Appendix B – Urban Design Report

SUNNYSIDE ESTATE

456-474 Plumpton Road,
Wagga Wagga, NSW

URBAN DESIGN REPORT

September 2020

SIVA PROJECTS

John Randall CONSULTING

sunny side.

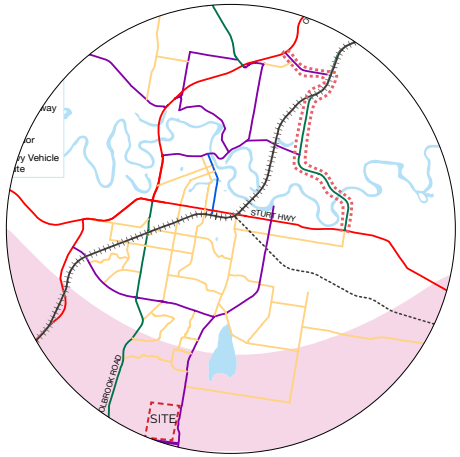
Table of Contents.

Executive Summary.

VISION

The vision of the masterplanned community is to establish a healthy connected community that is sustainable, robust, and promotes an active lifestyle. Paramount to the functioning of this community is the essential infrastructure which props and supports the development. Services have been planned with either augmentation of existing capacities and new lead in works. The civic infrastructure comprising of roads and path networks have been designed keeping in mind engineering requirements, community needs, connections to the surrounding areas and establishing an order and hierarchy for movement. The masterplan layout responds to Plumpton Road and the open space spines and corridors connect to the road domain.

SITE ANALYSIS



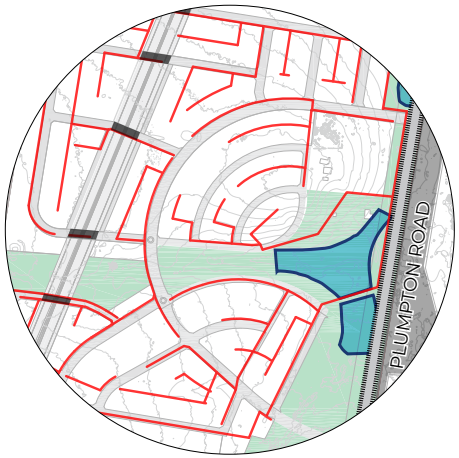
The site has a variety of features including significant mature and hollow bearing trees which have been retained in the road and block design and the watercourses through the site which will allow the creation of waterbodies with high quality visual outcomes and add value to the public domain. The corridors for the electrical easements have been optimised as linear open space spines to provide the community much needed parks, gardens and areas for exercising thus experiencing the outdoors in an area which is not available for residential housing development.

MASTERPLAN

The Wagga Wagga Spatial Plan provides the framework to guide planning and land use outcomes through to 2043. The subject land is located within the urban containment line. The final community will be an exemplary model for future developments and include high quality finishes, desired environmental attributes and balanced open space to built form ratio. The public domain features a variety of facilities such as parks, fitness nodes, dog park, market garden, waterbodies, dry creek beds, areas of local interpretation and importantly will also act as an extension to the live-work environment.

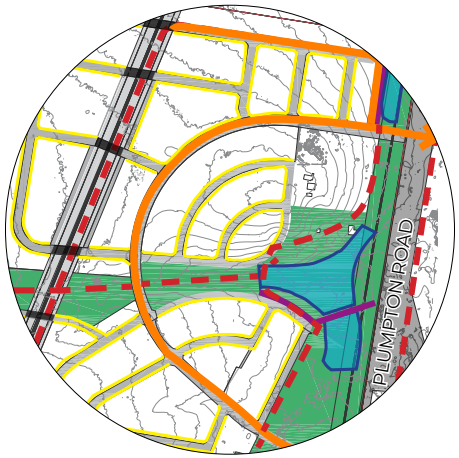
Executive Summary.

INFRASTRUCTURE



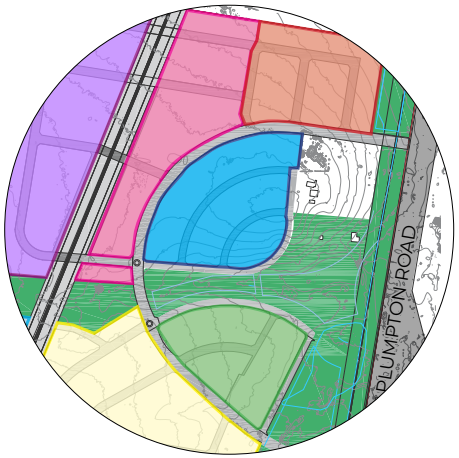
The shaping of the land to achieve roads and infrastructure and construction of homes will be a balance of cut and fill to achieve close to zero neutral import and export of earthworks. Logical corridors for movement of essential services such as shared trenches, in block interallotment drains for stormwater. Availability of essential services and upgrade/ augmentation of existing services have been considered.

HEALTHY COMMUNITIES



Walk-Bike-Play is the overriding message to promote an active lifestyle. There are interwoven layers of cycling/walking networks linking the various community based facilities such as market garden, playground, a neighbourhood shop, dog park, informal kick about spaces and experiencing the waters edge. Furthermore, wider cycling connections to Lake Albert precinct is also proposed along Plumpton Road to connect to the wider community.

BUILT FORM AND STAGING



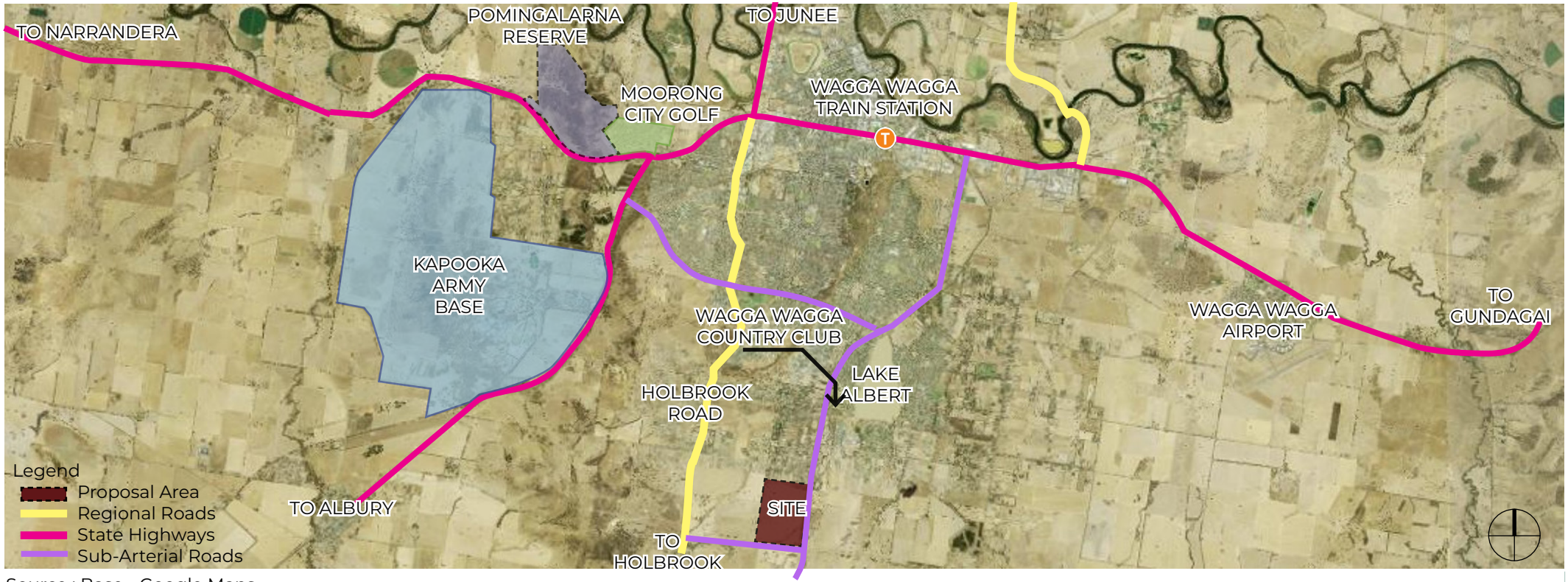
The staging/ special precincts will have distinct characteristics demonstrating the cohesiveness of the smaller "villages" from "a look and feel" perspective. Each village will have a themed urban character including built form massing, facades, roof lines, colours, street trees and street environment elements, signage both regulatory and interpretive and way finding. The material used will be robust and sympathetic to the surroundings thereby reducing the long term maintenance responsibilities of the local authorities. The views offered both internally and externally have been considered along with the intention to have a mix of north/south and east/west facing blocks to address orientation and solar access.

01 Context

01 Site Context.

Regional Context

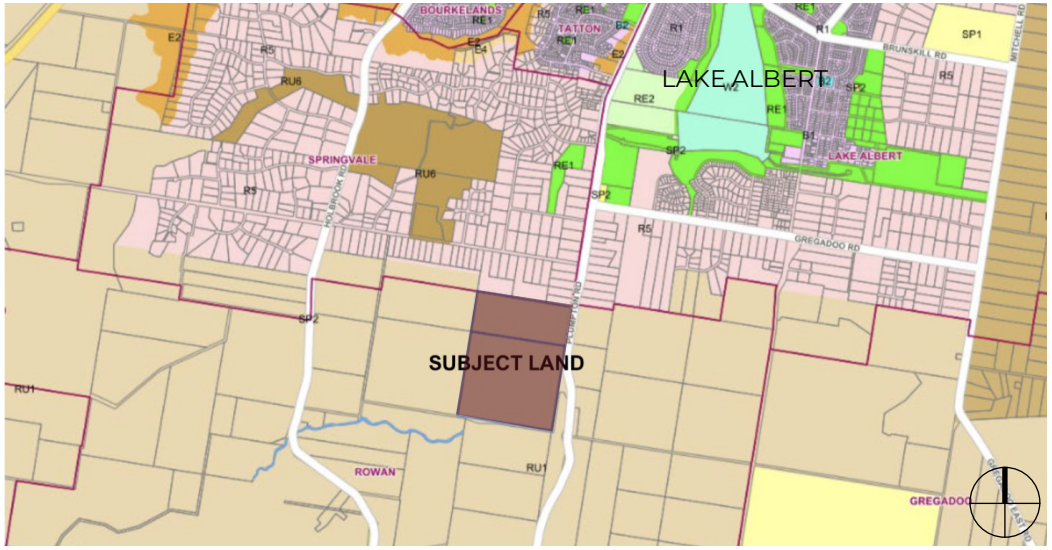
The site is located in Wagga Wagga to the south of the Central Business District. The site is well connected to a system of sub-arterial roads and state highways to provide connectivity to other regional town centres. Narrandera is about 100 km and Gundagai is 85 km, Junee, Holbrook and Albury are 43km , 80km and 128 km respectively.



Source : Base - Google Maps

01 Site Context.

Local Context



Subject Land
Source : Wagga Wagga City Council

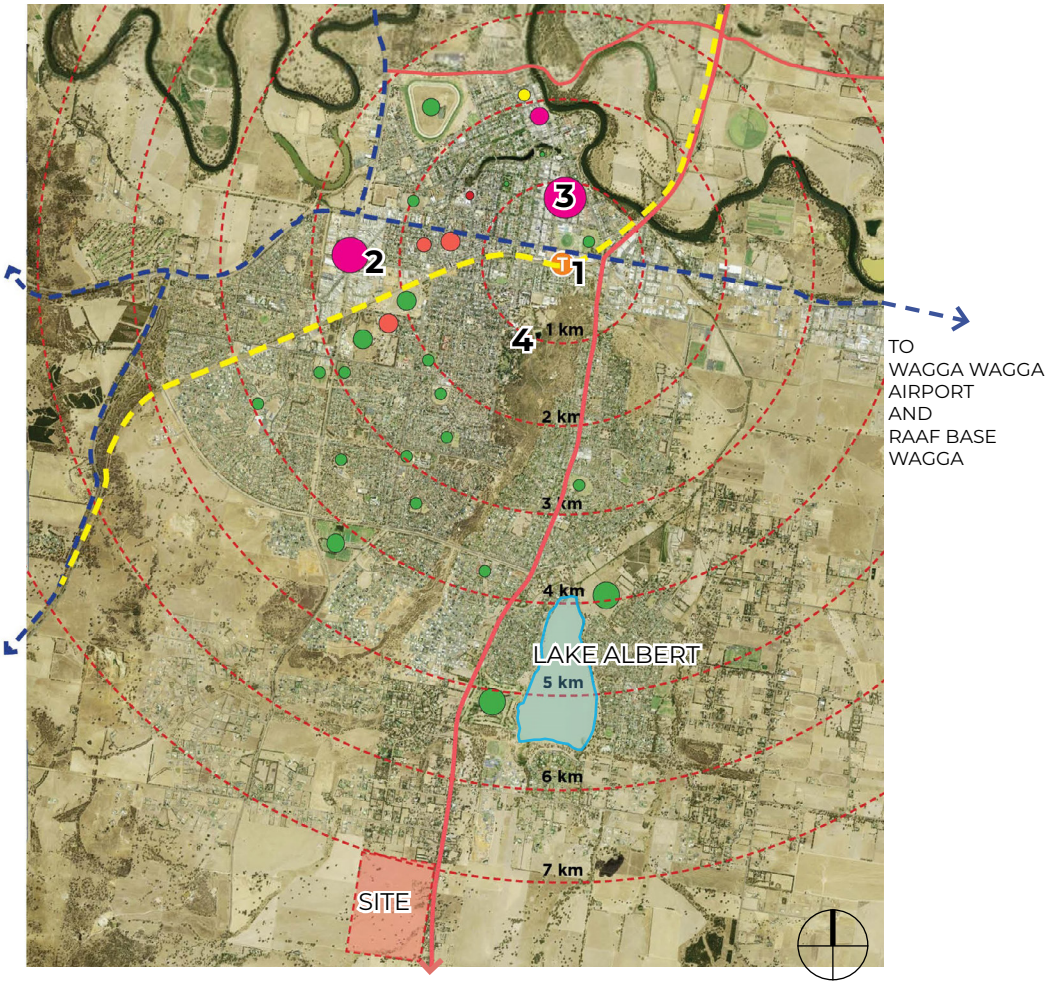
Wagga Wagga is the largest inland city and a major regional city in state of NSW. The Murrumbidgee River flows through the city. The CBD is of a metropolitan standard and supports a range of commercial establishments. (Source: Wikipedia)

The subject land is located within 7km of the Wagga Wagga CBD and is located on Plumpton Road, a sub-arterial road, and Rowan Road to the south. The current setting of the site is rural in character and is approximately 2km from Lake Albert and associated facilities. The site has a gradual terrain and has scattered stands of trees. There are two major electrical easements and creek corridors within the site; Stringybark Creek and a naturally formed local waterway.

01 Site Context.

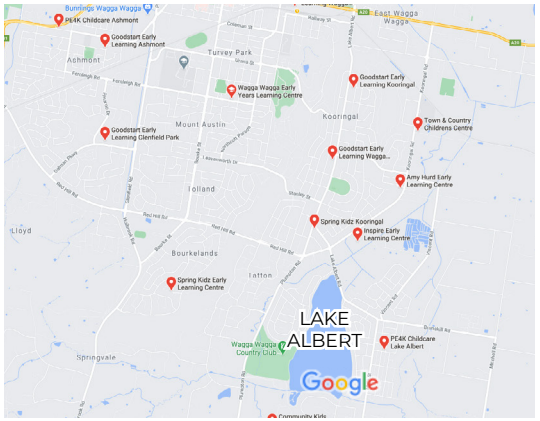
City Centre Context

Key Facilities

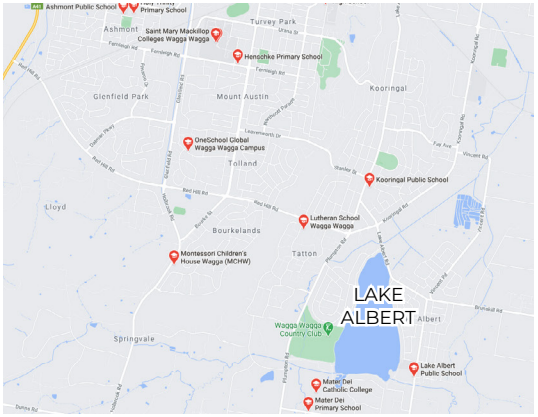


Access from train, state and regional roads
Source : Base - Google Maps

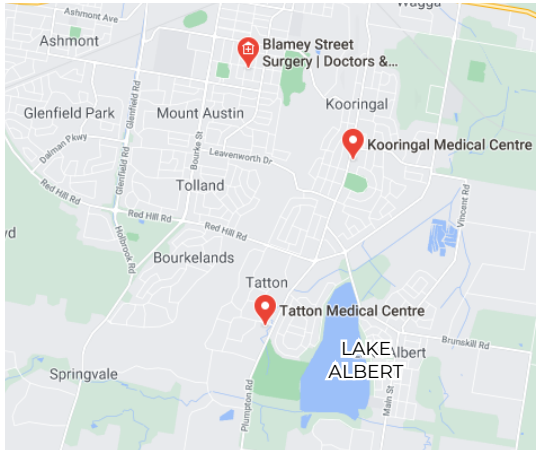
1. Wagga Wagga Train Station
2. Wagga Wagga Base Hospital
3. City Centre
4. City of Wagga Wagga Botanic Gardens



Child Care Centres
Source : Google Maps



Schools
Source : Google Maps



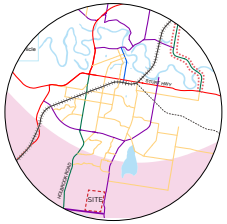
Medical Centres
Source : Google Maps

The key facilities within a range of 7km from the site include, transportation centres, a shopping precinct, a hospital, district, parks, botanic gardens, lakes, golf courses and an Army base. There are multiple childcare centres, schools and medical centres within close driving proximity of 2-5km from the subject site. The major educational landmark of Charles Sturt University is situated to the north of the City Centre.

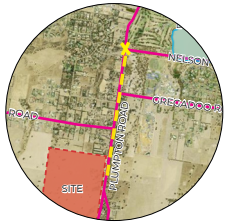
02 Site Analysis

02 Site Analysis.

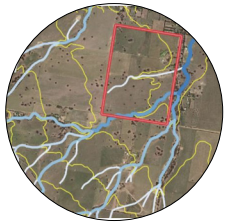
Overview



Travel Corridors and Connectivity

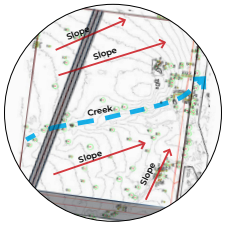


Infrastructure Capacity



Hydrology

Ecology



Site Characterstics

SIVA Projects has undertaken a site analysis based on existing topography, existing vegetaion and habitats, ecologically sensitive areas, drainage corridors, site features, the site constraints, site context and connections to the surrounding areas. The analysis leads to specific design patterns as it responds to the unique character of the site.

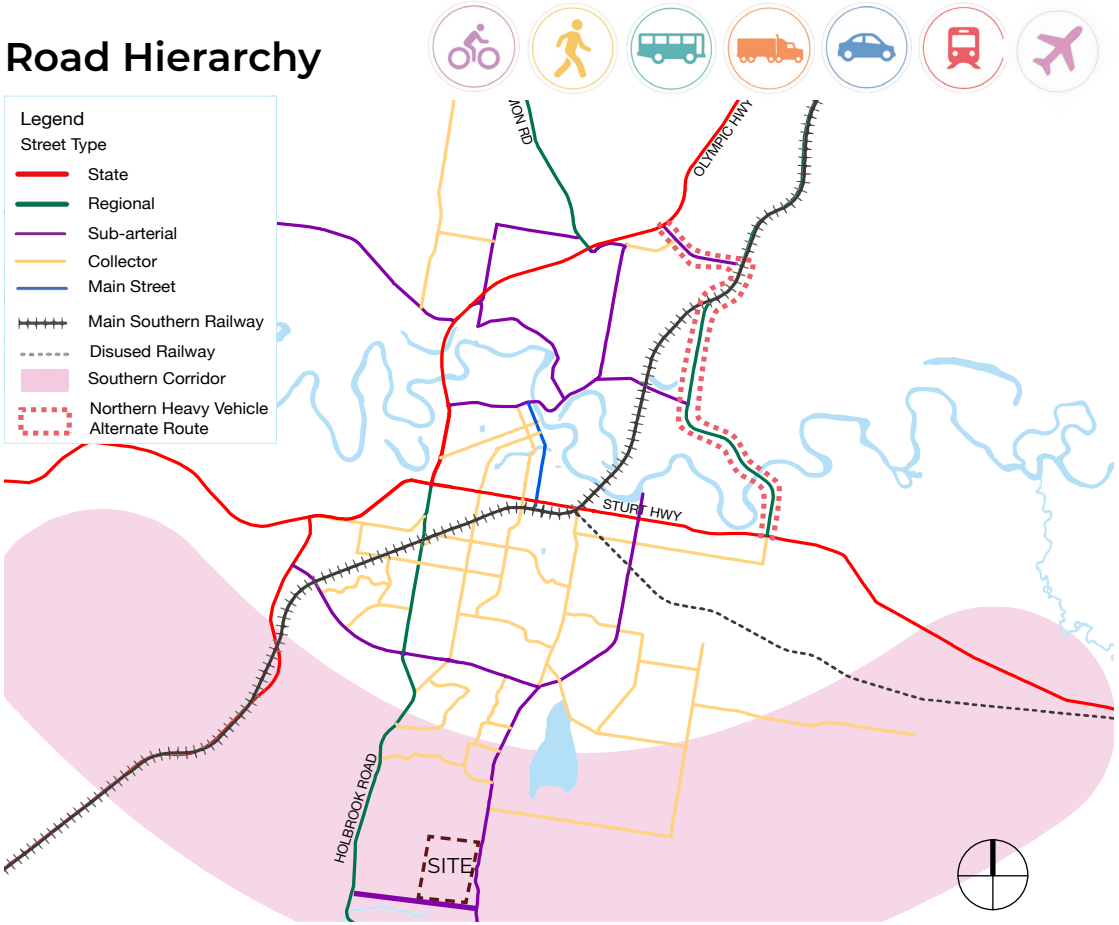
The analysis specifically focuses on:

- Travel Corridors and Connectivity
- Infrastructure Capacity
- Hydrology
- Ecology
- Site Characterstics

02 Site Analysis.

Travel Corridors and Connectivity

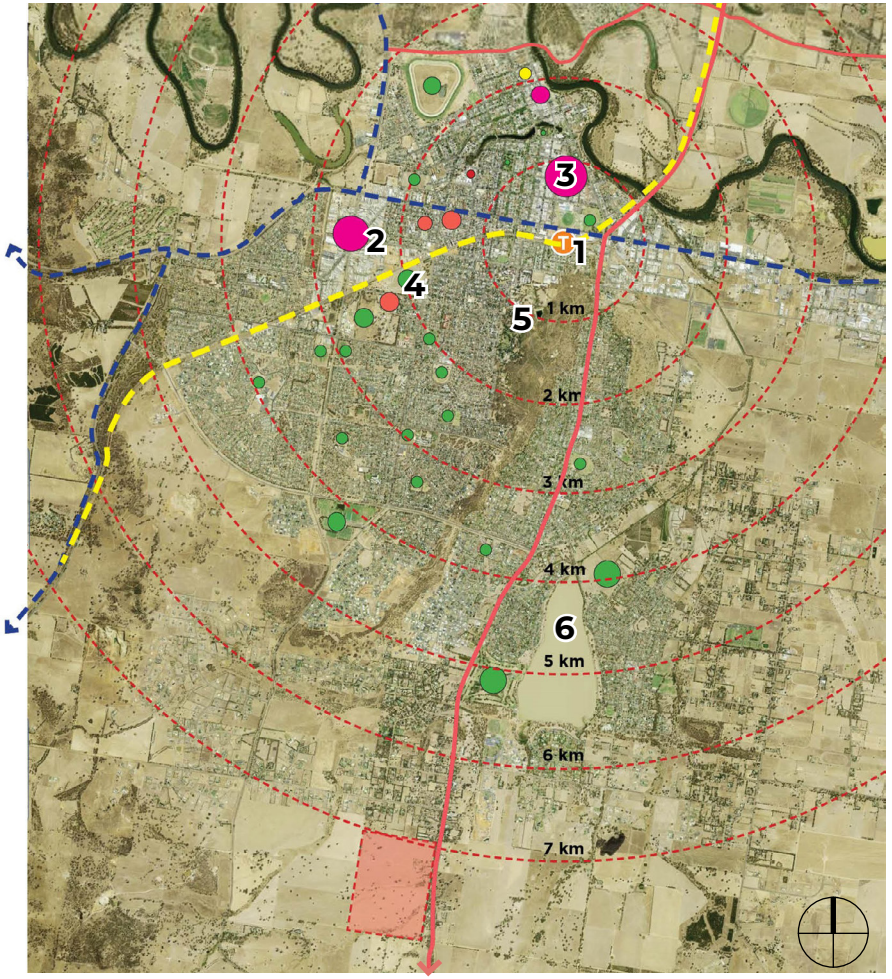
Road Hierarchy



Hierarchy of roads
Source: Wagga Wagga City Council

The site is located adjacent to a sub-arterial road and is well connected to the town centre and associated facilities. The major landmarks of Wagga Wagga and the CBD, and other significant sites are within a 7Km radius of the subject site. The Wagga Wagga train station is 7km to the subject site. The Wagga Airport is located 15km away which is approximately a 15 minute drive.

Access and Connectivity



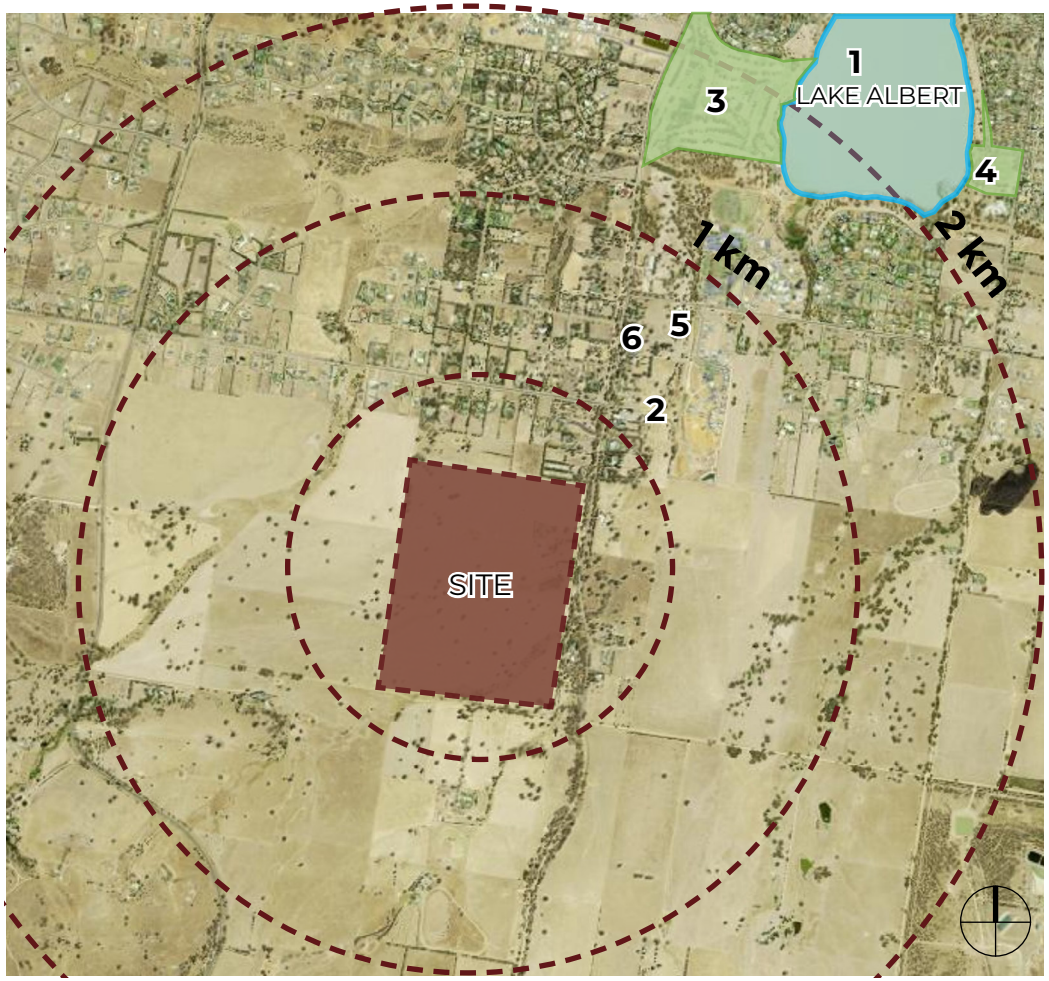
Access from train, state and regional roads
Source : Base Map - Google Maps

1. Wagga Wagga Train Station
2. Wagga Wagga Base Hospital
3. City Centre
4. Kooringal Mall
5. Botanic Gardens
6. Lake Albert

02 Site Analysis.

Travel Corridors and Connectivity

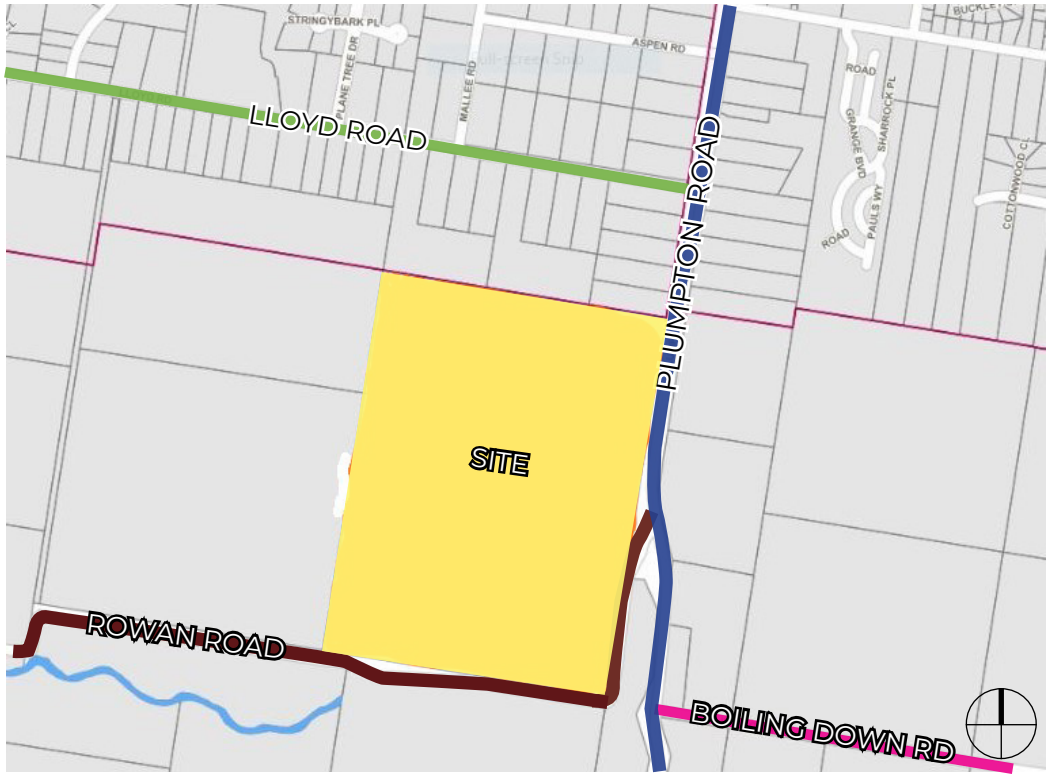
Nearby Amenities



Amenities - Proximity to site
Source : Base Map - Google Maps

1. Lake Albert
2. Grange Lifestyle Village
3. Wagga Wagga Country Club
4. Apex Park
5. Mater Dei Catholic College
6. Mater Dei Primary School

Access to site



Site with Plumpton Rd & Rowan Rd access
Source : Base Map - Wagga Wagga City Council

Lake Albert and the surrounding associated facilities such as Kooringal Mall and the Wagga Wagga Country Club are within 2km of the subject site. The site is adjacent to a large lot rural residential area to the north and rural R1 Land to the east, west and south. There are future plans for the upgrade of Rowan Road as a Wagga Wagga bypass thereby providing easier access to town and cities to the south.

02 Site Analysis.

Infrastructure Capacity

Sub - Stations

Existing Electrical
Source : Google Maps

Legend
- Proposal Area
- Type 1
- Type 2

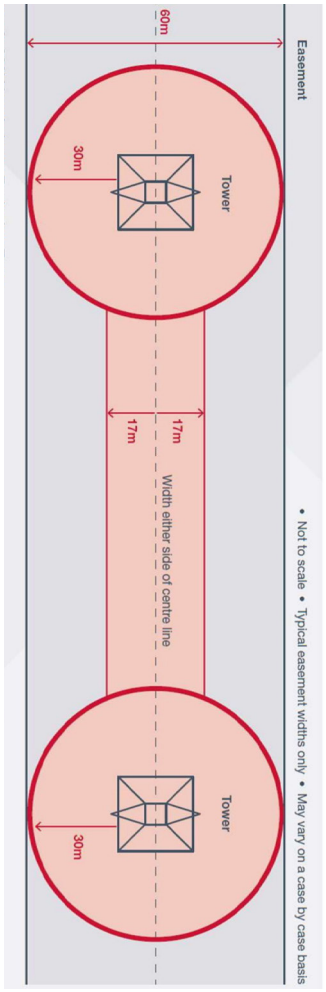
There are multiple sub-stations located close to site and the existing infrastructure has the capacity to supply upto 250 dwellings. Additional substations will be required as noted in the masterplan in chapter 4.

Electrical Easements

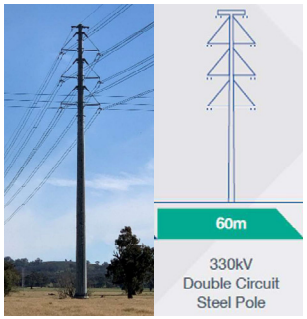
Easements
Source : Delta Star Design

Legend
- Power lines to be underground in this area

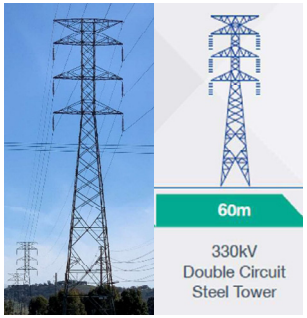
Easements are required for the overhead power lines and no residential development is permitted in the easement zone. The use of easements for open space connections adds value to the use of land by the local residents.



Exclusion Zone
Source : Delta Star Design



Double Circuit Steel Pole
Source : Delta Star Design

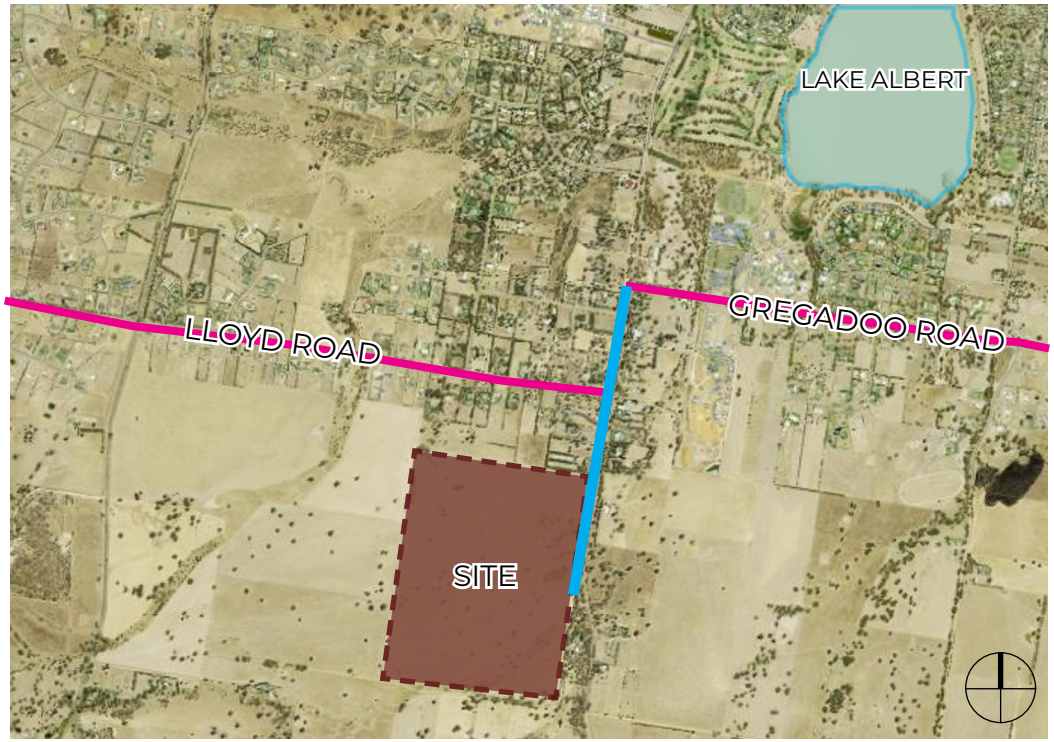


Double Circuit Steel Tower
Source : Delta Star Design

02 Site Analysis.

Infrastructure Capacity

Water Augmentation

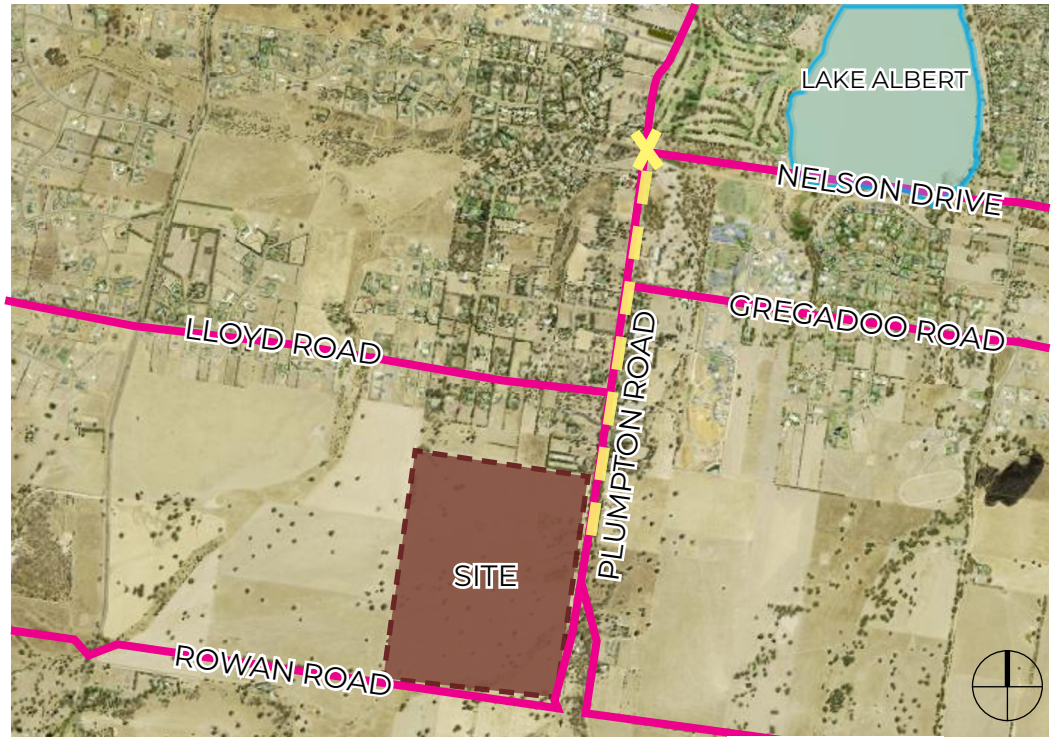


Water Augmentation
Source : Base Map - Google Maps

Legend
- Proposal Area
- Proposed Watermain

The subject land can be serviced from the town water supply by extending a new watermain along Plumpton Road from Gregadoo Road to and through the estate. The cost of the extending the watermain would be met by the developer.

Sewer Augmentation



Sewer Augmentation
Source : Base Map - Google Maps

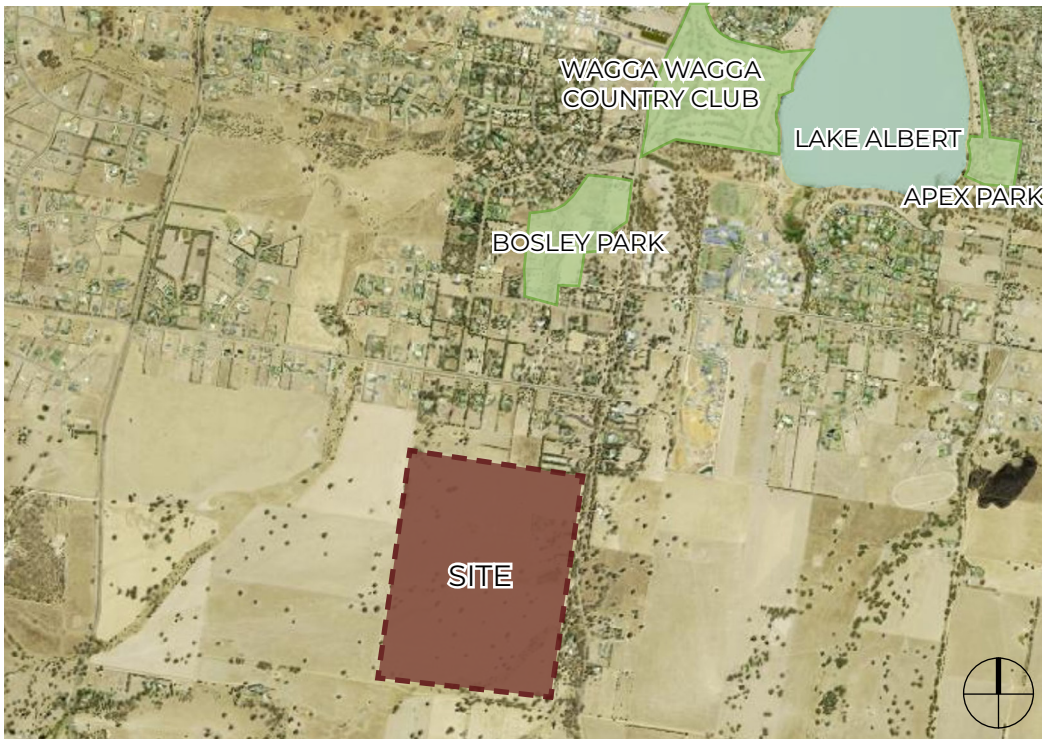
Legend
- Proposal Area
- Suggested connection point
- Proposed sewer lead in

The subject land can be connected to the town sewage system by extending a new sewer along Plumpton Road from Nelson Drive to and through the estate. The cost of the extending the sewer would be met by the developer. The new sewer along Plumpton Road would allow some 50 houses currently using on-site disposal systems to connect to the town sewage system.

02 Site Analysis.

Infrastructure Capacity

Open Space Facilities

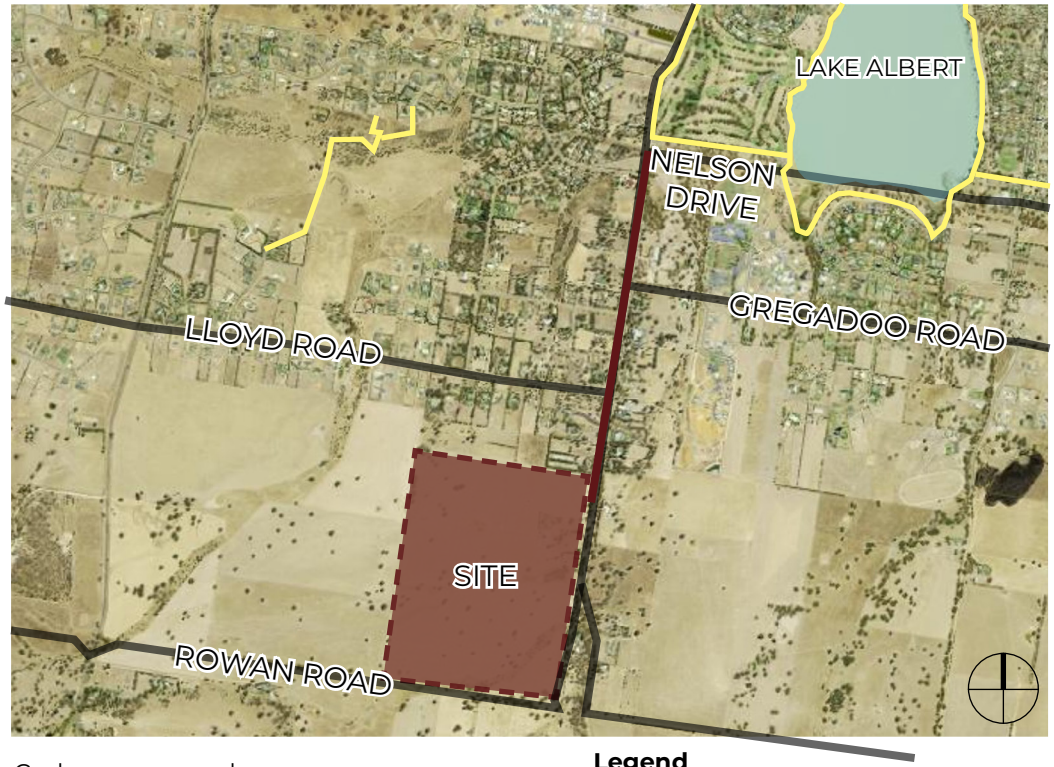


Open Spaces in Site Proximity

Legend
Proposal Area

Nearby open spaces will be connected to the estate by the construction of new paths and trails, the cost be met by the developer.

Cycleways



Cycleway proposal

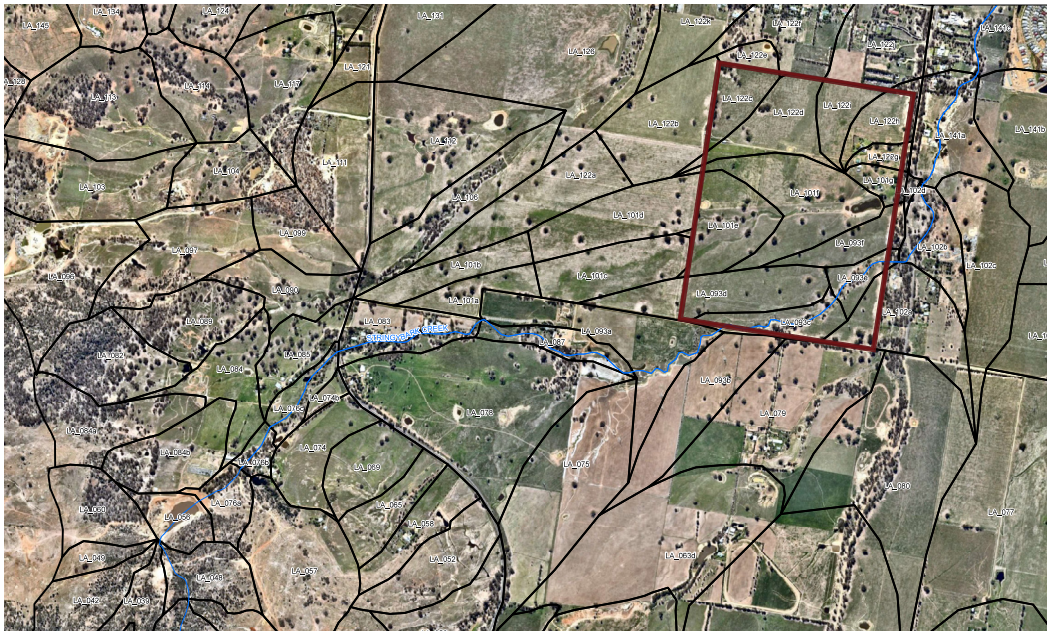
Legend
Proposal Area
2.5M wide concrete/ Asphaltic concrete cycleway
Existing Cycleway

The construction of a new cycleway along Plumpton Road to Nelson Drive will connect the estate to the existing cycleway network. The cost of the new cycleway would be met by the developer.

02 Site Analysis.

Hydrology

Sub Catchment Analysis

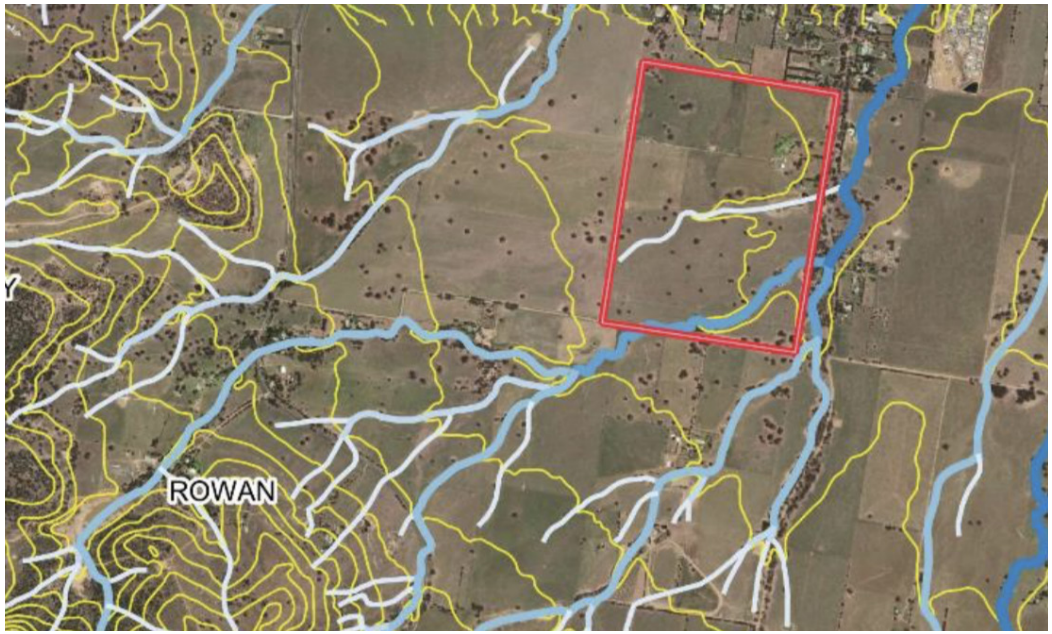


Catchment Areas
Source : eSpade, 2020 ; NGH, 2020

Legend
Proposal Area

The subject land is not within the Wagga Flood Planning Area (FPA). The land is however part of a wider catchment and is subject to flows through the site. There are upstream catchments that contribute to the flows on Stringybark Creek and a naturally formed local waterway both of which flow through the site.

Topography and Hydrology



Site slopes and depressions
Source : eSpade, 2020 ; NGH, 2020

Legend
Proposal Area

Stringybark Creek and the naturally formed local waterway will be integrated in the landscape and form active open space corridors for public use and be used as passive visual elements. The creeks and landform also provide opportunities to integrate wetlands / ponds into the landscape.

02 Site Analysis.

Hydrology

Overland Flow

Overland Flow
Source : WMA Water

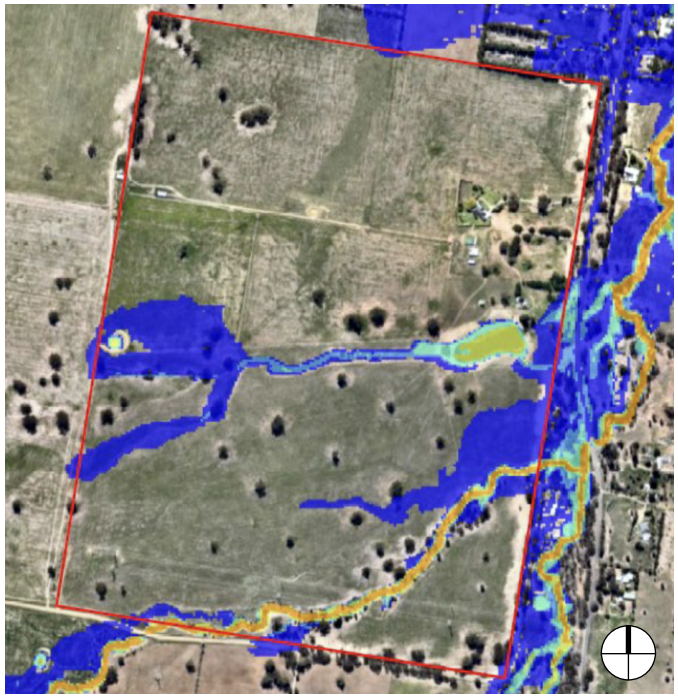
Legend

- Proposal Area
- Inflow Locations
- Outflow Locations
- Major Contours (1m)
- Minor Contours (0.5m)

Depth (m)

- <0.05
- 0.05 to 0.2
- 0.2 to 0.5
- 0.5 to 1
- 1 to 2
- > 2

Overland Flow



Overland Flow
Source : WMA Water

Legend

- Proposal Area
- H1- No constraints
- H2- Unsafe for small vehicles
- H3- Unsafe for all vehicles, children and elderly
- H4- Unsafe for all people and all vehicles
- H5-Unsafe for all people and vehicles. Building require special engineering design and const.
- H6- Unconditionally dangerous

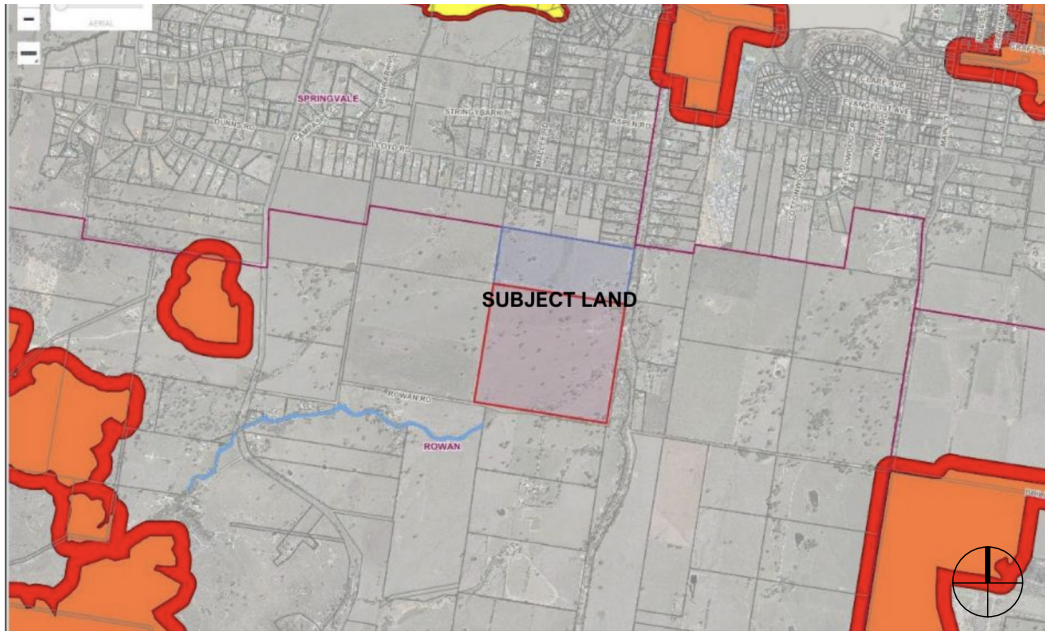
The creek and waterway flows provide the potential to be integrated into landscape / open space outcomes such as water bodies and dry creeks which provide visual relief and character. The provision of additional detention via wetlands and ponds and the use of water as a visual element will be an opportunity to enhance the development potential. There is also the additional opportunity to re-use the water body storage for irrigation purposes. The wetlands and ponds will also support natural flora and fauna thereby creating a habitat.

The modelling undertaken by WMA indicates that flow is generally confined to the channel of Stringybark Creek and the naturally formed local waterway during the design event. Outside of the creek lines, the overland flow depth in the design event is up to 200mm. The hydraulic hazard classification prepared by WMA (2020) indicates that potentially developable land outside of the creeklines is classified as H1 no constraint.

02 Site Analysis.

Ecology

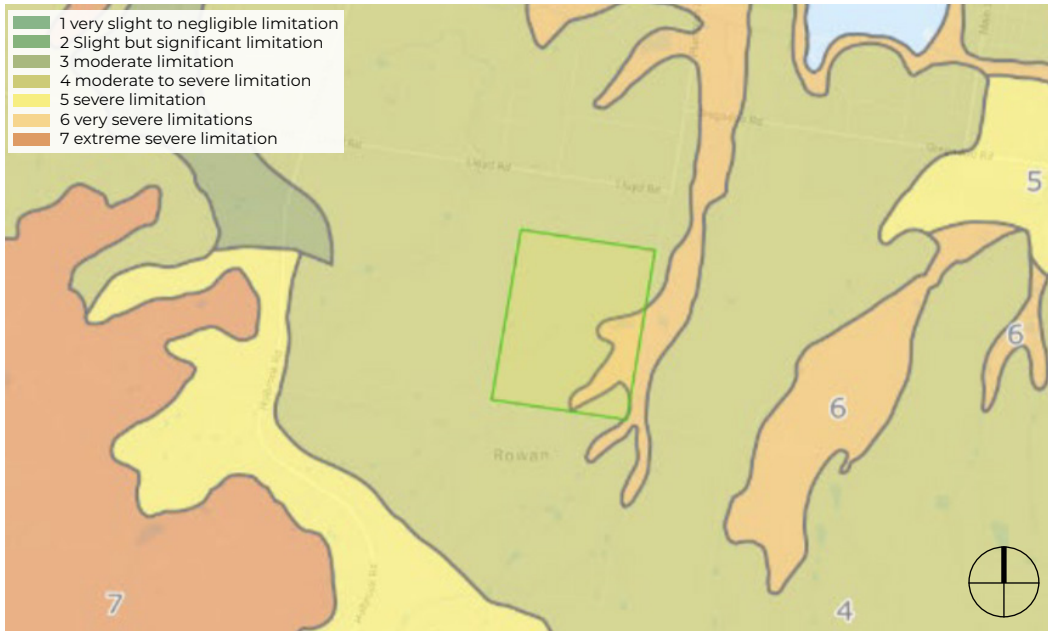
Bushfire Assessment Map



Bushfire affects - Site proximity
Source : Wagga Wagga City Council

The subject land is not mapped as bushfire prone, as shown on Council's online mapping. The nearest bushfire prone lands are located approximately 900 metres to the north, 1,500 metres to the west and 1,800 metres to the east. There are no substantial stands of woody vegetation within the subject land. The land is utilised for cropping and unmanaged grassland is not present. It is considered the bushfire hazard risk would be low.

Land Capability Map



Land Capability zones
Source : eSpade, 2020 ; NGH, 2020

The subject land is predominantly land mapped as Capability Class 4 (moderate capability), with portions of the south-eastern corner mapped as Capability Class 6 (low capability), as indicated in fig above. The Class 6 area is generally comprised by the Stringybark Creek and associated riparian corridor. Class 4 land is described as having moderate to high limitations for high-impact land uses. It would restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture.

02 Site Analysis.

Ecology

AHIMS Sites within 1km

AHIMS Sites
Source : NGH, 2020

Legend
Proposal Area

AHIMS Sites
Modified Trees
(Carved or Scarred)

Four registered modified trees are located within 30-130 metres of the eastern assessment boundary along Plumpton Road. A further modified tree is located within 600 metres of the south eastern corner of the assessment area. None of these registered sites will be impacted by the proposed rezoning.

Soil Landscapes

Soil Landscapes
Source : NGH, 2020

Legend
Proposal Area
O'Briens Creek Variant
Redbank

The existing soil landscapes vary from brown to dark brown clay with additional layers of sandy clay loam to silty loam and yellowish brown heavy clays. The geology of the subject site comprises present day alluvial and slope washed sediments from various sources.

Archaeological Sensitivity

Based on the previous archaeological investigations, it is suggested that the most likely sites to be found in the current assessment area are small low-density artefact scatters and isolated artefacts. These sites will generally be found in archaeologically sensitive landforms, such as elevated terraces and flat land associated with natural watercourses, but may also be dispersed across the wider area, due to previous disturbance, erosion and colluvial processes.

02 Site Analysis.

Ecology

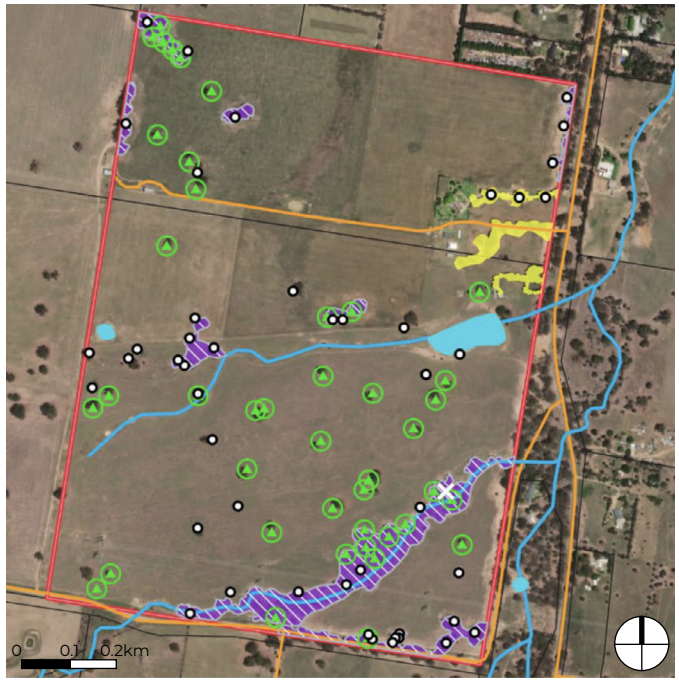
Biodiversity Values

Biodiversity Values
Source : NGH, 2020

Legend
Biodiversity Values

Based on investigations conducted, it is noted that no significant effects on threatened species, populations or ecological communities is considered likely at this stage. Part of the land is identified on the Biodiversity Values map. A specific Plant Community Type was identified in the study area, PCT 277 Blakely's Red Gum – Yellow box Grassy Tall Woodland of the NSW south western slopes bioregion. The intention is to maintain the area with minimal disturbance. The existing

Biodiversity Assessment



Biodiversity Assessment
Source : NGH, 2020

Legend
Proposal Area
Waterways
Dams
Lot Boundary
Roads
Hollow bearing tree
Non-Hollow bearing mature tree
PCT 277
Planted Natives
EEC
Burrow

vegetation around the homestead is native vegetation. This includes a series of River Red Gum along the driveway and Kurrajong surrounding the homestead property. It is the intention of the developer to plant 5 trees for every native tree that is removed to develop the estate.

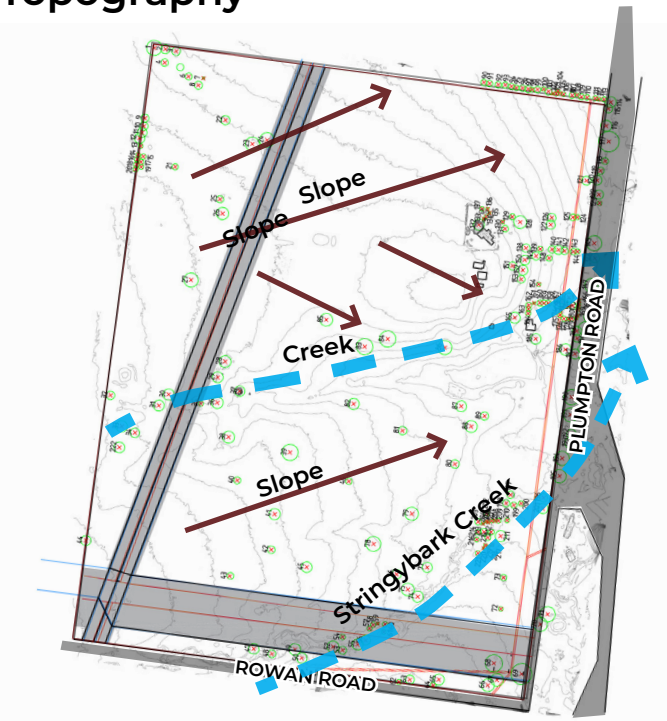
Credit Obligation

The subject site is classified as Woodland of the NSW south western slopes bioregion. The intention is to maintain the area with minimal disturbance. The remainder of the subject site areas has been highly disturbed therefore a prevalence of exotic vegetation was found during the site surveys. The existing vegetation around the house is native vegetation. This includes a series of River Red Gum along the driveway and Kurrajong surrounding the homestead property.

02 Site Analysis.

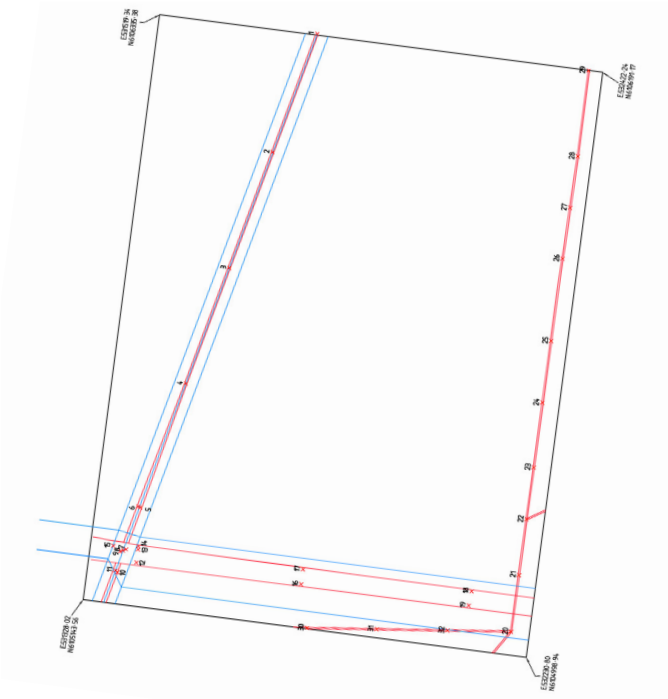
Site Characterstics

Topography



Site Topography and Existing trees on site
Source : Scott McNiven & Associates

Power Lines



Power Lines and poles on site
Source : Scott McNiven & Associates

The subject land has an existing dwelling and ancillary buildings such as a detached studio and storage sheds and outbuildings such as holding yards, barns, and stables. The northern and central portions of the site are generally shallow slope areas with some elevated areas. The remaining areas are comprised by minor slopes and flats with steeper slopes on the creek banks. Stringybark Creek traverses the south-eastern corner of the subject site and an ephemeral tributary is in the central portion of the site flowing east towards Plumpton Road.

The site has a gradual slope with a set of high points / point of aspect. The site access is from Plumpton Road to the east. The landscape easements can be used for outdoor activities such as walking, cycling and playing. The trees are to be retained thereby encouraging bird life and other fauna. Keeping existing trees will help reduce the ambient temperature and environmental heat island. The existing homestead is to be retained which will add value.

There are two electrical easements, 60 Metres and 140 Metres wide that are required by the service authority. A third underground easement is proposed to the east along Plumpton Road.There are existing mature and hollow bearing trees which provide biodiversity habitat. There is an existing homestead and out buildings which will be retained within the estate.

Whilst there are powerlines and creeks, these areas will be used to enhance the environment by a combination of active and passive open space areas including planting trees and potential to reinforce the natural habitat along the creeks. The creeks traversing the site are incised corridor with stable bank slopes.

02 Site Analysis.

Site Characterstics - Site Photos

View of Plumpton Road
Source: NGH, 2020

Homestead Entrance
Source: NGH, 2020

General Site View
Source: NGH, 2020

Existing Farm Dam
Source: NGH, 2020

02 Site Analysis.

Site Characterstics - Site Photos

General View
Source: NGH, 2020

General View
Source: NGH, 2020

View of Outbuilding
Source: NGH, 2020

General View
Source: NGH, 2020

02 Site Analysis.

Site Characterstics - Site Photos

Existing Stringybark Creek
Source: NGH, 2020

View of Power Lines
Source: NGH, 2020

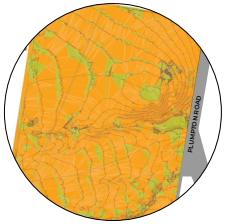
Minor drainage watercourse
Source: NGH, 2020

Building
Source: NGH, 2020

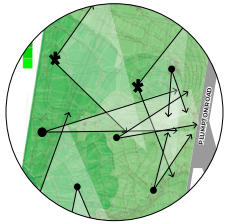
03 Design Response

03 Design Response.

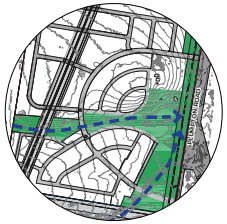
Overview



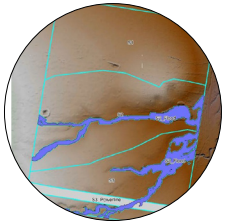
Slope Analysis



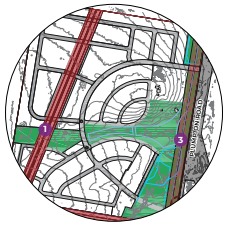
Topography & Views



Creekline Corridors

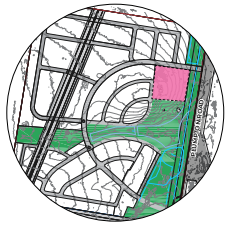


Overland Flows

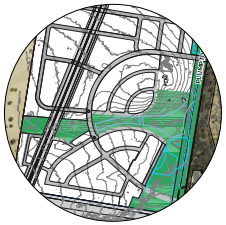


Easement corridors

Existing Vegetation



Sunnyside Homestead



Urban Extension

To establish a sound logical masterplan, this design responds to a variety of design parameters such as:

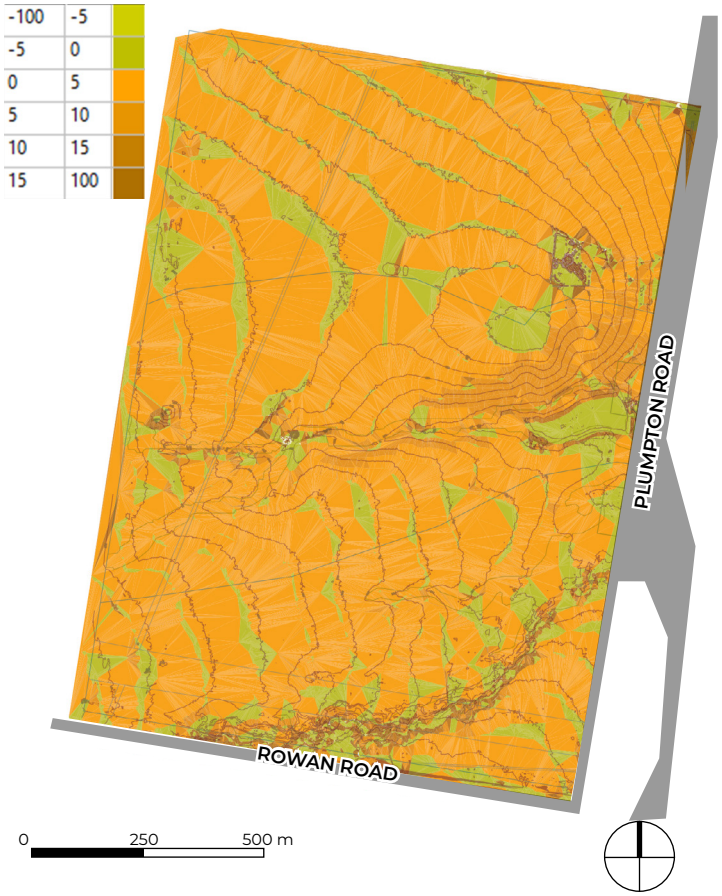
- Slope Analysis
- Topography & Views
- Sunnyside Homestead
- Creekline Corridors
- Overland Flows
- Easement Corridors
- Existing Vegetation
- Urban Extension

Each design parameter has undergone a place analysis and targeted design response. The end outcome of this process establishes a masterplan that is robust, serviceable, sustainable and include community driven initiatives.

03 Design Response.

Slope

Percentage Slope



Site Photo

General View

General View

Place Analysis

The northern and central portions of the site are generally shallow slope areas with some elevated areas. The remaining areas are comprised of minor slopes and flats with steeper slopes on the creek banks. The main character of the site is the lack of distinct topographic features except for slightly elevated ground associated with the centre of the proposal area and elevated banks around the natural water sources.

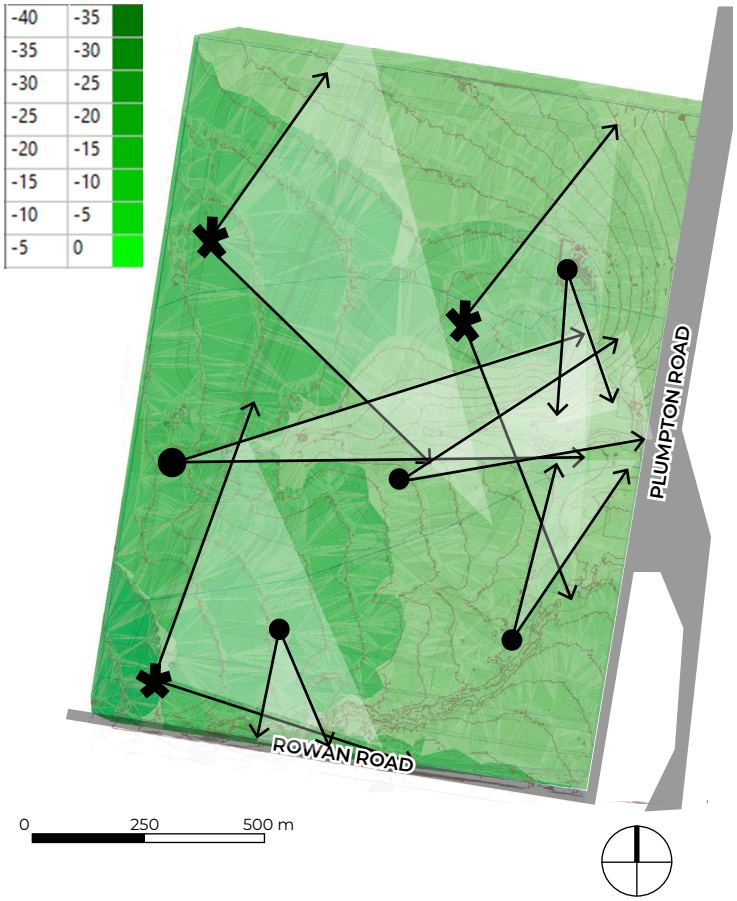
Design Response

Based on the slope analysis diagrams, it is concluded that the site does not have significant slopes that are detrimental to the infrastructure development. The masterplan roads are generally designed to traverse at right angles to the grading as opposed to being parallel to the grades. The slopes are not significant and hence manageable from an earthworks perspective.

03 Design Response.

Topography & Views

Elevation Map (m)



View Corridors

Place Analysis

The existing topography is gradual and the site rises in elevation from Plumpton Road to the western boundary with an elevation difference of approximately 16 metres.

The subject site consists of a landscape with gently sloping topography containing naturally formed local waterways as tributaries of Stringybark Creek . The main character of the site is the lack of distinct topographic features except for slightly elevated ground associated with the centre of the proposal area and elevated banks around the natural water sources.

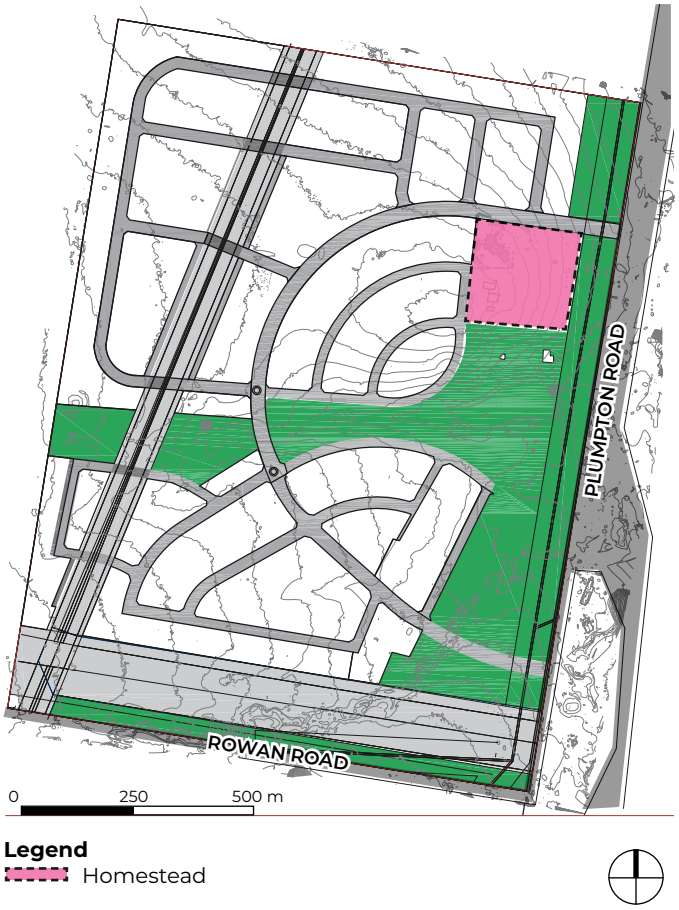
Design Response

The road design has considered the elevation with the collector road rising gradually until the neighbourhood shop. Some of the larger blocks are located on higher ground providing views. There are view corridors from different locations on site and roads have been designed to allow for viewsheds.

03 Design Response.

Sunnyside Homestead

Key Plan



Legend
Homestead

Site Photo


General View


General View

Place Analysis

The existing homestead has a presence in the surrounding area and is located in the North-East corner of the site. The subject land has an existing dwelling and ancillary buildings such as a detached studio and storage sheds and outbuildings such as holding yards, barns, and stables. The existing homestead is adjacent the minor creek but clear of the overland flows footprint.

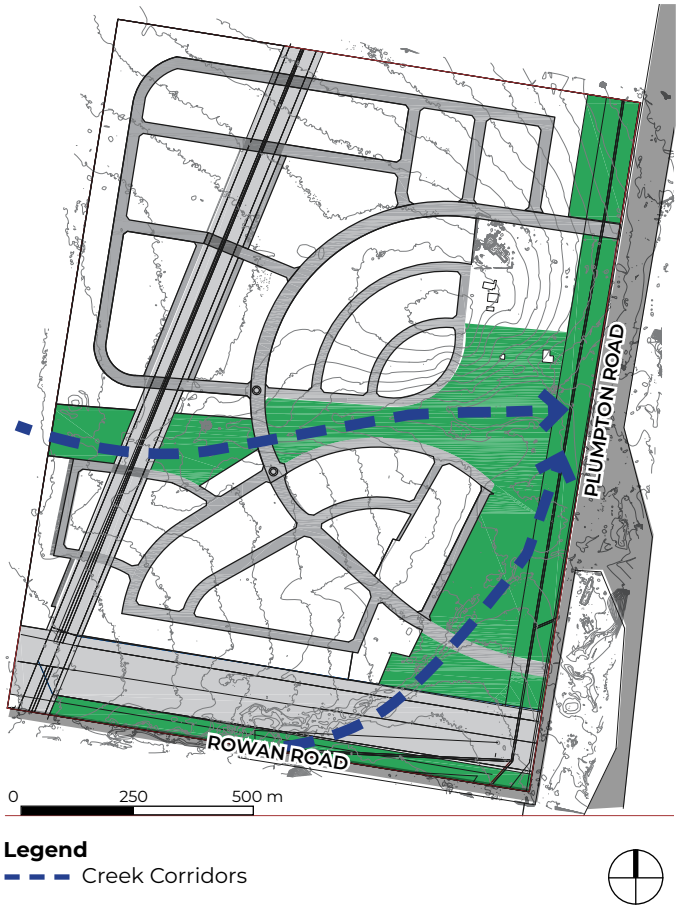
Design Response

The proposed masterplan incorporates the existing homestead as a large land parcel significant in size, approximately 3.5Ha. The location provides direct exclusive access to Plumpton Road. Furthermore, there are significant mature trees, close to the existing homestead which will add ecological value to the final outcome.

03 Design Response.

Creekline Corridors

Retained Creek Corridors



Legend
Creek Corridors

Site Photo


General View


General View

Place Analysis

The site has a gradual fall from the east to west direction. There are two incised watercourses through the site, Stringybark Creek and a naturally formed local waterway both of which convey water through the site from external catchments.

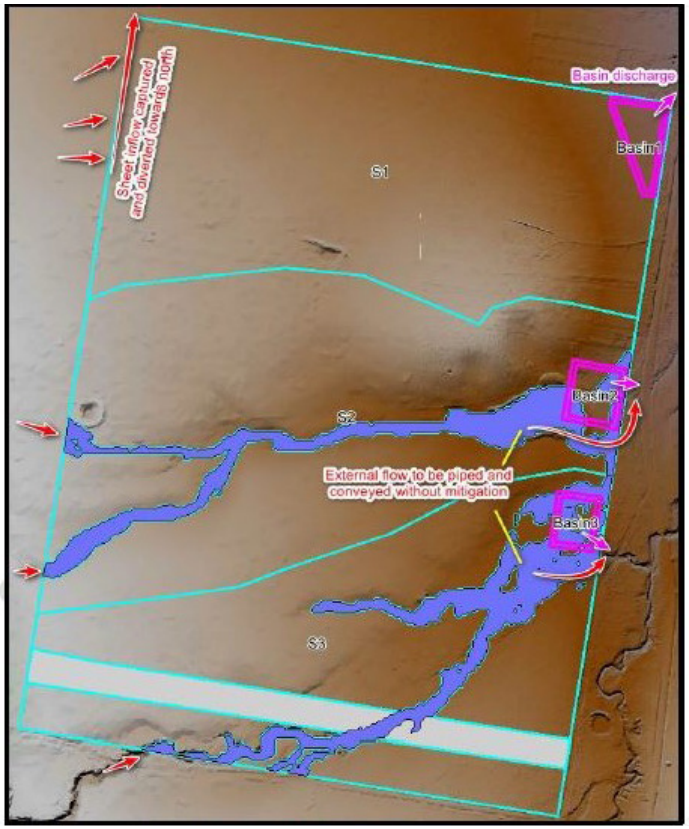
Design Response

The existing creek lines have been retained for the conveyance of minor and major flow events. The road alignments and built form have been kept clear of the optimised major event flow footprint. The environmental habitat is also retained which provides a high value ecological corridor. The alignment of roads in relation to creek corridors will encourage physical interaction with the open space. Detention basins will serve the dual purpose of attenuation and passive recreation with visual content.

03 Design Response.

Overland Flows

Overland Flow and Basins



Overland flow and basins on site
Source : WMA Water

Site Photo

General View

General View

Place Analysis

There are two incised watercourses through the site, Stringybark Creek and a naturally formed local waterway both of which convey water through the site from external catchments. Modelling undertaken by WMA indicates that flow is generally confined to the channel of Stringybark Creek and the naturally formed local waterway during the design event. Outside of the creek lines, the overland flow depth in the design event is up to 200mm. The hydraulic hazard classification prepared by WMA (2020) indicates that potentially developable land outside of the creek lines is classified as H1 no constraint.

Design Response

The design response seeks to modify the existing flows by the inclusion of retarding basins. Attenuation and additional drop structure will dissipate high energy flows there by minimising erosion. Futhermore, to reinforce the water quality and quantity targets, it is proposed to adopt a treatment train, which includes Water Sensitive Urban Design features, Bio - retention basins and 5 Kl Rain Water Tanks for each dwelling as part of the holistic strategy.

03 Design Response.

Easement Corridors

Electrical Easement

Legend
Electrical Easement
1. 60M Easement
2. 140M Easement
3. Underground Easement

Site Photo

General View

Place Analysis

There are 3 electrical easements with steel structures at regular intervals.
1. South West to North Line
2. South West to South East Line
3. South East to North East Line

Design Response

It is proposed to underground the eastern power line adjacent to Plumpton Road at the developer's expense to provide land for open space, roads and development. Line 1 has been allocated a 60metre wide easement and Line 2 has been allocated a 140 metre wide easement in accordance with Essential Energy's requirements.

Furthermore, the electrical easement will serve the dual purpose of retention of electrical assets and provide for an open space network with contained activities such as cycling, walking, fitness and play areas.

03 Design Response.

Existing Vegetation

Tree Retention

Legend

Existing Vegetation

Site Photo

General View

General View

Place Analysis

The existing site has mature and hollow bearing trees in disconnected canopies. The ground cover is that of pasture land character. The trees have been identified as moderate in environment value. While the assessment area is now extensively cleared of native vegetation, but contains isolated scattered remnant old growth trees. Most common tree species include grey box yellow box ,white box,red Marshalls, white cypress pine and river red gum. The understorey comprises of predominantly introduced grass species. In waterlogged areas common species include clustered dock and curled dock.

Design Response

The design responds to the locations of the trees by incorporating the mature and hollow bearing trees within the open spaces and residential blocks. It is also proposed to have larger blocks to accomodate the trees. Keeping existing trees will help reduce the ambient temperature and environmental heat island. The retention of hollow bearing trees will encourage fauna habitat. The existing creek will also provide environmental fauna value and the retention of existing vegetation will be beneficial.

03 Design Response.

Urban Extension

Key Plan

Photos of Northern Development

General View

General View

Place Analysis

The current land is located in a rural setting within close proximity to the Wagga Wagga Town centre and Lake Albert facilities. Historically, housing in the area has generally been large lot rural style residential.

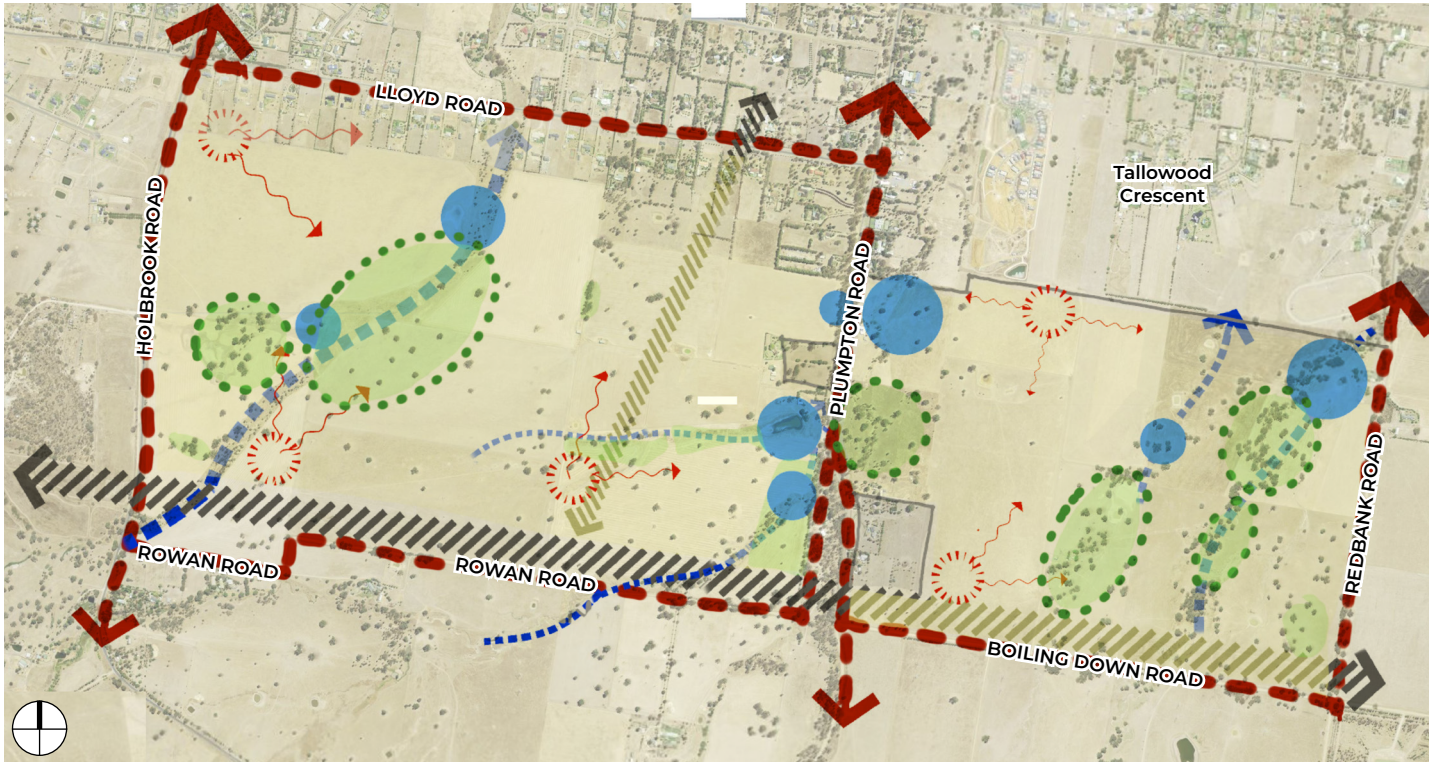
Design Response

In response to the growing housing needs of Wagga Wagga, the site is ideally located in the south of the CBD, providing affordable housing. The demand for housing triggers the rezoning of the subject site to cater for new homes. In order to cater to the growing demand for housing, the response is a balanced and measured approach to providing housing land supported by infrastructure facilities and adequate open spaces to retain as much as possible the character of the area. Services infrastructure to support the development are within close proximity and feasible for extention.

03 Design Response.

Urban Extension

Site Characterstics



0 250 500 m

Legend

- Major Road Connections
- Potential Views
- Electrical Easements
- Creek Flow
- Water body /dams
- Open Spaces

Place Analysis

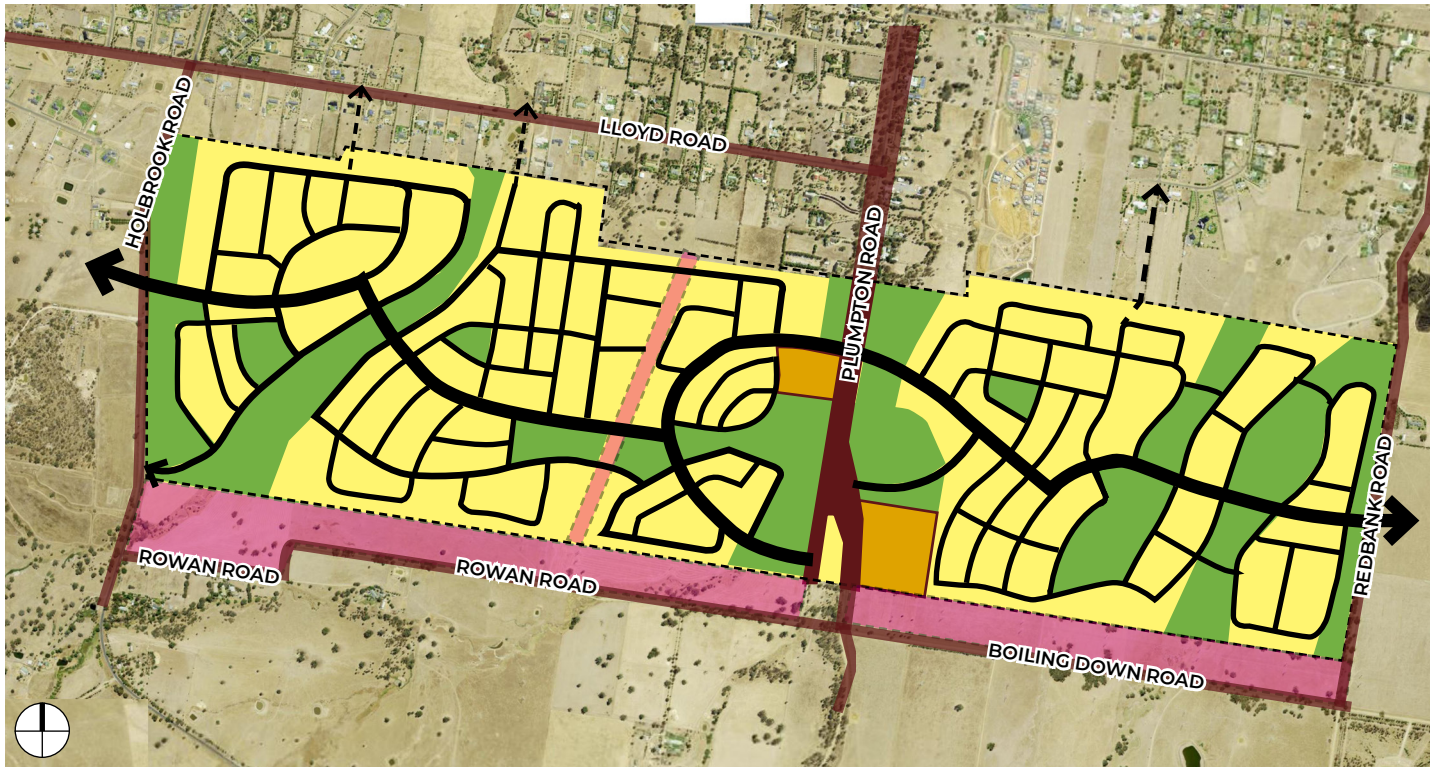
The proposed structure plan considers the context, setting and includes a wider study area comprising land to the west (upto Holbrook Road), to the east (Redbank Road) and to the North as bounded by Lloyd Road nd rural Residential lots. The southern boundary of the extended urban rezoning comprises of an electrical easement, and is bounded by Rowan Road and Boiling Down Road.

The limit of the study area possesses a variety of landforms, high points, incised creek corridors, wet areas, dams and multiple stands of trees. There are existing homesteads which have been integrated in the layout. The site conditions are noted and potential connections to the current proposed Sunnyside Masterplan demonstrates logical linkages for flora and fauna, stormwater movement and transportation corridors (vehicular and pedestrian). Strategic roads of the existing masterplan have been extended to the west with seamless integration to the north including open space connections and recreational path networks which are considered in the extension. Additionally, potential connections to Lloyd Road and Tallowood Crecent have been suggested.

03 Design Response.

Urban Extension

Master Plan



Design Response

The proposal gives consideration to a substantially larger area for potential re-zoning. The masterplan provides a robust structure that is capable of staged development for the entire precinct with provision for infrastructure with adequate capacities. In order to achieve a balanced environmental outcome, the masterplan provides a series of interconnected open spaces for active as well as passive recreation by way of equitable open space distribution, retention of mature trees and proposed legible street tree plan. The design response seeks to maintain the alignment with minimal modification to the existing creeks and mainstream flooding by on-site detention, attenuation and bio-retention. The road hierarchy is based on a series of road types. The residential block pattern is orderly and is a logical extension of the current masterplan to provide connectivity and future planned extensions.

04 Master Plan

04 The Master Plan.

Vision and Objectives

VISION

Sunnyside Estate will be a premium residential development and an exemplary model community based on environmental values, optimisation and value creation of the site constraints, connectivity, accessibility, sustainability, innovations, (such as smart systems based on information technology) and promote healthy lifestyle.

OBJECTIVES

Cycle Path

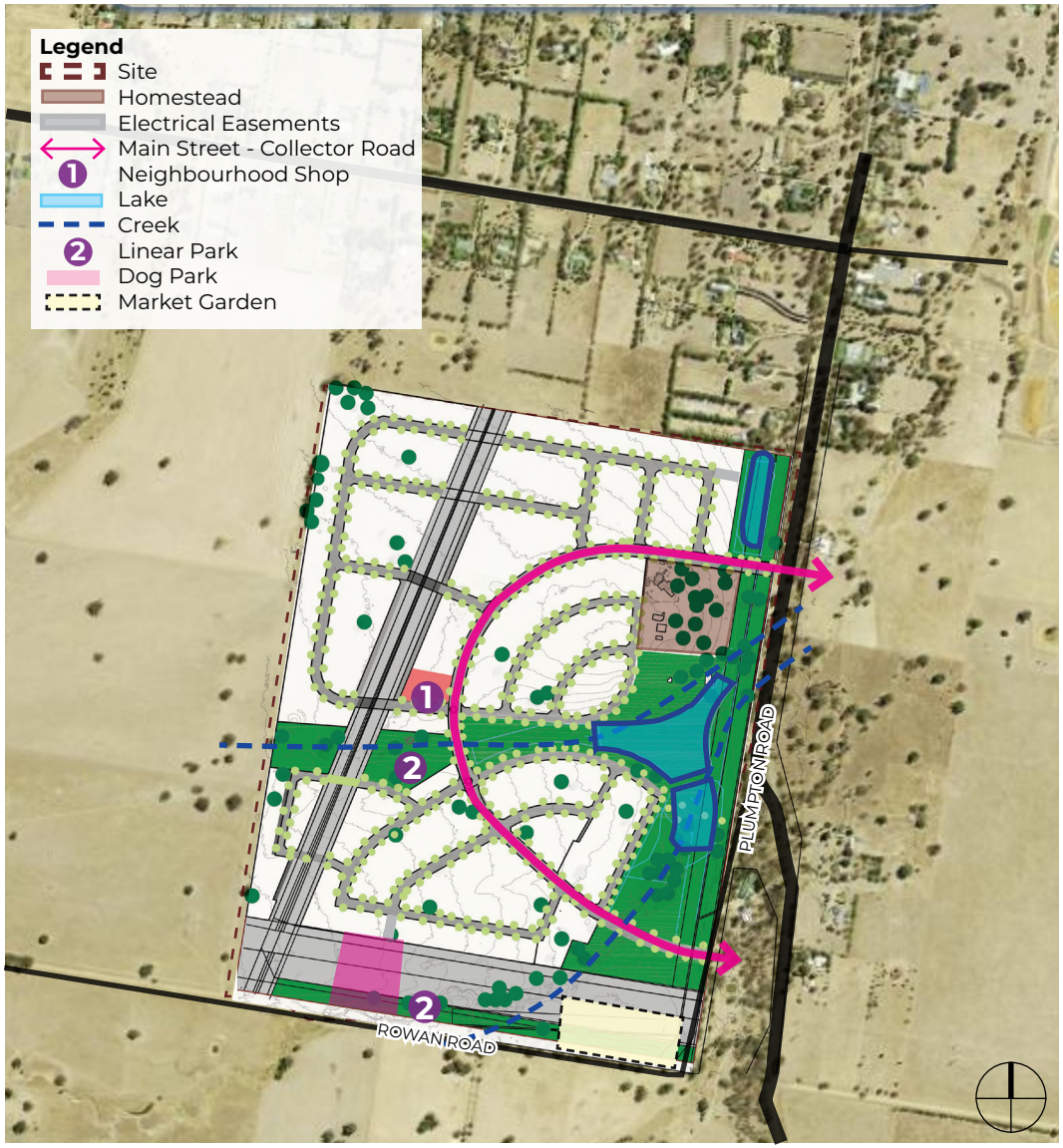
Neighbourhood Shop

Market Garden

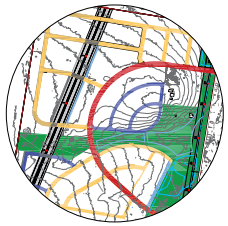
Pond and Wetlands

04 The Master Plan.

Overview

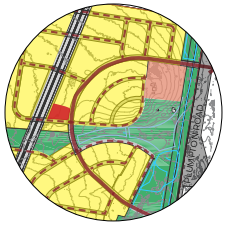


Design Principles

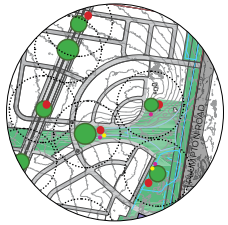


Transportation and Connectivity

Open Space and Vegetation

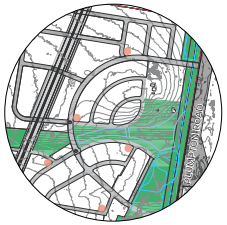


Land Use



Sustainability and Accessibility

Healthy Communities



Infrastructure

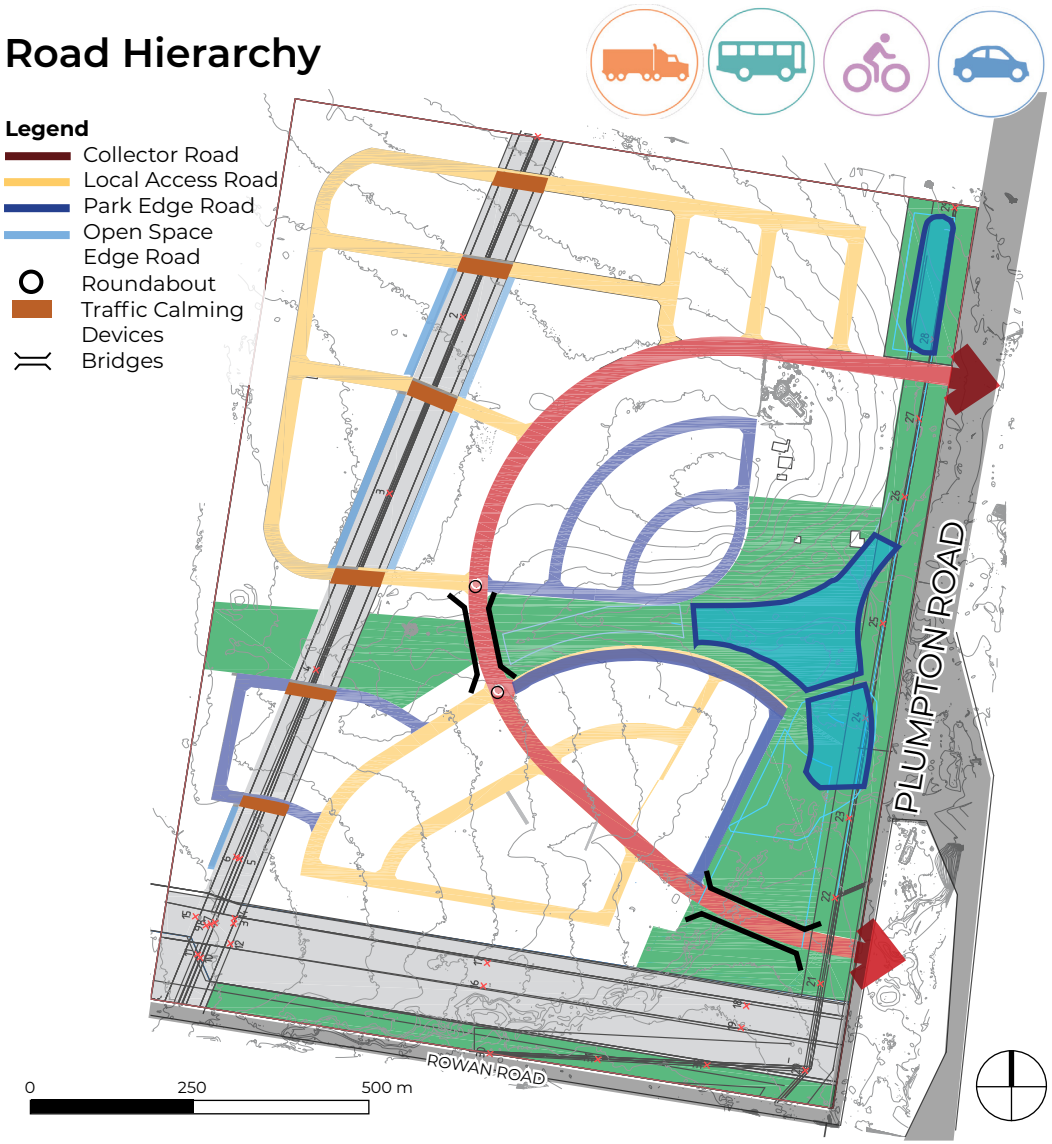
The masterplan has been designed to respond to the local context whilst making connections with the wider community. Opportunities and constraints have been considered and the master plan is a tailored response. The homestead has been retained with the existing trees on a large land parcel in close proximity to the Plumpton Road.

Sunnyside Estate Masterplan has been developed considering fundamental principles of site responses, ecological integration, connected communities, healthy lifestyles, sustainable models and diverse urban forms. The layers of networks including transportation, services, green corridors, drainage flow corridors have all intertwined to make a logical and connected masterplan.

04 The Master Plan.

Design Principle : Transportation and Connectivity

Road Hierarchy



The road hierarchy has been developed to address the movement of vehicles including buses, garbage trucks, service and emergency vehicles, passenger cars and on road push bikes. The collector roads will be used for public transport - buses and will be graded appropriately. Local access roads will serve the subdivision lots and will have adequate infrastructure in the street domain.

There are park edge facing roads with homes only on one side and recreational paths on the park side with constant interaction with the open space. The final order of open space edge roads are generally intimate in character, adjacent the easement corridor and blend with the open space.

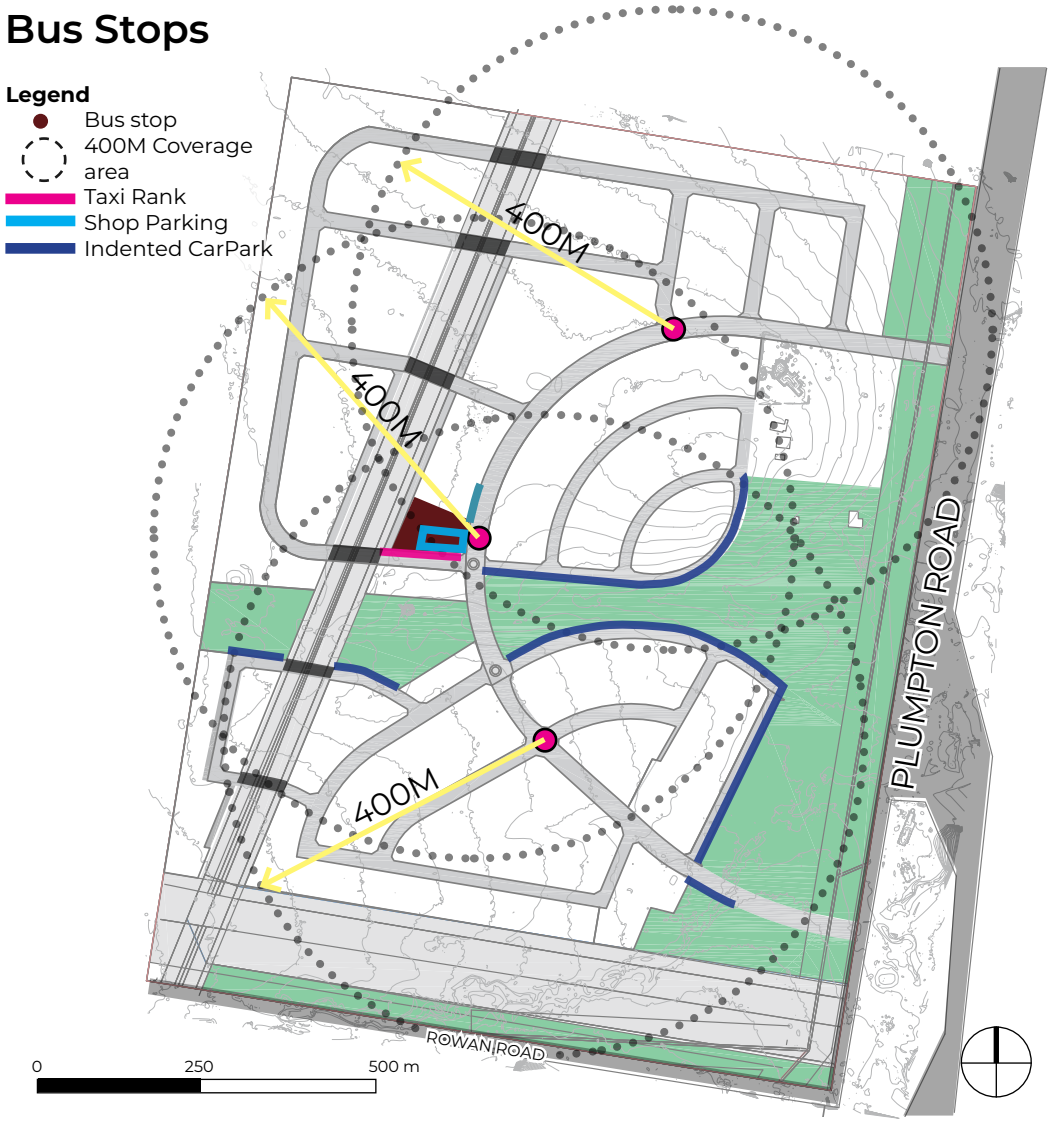
Street elements proposed such as kerbs, castellated kerbs, rain gardens, speed calming devices, streetlights and street trees all form part of the overall street environment and experience.

In addition to vehicular connectivity, pedestrian networks are proposed for both on road and off road scenarios to link the community. The highest order of road, the collector road consists of a shared path on one side and a standard footpath on the other side. The lower order of streets such as local access roads will have paths on both sides of the road. The park edge street will have a path on the development side of the road as will the easement open space edge roads. A series of off road recreational shared paths have been planned to connect the open spaces in the entire estate. These paths link with the residential road path system and form an interwoven network. Essential infrastructure such as bridges both vehicular and pedestrian have been planned to address crossing points for watercourses and sensitive riparian areas.

04 The Master Plan.

Design Principle : Transportation and Connectivity

Bus Stops



Additionally cycleway connection will also be provided on one of the local access roads to connect the collector road cycleway to the recreational cycleway. All streets will be provided with footpaths. Bus stops are planned within a 400 metres walking radius to service most of the homes. In total, three bus stops are proposed with one of them at the neighbourhood shop.

Furthermore, a taxi rank is proposed at the neighbourhood shop to augment public transport. Parking on the collector road and other streets will generally be on the kerb side. There is an opportunity to provide indented car parks along open space corridors for easy access for people to use the open spaces. In order to keep a safe community, a variety of speed calming devices are proposed to reduce the speed environment of the streets, which include roundabouts, chicanes, pedestrian crossings, rumble strips and thresh-hold treatments at the road intersections.

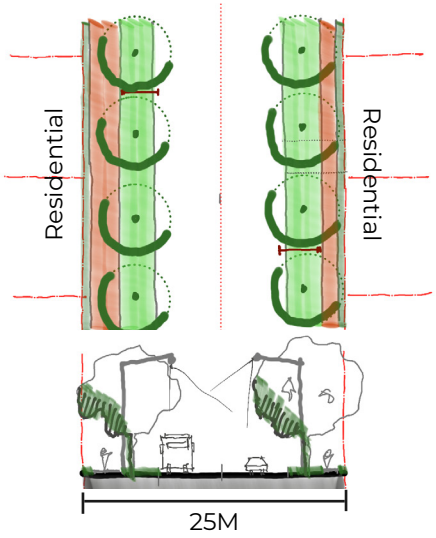
Mandatory signage such as give way, and stop signs will be in place, and in general, the road planning has avoided 4-way intersection.

04 The Master Plan.

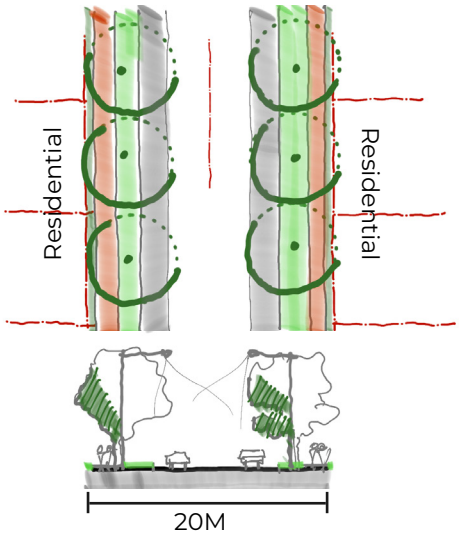
Design Principle : Transportation and Connectivity

Street Environment

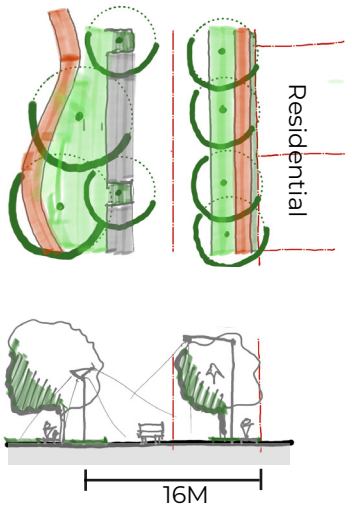
Collector Road



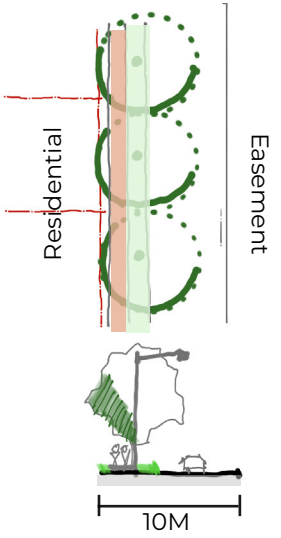
Local Access Street



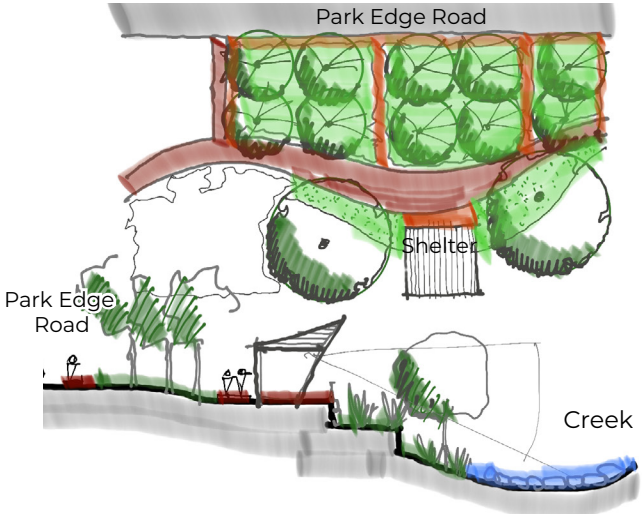
Park Edge Street



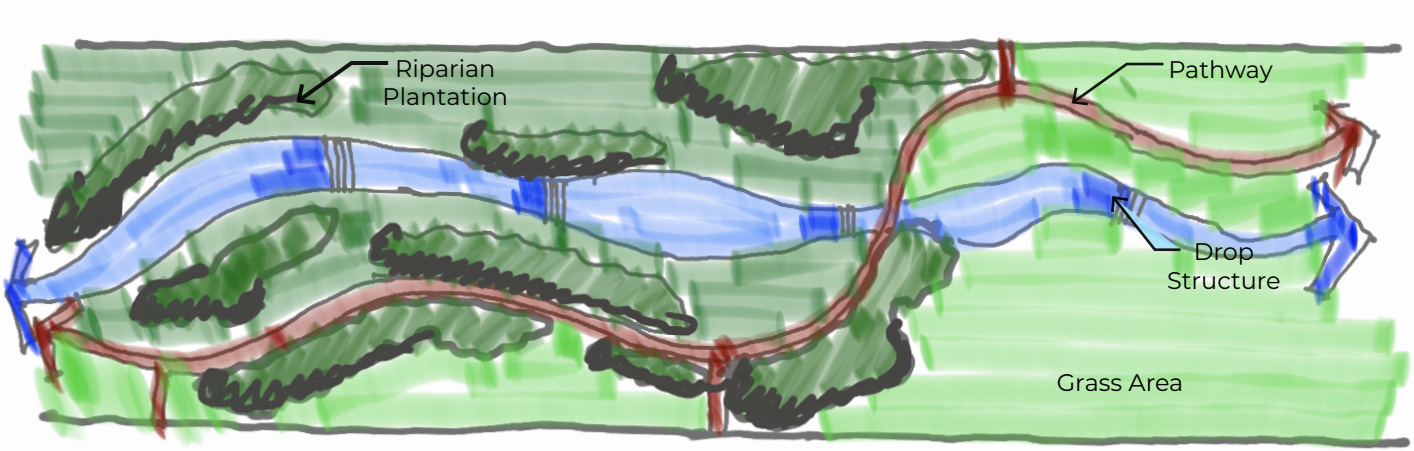
Easement Edge Street



Creek Edge Activation



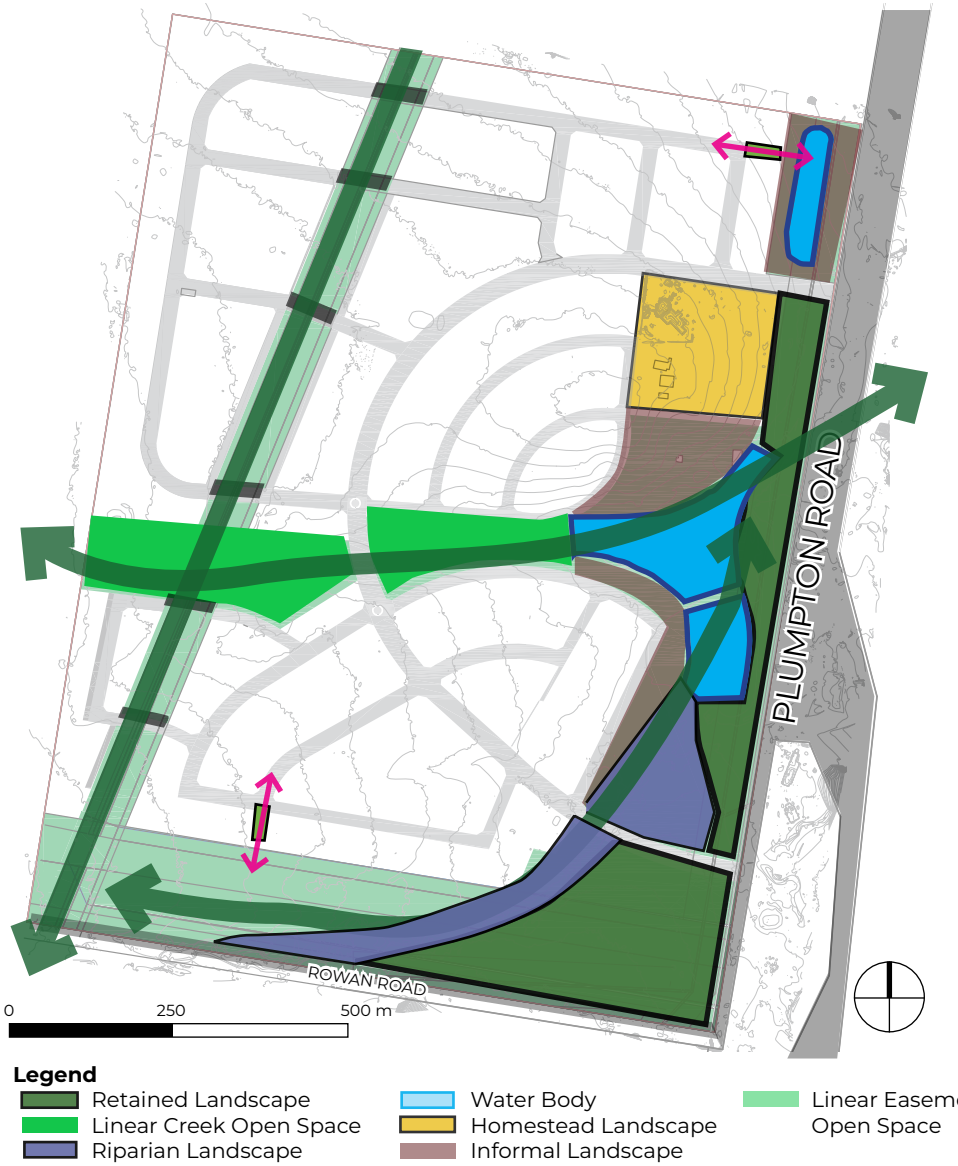
Dry Creek Treatment - Linear Park with Walking Trail



04 The Master Plan.

Design Principle : Open Space and Vegetation

Open Space Categories



The category of open spaces include linear open spaces, riparian landscape, formal playgrounds, informal grassed areas, existing landscapes of the homestead, retained habitat areas, retention of mature trees. The spaces will cater for various activities and the attributes of each space will comprise of adequate infrastructure to encourage outdoor lifestyle. Most importantly, various layers of walking and bike transportation networks will connect these spaces. Close to the waters edge, bridges, boardwalks and decks are proposed to interact with nature. The water bodies will contain ecological habitats and will be of high visual content.

The attributes of the open space categories will add environmental value to the community including ecological habitat, passive recreation, active recreation, storm water conveyance, and fauna movement corridor.

The developer would build and establish the open space. To ensure that the open space is fully established when handed over to the Wagga Wagga City Council, the developer will maintain the open space at its expense for a period of five years after construction. During the maintenance / establishment period, any plants that died would be replaced at the developer's cost.

Native Planting

Active Landscape

Landscape Art

04 The Master Plan.

Design Principle : Open Space and Vegetation

Existing Tree Retention

Legend

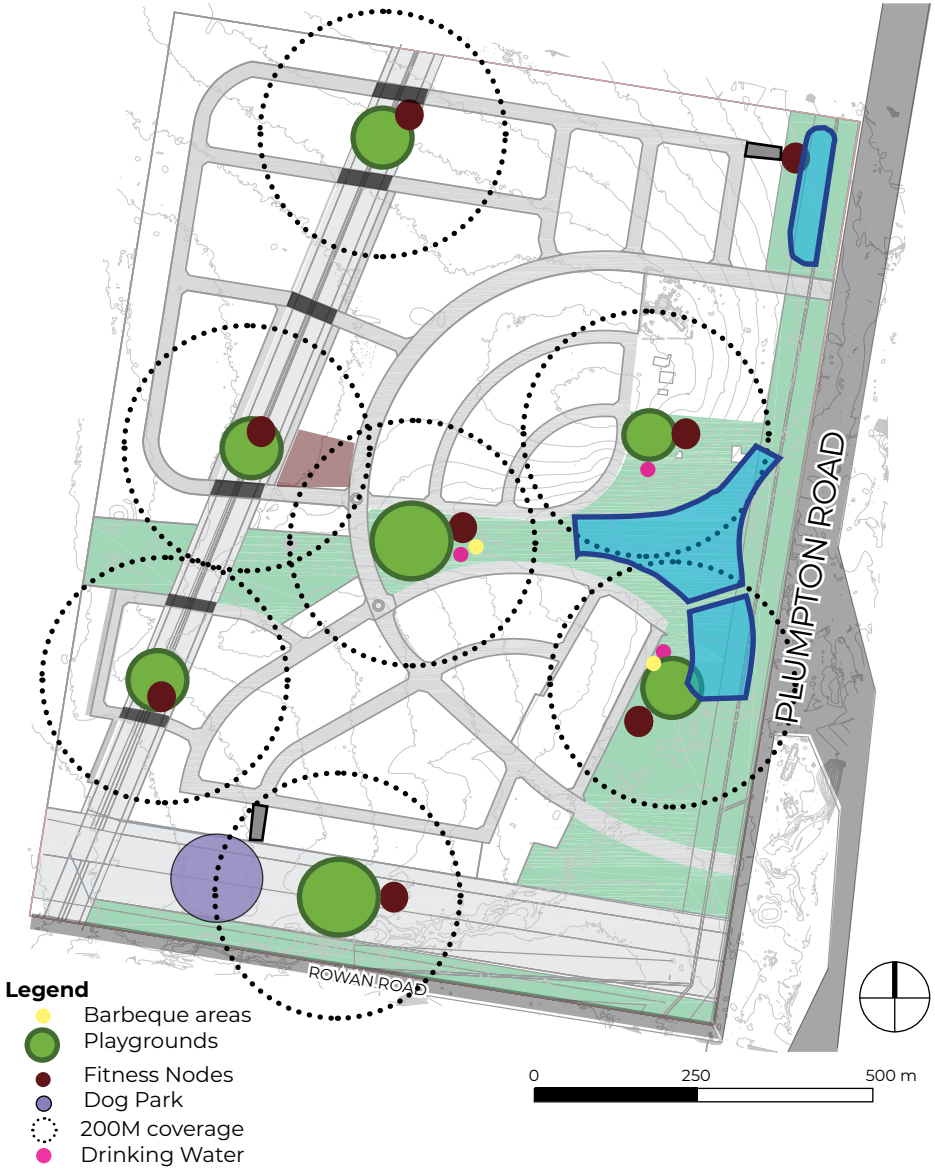
- Trees - Retained including mature and hollow bearing

The existing site has mature and hollow bearing trees in disconnected canopies. The ground cover is that of pasture land character. The trees have been identified as moderate in environment value. While the assessment area is now extensively cleared of native vegetation, but contains isolated scattered remnant old growth trees. Most common tree species include grey box yellow box ,white box,red Marshalls, white cypress pine and river red gum. The understorey comprises of predominantly introduced grass species. In waterlogged areas common species include clustered dock and curled dock.

04 The Master Plan.

Design Principle : Open Space and Vegetation

Open Spaces Amenities



A variety of amenities such as playgrounds, fitness nodes, connected running and walking paths, a dog park are proposed within easy reach of the community. Most homes are generally within 200 metres of an open recreation space. The assessment of facilities has been conducted based on the following criteria:

Linear Park
Attribute: Active Recreation and Visual Content
Activity: Walking, Cycling, Social interaction
Infrastructure: Paths, Trees, Ground Covers, Rest Points, Fitness Node, Shelters, Interpretation and Public Art

Retained Landscape
Attribute : Active Recreation and Visual Content
Activity: Walking, Cycling, Social interaction, Informal Area Interaction, Play activities
Infrastructure: Paths, Trees, Ground Covers, Rest Points, Fitness Node, Kickabout spaces

Riparian
Attribute : Ecological, Environmental, and Visual Content
Activity: Walking, Cycling, Nature Study
Infrastructure: Paths, Trees, Ground Covers, Rest Points, Infrastructure elements, Interpretation and Public Art

Water Body
Attribute : Ecological, Passive Recreation and High Visual Content
Activity: Walking, Cycling, Social interaction,
Infrastructure: Paths, Trees, Seats ,BBQ areas, Water fountains, Amphitheatre, Boardwalks and Decks, Bridges, Public Art

Local Park (within Linear Park or Creek Landscape)
Attribute: Recreation
Activity: Walking, Cycling, Social interaction, Community relationships
Infrastructure: Paths, Trees, Seats ,BBQ areas, Water fountains

04 The Master Plan.

Design Principle : Open Space and Vegetation

Street Trees

Quercus Coccinea

Brachychiton Populneus

Corymbia Maculata

Tristaniopsis Laurina

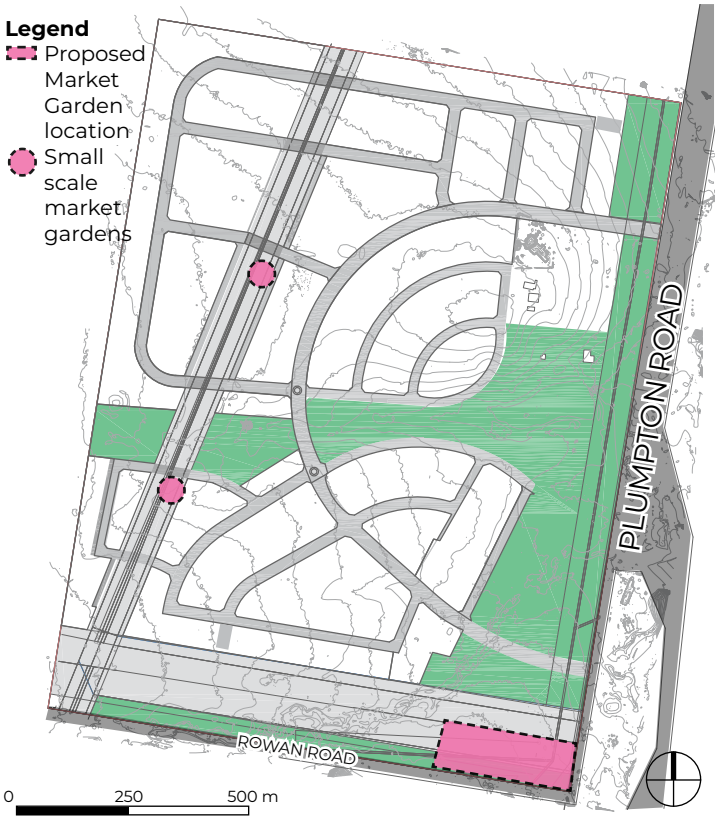
Eucalyptus Leucoxylon

Eucalyptus Sideroxylon

04 The Master Plan.

Design Principle : Open Space and Vegetation

Market Garden



Green Waste / Compost

Market Garden

Herb Garden

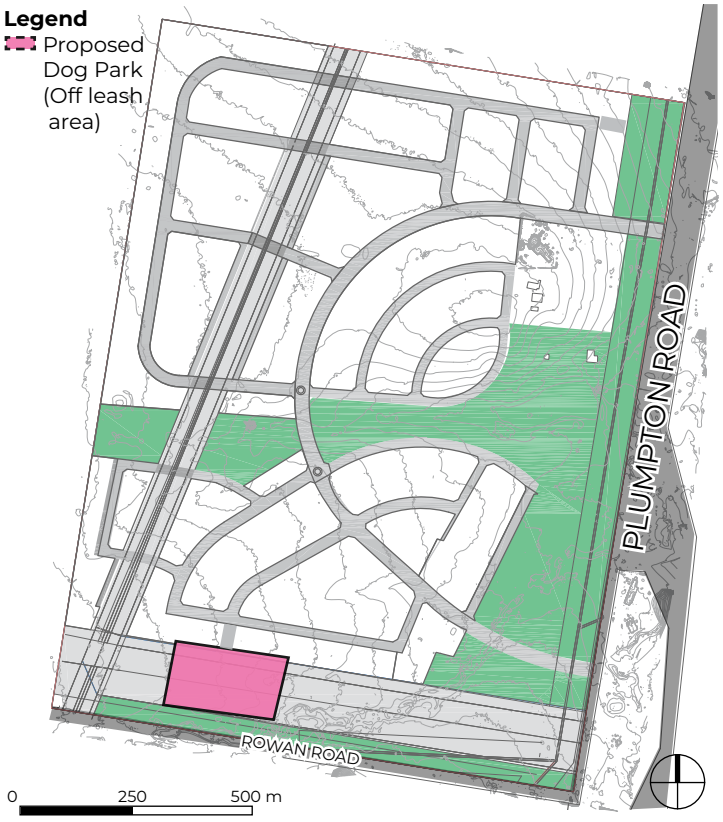
Grow your own vegetables

The development proposes the initiative of a market garden which will support the community, foster relationships and promote food production. The location is based on the land adjacent to the Stringybark creek and is located on the internal recreation path network. The larger blocks on the eastern side of the n/s easement corridor will be able to support internal food production. There are further opportunities for smaller community gardens which are located in the easement corridors.

04 The Master Plan.

Design Principle : Open Space and Vegetation

Dog Park



The dog park will be an important asset for the community to foster relationships and encourage healthy lifestyle. It is located along the pedestrian and cycling network. There will be additional facilities provided to support the dog park such as signage, innovative play equipment and drinking water bubbler.

Intent

04 The Master Plan.

Design Principle : Land Use

Land Use

Currently , in Wagga Wagga there is a demand for residential lifestyle blocks. This was identified in the Wagga Wagga Spatial Plan 2013-2043 for the local government area. Based on studies reported in the Riverina Murray Regional Plan 2036, Wagga Wagga will grow to a population of about 80,000 by the year 2040. The council has identified areas of growth but in addition has also supported rezoning of smaller precincts with the urban containment line. Historically, housing in the area has generally been large lot rural style residential in areas such as Springvale, Lake Albert, San Isodore and Gumly Gumly.

With the growing demand for lots and the need to optimise the infrastructure to be delivered to necessitate economical development, it is proposed to keep all lot sizes over 1000 sqm with the majority of lots above 1200 sqm. It is more appropriate to have high quality of open spaces for the community to use which is loaded with facilities as opposed to providing larger lots ie 0.25 ha and over. The dedication of open spaces also has long term benefits in fostering community bonding. Very large lots are unsustainable and leads to increased per sqm land cost due to inefficient use of services. The estate is planned with wide roads and generally a country style character. The landuse categories are nominated on the masterplan.

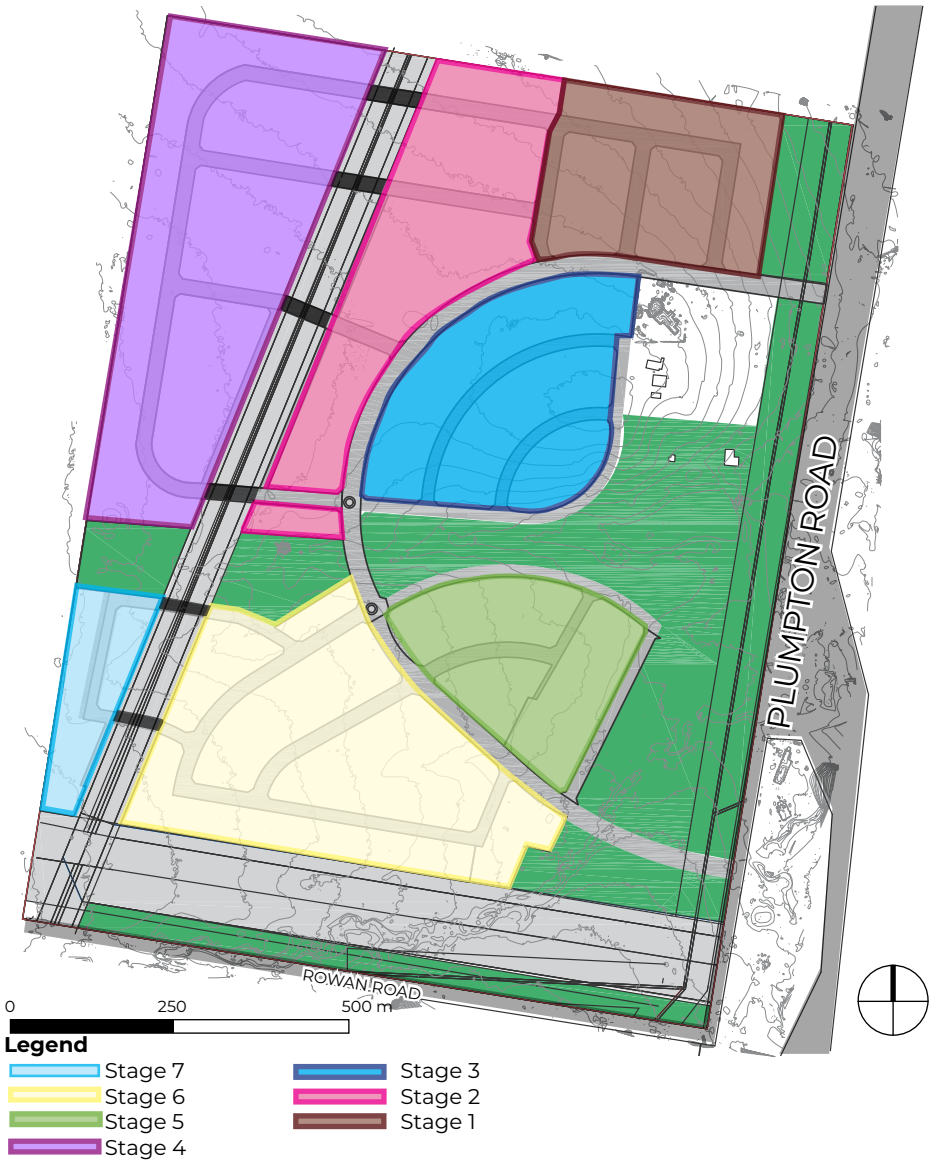
The total land areas is approximately 110 Ha.
The areas under each category are as follows:

- Residential - 49 Ha
- Shop - 0.56 Ha
- Homestead - 3.25 Ha
- Electrical easements (overhead)- 16.35 Ha
- Open space corridors - 20.96 Ha
- Roads - 15.68 Ha
- Ponds and Lakes - 4.2 Ha

04 The Master Plan.

Design Principle : Land Use

Staging / Village Precincts



The staging of the project is over a few years and is based on the progressive delivery and release of lots based on market conditions and demand. The first stages 1,2 and 3 are planned for the north side of the development to continue with the existing rural residential. The collector road being the vehicular access road will feed the first 3 stages. The shop precinct is also located in stage 2 which will provide much needed minor facilities to the community. It is also the intention that the infrastructure works related to the creation of lakes, ponds and wetlands be constructed concurrently with the first 3 stages for place making. The early establishment of the landscape is a natural magnet for attraction as it sets the tone of the development with regards to fostering community relationships.

Stages 4, to the north-east and then subsequently 5, 6 and 7 to the south will be progressively realised over the next 5 years. Each stage is also aimed at being a "Village"; with a unique character that brings the binds the sub precinct with a common theme. The various parameters of the theme include house style, street trees, civil infrastructure elements, the consistency of roof colours and forms, the front landscape of homes all elements that add to the overall public domain experience.

Stages to the west of the electrical easement will have a "gateway" while crossing the easement to arrive in a different public domain setting. The transition between the stages will either be roads or riparian corridors thus presenting each village its own distinct character. The street trees in a specific village will be of one type thus reinforcing the consistency. Interpretation and art will be part of various strategies to achieve the village character.

All the villages will have a network of pathways connecting them with each other and creating a seamless community.

04 The Master Plan.

Design Principle : Land Use

The Hub

Shop

The neighbourhood shop, located at a suitable walking distance from all homes, will be the hub of the estate. This hub will comprise a shop and playground and be a meeting place for parents with children. The hub is located on the collector road providing good visibility, connected to a bus stop with accessible line of travel and features to cater for people with disabilities. The hub will also promote active work and play and provide WIFI facilities and cafe style seating. A possible bus stop, taxi ranks and bike racks will also be incorporated in the hub.

04 The Master Plan.

Design Principle : Land Use

Urban Design Control

Federation Bunglow

Federation revival

Vision:
A balanced community provides a variety of housing options which can vary and establish a themed village character. The urban form of the house will be based on the lot size with regards to footprint and volume. Residences closer to the waterfront will have a special appeal and aesthetics. There are a range of block sizes and typologies to provide housing density, diversity and choice.

Typology:
The development proposes to have several styles for residential homes that will be linked with building and siting controls for different precincts. The architectural styles suggested for the development reflect the nature for the lot sizing. All lots will be over 1,000square metres with the majority larger than 1,200 square metres in area.

These lot size categories will support a variety of detached housing styles such as traditional, revival style, colonial, ranch, modern and contemporary. The styles will be further reinforced with coordinated colour schemes, facade treatments to merge with each village character for the development.

Colonial style

Ranch Style

Traditional Style

04 The Master Plan.

Design Principle : Land Use

Urban Design Control

Contemporary and Modern Styles

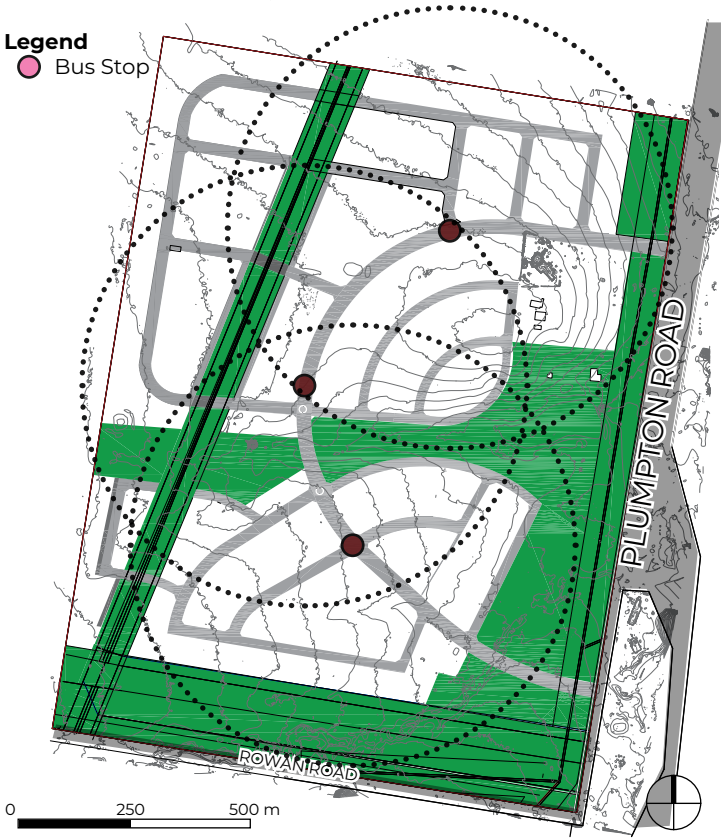
Building and siting requirements:
The lot frontages are from 20-30 m wide and support double garages and a substantial façade width with defined entrance features. It is proposed to have the garages set back to provide more prominence to the house. The front setbacks will be minimum 10 m with minimum 1.5 for the site setbacks. Potential for front fencing to be explored to provide additional streetscape character as an important element that compliments the public domain of the street environment.

Front Yard Landscape:
The proposed landscape in the front yards of the homes should be consistent with the theme of the streetscape character, belonging to a specific stage/village. The intent is to integrate the front yard landscape to add additional value to the street public domain.

04 The Master Plan.

Design Principle : Sustainability and Accessibility

Sustainability



Each lot is to accommodate a 5Kl rain water harvesting tank. Native Planting promotes low water use. 90% of the lots are within 800M walking distance to the neighbourhood shop creating a walkable neighbourhood. Solar is proposed on the roofs of homes and bus stops. Water Sensitive Urban Design initiatives to be implemented in the open spaces. There is opportunity for solar street lights.

Solar cells on roof

Bioretention

Bus stops
Solar powered

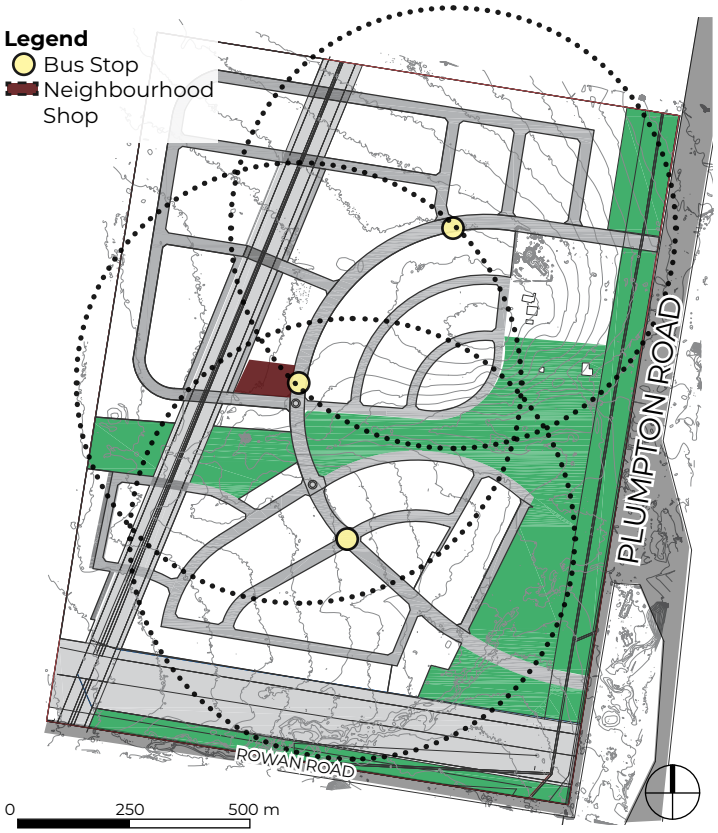
Native planting
low water use species

Street lights
Solar powered

04 The Master Plan.

Design Principle : Sustainability and Accessibility

Accessibility Provision



The development accomodates accessibility, at various levels including pathways, ramps, car parks, pedestrian movements, guidance systems and play equipments.

Accessible Parking

Accessible Ramps

Accessible Guidance

Accessible Swings

04 The Master Plan.

Design Principle : Healthy Communities

Walk - Bike - Play

Legend

- Neighbourhood Shop
- Recycling Centre
- Free Wifi Facility
- Recreational paths
- Shared Cycleway
- Market Garden
- Dog Park

Walk

Bike

Walking, cycling, running, walking the dog, fitness nodes are all part of the overall strategy to address healthy lifestyle. Additionally playground and informal kickabout spaces will encourage active sport. The master plan suggests a logical path network system in a closed loop that connects the entire community . Connections to surrounding areas have also been considered as part of the network, such as the existing Lake Albert facilities.

Active Play

04 The Master Plan.

Design Principle : Healthy Communities

Pedestrian and Cycle Network

Lakefront edge

Cycleway
Source : Sunnyside Ventures

Cycleway

The proposed road and path network promotes walkability at various levels. The neighbourhood shop is located within 800 metres, bus stops are within 400 metres, parks and open spaces are within 200 metres walk from most homes. The key active open space areas such as parks, passive open spaces and playgrounds are interwoven with a layer of pathways. Furthermore, a market garden and a dog park also form part of the same network. Future connections are proposed to the north including the trunk cycleway on Plumpton Road to Nelson Drive linking into the broader Wagga Wagga City Council cycleway network. The cost of the cycleway to Nelson Drive being funded by the developer.

04 The Master Plan.

Design Principle : Infrastructure

Electrical Substations

Legend

Substations

Underground easement

- Gas, NBN, Electrical in shared trench along roads.

Water Cycle Management

Legend

Ponds

Main Flows

Water Sensitive Urban Design Retention pits

Castellated kerbs

Note : Each lot to have 5Kl rain water tank.

04 The Master Plan.

Design Principle : Infrastructure

Sewer

Storm Water

05 Design Intent

05 Design Intent.

Creeks




Wetland Ponds




05 Design Intent.

Streets




Cycle Paths




05 Design Intent.

Art & Sculpture




Retaining walls




05 Design Intent.

Amphitheatre / Seating Spaces




Street Furniture

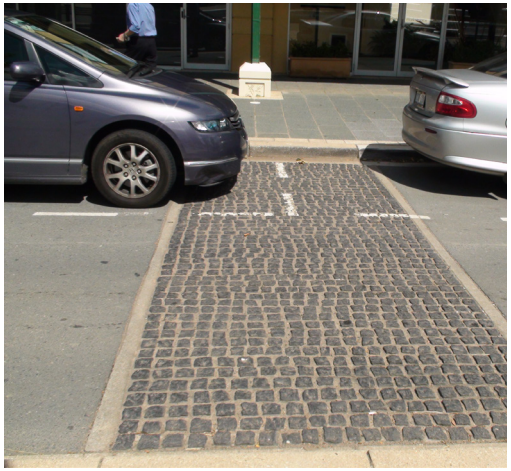



05 Design Intent.

Pedestrian / Road Bridges




Speed Calming Devices

05 Design Intent.

Landscape




Play Areas

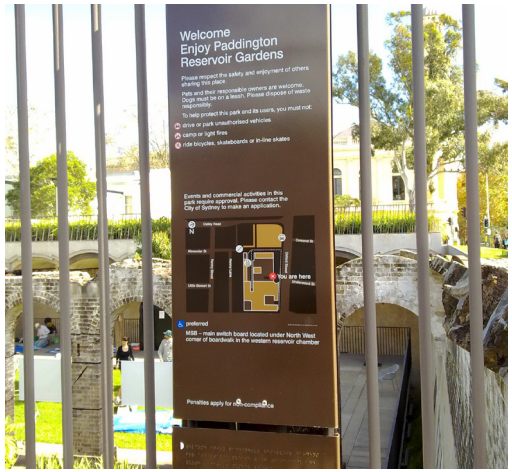



05 Design Intent.

Picnic Shelters

Street Lighting

Signage



Civil Infrastructure




Civil Infrastructure




06 References.

- SIX Maps
- Google Search Engine
- Google Earth
- Wikipedia
- Wagga Wagga City Council
- Documents Provided by John Randall Consulting (JRC)
- Documents and Images Provided by Sunnyside Ventures
- Delta Star Designs Report
- Preliminary Assessment Report by NGH.
- Stormwater Report by WMA Water
- Wagga Wagga City Council - Local Infrastrucutre Contributions
- Wagga Wagga City Council - Integrated Transport Strategy
- Wagga Wagga City Council - Community Strategic Plan 2040
- Active Transport Plan - Wagga Final
- Traffic Report by John Randall Consulting (JRC)
- Site Survey Report by Scott McNiven and Associates