and the primary gateway into Jindera. A connection with Urana Road is considered necessary, however given the higher order arterial road status should be limited to only one access point. The preferred intersection location is in the southern extent of the study area, allowing for provision of appropriate spacing from the Pioneer Drive intersection for desirable traffic movement. The proposed intersection is capable of being established with adequate sight distances and ability for safe turning movements without impacting upon traffic flow.

Pioneer Drive presently has a lower density of traffic, however will increase as future development continues further west and south (within the study area). The proposed intersection point should be offset from the Jindera Street intersection to provide traffic calming opportunities and prevent creation of a four way intersection.

Future review of speed zones along Urana Road may be separately undertaken by Council and the NSW Roads and Maritime Services.

Infrastructure delivery

The study area also serves an important link in the extension of infrastructure for Jindera, with reticulated services presently traversing the land to reach the expanding industrial precinct to the south east.

A new sewer main has been established within the north east corner of the lot and allows for future extension of reticulated sewer throughout the study area. Likewise, connection to the reticulated water supply is available from both Urana Road and Pioneer Drive, with the framework allowing for these extensions to be made efficiently throughout the precinct from either point.

A drainage strategy for the precinct proposes directing flows to the to the north east corner (adjacent to Urana Road) north west corner before out-falling to existing drainage provisions at Urana Road and Pioneer Drive respectively. New retarding basins are to be contained within the identified reserves, which have been developed based on limiting the proposed catchments to undeveloped flows based on the developed catchment plans

Land release

The overall framework and determination of the required infrastructure and Master Plan aims to ensure an efficient program of future land release within the precinct. This includes confidence to Council in granting consent to future development, and greater certainty to current and future landowners of the future development.

The framework allows individual development of the existing parcels, ensuring that each may be delivered separate of the other parcels. This recognises the potential for different timing and development scenarios to occur, depending on landowner/developer interest and other external factors which cannot be predicted by the Master Plan.

Equitable provision of infrastructure

Provision of new infrastructure within the low density residential extension has been assessed as part of this Master Plan. A key outcome for Council is the fair and equitable delivery of these services within the study area, and to the broader southern growth area of Jindera.

A Development Contributions Plan will also be prepared and imposed over the study area to set out a consistent contribution rate for the identified major infrastructure which is to be provided by Council. The contribution plan will ensure that the cost of establishing the infrastructure can be fully recovered by Council during future development. It also ensures that the total contribution paid by landowners is proportional to the particular development being established.

South Jindera Master Plan

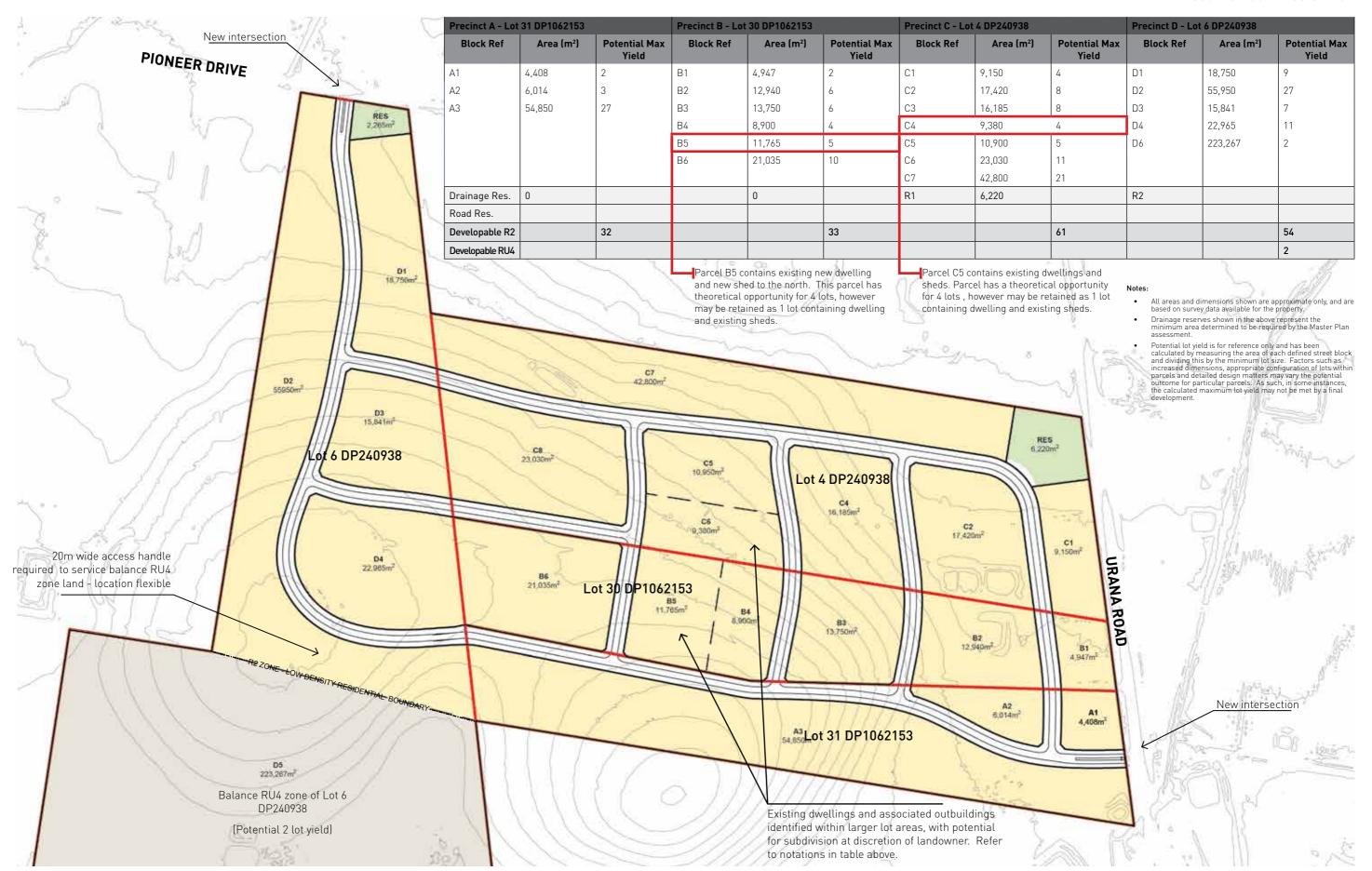


Figure 11 - Master Plan Framework

05 Infrastructure and Servicing Assessment

To assist the delivery of the master plan framework, the infrastructure and servicing assessment determines the availability of existing infrastructure and required improvements to sustain predicted future growth.

An overall drainage and servicing strategy is indicated in Figure 12.

Roads & Access

Arterial road access is provided at the eastern frontage of the property by Urana Road, which interfaces with a 460 metre length of the study area. Local road access is also provided in the north west corner by Pioneer Drive.

The existing speed limit for Urana Road along the frontage of the proposed development is 50km/h and changes to 100km/h at the proposed intersection point to the south. The minimum safe intersection sight distance as set out in the Austroads Guide to Road Design Part 4A: Section 3 Sight Distance, Table 3.2 for a design speed of 100km/h is 248 metres for a reaction time of 2.0 seconds. This criteria is satisfied at the proposed intersection in both directions with measured sight distances as of over 300 metres.

The proposed right and left turn treatments of the new Urana Road T-junction intersection should be in accordance with Austroads Guide to Road Design, by comprising a Rural Channelised T-junction – Short Lane Type (CHR) and Rural Auxiliary Left-turn Treatment – Short Turn Lane (AUL) on the Major Road.

The existing speed limit for Pioneer Drive along the frontage of the proposed development for the T-junction access is 50km/h. The minimum safe intersection sight distance as set out in the Austroads Guide to Road Design for a design speed of 50km/h is 97 metres for a reaction time of 2.0 seconds. This criteria is satisfied at the proposed Pioneer Drive intersection location in both directions with measured sight distances of over 200 metres in either direction.

The intersection at Pioneer Drive should also be designed in accordance with Austroads Guide to Road Design Part 4A, and include an Urban Basic Right Turn Treatment (BAR) and Urban Basic Left Turn Treatment (BAL).

Pedestrian and Cycle Pathways

There are no existing pedestrian or cycling facilities in place on Urana Road at the development site. Traffic assessment has determined that Urana Road does comprise some demand as cycling route, however the lack of pedestrian infrastructure at either Urana Road or Pioneer Drive suggests limited pedestrian use on these roads.

It is recommended that a future shared pedestrian/cycle path be investigated on Urana Road and Pioneer Drive along the frontage of the development to link with the existing path network north of Pioneer Drive. It is expected that as development of the land intensifies, there will be increased demand for pedestrian services linking with the Jindera township. This will allow for the safe access for pedestrians to schools, retail, community services and recreation facilities.

Water Supply

Reticulated water supply is available from both Urana Road and Pioneer Drive, allowing for integration of the land from either point, and eventually linking through the study area. The preferred design comprises extension of a 100mm diameter water main network through the development area, and assumes that there is adequate pressure at the source. It should be noted that based on modelling and consideration of the supply, a 150mm diameter main may be required.

Sewer & Wastewater

A new sewer main has been established from the Pioneer Drive Sewer Pump Station and into the north east corner of the land before extending along the eastern boundary addressing Urana Road. This main presently services the Jindera Industrial Estate, however has capacity to absorb future development from within the subject land. The location of the newly constructed sewer main is indicated at Figure 10.

Future lots within the study area should be serviced by new internal 150mm diameter mains along internal roads and/or lot boundaries subject to future detailed design. The topography of the land and expected capacities will allow the area to be adequately serviced by gravity services without need for additional pump station installation.

Stormwater & Drainage

The management of stormwater has been considered as part of the master plan, but does not detail the detention or retention systems for the final development which will be subject to detailed design. Recommendations for future detention and outfall.

Within the study area, the proposed drainage strategy is based on conveying flows to the east catchment through road drainage swales and additional swale drains within the boundaries of future lots. Flows will be detained and treated at the north east corner (adjacent to Urana Road), within a large basin reserve, and in the north west (Pioneer Drive) within a smaller secondary basin reserve. The basins are to be designed with outfall provisions to the existing drainage services at Urana Road and Pioneer Drive respectively.

The retarding basins have been sized based on limiting the proposed catchments to undeveloped flows based on the developed catchment plans. The retardation is based on limiting the 100 year ARI event. The volume estimated for the retarding basins are 5,500m³ at Urana Road (Reserve 1) and 910m³ at Pioneer Drive (Reserve 2).

A new 1050mm diameter pipe (or alternative, subject to detailed design) should be established along Urana Road from the primary retardation basin to the existing unformed drainage line east of the Urana Road and Pioneer Drive intersection. This will allow for the increased flows to be directed to existing outfall provisions and minimise potential to exacerbate drainage issues further north.

From the review of the existing flood study advice regarding drainage issues for the surrounding area, it is understood that the flow of water from Pech Avenue results in issues particularly at the corner of Urana Street and Molkentin Road. This is caused by location of existing residences and the limited road side drainage. It has been determined that a drainage scheme to reduce flows to Pech Ave and increase flows along the drainage line to the east of Urana Road is of benefit to the overall drainage for the southern area of Jindera. Directing flows in the manner recommended above will assist in ensuring the development of the study area will not increase potential localised flood risks.

Electrical

Electrical supply is available to the site via existing overhead services at Urana Road and Pioneer Drive. Existing dwellings on Lots 4 and 30 are presently serviced by the overhead lines which extend along the common boundary from Urana Road.

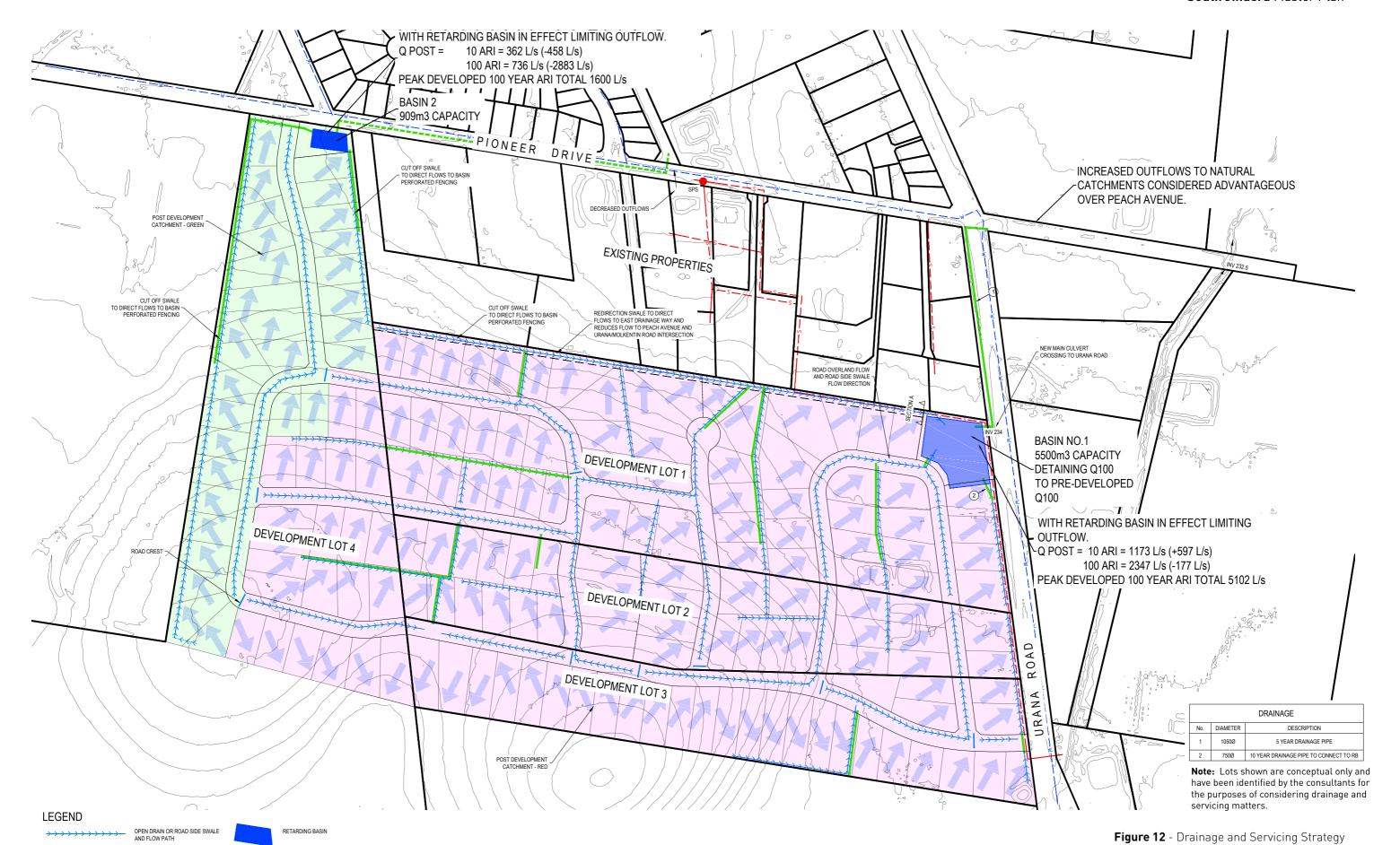
Future development of the land is recommended to comprise underground electricity services on a user pays basis from the existing road frontages at Urana Road and Pioneer Drive.

Telecommunications

Standard telecommunication services can be provided to the proposed development site along new internal roads.

Gas Supply

Gas is able to be provided on a user pays basis, given that gas does not comprise an essential service. Gas mains exist directly north of the site and are able to be extended into the development area. Based on a greater lot density at 2,000m², it is likely that provision of gas will be more efficient than for a 4,000m² lot density.



PIPED DRAINAGE

06 Implementation & Development Controls

To support the Master Plan, as detailed within earlier sections of this document, a series of guidelines have been prepared to ensure clear and consistent direction to the future design and delivery of the future low density residential development. These guidelines represent a key element of the Master Plan process, as they will serve the key considerations against which development proposals will be assessed by Council.

In order to ensure proper mechanisms are in place for Council to consider the Master Plan, it is intended that once adopted these guidelines will form part of the *Greater Hume Development Control Plan 2012*, for consideration against future detailed proposals for subdivision and development within the study area.

06.1 Master Plan Framework

Future development should respond to the overall framework plan, as set out within the South Jindera Master Plan. The Master Plan forms the basis for the future development of the precinct by setting out the internal road network, infrastructure and servicing requirements and drainage networks.

Objectives

- a. To encourage good site planning based on an analysis and understanding of the site and context.
- b. To ensure that development occurs in an integrated manner.
- c. To ensure that all land within the low density residential precinct can be efficiently developed.
- d. To landowners and purchasers with more certainty as to the types of development proposed.

Guidelines

- Future Development should be generally in accordance with the Master Plan.
- Any proposed variations to the general arrangement of the Master Plan must demonstrate that suitable integration and circulation within precinct is achieved.
- When assessing development applications, Council will consider the extent to which the proposed development is consistent with the Master Plan.

06.2 Subdivision Form and Layout

The future form of subdivision is to generally follow the broader Master Plan Framework plan. Detailed applications for development will also need to demonstrate a subdivision concept which is consistent with the relevant environmental planning instrument and responsive to best practice urban design principles.

Objectives

- a. To encourage a range of lot sizes and densities to meet the needs of a growing community.
- b. To provide lots with areas and dimensions which are capable of accommodating future dwellings and associated infrastructure or outbuildings.
- c. To promote principles of energy efficient design and maximise opportunities for energy efficiency for future dwellings.
- d. To encourage future lots with areas and dimensions which consider and respond to environmental features and site constraints.

Guidelines

- Future lots created for the purpose of a dwelling house are to comply with clause 4.1 and the Lot Size Map of the *Greater Hume Local Environmental Plan 2012*.
- Subdivision layout is to create a legible and permeable street hierarchy that is responsive to existing conditions of the property and solar design principles.
- Residential lots should be generally rectangular in geometry where possible.
- Subdivision layout is to be designed to encourage future dwellings to front a main internal road.
- Use of battle-axe lots are to be minimised. Any proposal to create a battle axe lot must demonstrate that there would be no alternative due to site constraints or characteristics of the proposed subdivision.

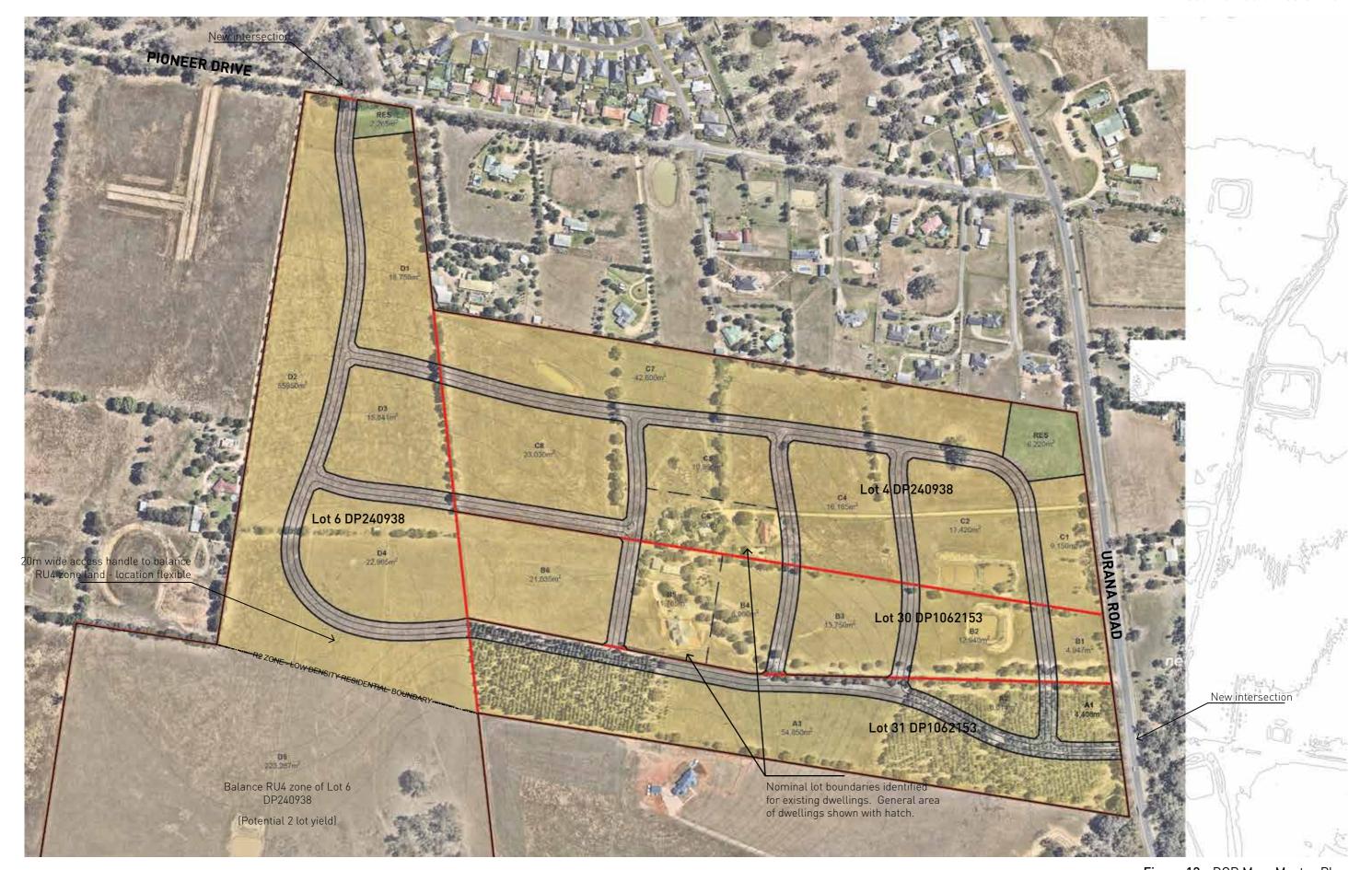


Figure 13 - DCP Map: Master Plan

06 Implementation & Development Controls

06.3 Road Network

The Master Plan sets out the preferred future road reserve alignment throughout the study area and intends to provide for a continuous network through existing parcels. Within the reserves, it is proposed to established sealed urban low density type roads with table drain services.

Objectives

- a. To establish a framework of interconnected streets providing safe, convenient and clear access within and beyond the Precinct.
- b. To ensure the creation of a road and street network which responds to the expected capacities.
- c. To facilitate energy efficient development outcomes by defining suitable road and lot orientations.
- d. To establish new intersections in safe and convenient locations and of a standard capable of accommodating expected traffic movements.
- e. To contribute to the creation of attractive streetscapes.

Guidelines

- New internal roads are to designed in accordance with the relevant Guidelines for subdivisions and development in Greater Hume Shire
- Road reserves should be a minimum of 20 metres, in accordance with a 'Local Access' road type (see inset plan at Figure 14).
- All lots are to be provided with access to a public road.
- Easements for access will only be considered in extraordinary circumstances.
- New intersections will be supported in those locations identified by the adopted Master Plan.
- A Traffic Impact Assessment and Traffic Management Plan is to be provided where an intersection is proposed in an alternate location to that identified by the adopted Master Plan.
- A 20 metre access handle or road reserve is to be provided to the RU4 balance within the western lot.
- Pathways shoud be provided along Pioneer Drive and Urana Road.

06.4 Utilities & Infrastructure

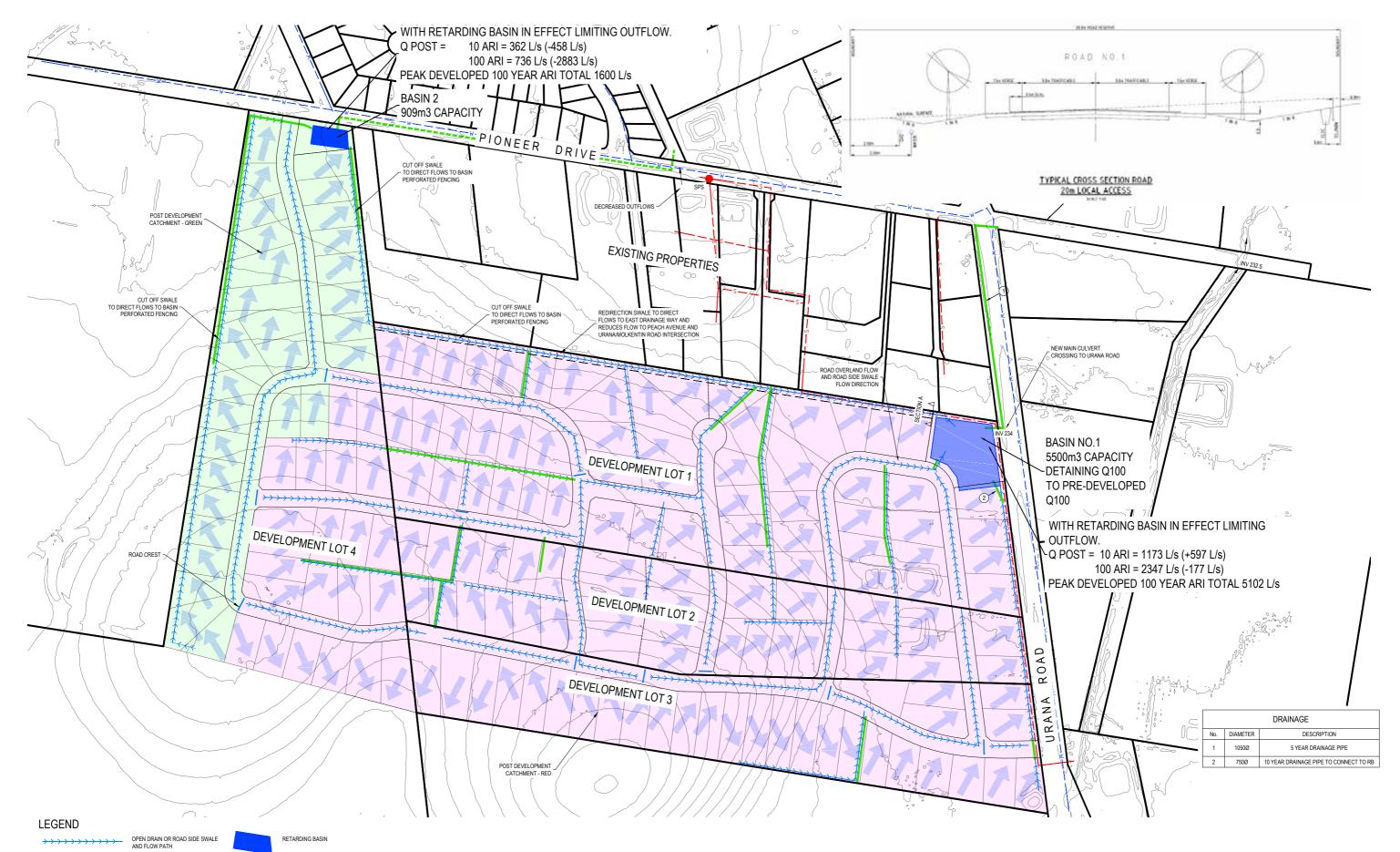
The extent of future infrastructure is determined based on the development and density of the precinct being for low density residential purposes. The guidelines below aim to ensure that a suitable provision of constructed infrastructure as part of the future development, and that these services are capable of accommodating the expected residential densities. Essential services required for future development comprise reticulated water and sewer, drainage, electricity and telecommunications.

Objectives

- a. To ensure all required utilities and infrastructure for the development can be provided.
- b. To provide appropriate provision of infrastructure and services to accommodate low density residential development.
- c. To ensure efficient extension and construction of infrastructure capable of accommodating the expected development loads.

Guidelines

- All lots are to be provided with connection to potable water and sewerage services, in accordance with Council's requirements as the relevant water and sewerage authority.
- Reticulated water supply is to be provided in accordance with the relevant Guidelines for subdivisions and development in Greater Hume Shire.
- Details shall be provided by the applicant, demonstrating that any subdivision proposal is generally in accordance with the drainage requirements of the Drainage and Services Plan. Applicants are encouraged to include use of water sensitive urban design measures to maximise the re-use of stormwater and/or reduces the rate of flow from the property.
- To ensure the delivery of an integrated stormwater management system, Council may consider temporary drainage provisions in circumstances where primary drainage systems (i.e. detention) is shown in later stages and the applicant can demonstrate a suitable temporary solution.
- Applicants should discuss servicing requirements for electricity, telecommunications and natural gas with relevant service providers.



PIPED DRAINAGE

Figure 14 - DCP Map: Drainage and Services Plan

07 Implementation & Development Controls

07.5 Landscaping

Future development of the land should make use of existing landscape features, as well as introducing new elements along streets and within reserves to present a high quality residential context, enhance the low density landscape setting of the precinct and to assist with residential amenity.

Objectives

- a. Encourage the use of species that will contribute to an increase in biodiversity values of the site.
- b. Encourage applicants to retain and incorporate existing landscape features wherever possible within the subdivision design.

Guidelines

- New consistent street tree plantings are to be provided as part of new subdivision development. Preference should be given to native species and those with low water requirements.
- Consideration should be given to retaining significant existing trees, or groups of trees, wherever possible. These may be contained within residential lots, new road reserves and other reserves.
- Opportunities for re-vegetation, particularly as buffer or screening plantings, should be considered during the subdivision process to enhance visual and landscape amenity.

07.6 Interface Considerations

The study area serves an important gateway role for Jindera that must be enhanced and improved as the township continues to expand to the south.

Objectives

- a. To assist in facilitating an appropriate and aesthetic interface between buildings and major road corridors.
- b. To ensure future development of the land does not impact upon the function of Urana Road.

Guidelines

- Open post and wire or post and rail fencing is to be constructed along lot boundaries interfacing with Urana Road or Pioneer Drive.
- A minimum 5 metre wide landscaping strip is to be established within any lots addressing Urana Road or Pioneer Drive.

07 Development Contributions

As discussed throughout, Council intends to fund some of the initial infrastructure works for the development and recover the costs via a Development Contributions Plan. Development contributions are payments by developers to councils that are used to fund community facilities and infrastructure for new development areas. An existing Section 94A plan applies across the Greater Hume Shire, with this proposed Section 94 Development Contributions Plan to be applied only to the low density residential area.

The purpose of the associated Development Contributions Plan is to authorise the imposition of a condition on all future development consents issued for subdivision within the study area to require payment of a contribution to Council. This contribution is to assist Council in providing infrastructure necessary to service the development, and must be paid to council at the time specified in the condition on the development consent that imposes the levy. If no such time is specified, the levy must be paid prior to the issue of a certificate of compliance for the subdivision.

A Development Contributions Plan must establish a nexus between the development proposed and increased demand for facilities for which the contribution is being sought. In this instance, the relationship between expected development and the demand for infrastructure is established through the intensification of land use from rural to low density residential and an increase in infrastructure demands due to increased population, additional surface run-off and traffic movements.

It is also necessary to ensure a Development Contributions Plan ensures division of costs equitably between all those who will benefit from the infrastructure. It is accepted that a contributions plan may set out full cost recovery where the infrastructure is provided to meet the demand from new development, which is the case in this instance.

The contribution payable will be derived by calculating the total cost of providing each item of infrastructure listed in Schedule 1 and dividing it by the potential lot yield from the subject land.

The contribution for roads infrastructure is levied under Section 94 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and in accordance with this plan. The contribution for water, sewer and drainage infrastructure is made under Section 64 of the *Local Government Act 1993* (LG Act) and subsequently Section 306(2) of the *Water Management Act 2000* (WM Act). Consequently contributions for water, sewer and drainage infrastructure are not subject to the EP&A Act. However for the purposes of levying contributions under the LG Act, the protocols of the plan are adopted for this purpose.

A works program will be established as part of the Contributions Plan to set out the various infrastructure works and associated costs for which contributions under the plan will be required. Infrastructure works relating to water, sewer and drainage will be undertaken across the subject land. Works relating to roads will be undertaken at the intersection points in Urana Road and Pioneer Drive.

08 Conclusion

The South Jindera Low Density Residential Master Plan gives direction to future development of the defined 68.75 hectare low density residential precinct on the fringe of the Jindera township. The preferred Master Plan framework aims to ensure the delivery of an integrated low density urban extension of Jindera, which responds to the surrounding urban and non-urban land and the future vision for growth of Jindera.

The density proposed by the preferred Master Plan will ensure that the land remains a transitional area between the primary residential areas of Jindera and surrounding non-urban land, while not prejudicing opportunities for longer term urban growth.

The internal road network is the main structural element, and sets the linkages between the existing properties. This network has been established with regard to ensuring a suitable flow of traffic through the study area, responding to existing physical constraints and ensuring best possible future alignments of new infrastructure and services.

Given each of the land parcels are presently held in separate ownership, the preferred framework ensures each parcel may be developed separately. This responds to the potential for a variety of development scenarios which may occur in the study area and Jindera.

Provision of new infrastructure within the future urban extension has been assessed as part of this Master Plan. A key outcome for Council is the fair and equitable delivery of these services within the study area, and to the broader southern growth area of Jindera. Delivery of some lead in infrastructure will therefore be provided for by Council for the benefit of the entire study area.

As such, a new Development Contributions Plan is proposed to be imposed over the study area, and will set out a consistent contribution rate for the identified major infrastructure which is to be provided by Council. The future contributions plan will ensure that the cost of establishing infrastructure can be fully recovered by Council during future development. It also ensures that the total contribution paid by landowners/applicants will be proportional to the extent of the development proposed.

The Master Plan is intended to provide broad frameworks for guiding the development of the land, however remain flexible enough to allow for detailed design by landowners/developers and to respond to change over time. Principally, the core focus of the Master Plan is on guiding the delivery of an integrated framework of development, with appropriate infrastructure and services.