



# mildura south urban design plan

precinct structure plan

prepared by  
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in association with  
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# 1 introduction

**hansen partnership** has been engaged by Mildura Rural City Council to prepare a Precinct Structure Plan for the Mildura South Growth Area. The study area has been identified for more than a decade as the area which will accommodate the next major stage of Mildura's residential growth. This plan forms one component of a project referred to as the Mildura South Urban Design Plan and is a key document in ensuring that future development within Mildura South occurs in an orderly and sustainable manner. The Mildura South Urban Design Plan comprises two components including:

- A Precinct Structure Plan for the entire study area; and
- A Development Plan for part of the study area already zoned for residential use and currently affected by a Development Plan Overlay (DPO).

The Mildura South Urban Design Plan builds on the *Mildura South Strategic Framework Plan* (MSSFP) that was developed by David Lock and Associates in 2007. That document was prepared to articulate a vision for the sustainable development of the area to ensure that future growth responded to the challenges posed by a rapidly changing society and the imperatives of achieving greater sustainability.

In preparation for the development of the Mildura South Urban Design Plan, a *Context and Framework Plan Review* (2011) was prepared by **hansen partnership** (planning and urban design) in collaboration with Aurecon (traffic and engineering), hillPDA (economics), Capire (social infrastructure) and James Golsworthy (planning). This review comprised an assessment of the local context and existing conditions, and a policy and contextual review of the MSSFP to determine if there had been any changes in the years since 2007 that would need to be considered in the development of the area. The intention of the review was not to 'rewrite' the vision for Mildura South, but to build upon the existing knowledge base of the study area and to reinforce the guiding planning and urban design principals established in the initial framework plan.

In addition to the background review, all relevant stakeholders, including the existing Mildura South community, have been engaged in consultation to confirm the key issues and direction for the Mildura South Urban Design Plan. As such, this Precinct Structure Plan represents an intimate understanding of the study area, the key planning and urban design principles established in the MSSFP, and reflects the views and aspirations of the Mildura South community. Together these attributes have contributed to a plan that will enable the study area to develop in an orderly and

sustainable fashion which will result in a high quality built environment that provides the required facilities and infrastructure to meet the needs of the future community.

This Precinct Structure Plan has been developed in line with the *Precinct Structure Planning Guidelines* (2009) developed by Melbourne's Growth Area Authority. While these guidelines have been developed primarily for a metropolitan context, they are also applicable to regional growth areas such as Mildura South. It is important to consider, however, how they may be applied in a regional rather than metropolitan context and ensure that an appropriate flexibility is maintained.

The plan nominates a hierarchy for the future road network within the study area, identifies where future commercial, community and other infrastructure will be located, outlines how open space and landscaping will be incorporated, and provides an indication for preferred housing densities.

The identified study area for the *Mildura South Precinct Structure Plan* is shown on the following page at Figure 1, along with the area subject to the *Mildura South (Sixteenth and Deakin West) Development Plan*.



*'Mildura South Strategic Framework Plan, David Lock Associates 2007*





# mildura south urban design plan

fig 1  
study area aerial

## legend

- study area
- mildura south (16th and deakin west) development plan



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## 2 project process and consultation

The process of preparing the *Mildura South Precinct Structure Plan* (PSP) has been affected by a number of external factors which have influenced the timing of the PSP development. A summary of the progress of this plan is provided below for context:

Following preparation of the *Context and Framework Plan Review*, a preliminary draft Precinct Structure Plan was prepared and taken to the community and key stakeholders for consultation in 2011.

- Council was simultaneously undertaking a Planning Scheme Amendment process (Amendment C56) to acquire land to facilitate the project referred to as the Mildura South Sporting Facility. As part of this amendment, land was to be acquired within the study area through implementation of a Public Acquisition Overlay.
- Given community response to this PAO process and an upcoming Panel hearing, the preparation of the Precinct Structure Plan was placed on hold until the issue of the location and amount of land required for this facility was determined.
- Following the Panel hearing, Council determined not to pursue Amendment C56 and to undertake further work to determine the appropriate location of required sporting facilities which included:
  - Active recreation needs for the future Mildura South community.
  - An indoor sporting facility that would play a regional role.
  - The potential for the area to accommodate either regional AFL games or the relocation of one of Mildura's football teams who currently share another oval.
- Council also commenced preparation of the *Mildura Housing and Settlement Strategy* which was to provide higher level guidance for how Mildura, including its growth areas, should develop over time. This document was adopted by Council in late 2013.
- In order to ensure residential development in Mildura was not unduly constrained, work was progressed on the *Mildura South (Sixteenth and Deakin West) Development Plan* which affected an area to the north of Deakin Avenue.

- A further three consultation events were held as part of the preparation and finalisation of the *Mildura South (Sixteenth and Deakin West) Development Plan*, which addressed many of the issues relevant to the higher level Precinct Structure Plan.
- The *Mildura South (Sixteenth and deakin West) Development Plan* was adopted by Council for the majority of that land in August 2014, with the exception of the land identified as the location for the Sixteenth and Ontario Activity Centre which was excluded pending finalisation of the Precinct Structure Plan and the associated Planning Scheme Amendment.
- Also in 2013, Council commissioned the *Mildura Recreation Assessment* to consider the optimal strategic location for required sporting facilities. This document was adopted by Council and confirmed the location at the corner of Sixteenth Street and Deakin Avenue for a major active recreation complex. It also confirmed the required land for such as facility on the basis of Growth Area guidelines and identified drainage requirements.
- Following this, the preliminary draft PSP was updated to respond to both the contents of the *Mildura South (Sixteenth and Deakin West) Development Plan*, the *Mildura Housing and Settlement Strategy* and the *Mildura Recreation Assessment*.

Details about steps required to implement the *Mildura South Precinct Structure Plan* are provided in Section 7 which addresses implementation.



### 3 precinct identification and overview

The precinct is critical to Mildura's on-going growth and development and will form the key residential growth area for the short to medium term. While recent strategic work undertaken by Council through the *Mildura Housing and Settlement Strategy* has identified a second growth front, Mildura South remains the key opportunity for growth in short term. Importantly, drainage for this precinct has been considered and planned through a Drainage Plan prepared in 2002 which is reflected in this Precinct Structure Plan. This is particularly critical as a lack of drainage infrastructure is often the cause of significant delays to development in the Mildura context.

The study area is located approximately 4.5km to the south west of the Mildura Central Business District, at the edge of the existing developed urban area. The land is bounded by Riverside Avenue and Sixteenth Street and extends to halfway between Etiwanda and Benetook Avenue to the south east and just short of Seventeenth Street (Calder Fwy) to the south west.

The background research and analysis highlighted the following key issues which will inform the future development of Mildura South. These are detailed in Figure 2.

- The study area is one of the key growth areas of Mildura. The current Mildura 2030 Residential Growth Boundary defines part of the study area boundary.
- The Mildura South Growth Area was identified within the 2007 framework plan as accommodating an additional 8400 people. This was calculated at a residential density of 3.5 lots per acre which translates to an approximate dwelling density of 8 or 9 dwellings per hectare. This density is below that anticipated through the implementation of the PSP.
- The Mildura Airport is located approximately a kilometre to the south-west of the study area. This has implication for the building height controls within the study area, the provision of employment opportunities, and the visual importance of the area as it will provide the 'first glimpse' of Mildura for visitors arriving by air.
- The defining characteristic of the urban structure of the study area is the existing road structure and subdivision patterns which reflect the 'Chaffey' subdivision seen throughout Mildura. This subdivision pattern remains relatively intact in the study area, with 20 parcels of land provided within each urban 'block'. While some of these have been consolidated and some excision of dwellings has occurred, the regularity of the pattern remains.

- The study area is divided down the middle by Deakin Avenue, which is the City's primary boulevard and a key route into the centre of town. It has a wide carriageway and carries a high volume of traffic. While a proposed bypass route may reduce heavy vehicle volumes, Deakin Avenue will remain the key road into the city.
- In addition to the key junction of Deakin Avenue and Seventeenth Street, which is one of the city's key 'gateways', there are a number of other intersections which are either currently 'key', or are likely to become so, in proximity to the study area. This includes the intersection of Deakin and Sixteenth, the intersection of Deakin and Fifteenth (where Mildura Centro is located), and the intersection of Fifteenth and Benetook, which will increase in importance as the bypass develops and provides access to a previously identified future industrial area.
- The proposed heavy vehicle bypass route (along Seventeenth Street and Benetook Avenue) runs below the south-eastern boundary of the study area. The study area itself reflects the impact of this route, with the land immediately adjacent to these roads sitting outside the study area boundary to reflect the need to restrict residential development immediately adjoining this route.
- There are a number of education facilities in close proximity to the study area. Mildura South Primary School, just north of the study area, is currently reported to be at capacity. Irymple Primary School and The Lake Primary School are located to the east and west respectively.
- The study area is also close to Centro Mildura and the associated retail offer the Fifteenth Street precinct. This includes two supermarkets, a Big W and specialist retail, as well as some bulky goods outlets.
- There is an existing residential interface along Sixteenth Street where the study area meets the currently developed urban area of Mildura. The interface between these areas will need to be considered to ensure that there is a sense of cohesion between the two urban areas.
- This potential integration of the two areas is aided by the fact that most of the existing development that runs along Sixteenth Street has to date, been orientated to front that street. However, beyond this 'front row' of dwellings, there is little uniformity in the subdivision pattern.

- The study area also has an interface with existing agricultural uses. The future of the strip of agricultural land between the proposed heavy vehicle bypass and the study area will need to be established, but the interface with these parcels, which are unlikely to accommodate residential uses due to the presence of heavy vehicles will need to be carefully managed to ensure no conflict between land uses.
- A series of linear wetlands are in the process of being developed to the north within the existing Mildura South area. These wetlands will be naturalistic, but also provide BBQ shelters and playgrounds to serve the residents. It is understood the wetland system takes stormwater runoff from as far as Irymple and is a key component of the Mildura South Drainage Plan.
- Preceding Council plans have established the need for a significant regional sporting complex to be established in Mildura's south. The important complex will be established on the south-eastern corner of Sixteenth Street and Deakin Avenue. The position of this complex within the heart of this study area offers great opportunities for residents of the area but means the area will need to acknowledge the role it will play in the regional, as well as local, context.
- The study area immediately adjoins Lake Hawthorn, one of two semi-permanent lakes to the immediate north of Mildura's urban area. The proximity of the area to this important habitat and the impact of urban stormwater drainage on this lake means a high level of care must be taken to ensure that development of the study area does not impact on the environmental health of the lake.
- The precinct is generally considered at 'medium' risk of salinity, with three significant parcels considered at 'high' risk of salinity. The management of salinity in the area will be an important consideration, particularly in relation to the provision of infrastructure.
- The topography is generally quite flat, although there are some minor variations in the landscape, with a higher point to the south between Etiwanda and San Mateo Avenues and a low point to the north adjoining Lake Hawthorn. The urban design of the growth area will need to respond to the topography by generating areas of visual interest within a relatively uniform landscape.

For a more in depth analysis of the study areas existing conditions please refer to the *Context and Framework Plan Review* (2011) at Appendix 1.



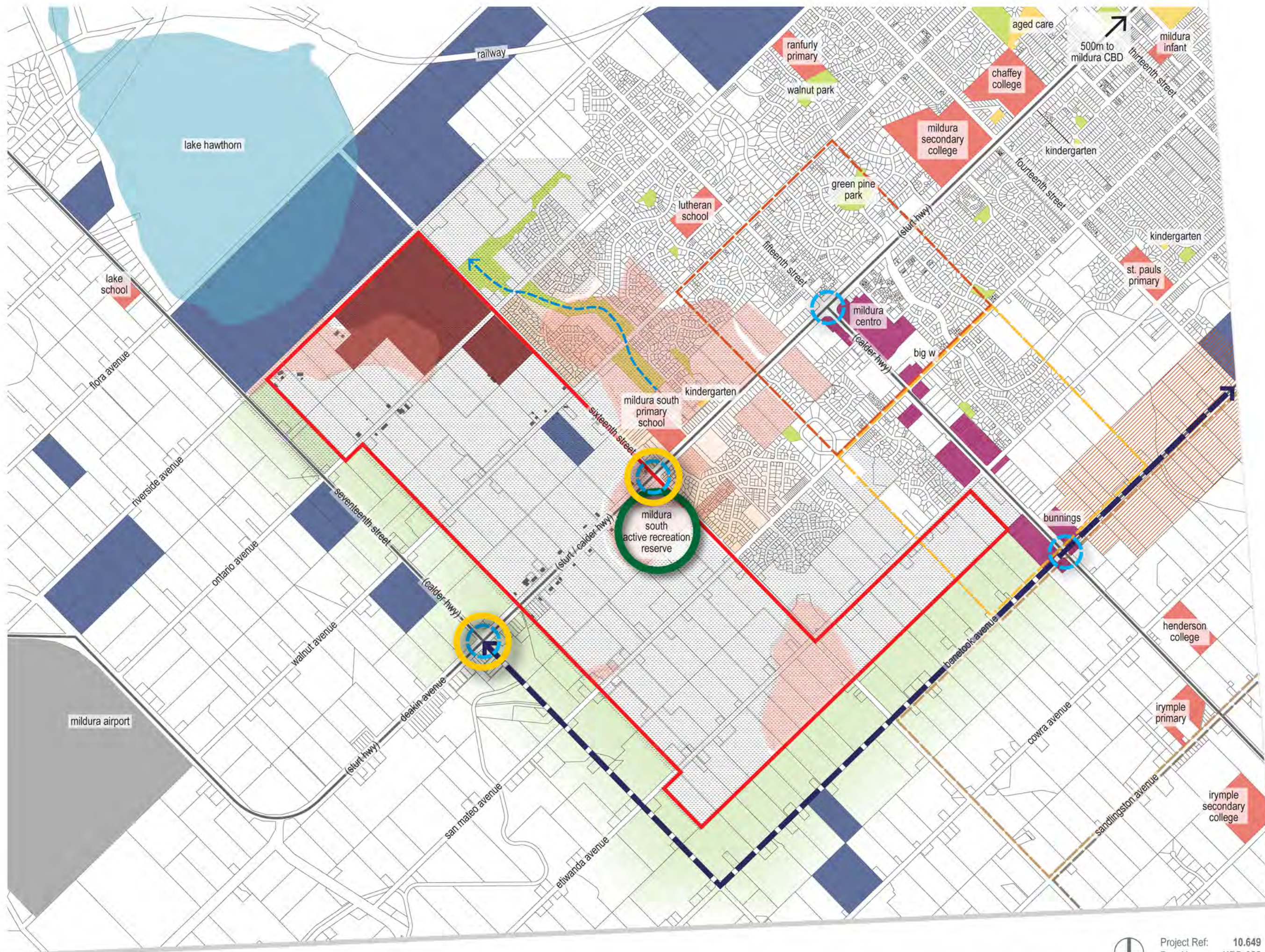
# mildura south urban design plan

fig 2

local context

## legend

- study area
- mildura airport
- water
- linear wetlands
- public open space
- community services / facilities
- mildura south active recreation reserve
- education facilities
- retail
- industrial precinct
- LMW land
- college lease land
- residential interface
- farming interface
- gateways
- key traffic junctions
- vicroads road
- proposed heavy vehicle bypass route
- land in study area effected by salinity: medium risk
- land in study area effected by salinity: high risk
- fifteenth street structure plan
- city gate precinct structure plan
- irymple structure plan
- urban transitional area



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## 4 vision

Reaffirming the underlying objectives of the *Mildura South Strategic Framework Plan* (2007), the future vision for the study area is to create a sustainable and highly liveable urban expansion to the south of Mildura, where all members of the existing and future local community have access to all the facilities, services and amenity that will contribute to their quality of life and allow them to thrive and realise their potential as individuals and as a community.

In order to achieve this vision the Plan is underpinned by the following key directions:

- Develop a road network that is safe, attractive, and well connected to facilitate walking and cycling, whilst ensuring adequate standards of vehicular access.
- Reinforce the role of Deakin Avenue for its civic function, as well as its role as the gateway to the study area and the Mildura city.
- Locate two activity centres within the precinct to meet the needs of the local community, reconciling a wide range of complementary functions, retail and commercial facilities, community, health and civic uses, and recreational and entertainment functions.
- Establish a highly attractive, landscaped linear 'Greenway' along Sixteenth Street that links that both key areas of activity, but also the different sections of the broader Mildura South community as these areas develop.
- Develop a network of open spaces that are safe, attractive, comfortable places that ensure that the future community will have access to a wide range of high quality settings to play, exercise, rest, experience nature and generally support their health.
- Locate higher density housing along Sixteenth Street and around key activity nodes to reinforce the importance of this spine and encourage the use of sustainable transport modes.
- Incorporate principals of Water Sensitive Urban Design into Parkways, the Greenway and open spaces that contributes to the efficient management of stormwater.
- Establish clearly defined and visually interesting gateways that reflect the local context and provide a sense of arrival into the study area, and the Mildura city.

## 5 precinct structure plan

The formation of this Precinct Structure Plan has resulted from key planning and urban design principals established in 2007 through the MSSFP, an assessment and review of the existing conditions and current policy context, and the ideas and concerns expressed in more recent consultation with stakeholders. The following list identifies the key elements that make up the Plan, which together provides a means for achieving the future vision for Mildura South:

- Highly landscaped '**Bush Boulevard**' (Deakin Avenue) which strengthens the avenues civic and functional role within the Mildura and provides an attractive entrance to the city.
- Highly landscaped '**Greenway**' (Sixteenth Street) which will accommodate commercial and community infrastructure, facilitating and encouraging walking and cycling to key destinations.
- Road network which identifies a **hierarchy of roads** which provides safe and legible access through and within the study area. Roads will contain significant landscaping which will contribute to the area's character.
- Two **activity centres** with easy access to the 'Greenway', one at a neighbourhood level located on the Greenway to the north, and another 'convenience' centre close to the proposed school and active recreation reserve.
- **Community services and facilities** which are co-located with the activity centre, regional sporting facilities and the primary school.
- **Primary School** located in close proximity to community services and facilities, local shops, and active and regional sporting facilities.
- Range of housing densities with **higher density housing** focused around the activity centres and along the Sixteenth Street spine.
- A key **Active Recreation Reserve**, incorporating **regional sporting facilities** acting as an anchor point within the study area.
- Network of **public open spaces** providing active and passive recreation opportunities for all members of the community.
- **Stormwater management** incorporated in open space and **Water Sensitive Urban Design** (WSUD) treatments incorporated into 'Parkways'.

- **Gateway features** at the intersection of Deakin Avenue and Seventeenth Street and at Deakin Avenue and Sixteenth Street to provide an attractive gateway to the study area and Mildura City.

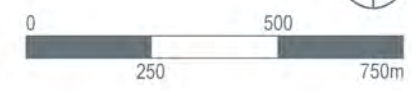
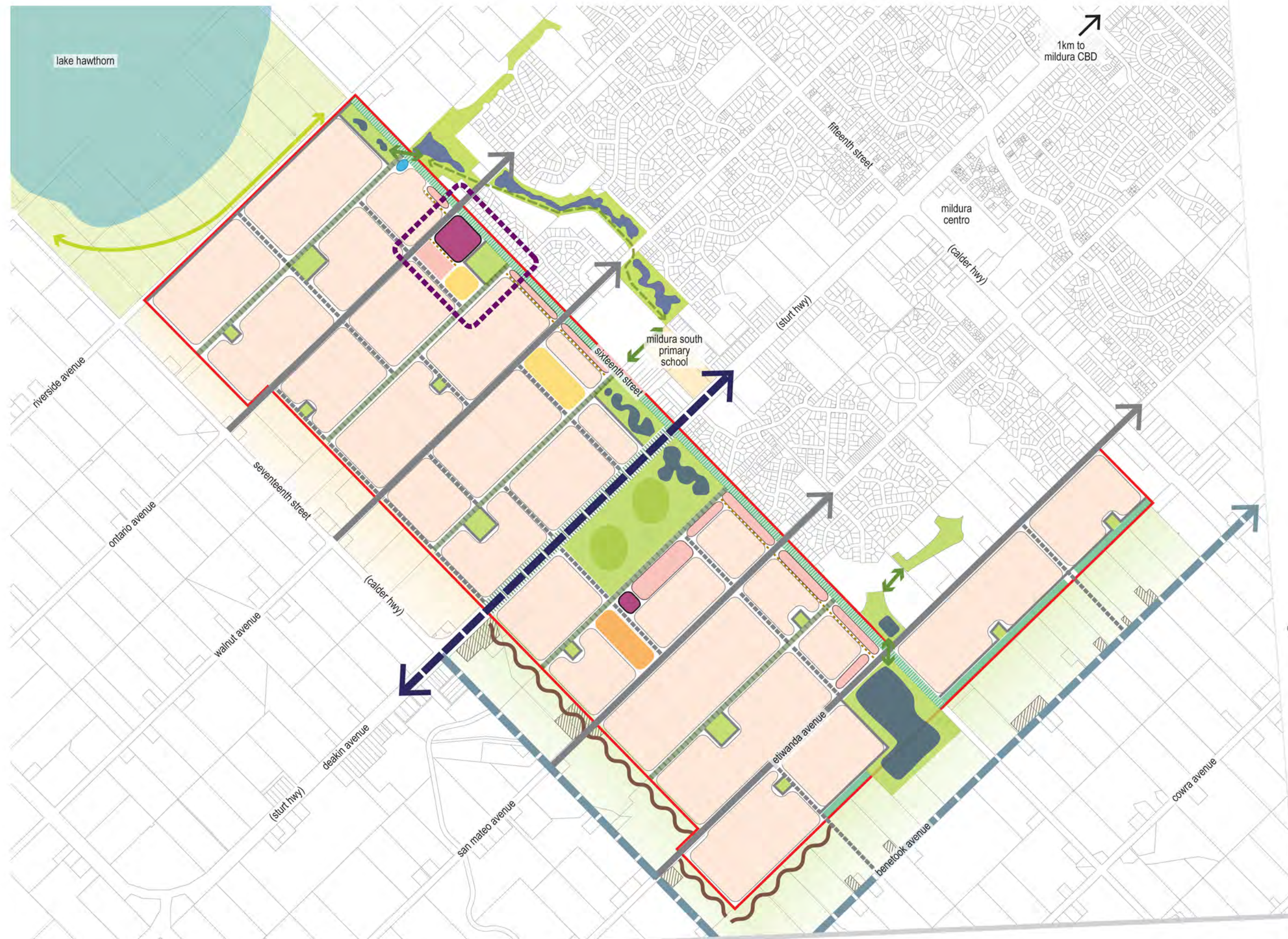


# mildura south urban design plan

fig 3  
precinct structure plan

## legend

- sixteenth and ontario activity centre
- retail and commercial
- higher density residential
- residential development cells
- community uses
- primary school
- public open space
- wetlands / retention basin
- utility area
- future low density residential land
- future non-residential uses along heavy vehicle bypass
- existing dwellings
- existing open space
- pedestrian connection
- new potential open space connection
- potential long term connection around lake hawthorn
- linear park
- appropriate interface treatment between residential and non-residential land uses
- deakin avenue boulevard
- sixteenth street greenway
- proposed heavy vehicle bypass
- access avenues
- parkways
- secondary roads
- edge roads
- rear access lane



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## 6 precinct elements

### element 1: traffic and access

Access into, and connectivity within, the study area should be safe and legible, with well defined routes for vehicles, cyclists and pedestrians. A network of roads seeks to reinforce the existing grid layout which defines the structure of the exiting urban north of the subject site. The detailed characteristics of these roads can be found in the adopted *Mildura South (Sixteenth and Deakin West) Development Plan*. One key difference from the existing framework plan is that this plan does not specify a requirement for north-south aligned streets. While it is acknowledged that, within a metropolitan context, this is desirable, the local climatic conditions within Mildura mean the energy efficiency gains from this orientation are generally reduced. As such the impetus to ‘force’ this alignment on the existing 45° angle of lots is reduced. The proposed road hierarchy includes:

- Bush Boulevard (Deakin Avenue);
- Greenway (Sixteenth Street);
- Access Avenues;
- Parkways;
- Secondary (connector) Roads;
- Edge roads; and
- Local roads.

Appendix 2 contains proposed cross sections associated with each of these elements of the road hierarchy.

#### bush boulevard (deakin avenue)

The Bush Boulevard treatment will act as the city gateway feature and define the threshold point between the rural area and City of Mildura. Within a 60m road reserve it will be capable of accommodating a bus route, pedestrian and cycle paths on both sides, and the establishment of significant landscaping which will create the ‘bush landscape’ setting. This is an adoption of the preferred option outlined in the MSSFP. Currently the formal Deakin Avenue landscape treatment and road alignment end abruptly at Fifteenth Street but as the urban area expands, this treatment should be continued to a defined city ‘edge’. The Bush Boulevard landscape and road alignment treatment will ensure that Deakin Avenue maintains its civic role within Mildura as well as providing an attractive interface to development within the study area.

#### the greenway (sixteenth street)

The Greenway is to form a high quality landscape corridor which will facilitate and encourage walking and cycling to occur along this key spine of the Mildura South area, linking the major trip generators that are to be located along this route. This linkage will help promote the use of walking and cycling to access services which will help to reduce to overall reliance on the motor car that is typical across Mildura. Within a 30m road reserve it will be capable of accommodating a bus route if required, and includes both a generous pedestrian path and a separated bike lane on the southern side of the road. Like the Bush Boulevard, significant landscaping will be established to provide shade and shelter for paths to facilitate a safe and comfortable walking and cycling environment. The focus on landscaping along this corridor, which will also include an iconic feature such as a dry river bed swale will also play a significant role in establishing the neighbourhood character of the precinct.

#### access avenues

Avenue treatments will be applied to the existing Avenues of Riverside, Ontario, Walnut, San Mateo and Etiwanda. Each of the Avenues will carry bus routes and will be the main vehicular access routes into the study area as they are connect to the existing road network within the urban area to the north and to Seventeenth Street to the south. Within a 30m road reserve they accommodate a two way carriageway with parallel parking, as well as indented bus bays set within an approximately 7m landscaped verge. The focus of these Avenues will be in vehicular, rather than pedestrian or cyclist movement

#### parkways

Parkways primarily run down the ‘back of blocks’ between the existing Avenues and play a key role in facilitating active transport (walking and cycling) through the precinct but also serve as informal linear parks. Wide verges allow for significant vegetation to be established along the Parkways, which as with the other major roads, will make a strong contribution to the areas ‘landscaped’ character. Parkways comprise a 35m road reserve and can be developed in a staged process. The key elements are a significant landscape treatment along the central median with a single width carriageway in each direction, as well as a separated bike lane and pedestrian path. This keeps the focus on the landscape treatment of these roads, rather than the roadway. This character is further strengthened because the actual

road pavement is approximately a third of the road reserve which will ensure the road does not dominate.

#### secondary roads

The northwest-southeast roads shown on the plan in the area will be Secondary Roads. Primarily they will provide connectivity between the Avenues. These roads have been carefully aligned to discourage ‘rat-running’ through the study area. These roads must be wide enough to accommodate bus movement, as well as cycle paths.

#### edge roads

Edge roads provide the ‘edges’ to open space. They will ensure the open spaces are safe, overlooked, and will facilitate walking, cycling and local vehicular access. They provide a well landscaped edge between open space and residential development, allowing views from adjacent residences which will provide passive surveillance.

#### local roads

The local road network is not identified as part of this PSP. The principles for the development of local roads should be confirmed through a Development Plan and specified through individual subdivision plans. These roads should be of generous widths to ensure access and landscaping do not conflict. Connections between adjoining 10 acre lots be sought wherever possible during the subdivision process and a minimum of at least one connection to adjoining residential areas provided. They should also include landscaping to provide a continuity with the rest of the road hierarchy.

#### key junctions

Intersections treatments are required at key road crossings within the study area to ensure the safe and efficient flow of movement. The intersection of Deakin and Sixteenth will be a key junction of activity both inside and outside the study area boundary and will require an intersection that is signalised, particularly as the Mildura South Recreation Reserve is established. Other key junctions have been identified where it is considered further assessment of the traffic volumes and patterns will be needed to determine appropriate treatments.



#### key pedestrian crossings

Deakin Avenue has been identified as a potential barrier to walking and cycling as it dissects the study area and carries significant through and local traffic. The 'Greenway' proposed will run continuously along Sixteenth Street and will also be bisected by Deakin Avenue. It is vital to the integrity of the 'greenway' that a high quality, prompt and direct signalised crossing facility is provided at the intersection of Deakin and Sixteenth. Furthermore, additional pedestrian crossings will need to be provided at key points between community facilities and activity centres, as well as between the primary school and active recreation reserve.

#### bus routes

Bus routes should run down each of the Avenues and along the Greenway to provide easy access within the study area as well as to the broader surrounding Mildura area, including the Mildura CBD and Mildura Airport. Potential east-west connections have been accommodated along Secondary Roads, ensuring opportunities for permeability of public transport through new suburbs. Locating routes along these access routes will ensure that the Plan meets the *Precinct Structure Planning Guidelines* which suggest the provision of a bus stop within 400m of residential dwellings. Bus stops should be located in suitable locations and where they are safe and legible.

#### pedestrian and cycle paths

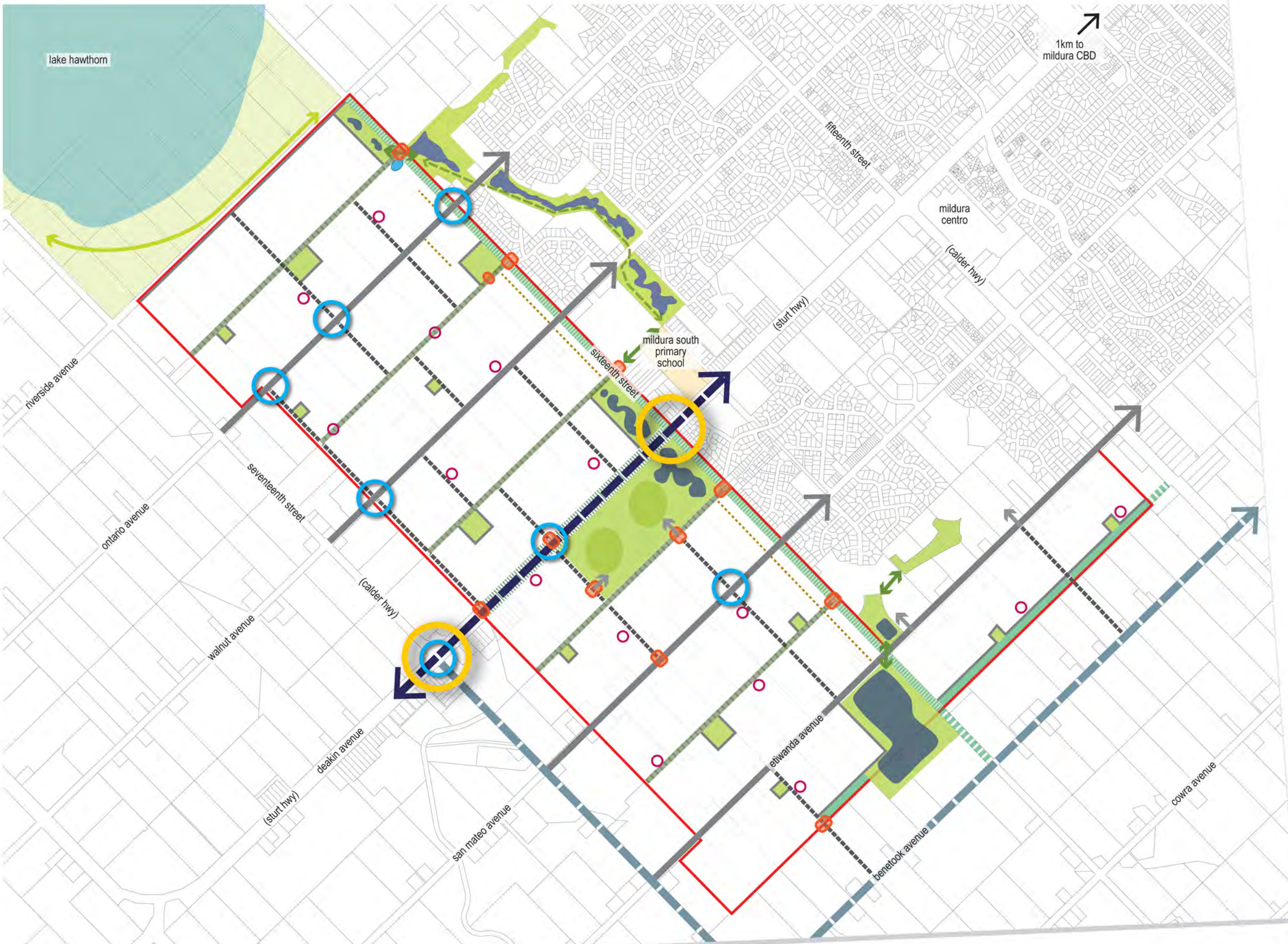
A network of pedestrian and cycle paths will be incorporated along the 'Bush Boulevard', 'Greenway' and Parkways to provide an extensive network of separated shared routes within the study area. The paths will be adjacent to landscaping which will provide a safe and attractive spaces, as well as providing much needed shade in a Mildura context. They will provide easy connections to key destinations within the study area, which will encourage localised walking and cycling. Connections to established areas of open space outside the study area and to other tracks and trails is encouraged.

#### gateways

The intersection of Deakin Avenue and Seventeenth Street is a key junction within Mildura as it demarcates the entrance into Mildura's urban area from the airport and from the Calder Freeway. This intersection will provide a primary gateway which will act as a gateway in the study area from the south as well as gateway into

Mildura. The gateway at the intersection of Deakin Avenue and Sixteenth Street will form the secondary gateway that will distinguish the study area from the existing urban development in Mildura South. The proposed gateways do not suggest as 'enclosed' community but clearly identify key entrance and departure points to the new development area. Gateway treatments should be of a scale that relates to both motorists and pedestrians. Where possible, they should also integrate artwork and landscaping, including reference to the areas current 'vineyard' character. The Sixteenth Street gateway should respond to the wetland / drainage / park uses which will be occurring on both sides of deakin Avenue in this location.





# mildura south urban design plan

fig 4  
access and movement  
legend

- proposed heavy vehicle bypass route
- deakin avenue boulevard
- sixteenth street greenway
- access avenues
- parkways
- secondary roads
- edge road
- rear access lane
- gateway features
- intersection treatments
- existing open space pedestrian connection
- new open space connection
- potential long term connection to lake hawthorn
- future access point
- safe pedestrian crossings
- pause places
- public open space
- linear park
- potential future greenway



## element 2: open space

To meet the open space standards outlined in the *Precinct Structure Planning Guidelines*, development of the study area will incorporate a network of high quality public open space that will be located within 400m of the majority of residential areas. This network will provide a variety of spaces which will accommodate both passive and active recreation, as well as facilitate efficient stormwater management. These must be attractive spaces that become focal points for the community and assist in meeting their social and recreational needs. The anticipated characteristics of these spaces can be found in the MSSFP and the more recent *Mildura South (Sixteenth and Deakin West) Development Plan*. The proposed public open space hierarchy includes:

- Mildura South Active Recreation Reserve (including a regional indoor sporting facility);
- Neighbourhood village green;
- Secondary village greens;
- Local open space;
- Linear open space; and
- Stormwater retention spaces.

### active recreation reserve (including regional indoor sporting facilities)

A major new active recreation reserve will be developed at the intersection of Sixteenth Street and Deakin Avenue. This recreation reserve will provide for the active recreational needs of new residents in the PSP area. However, it will also play an important role at a regional level by accommodating a multi-use indoor sporting facility. In addition, a portion of the site to the north accommodates a drainage basin which is also a fundamental part of the Mildura South Drainage Plan. This basin has been designed to ensure it can be integrated with passive open space opportunities for the Mildura South community. Passive recreation opportunities should also be accommodated in the southern portion of the site.

### neighbourhood village green

The neighbourhood village green will provide a social focus for the community. It will form a high quality open space surrounded by appropriate built form to evoke a 'village green' character. The village green is located along the 'Greenway' and is incorporated into the Sixteenth and Ontario neighbourhood activity centre. This village green will provide passive recreational amenity and incorporate social

infrastructure such as an amphitheatre or market space, barbeque area, play equipment, shelter, seating, tables and a community notice board. Medium density housing or commercial uses should front this high quality landscaped public open space. It will form a key focal point for the community and allow for gatherings and events that bring the community together such as Christmas Carols and markets.

### local village greens

The local 'village greens' provide other neighbourhood focal points within the new residential areas. Instead of being edged by an activity centre they are surrounded by housing. Village greens are located on Parkways to provide high visibility and well connected active transport routes to them from within the study area. There are three proposed local village greens, two within the northern portion of the PSP area and one south of Deakin Avenue. Higher order recreation facilities are expected in these village greens in comparison to local open space (i.e. half courts, exercise circuits or a skate bowl).

### local open space

Local open space is to be dispersed throughout the area, and to meet *Precinct Structure Planning Guideline* requirements, should be within 400m safe walking distance from the majority of dwellings. Local open space is located 'mid block' and not along identified Access Avenues to ensure they are shielded from a high traffic volumes. As with local 'village greens', edge roads are provided to ensure passive surveillance and building frontages.

### linear open space

In addition to the more traditional 'parks', within the study area there is a 'linear park' which runs up part of the south-eastern study area boundary. Together with the Parkways which are outlined in the previous section, this linear open space provides opportunities for both active transport choices, but also provides connective areas of attractive space within new urban areas to facilitate incidental social activity such as dog-walking.

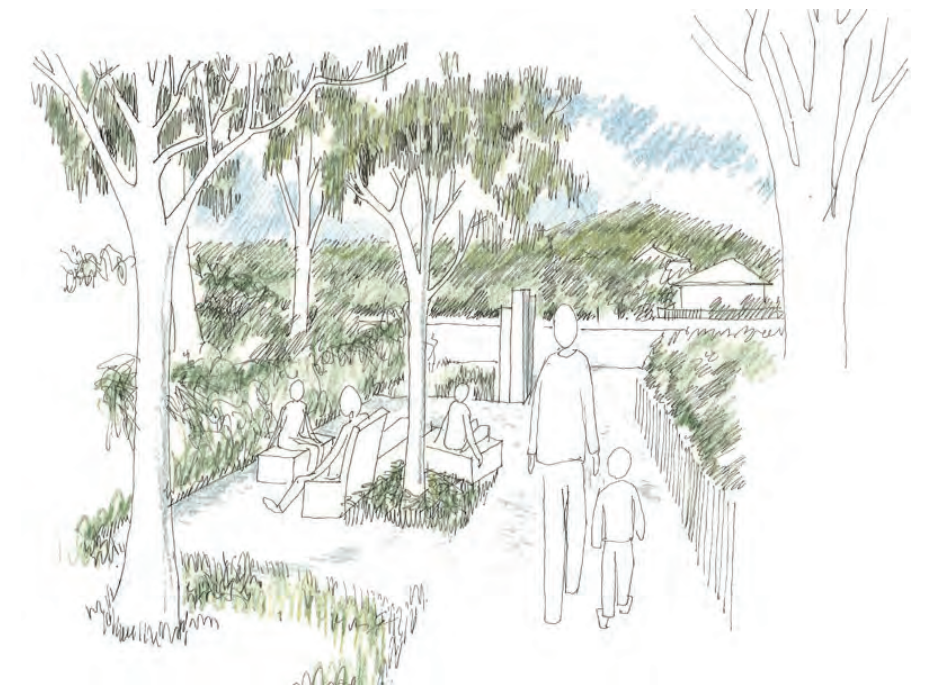
### stormwater management areas

In addition to the stormwater retention basins identified through the Mildura South Drainage Plan, an additional retention basin has been shown at the intersection of Sixteenth and Riverside Avenue to provide a continuity and visual connection to the existing linear wetlands to the north. While this is not a technical requirement as part of the drainage strategy for the area, connecting this additional wetland to the

existing system will provide both better design outcomes and a 'safety net' for the existing system. This area of open space could eventually be extended down to the shores of Lake Hawthorn. Stormwater management areas will provide an aesthetic and ecologically responsible way of dealing with drainage. Swale treatments will also be a key feature along the Boulevards. They will help carry stormwater through the study area to the retention basins and linear wetlands in the existing Mildura South area.

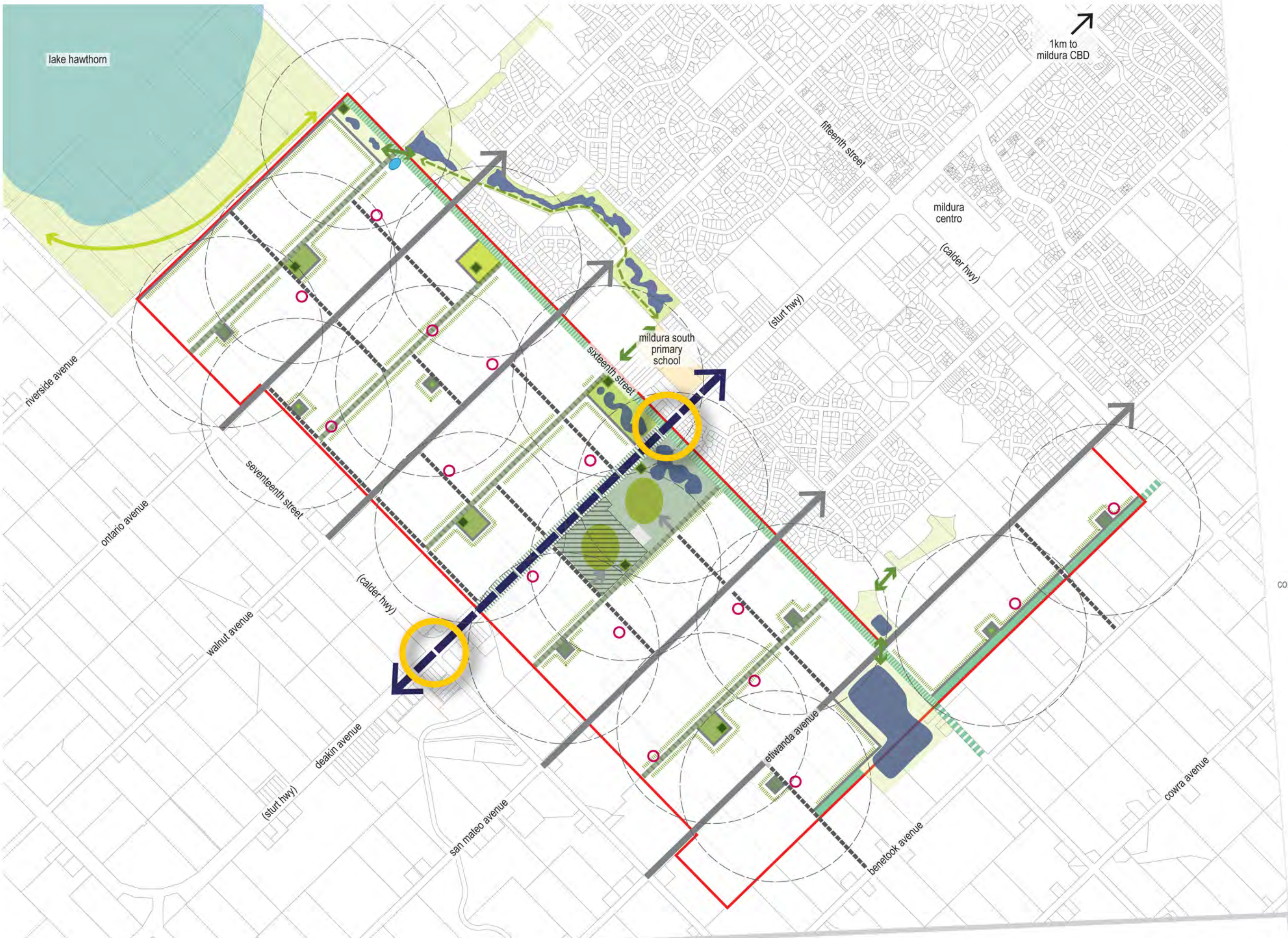
### pause places

Pause places are located along roads which provide connections across the study area and provide places to rest and relax. They are primarily located between key destinations such as the activity centres, community facilities, and larger open space. The pause places will allow walkers to 'pause' on their trips, which is particularly important as the population ages. Seating should be provided under a shade tree and seek to facilitate people sitting either individually or in small groups, as identified in the MSSFP.



'Pause Place': MSSFP, David Lock Associates 2007

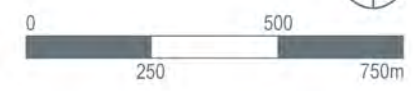




**mildura south  
urban design plan**

fig 5  
open space

- legend**
- 400m distance from open space
  - active recreation reserve stage 1
  - active recreation reserve stage 2
  - neighbourhood village green
  - local village green
  - local open space
  - other open space
  - linear park
  - wetlands / retention basin
  - utility area
  - existing open space
  - pedestrian connection
  - new potential open space connection
  - potential long term connection around lake hawthorn
  - development to respond to park edge
  - proposed playground
  - potential play equipment
  - gateway features
  - pause places
  - deakin avenue boulevard
  - sixteenth street greenway
  - potential future greenway
  - parkways



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### element 3: built form and land use

As part of the *Context and Framework Plan Review* which formed the background to this PSP, the question of how many residents were anticipated to live in the area was revised in light of the policy changes encouraging more efficient use of urban land and the previous indication that a density of 8-9 dwellings per hectare could be achieved. However, given the flexibility being provided in terms of densities within this precinct, the existing predication of a new resident population in the order of 9,000 new residents has been adopted. This will need to be reassessed as later stages of the precinct are subject to the preparation of Development Plans. While not directly relevant, it is also noted that there have been very few services and facilities provided as part of the earlier stages of Mildura South and in Cabarita and it is anticipated many of these existing residents will also access any services or facilities provided within this new Growth Area.

#### activity centres

Activity centres perform a range of functions and essentially serve as focal points for new communities, and while they perform a range of functions they are often anchored by their retail offer. The study area will comprise two activity centres that will provide the future community with retail and commercial services to meet their daily and some weekly needs. The proximity to Centro Mildura is likely to provide for retail needs of future residents beyond this. While the MSSFP identified two very small centres both located along the Sixteenth Street Greenway, further analysis and changes that have occurred since the preparation of that document have led to divergence from that approach.

Hill PDA's modelling as part of the *Context and Framework Plan Review* indicated the Mildura South Precinct could sustain up to 9,000sqm of shop front floorspace by 2031. Of this 8,000sqm is associated with retail. In spatial terms, in addition to the retail floorspace, the PSP needs to consider community uses which may be located in or proximate to the activity centres, higher density housing, and ancillary land uses such as car parking which are associated with retail areas.

*neighbourhood activity centre*: broadly following the MSSFP, the larger activity centre is located north of the intersection of Deakin Avenue and Sixteenth Street. It continues the idea of the activity wrapping around 'village green'. This centre will accommodate a supermarket in the longer term as well as convenience retailing, food and drink premises and personal services. This centre therefore comprises an area of approximately 2ha identified for 'retail' uses as well as associated car

parking, landscaping and some non-retail uses, the 2ha 'village green' addressed in the previous section, an area of 2ha for nominal community uses such as a medical centre, kindergarten and an area of approximately 2ha specified for higher density housing. The exact areas required for these uses will need to be determined through a masterplanning process. In relation to required retail floorspace, given 4,000sqm of supermarket or grocery store floorspace would be demanded by 2031 (based on a catchment of 9,000 people) a supermarket of 2,500sqm to 3,000sqm would be supportable in the shorter term. The supermarket could open around 2 years ahead of achieving industry target turnover levels so as to meet residents' needs for services in advance. This would still allow expenditure to escape the Precinct to other supermarkets (e.g. Mildura Centro). In addition to the 4,000sqm supermarket floorspace in this area, an additional 3,000sqm of retail shopfront and 1,000sqm of non-retail shopfront have been identified for this neighbourhood activity centre.

Locating this larger centre with easy access to the Greenway adds to the liveability and vibrancy of the Greenway and supports its role in encouraging active transport within the study area. It is also critical the centre is located on one of the key Access Avenues to ensure access from the broader Mildura area. Locating along Sixteenth Street will mean the activity centre will also service the existing Mildura South urban area.

*local activity centre*: a smaller local convenience centre will be provided close to the primary school and sporting facilities. This centre is not anticipated to support a supermarket. While the *Precinct Structure Planning Guidelines* (2009) suggest residential dwellings should be located within 1km of a supermarket, it is not considered this needs to be strictly applied due to the regional context and close proximity of Mildura Centro. Instead an area of approximately 0.5ha has been identified for retail uses. This is anticipated to accommodate 1500sqm of retail and 500sqm of non-retail shopfront development. No additional land has been identified for community uses given the retail centre is co-located with both the Primary School and the Active Recreation Reserve and associated indoor sporting facility. It is the co-location with these two important land uses which has led to this smaller centre being located off the Sixteenth Street Greenway as proposed in the MSSFP. The exact composition of this smaller centre should be confirmed through any Development Plan process.

#### community services / facilities

Community facilities are shown as being provided in conjunction with the larger activity centre. While it is anticipated additional community facilities may be needed

in later stages of the precincts development, these are likely to be integrated with either the identified Primary School, or with the proposed Active Recreation Reserve and indoor sporting facility.

#### primary school

The location of the Primary School as identified is one of the few sites within the precinct which meets all requirements for such a use. One of the critical elements for a Primary School is access, and the location of the school adjoining an Access Avenue, Parkway and Secondary Road which provides a connection to the northern portion of the study area ensures that a range of access requirements are facilitated. It is also noted that the Department of Education requested a location on San Mateo Avenue, and a separation from the existing Mildura South Primary School. In planning for the precinct more broadly, it was considered co-location with the Active Recreation Reserve and associated regional sporting facilities was also critical and allows the school to make use of the high quality sporting facilities to be provided. As preferred by the Department of Education, the site identified is rectangular in shape with three street frontages, and includes enough land to accommodate car parking on-site.

#### aged care facilities

To respond to demographic changes and meet the needs of Mildura's aging population the study area should provide aged care facilities. While the location shown on the Plan is indicative, it is considered an excellent use for the parcel of college lease land. The location close to the neighbourhood activity centre and village green provides maximum amenity to future residents and allows them easy access to a high quality open space and all of their personal needs as well as opportunities to socialise within their local community. The area also has the capacity to accommodate retirement facilities as needed. It should also be noted that other residential areas within the precinct can also accommodate aged care or retirement living developments (see further discussion below under medium density housing).

#### active recreation reserve and regional sporting facilities

In line with the *Precinct Structure Planning Guidelines*, a generous area has also been identified to provide for the active recreation needs of the future Mildura South community (see *Mildura Recreation Assessment* for further details). The exact composition of recreation activities to be included on this site should be determined through any masterplanning process. The site in question has also been identified as



accommodating an indoor sporting facility that will play a regional role, and will also play an important function as part of the identified Drainage Plan for this precinct. It is understood that the indoor facility is likely to include some multi-use rooms which will be available for the Mildura South residents to utilise. In addition to the active recreation uses, it is also important that this reserve incorporates passive recreation opportunities to both the north and south.

#### residential development

To ensure development of the study area results in a sustainable built environment, residential development within the study area should meet the *Precinct Structure Planning Guidelines* requirements of an average of 15 dwellings per residential hectare across the study area. This does not mean this density will need to occur everywhere, but that there will need to be a range of lot sizes across the entire study area which provides an average of 15 dwellings per/ha. A new model for the provision of this lot diversity was developed as part of the *Mildura Housing and Settlement Strategy*. This seeks to identify percentages of development areas which need to be provided at a higher and lower density equating to 25% of net developable area, while leaving lot sizes for the remainder of any subdivision to the discretion of the developer. This ensures a diversity of lot sizes throughout the precinct, noting some locational criteria which would apply to higher density areas (discussed further below). The design of each urban block should always be configured with a sensible 'back to back' relationship and enable new buildings to provide frontage towards streets, open spaces and important pedestrian links.

#### higher density residential

The areas specifically identified for higher density residential development are accommodated primarily along the Sixteenth Street spine, where they will present a strong urban street edge which will define this road corridor as the anchoring axis for the urban structure of the study area. The intention behind designating these areas for higher density development is to allow the maximum number of people to live as near as possible to this high amenity corridor and be within easier walking and cycling distance of the facilities and services they require on a day-to-day basis. In addition, an area for higher density housing has been identified in the designated neighbourhood activity centre. This will also ensure that a higher percentage of the future residents will be as close and possible to the rest of Mildura and its existing facilities and services. The other areas specifically identified for higher density housing are those immediately adjoining the Active Recreation Reserve and the large drainage basin at the intersection of Sixteenth Street and Etiwanda Avenue.

Medium density housing to be provided within the broader residential areas should be located adjoining major roads, areas of non-residential activity such as the school or open space.

#### street edge interfaces

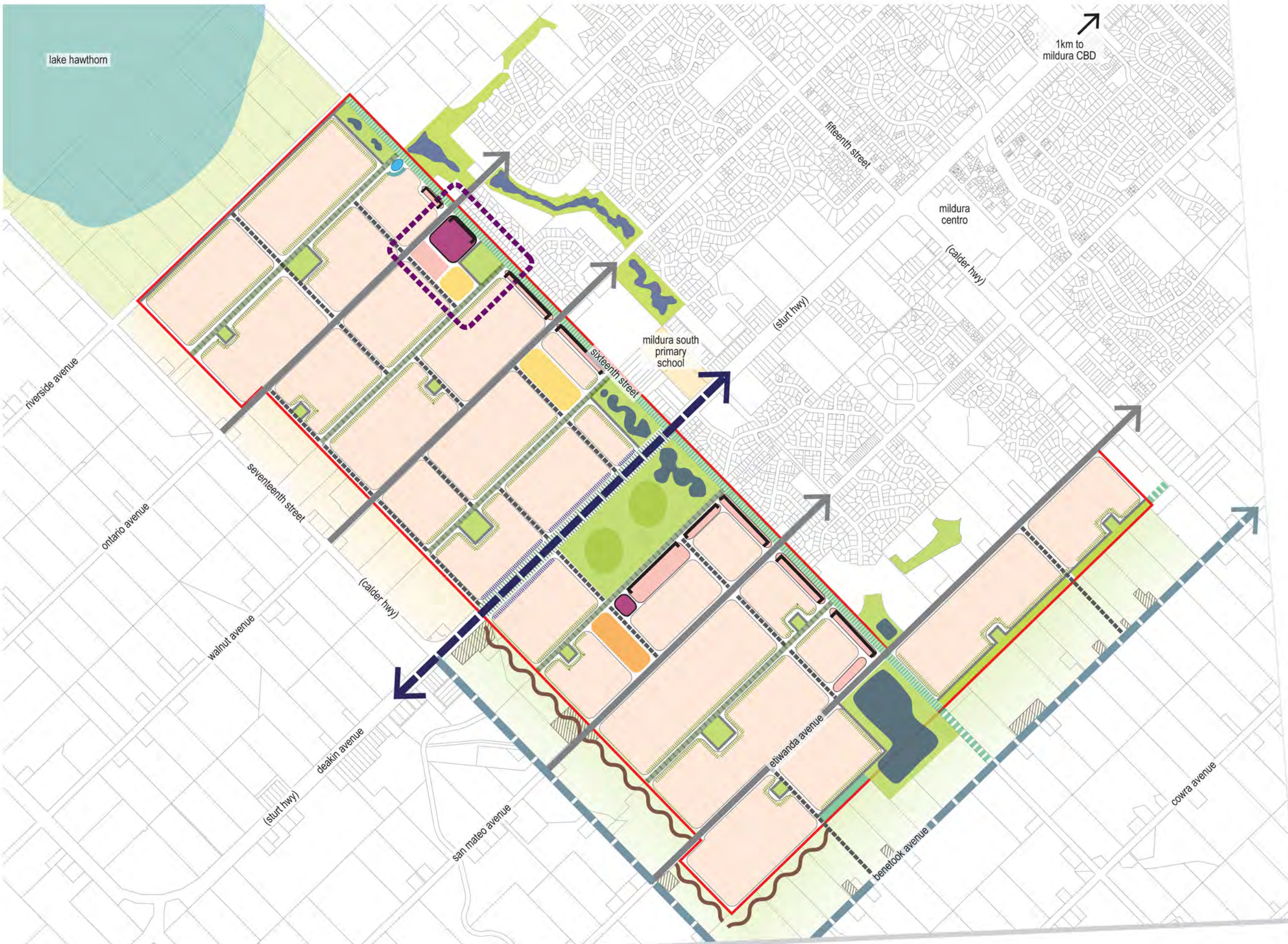
Across the PSP area, there are two specific types of interface treatments identified within the PSP. These areas require a particular built form response to ensure an appropriate interface to key areas of the precinct. The first of these is along Deakin Avenue where a built form response to this key civic spine should recognise the greater scale which may be accommodated given the width of the road reserve, but also the need for high quality built form to be provided and visual clutter through signage etc to be minimised. Secondly, within the precinct a number of areas have been identified where a specific built form response will be needed as the result of an interface with an area of public open space or the identified Parkways. At these interfaces, matters such as passive surveillance, landscapes and design detailing will be of greater importance than other areas within the precinct. In addition, residential areas immediately adjoining an existing Lower Murray Water utility area on Sixteenth Street will need to ensure an appropriate separation and built form response to this facility.

#### land use interfaces

*Low density residential:* The *Mildura Housing and Settlement Strategy* identified that, in the longer term, land between the PSP study area and Seventeenth Street is likely to develop with low density housing, forming the urban edge of Mildura. The PSP has identified a road frontage separating these two areas.

*Non-residential activity along the proposed heavy vehicle bypass route:* Land in the remaining areas between the PSP study area and Seventeenth Street and Benetook Avenue do not currently have an identified future land use. However, given the identification of the heavy vehicle bypass route, land uses in this area will not be residential. Until such time as the use of this land has been determined it is not appropriate to specify a treatment. However, along part of the southern interface a linear park has been identified. This provides a linear green corridor in this area (similar to the Parkways established through the remainder of the precinct). It also provides some greater flexibility in terms of the land uses which may be provided along Benetook Avenue given the depth of the lots fronting this roadway and issues that have arisen previously in the development of lots further to the north along Benetook Avenue.





# mildura south urban design plan

fig 6  
built form and land use

## legend

- sixteenth and ontario avenue activity centre
- retail and commercial
- higher density residential
- residential development cells
- community uses
- primary school
- public open space
- wetlands / retention basin
- utility area
- future low density residential zone land
- future non-residential uses along benetook bypass
- existing residential uses
- utility area interface treatment
- robust urban street edge
- boulevard built form and siting response
- park edge built form and siting response
- appropriate interface treatment between residential and non-residential land uses
- deakin avenue boulevard
- sixteenth street greenway
- potential future greenway
- parkways



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## 7 implementation

### zoning of land

Given a significant portion of land within the study area expected to develop in the shorter term has already been rezoned to the General Residential Zone (GRZ), only minor rezoning of land is proposed as part of the implementation of the *Mildura South Precinct Structure Plan*. It should be noted that consideration was given to the use of the Urban Growth Zone to the remaining land within the study area (currently in the Farming Zone). This was ultimately not pursued due to a number of factors including:

- The timeframes associated with development of the remaining areas of the precinct are unknown at this point in time and will need to be considered in conjunction with development of the Mildura East Growth Area identified through the *Mildura Housing and Settlement Strategy*. As such, it is considered the land is better retained within the Farming Zone to ensure unrealistic expectations are not generated.
- There is a need for consistency in policy direction for this area and the Mildura East Growth Area. These areas are proposed for acknowledgement through changes to existing policy and to the Mildura Older Irrigated Areas Incorporated Document which will provide a similar function to any application of the Urban Growth Zone. Under proposed changes, a dwelling will be allowed on existing lots within Farming zoned parts of the Mildura South Growth Area, subject to siting controls intended to ensure that this does not compromise the long term urban growth of the area.

Therefore land within the study area proposed for residential development and not currently zoned will remain in the Farming Zone until such time as land supply analysis supports additional rezoning of land.

There are two areas in the precinct identified for non-residential uses which are proposed for rezoning. These are as follows:

- Three lots at the corner of Sixteenth Street and Deakin Avenue currently owned by Council and proposed for development as the Mildura South Active Recreation Reserve (stage 1) are to be rezoned to Public Parks and Recreation Zone.

- The three lots at the corner of Sixteenth Street and Ontario Avenue (2 currently zoned General Residential Zone and one zoned Public Use Zone) should be rezoned to the Urban Growth Zone. This allows for applied zones to be identified and the preparation of a masterplan / urban design framework for this important activity centre to be implemented through the Mildura Planning Scheme. This is critical in ensuring this land is not developed for residential purposes and also in ensuring that the zoning of the land is not contrary to the contents of the *Mildura South (Sixteenth and Deakin West) Development Plan* and the Precinct Structure Plan.

At such time as it is determined that additional land is required in Mildura South to meet housing demand, rezoning of the remaining land from the Farming Zone should be undertaken. In regard to the land in the north-west portion of the study area, this land could be rezoned to General Residential Zone following resolution of any drainage management.

Land to the south of Deakin Avenue should have a Development Plan Overlay applied to the land in advance of any rezoning to allow for more detailed planning of the land to be undertaken and the appropriate zones to be identified. This is particularly important given the need for the Development Plan process for this area to test and refine the contents of the PSP given the potential for changes in policy direction or strategic context which may occur in the intervening years.

### inclusion in the planning scheme

In addition to the identified rezoning of land, minor adjustments to the Mildura Planning Scheme are also proposed to include reference to this document within the scheme. In particular this would affect Clauses 21.04 and 21.10.

### development contributions

The Mildura South Growth Area is affected by a current Development Contributions Plan Overlay. The *Mildura South Development Contributions Plan* was prepared in 2005 on the basis of a number of high level documents dated from 1991 to 2005, many of which have been superseded by subsequent plans and strategies. Council has determined to proceed with the existing 2005 *Mildura South Development Contributions Plan* in funding for development of the area affected by the Mildura South Development Plan however, given this document is based on outdated reports and does not accurately reflect the extent of infrastructure that will need to be provided to facilitate growth within Mildura South, a review of how it applies to the remainder of the land within the Mildura South Growth Area is needed. It was noted through the *Mildura Housing and Settlement Strategy* that there are a number of issues associated with this existing DCP which will need to be considered and resolved more broadly through an identified working group.

### further work

There are also a number of other key projects or actions that will need to be undertaken by Council or others in order to facilitate the development of this important Growth Area. These include:

- **The preparation of a masterplan / urban design framework for the Ontario and Sixteenth Activity Centre.** In order for development of this key area to proceed, a more detailed planning exercise needs to be undertaken to confirm the preferred structure and design of the centre in terms of the retail component, in particular its relationship to proposed community and recreation uses. In addition the exact amount of land required for community uses needs to be confirmed in conjunction with Council community planners, and a design for the proposed village green documented to underpin the acquisition of land for public use and subsequent rezoning. It will also allow for consideration of the use of the Residential Growth Zone or Mixed Use Zone in remaining areas of the activity centre based on consideration of the appropriate design outcomes for the centre. It is recommended that this process be led by Council, rather than any private landowner/s.



- **The preparation of a streetscape masterplan for the Sixteenth Street Greenway.** This masterplan is the second high priority project in implementing the *Mildura South Precinct Structure Plan*. Given the critical role that this street plays in connecting the existing and future parts of Mildura South Growth Area and the identified role that landscaping along this street should play in defining the identity and character of Mildura South, planning for this early is important in ensuring direction can be provided for early subdivisions. Part of the role of this streetscape masterplan will be to establish a palette of materials and finishes, as well as street furniture and suitable plant species to guide proposed landscaping for Mildura South subdivisions.
- **Confirmation of land required for drainage and acquisition of this land.** Areas required to implement appropriate drainage in Mildura South have been identified since the early 2000s, however, much of this land has not yet been acquired by Council. It will be important that the design of these areas is considered in order to ensure appropriate land areas are identified, and that a strategy is in place to ensure the acquisition of this land in a timely fashion to facilitate drainage as the area develops. A priority will be area identified within the *Mildura South (Sixteenth and Deakin West) Development Plan* area such as the lot at the intersection of Sixteenth Street and Deakin Avenue still in private ownership.
- **Liaise and work with VicRoads regarding the development of Deakin Avenue and the Benetook Avenue heavy vehicle bypass.** The implementation of the adopted Deakin Avenue Masterplan and the Benetook Avenue bypass are both significant road projects, and given the roads are both Category 1 Road, they are under the control of VicRoads. In light of the scale of both these road projects, discussions should commence in the short term.
- **Resolution of land uses along the heavy vehicle bypass and identification of appropriate interface treatments.** While technically outside the PSP area, the undertaking of further strategic work to determine the optimal long term land use of lots between the PSP area and the proposed heavy vehicle bypass will impact on development of the study area. In particular, the identification of appropriate interface treatments for much of this land cannot occur until the future land use has been identified.

- **Masterplanning for other identified open space areas.** As land within the PSP area develops, more detailed planning will need to be undertaken for these key community assets within the study area.
- **Continuation of discussions with the Department of Education regarding development of a new Primary School within the Mildura South Growth Area.** The department has indicated a need for a new primary school in the area in the medium to long term. While community sentiment has identified that current pressure exists on Mildura South primary, advice to date has indicated that other schools in the area have the capacity to absorb growth in the shorter term. The site identified in the PSP is one of the few sites that is considered suitable for the development of a school, given the following locational needs:
  - Access from one of the main Access Avenues;
  - Access to another collector road anticipated to provide public transport access;
  - Proximity to an identified Parkway to facilitate pedestrian and cycle access; and
  - And most importantly, co-location with the proposed active recreation reserve.

A 4 hectare parcel of land has been identified in line with departmental guidelines but on-going discussions will be needed between Council and the Department to facilitate the timely development of this important piece of infrastructure.

- **Masterplanning for the Mildura South Active Recreation Reserve.** A masterplan also need to be prepared for the identified Active Recreation Reserve. Key matters highlighted in the PSP which need to be considered as part of this process include:
  - Further assessment and identification of the specific active recreation needs of the Mildura South community (ie are two ovals required or an oval and football pitch etc).
  - Vehicular access points which should match up with the identified road hierarchy and access points shown on the access and movement diagram (pg 12).
  - Ensuring that the design of the park sufficiently integrates and reflects the Parkway shown along the south-eastern edge.
  - Consideration of the needs of Mildura South community in terms of facilities but also passive uses, BBQ areas, playgrounds etc in any design.
  - The integration of required drainage basin to ensure that batters and other proposed treatments are designed to allow for use of these areas for passive open space as well as drainage.
  - Recognition of the 'gateway' role, in conjunction with the land on the other side of Deakin Avenue.





appendix 1  
context and framework plan review









mildura south urban design plan

# context and framework plan review

prepared by **hansen partnership** pty ltd in association with **aurecon engineering**, **capire consulting** **hillPDA** and **james golsworthy** | march 2011

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# 1 introduction

The Mildura South Urban Design Plan is intended to become a guiding document shaping the future development of one of Mildura's key growth areas in a sustainable manner. The Mildura South Urban Design Plan will consist of two parts:

- A Precinct Structure Plan for the whole area; and
- A Development Plan for the areas currently affected by a Development Plan Overlay (as shown on the overlay map on the following pages)

This project is being undertaken by hansen partnership who have been commissioned by Mildura Rural City Council to undertake this project. hansen partnership will be working closely with a number of specialised subconsultants who will ensure a robust plan is developed. These subconsultants are Aurecon (traffic and engineering), hillPDA (economics), Capire (social infrastructure) and James Golsworthy (planning).

This project builds on the *Mildura South Strategic Framework Plan* that was developed by David Lock and Associates in 2007. That document was prepared to articulate a vision for the sustainable development of the area, setting appropriate parameters for the future planning of the area. This study is not intended to 'rewrite' that framework but to assess it in light of changes in policy or context that may have occurred subsequent to its production and ensure that the Precinct Structure Plan responds to these changes appropriately.

This Context and Framework Review represents the outputs of the first stage of this project and seeks to establish a sound base of knowledge to underpin the preparation of the Urban Design Plan. The Context and Framework Review assesses the following matters:

- The planning process;
- The planning context;
- Local context, including availability of community and transport infrastructure in proximity to the study area;
- Local conditions in relation to the urban structure, land use, environment and access characteristics; and
- The existing *Mildura South Strategic Framework Plan* and changes that are likely to be required to this framework as the precinct structure planning process proceeds.

## 1.1 study area

The study area is located to the south west of the centre of Mildura at the edge of the existing developed urban area approximately 4.5km to the south west of the Mildura Central Business District. The area is in close proximity of Mildura Centro retail precinct and to Lake Hawthorn which adjoins the study area to the immediate north. Residential land between the study area and the centre of Mildura has not yet been fully developed.

The study area encompasses land bounded by Riverside Avenue and Sixteenth Street and extends to halfway between Etiwanda and Benetook Avenue to the south east and just short of Seventeenth Street (Calder Fwy) to the south west. The exact boundaries of the study area are shown on the following page. Other details relating to the study area can be found in the following sections of this report.



# mildura south urban design plan context aerial

legend

study area



**DRAFT**



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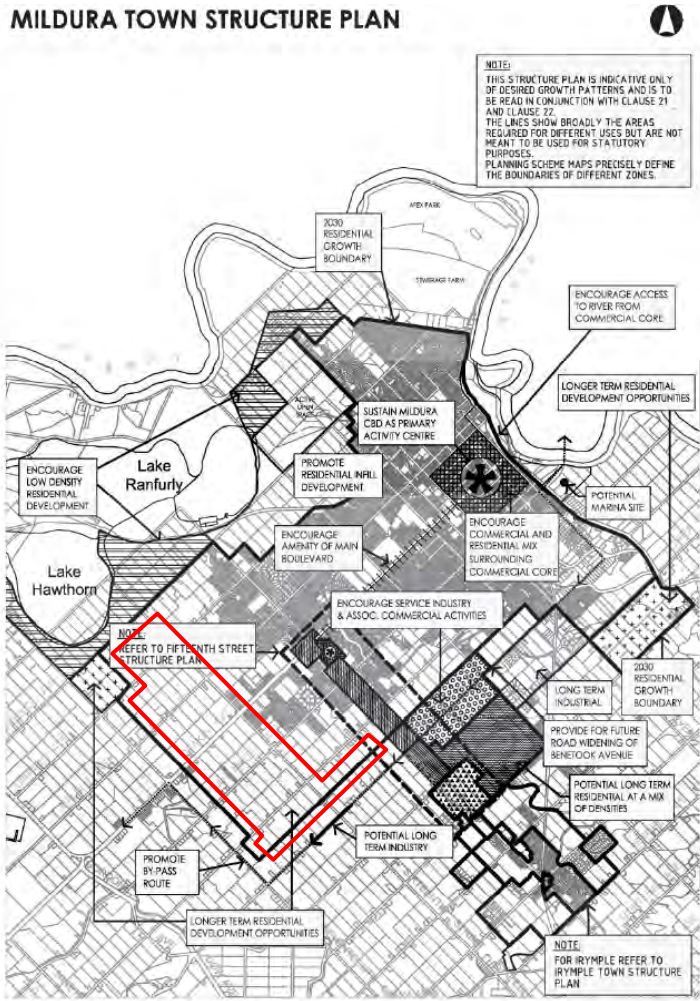


1.2 the planning process

In order to facilitate the proper planning of residential growth areas and to ensure that appropriate infrastructure and community services are delivered to residents of these areas a process must be undertaken before development of greenfield land can occur. This process is dictated at a State Government level and is reinforced through local planning policy. The development of a greenfield site will generally occur as follows:

- 1. A broad strategic plan will identify the area as appropriate for growth. This will generally be supported by analysis and research to determine the anticipated population, demand for dwellings and the most strategically justified location for this growth. Once broad plan has been through an approvals process, including review by an independent Planning Panel appointed by the State Government, the location of these growth areas will be identified. In the case of Mildura South, this area is identified in the Strategic Framework Plan seen at Clause 21.04 'Strategic Directions' in the Mildura Planning Scheme.

MILDURA TOWN STRUCTURE PLAN



- 2. A Strategic Framework Plan or an Outline Development Plan is then frequently prepared for the growth area. This step is not always considered necessary but in this case a comprehensive Strategic Framework Plan was prepared for Mildura South in 2007.



- 3. Following this, a Precinct Structure Plan is prepared for the area. These plans provide more detailed guidance as to how the area will develop into the future and provide plans to identify where future commercial, community and other infrastructure will be located. Precinct Structure Plans are generally developed in line with the Precinct Structure Planning Guidelines developed by Melbourne's Growth Area Authority, which are discussed in more detail below.
- 4. As part of the implementation of a Precinct Structure Plan, a Development Plan is often prepared to provide specific details about what infrastructure is required within the growth area. This also allows for development within the area to proceed without a separate permit if it is in accordance with the plan, allowing for more streamlined application processes. Commonly, a Development Contributions Plan is prepared alongside the Development Plan which allows for the costs associated with the infrastructure that is identified to be equitably spread across developers in the area affected by the plan.
- 5. Following the incorporation of these plans into the Planning Scheme, private developers commence development of the area, preparing subdivision plans for individual sites within the precinct. The Precinct Structure Plan will be used to resolve any competing objectives which may need to be addressed when a subdivision application is being assessed under Clause 56.

1.3 where are we at?

This project sits within a broader planning project which is being undertaken by Mildura Rural City Council for the Mildura South Area. There are three projects being developed by the Council in a coordinated manner, all of which will inform the future character and development of the area. These projects are the Mildura South Community Plan, which seeks to understand the needs and desires of the existing community in the area, the Mildura South Urban Design Plan (this project) and the Mildura South Sporting Facility, which is to be located within the study area and which will play a regional role in providing access to high quality recreational and sporting assets



Mildura South Community Plan



Mildura South Urban Design Plan

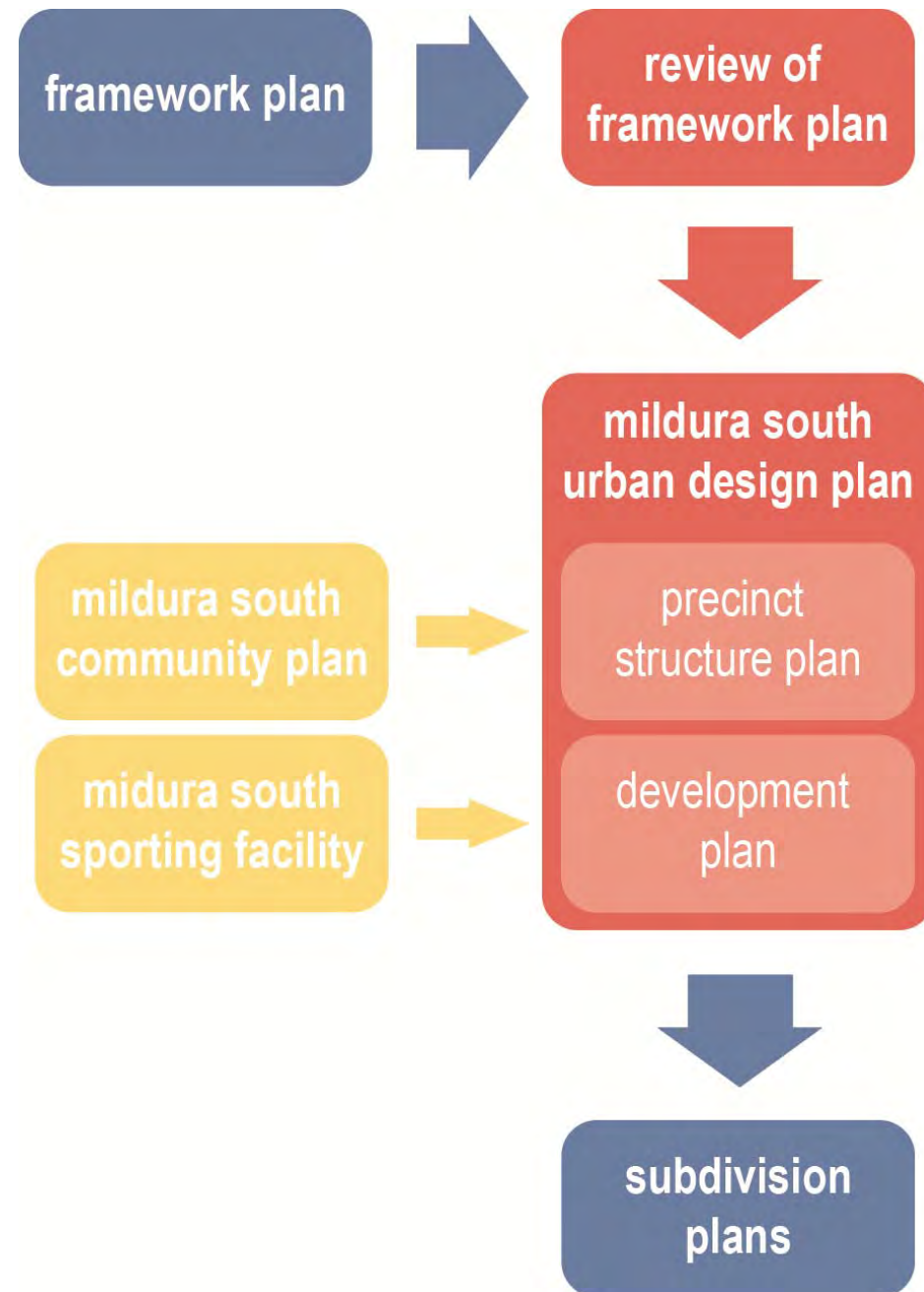


Mildura South Sporting Facility

As mentioned in the previous section, the work which will underpin the Mildura South Urban Design Plan commenced in 2007, with the preparation of the Mildura South Strategic Framework Plan. As can be seen from the diagram to the right, this work is reviewed within this first output. This work then feeds into the Mildura South Urban Design Plan. Also providing input into this plan will be the work undertaken with the community in relation to the other two projects outlined above.

It is important for the orderly planning of the area and the engagement of the community that these projects are undertaken in a coordinated manner. The diagram opposite also identifies that the output for this project itself has two elements, the Precinct Structure Plan and the Development Plan, both of which were outlined in the previous section. It is important to also recognise that there is an additional step beyond this in the preparation of subdivision plans by individual developers.





between meeting complex policy requirements and providing affordable development.

The overall objectives which underpin PSPs are as follows.

- To establish a sense of place and community;
- To create greater housing choice diversity and affordable places to live;
- To create highly accessible and vibrant activity centres;
- To provide for local employment and business activity;
- To provide better transport choices;
- To respond to climate change and increase environmental sustainability; and
- To deliver accessible, integrated and adaptable community infrastructure.

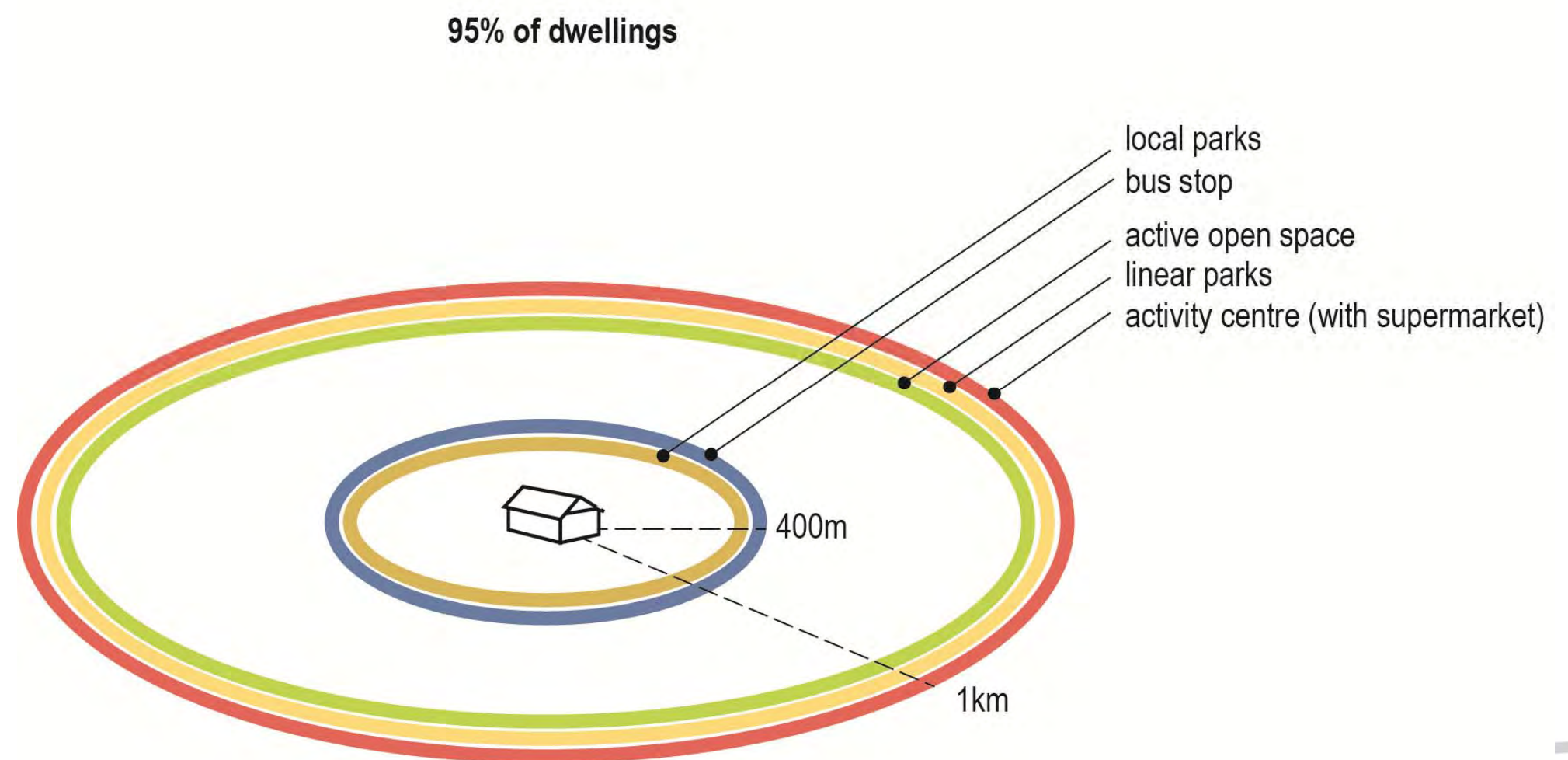
The typical contents of a PSP are replicated below, however it should be noted that the contents will vary depending on the local circumstances of the area for which the PSP is being prepared.

- Introduction
- Strategic Context
- Vision
- Integrated Precinct Design (this will include an overall plan and a land budget)
- Elements (details of Image and Character, Housing, Employment and Activity Centres, Community Facilities, Open Space and Natural Systems, Transport and Movement, Utilities and Energy)
- Precinct Infrastructure Plan
- Development Staging Plan
- Implementation Provisions

The Precinct Structure Plans also outlines a number of standards in relation to preferred distances to key services and facilities for dwellings within the growth area, including distances to shops (activity centres) and to recreational opportunities. These are outlined in the diagram below

### 1.3.1 precinct structure planning

Precinct Structure Plans (PSPs) are master plans for whole communities which in a metropolitan context are usually for between 7,000 to 30,000 people. Within a regional context they can be provided for any new substantial growth area. Precinct structure planning addresses the layout of roads, location of shopping centres, schools, parks, housing, employment and the connections to transport. According to state policy, Precinct Structure Plans are created to set the blueprint for development and investment that will occur over many years. They provide an up to date approach to address current global issues such as adapting to climate change, reducing carbon emissions, rising living costs and pressures of increasing travel distances as our cities grow. Precinct structure plans provide a balance





## 2 planning context

This Urban Design Plan, as a document that will be used to plan the South Mildura area and which will be given weight through the Mildura Planning Scheme must align with the policy guidelines which are established through State and Local planning policy. This chapter provide a brief overview of the key policy directions which must guide this plan.

### 2.1 state planning policy framework

#### 2.1.1 settlement

Under the clause relating to ‘settlement’ planning is to anticipate and respond to the needs of existing and future communities through provision of zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure.

Strategies identified within the state framework to achieve this include the following of relevance to this project are identified below under the relevant headings.

##### activity centres

- Undertake strategic planning for the use and development of land in and around the activity centres.
- Encourage a diversity of housing types at higher densities in and around activity centres.
- Reduce the number of private motorised trips by concentrating activities that generate high numbers of (non-freight) trips in highly accessible activity centres.
- Improve access by walking, cycling and public transport to services and facilities for local and regional populations.
- Broaden the mix of uses in activity centres to include a range of services over longer hours appropriate to the type of centre and needs of the population served.
- Provide a focus for business, shopping, working, leisure and community facilities.
- Locate new small scale education, health and community facilities that meet local needs in or next to Neighbourhood Activity Centres.

- Ensure Neighbourhood Activity Centres are located within convenient walking distance in the design of new subdivisions.

##### Urban growth

- Planning for urban growth should consider:
  - Opportunities for the consolidation, redevelopment and intensification of existing urban areas.
  - Neighbourhood character and landscape considerations.
  - The limits of land capability and natural hazards and environmental quality.
  - Service limitations and the costs of providing infrastructure.
- Maintain access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry.
- Restrict low-density rural residential development that would compromise future development at higher densities.

##### planning for growth areas

- Concentrate urban expansion into growth areas that are served by high-capacity public transport.
- Encourage average overall residential densities in the growth areas of a minimum of 15 dwellings per net developable hectare.
- Deliver timely and adequate provision of public transport and local and regional infrastructure, in line with a preferred sequence of land release.
- Provide for significant amounts of local employment opportunities and in some areas, provide large scale industrial or other more regional employment generators.
- Create a network of mixed-use activity centres and develop an urban form based on Neighbourhood Principles.
- Meet housing needs by providing a diversity of housing type and distribution.
- Retain unique characteristics of established areas incorporated into new communities to protect and manage natural resources and areas of heritage, cultural and environmental significance.
- Create well planned, easy to maintain and safe streets and neighbourhoods that reduce opportunities for crime, improve perceptions of safety and increase levels of community participation.

##### structure planning

- Ensure effective planning and management of the land use and development of an area through the preparation of strategic plans, statutory plans, development and conservation plans, development contribution plans and other relevant plans.
- Undertake comprehensive planning for new areas as sustainable communities that offer high-quality, frequent and safe local and regional public transport and a range of local activities for living, working and recreation.
- Facilitate the preparation of a hierarchy of structure plans or precinct structure plans that:
  - Take into account the strategic and physical context of the location.
  - Provide the broad planning framework for an area as well as the more detailed planning requirements for neighbourhoods and precincts, where appropriate.
  - Provide for the development of sustainable and liveable urban areas in an integrated manner.
  - Assist the development of walkable neighbourhoods.
  - Facilitate the logical and efficient provision of infrastructure and use of existing infrastructure and services.
- Develop precinct structure plans consistent with the Precinct Structure Planning Guidelines (Growth Areas Authority, 2009) approved by the Minister for Planning to:
  - Establish a sense of place and community.
  - Create greater housing choice, diversity and affordable places to live.
  - Create highly accessible and vibrant activity centres.
  - Provide for local employment and business activity.
  - Provide better transport choices.
  - Respond to climate change and increase environmental sustainability.
  - Deliver accessible, integrated and adaptable community infrastructure.



**sequencing of development**

- Define preferred development sequences in growth areas to better coordinate infrastructure planning and funding.
- Ensure that new land is released in growth areas in a timely fashion to facilitate coordinated and cost-efficient provision of local and regional infrastructure.
- Require new development to make a financial contribution to the provision of infrastructure such as community facilities, public transport and roads.
- Improve the coordination and timing of the installation of services and infrastructure in new development areas.
- Support opportunities to co-locate facilities.
- Ensure that planning for water supply, sewerage and drainage works receives high priority in early planning for new developments.

**open space planning**

- Plan for regional and local open space networks for both recreation and conservation of natural and cultural environments.
- Ensure that open space networks:
  - Are linked through the provision of walking and cycle trails and rights of way.
  - Are integrated with open space from abutting subdivisions.
  - Incorporate, where possible, links between major parks and activity areas, along waterways and natural drainage corridors, connecting places of natural and cultural interest, as well as maintaining public accessibility on public land immediately adjoining waterways and coasts.
- Ensure that land is set aside and developed in residential areas for local recreational use and to create pedestrian and bicycle links to commercial and community facilities.
- Ensure that land use and development adjoining regional open space networks, national parks and conservation reserves complements the open space in terms of visual and noise impacts, treatment of waste water to reduce turbidity or pollution and preservation of vegetation.
- Improve the quality and distribution of open space and ensure long-term protection.

- Protect large regional parks and significant conservation areas.
- Ensure land identified as critical to the completion of open space links is transferred for open space purposes.
- Ensure that urban open space provides for nature conservation, recreation and play, formal and informal sport, social interaction and peace and solitude. Community sports facilities should be accommodated in a way that is not detrimental to other park activities.
- Ensure open space is designed to accommodate people of all abilities, ages and cultures.
- Develop open space to maintain wildlife corridors and greenhouse sinks.

**regional planning strategies and principles**

- Maintain and enhance regional Victoria’s competitive advantages by:
- Providing adequate and competitive land supply, including urban regeneration, redevelopment and greenfield sites, to meet future housing and urban needs and to ensure effective utilisation of land.
- Strengthening settlements by ensuring that retail, office-based employment, community facilities and services are concentrated in central locations.
- Respond to the impacts of climate change and natural hazards and promote community safety by:
  - Siting and designing new dwellings, subdivisions and other development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards, such as bushfire and flooding.
  - Encouraging reduced energy and water consumption through environmentally sustainable subdivision and building design.
  - Encouraging a form and density of settlements that support sustainable transport to reduce greenhouse gas emissions.
- Support the growth and development of distinctive and diverse regional settlements by:
  - Encouraging high-quality urban and architectural design which respects the heritage, character and identity of each settlement.
  - Ensuring development respects and enhances the scenic amenity, landscape features and view corridors of each settlement.

- Limiting urban sprawl and directing growth into existing settlements, promoting and capitalising on opportunities for urban renewal and redevelopment.
- Ensuring that the potential of land that may be required for future urban expansion is not compromised.
- Creating opportunities to enhance open space networks within and between settlements.
- Promote liveable regional settlements and healthy communities by:
  - Responding to changing community needs and facilitating timely provision of, and access to, social infrastructure and services.
  - Encouraging the development of compact urban areas which are based around existing or planned activity centres to maximise accessibility to facilities and services.
  - Improving the availability of a diverse range of affordable accommodation, including social housing, in locations with good access to transport, commercial facilities and community services.
  - Supporting innovative ways to maintain equitable service delivery to settlements that have limited or no capacity for further growth, or that experience population decline

**protection of habitat**

- Assist the conservation of the habitats of threatened and endangered species and communities as identified under the Flora and Fauna Guarantee Act 1988, including communities under-represented in conservation reserves such as native grasslands, grassy woodlands and wetlands.

**Floodplains**

- Avoid intensifying the impacts of flooding through inappropriately located uses and developments.
- Locate emergency and community facilities (including hospitals, ambulance stations, police stations, fire stations, residential aged care facilities, communication facilities, transport facilities, community shelters and schools) outside the 1 in 100 year floodplain and, where possible, at levels above the height of the probable maximum flood.



**salinity**

- Identify areas subject to salinity in the preparation of planning schemes and land use planning decisions.
- Promote vegetation retention and replanting in aquifer recharge areas contributing to groundwater salinity problems.
- Prevent inappropriate development in areas affected by groundwater salinity.

**catchment planning and management**

- Undertake measures to minimise the quantity and retard the flow of stormwater runoff from developed areas.
- Encourage measures to filter sediment and wastes from stormwater prior to its discharge into waterways, including the preservation of floodplain or other land for wetlands and retention basins.
- Ensure land use and development proposals minimise nutrient contributions to waterways and water bodies and the potential for the development of algal blooms.

**water conservation**

- Encourage the use of alternative water sources such as rainwater tanks, stormwater and recycled water by governments, developers and households.
- Ensure the development of new urban areas and green spaces takes advantage of any opportunities for effluent recycling.
- Protect areas with potential to recycle water for forestry, agriculture or other uses that can use treated effluent of an appropriate quality.

**2.1.2 built environment and heritage**

This clause within the State Planning Policy Framework states that planning should ensure all new land use and development appropriately responds to its landscape, valued built form and cultural context, and protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value. Relevant strategies identified under this clause include:

- Creating quality built environments supports the social, cultural, economic and environmental wellbeing of our communities, cities and towns.
- Land use and development planning must support the development and maintenance of communities with adequate and safe physical and social

environments for their residents through the appropriate location of uses and development and quality of urban design.

- Planning should achieve high quality urban design and architecture that:
  - Contributes positively to local urban character and sense of place.
  - Reflects the particular characteristics, aspirations and cultural identity of the community.
  - Enhances liveability, diversity, amenity and safety of the public realm.
  - Promotes attractiveness of towns and cities within broader strategic contexts.
  - Minimises detrimental impact on neighbouring properties.

**neighbourhood and subdivision design**

- In the development of new residential areas and in the redevelopment of existing areas, subdivision should be designed to create liveable and sustainable communities by:
  - Creating compact neighbourhoods that have walkable distances between activities and where neighbourhood centres provide access to services and facilities to meet day to day needs.
  - Creating a range of open spaces to meet a variety of needs with links to open space networks and regional parks where possible.
  - Providing a range of lot sizes to suit a variety of dwelling and household types to meet the needs and aspirations of different groups of people.
- Contributing to reducing car dependence by allowing for:
  - Convenient and safe public transport.
  - Safe and attractive spaces and networks for walking and cycling.
  - Subdivision layouts that allow easy movement within and between neighbourhoods.
  - A convenient and safe road network.
- Creating a strong sense of place because neighbourhood development emphasises existing cultural heritage values, well designed and attractive built form, and landscape character.
- Protecting and enhancing native habitat.

- Environmentally friendly development that includes improved energy efficiency, water conservation, local management of stormwater and waste water treatment, less waste and reduced air pollution.
- Being accessible to people with disabilities.
- Developing activity centres that integrate housing, employment, shopping, recreation and community services, to provide a mix and level of activity that attracts people, creates a safe environment, stimulates interaction and provides a lively community focus.

**sustainable development**

- Ensure that buildings and subdivision design improves efficiency in energy use.
- Promote consolidation of urban development and integration of land use and transport.
- Improve efficiency in energy use through greater use of renewable energy.
- Support low energy forms of transport such as walking and cycling

**2.1.3 housing**

The following strategies are identified in the state planning policy framework in relation to the provision and development of housing under a series of headings.

**integrated housing**

- Ensure housing developments are integrated with infrastructure and services, whether they are located in existing suburbs, growth areas or regional towns.
- Encourage housing that is both water efficient and energy efficient.

**housing diversity**

- Ensure housing stock matches changing demand by widening housing choice, particularly in the middle and outer suburbs.
- Encourage the development of well-designed medium-density housing which:
  - Respects the neighbourhood character.
  - Improves housing choice.
  - Makes better use of existing infrastructure.
  - Improves energy efficiency of housing.



- Support opportunities for a wide range of income groups to choose housing in well serviced locations.
- Ensure planning for growth areas provides for a mix of housing types and higher housing densities in and around activity centres.

#### Residential aged care facilities

- Ensure local housing strategies, precinct structure plans, and activity centre structure plans provide for residential aged care facilities.
- Encourage planning for housing that:
  - Delivers an adequate supply of land or redevelopment opportunities for residential aged care facilities.
  - Enables older people to live in appropriate housing in their local community.

### 2.1.4 economic development and transport

To ensure the sustainable development of the economy within Mildura, any plan should have consideration of the following strategies:

#### commercial

- Locate commercial facilities in existing or planned activity centres.
- Provide new convenience shopping facilities to provide for the needs of the local population in new residential areas and within, or immediately adjacent to, existing commercial centres.

#### land use and transport planning

- Develop transport networks to support employment corridors that allow circumferential and radial movements.
- Plan urban development to make jobs and community services more accessible by:
  - Coordinating improvements to public transport, walking and cycling networks with the ongoing development and redevelopment of the urban area.
  - Providing routing, bus stop and interchange arrangements for public transport services in new development areas.
- Providing safe, convenient and direct pedestrian and cycling access to activity centres public transport interchanges and other strategic redevelopment sites.
- Integrate public transport services and infrastructure into new development.

#### sustainable personal transport

- Encourage the use of walking and cycling by creating environments that are safe and attractive.
- Develop high quality pedestrian environments that are accessible to footpath-bound vehicles such as wheelchairs, prams and scooters.
- Ensure development provides opportunities to create more sustainable transport options such as walking, cycling and public transport.
- Ensure cycling routes and infrastructure are constructed early in new developments.

#### cycling

- Direct and connected bicycle infrastructure should be provided to and between key destinations including activity centres, public transport nodes and major attractions.
- Cycling infrastructure (on-road bicycle lanes off-road bicycle paths) should be planned to:
  - Separate cyclists from other road users, particularly motor vehicles.
  - Provide the most direct route practical.
  - Develop local cycling networks and new cycling facilities that link to and complement the metropolitan-wide network of bicycle routes – the Principal Bicycle Network.

#### management of the road system

- Plan and regulate the design of transport routes and nearby areas to achieve visual standards appropriate to the importance of the route with particular reference to landscaping, the control of outdoor advertising and, where appropriate, the provision of buffer zones and resting places.
- Make better use of roads for all road uses through such techniques as the provision of wider footpaths, bicycle lanes, transit lanes (for buses and taxis) and specific freight routes.
- Improve roads in developing outer-suburban areas to cater for car, bicycle, public transport, and freight, commercial and service users.
- Ensure that road space complements land use and is managed to meet community and business needs.

### 2.1.5 infrastructure

In relation to infrastructure, state policy directs that planning for development of social and physical infrastructure should enable it to be provided in a way that is efficient, equitable, accessible and timely. Planning should also recognise social needs by providing land for a range of accessible community resources, such as education, cultural, health and community support (mental health, aged care, disability, youth and family services) facilities.

In addition to this, growth and redevelopment of settlements should be planned in a manner that allows for the logical and efficient provision and maintenance of infrastructure, including the setting aside of land for the construction of future transport routes. Strategic planning should facilitate efficient use of existing infrastructure and human services. Providers of infrastructure, whether public or private bodies, are to be guided by planning policies and should assist strategic land use planning. State policy also directs that planning authorities are to consider the use of development contributions (levies) in the funding of infrastructure and suggests the following strategies to achieve these aims:

#### health facilities

- Facilitate the location of health-related facilities (including acute health, aged care, disability services and community care facilities) with consideration given to demographic trends, the existing and future demand requirements and the integration of services into communities.

#### education facilities

- Locate primary education facilities to maximise access by walking and cycling.
- In planning for the location of education facilities, consideration should be given to demographic trends, the existing and future demand requirements and the integration of facilities into communities.
- Ensure areas near to education facilities, adjoining streets and accessways are designed to encourage safe bicycle and pedestrian access.

- Develop libraries as community based learning centres.

#### distribution of social and cultural infrastructure

- Identify and address gaps and deficiencies in social and cultural infrastructure.
- Encourage the location of social and cultural infrastructure in activity centres, especially those identified as Principal Activity Centres.



**development contribution plans**

- Prepare Development Contributions Plans, under the Planning and Environment Act 1987, to manage contributions towards infrastructure.
- Collect development contributions on the basis of an approved Development Contributions Plan.

**water supply, sewerage and drainage**

- Ensure water quality in water supply catchments is protected from possible contamination by urban, industrial and agricultural land uses.
- Plan urban stormwater drainage systems to:
- Encourage the re-use of wastewater including urban run-off, treated sewage effluent and run-off from irrigated farmland where appropriate.

**stormwater**

- Support integrated planning of stormwater quality through a mix of on-site measures and developer contributions.
- Ensure stormwater and groundwater entering wetlands do not have a detrimental effect on wetlands and estuaries.
- Incorporate water-sensitive urban design techniques into developments to:
  - Protect and enhance natural water systems.
  - Integrate stormwater treatment into the landscape.
  - Protect quality of water.
  - Reduce run-off and peak flows.
  - Minimise drainage and infrastructure costs.

**telecommunications**

- Encourage the continued deployment of broadband telecommunications services that are easily accessible by:
- Supporting access to transport and other public corridors for the deployment of broadband networks in order to encourage infrastructure investment and reduce investor risk.

**2.2 local planning policy context**

The following clauses of the Mildura Planning Scheme are considered to be of relevance to the planning of the Mildura South growth area.

**2.2.1 the vision for mildura rural city**

The vision contained within the planning policy is as follows:

- Our Vision for the PEOPLE of our communities is that we will be the most liveable, people friendly municipality in Australia.
- Our Vision for the DEVELOPMENT of the Municipality is that all of our communities will have plans, infrastructure and utilities to proactively attract and= support ongoing future development. Planning will be integrated to support the development of an inclusive community.
- Our Vision for the IDENTITY of the municipality is one that builds on the unique and diverse attributes of our locality and people to become the regional tri-state hub, ensuring the ongoing growth and development of our region.
- Our Vision for the ENVIRONMENT of our municipality is for a healthy and sustainable natural environmental system.
- Our Vision for TRANSPORT systems in our municipality is that there will be an increase in transport capacity in and out of the region.
- Key themes in support of the DEVELOPMENT vision include:

The following land use planning vision aims to complement Council's broad vision for the Rural City and paint a picture of how the municipality will look and function in 2030. The statements provide underlying targets to guide the development of the Municipality in accordance with the four identified key land use themes. In the year 2030:

- The major concentration of population in the region will be at Mildura, Mildura South and Irymple.
- Major road entrances to each of these townships will be well designed and landscaped and will reflect the character and charm of these communities.
- Residents will be living in a variety of housing styles and environments. They will range from attractive and consolidated medium density clusters in the major townships, to rural living in low density allotments in clearly defined rural

settings that are in harmony with the environment and that are not inhibiting the productivity of agricultural and horticulture activities.

- Deakin Avenue will be Mildura's main boulevard providing residents and visitors a grand entrance to and exit from the City. All development and use along its route will be sensitive and enhance its visual amenity.
- Residents throughout the entire municipality will have access to affordable essential services and facilities and be well served by a diverse range of community infrastructure.
- The natural resources of the municipality and surrounding region will be protected and maintained to provide a diversity of species and development that is ecologically sustainable.
- Land and water systems will be well managed, meeting the community's needs and expectations.
- Salinity and nutrient levels in the municipality's water system will be at their lowest concentration in 40 years.
- Remnant vegetation and habitat on both private and public land will be preserved and enhanced.
- Public land in the municipality and surrounding region will be recognised, protected, and promoted for its significant environmental, cultural and economic value.
- The history and culture of the municipality will be well preserved and clearly evident, contributing to the charm and attractiveness of the Rural City.
- Agricultural and horticultural production will be the foundation of the municipality's strong and prosperous economy and will be uninhibited by urban encroachment.
- Benetook Avenue (between Fourteenth Street and Fifteenth Street) will have developed as an extension of the existing Mildura Industrial Estate thereby reinforcing this area as prime light industrial and associated service commercial hub of the region.
- Retail activities throughout Mildura will be sufficient to serve the needs of its residents and visitors.
- The Mildura Centre Plaza Precinct will have developed as a fully integrated subregional centre which complements the function of the Mildura CBD.



- The expanded Fifteenth Street precinct from Benetook to Cowra Avenue will be developed as smaller scale restricted retailing within a landscaped setting.
- Convenience centres, including town centres, neighbourhood centres and local shops, will serve an important function in providing limited retail facilities to residents.
- Mildura Airport will be one of the country's main regional passenger and freight centres.
- Residents and visitors will be utilising a comprehensive mix of safe and efficient transport services to travel within and to the municipality
- Benetook Avenue will have established its role as the major heavy vehicle internal
- bypass route around the township of Mildura.

**2.2.2 settlement**

The following strategies are identified in relation to the planning of settlements within Mildura, which are relevant to this project:

- Facilitate the urban expansion of Mildura, Mildura South and Irymple as the prime residential growth areas of the municipality and wider region.
- Prepare Development Plans that identify subdivision layout, staging and provision of services as a precursor to subdivision of land zoned for residential purposes.
- Ensure that proposals for residential development have access to stormwater infrastructure in accordance with Council's infrastructure program as indicated on the Town Structure Plans.
- Ensure that the residential growth areas of Mildura, Mildura South and Irymple are contiguous with existing residential estates and in locations that reflect logical and cost effective infrastructure servicing options.
- Provide drainage and other relevant infrastructure on at least two or ideally three development fronts within the Mildura, Mildura South and Irymple urban areas.
- Support proposals for residential development that can be serviced by Council's infrastructure program as indicated on the Town Structure Plans in preference to on-site infrastructure provision.

- Recover Council's upfront construction costs for the development of physical and community infrastructure on a staged basis through the application of Development Contribution Plans.
- Encourage the application of water sensitive design principles in subdivision and development.
- Encourage future residential development at a range of lots sizes and densities (including medium density development) in appropriate locations, particularly in close proximity to town activity centres.
- Encourage a diversity of housing styles and densities reflecting changing market demands and recent trends such as the development of units and smaller housing lots.
- Accommodate the demand for rural residential and low density residential development in planned estates.
- Limit the location of sensitive land uses in the vicinity of industries or other activities with significant off site effects such as noise, traffic and residual air emissions.
- Discourage the siting of sensitive land uses such as residential development along either side of Benetook Avenue (from Eleventh Street to Seventeenth Street) and along the heavy vehicle by-pass designation of Seventeenth Street (from Benetook to Deakin Avenue).
- Ensure that development is in accordance with the Mildura Airport Master Plan 2000- 2015, particularly in relation to noise and height restrictions.
- Minimise the impacts of salinity and potential increase the salt loads in the Murray River associated with residential development.
- Maintain Deakin Avenue as a grand boulevard and gateway to Mildura.

**2.2.3 environment**

The following strategies are identified in relation to the environment within Mildura, which are relevant to this project:

- Reduce ground water accessions, prevent development within high risk salinity areas and stabilise salinised areas.
- Discourage the discharge of irrigation run-off directly into the Murray River and its tributaries, except where recommended under the relevant Salinity Management Plan.

- Discourage the development of drainage evaporation ponds in wetlands and floodplain areas except where recommended under the relevant Salinity Management Plan.
- Discourage development on salinity discharge areas.
- Encourage the retention and regeneration of native flora.
- Reinforce existing wildlife corridors along road and railway reserves with supplementary revegetation in adjacent private lands.
- Maintain and improve the condition of waterways and wetlands in support of flora and fauna habitats.
- Encourage the location of services on private cleared land in both dryland and irrigated areas, rather than on vegetated roadsides.
- Discourage further development, particularly residential development within areas on the floodplain.
- Restrict further development in on land liable to flooding.
- Encourage drainage works and schemes that redirect rainfall run-off, minimise irrigation drainage and assist in the reduction of salinisation of land.
- Limit nutrient level increases in ground water and surface water systems.
- Treat stormwater prior to outfall.

**2.2.4 economic development**

The following strategies are identified in relation to the economic development within Mildura, which are relevant to this project:

- Provide adequate retail capacity in anticipation for future growth.
- Support the development of large corner stores rather than new centres to serve the local retail needs of future residential development areas in Mildura.

**2.2.5 infrastructure**

The following strategies are identified in relation to the provision of infrastructure within Mildura, which are relevant to this project:

- Require that those developing land for residential, business, industrial or rural purposes fund capital works that are required to provide infrastructure and services.



- Ensure that land use and development is compatible with the function and operation of the Airport.
- Focus development in those areas that are or can be readily serviced with infrastructure.
- Ensure that the placement and maintenance of services occurs in a way that minimises detrimental impacts to environmental and cultural heritage values.
- Encourage the application of water sensitive design principles in subdivision and development.
- Encourage the co-location of infrastructure such as water, electricity and natural gas.
- Improve the gateway to Mildura for tourist traffic.
- Avoid the proliferation of further ribbon development along the main Highways which may prejudice the function of the highways.
- Improve the appearance of major transport routes into and within the towns through street side landscaping, preferably using native species, with an emphasis on local or indigenous species.
- Require the provision of service roads in appropriate locations along major roads that serve new development.

2.3 zoning and overlays

The study area contains the following zoning and overlays, the objectives of which are detailed within this section:

residential 1 zone

- To provide for residential development at a range of densities with a variety of dwellings to meet the housing needs of all households.
- To encourage residential development that respects the neighbourhood character.
- In appropriate locations, to allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs.

farming zone

- To provide for the use of land for agriculture.
- To encourage the retention of productive agricultural land.

- To ensure that non-agricultural uses, particularly dwellings, do not adversely affect the use of land for agriculture.
- To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.
- To protect and enhance natural resources and the biodiversity of the area.

road zone category 1

- To identify significant existing roads.
- To identify land which has been acquired for a significant proposed road.

pubic use zone 1

- To recognise public land use for public utility and community services and facilities.
- To provide for associated uses that are consistent with the intent of the public land reservation or purpose.
- Public Use Zone 1 under the Mildura Planning Scheme relates to land for services and utilities.

design and development overlay (schedule 8)

This overlay seeks to ensure that building height does not adversely effect the operation of the Mildura Airport. Under this overlay a permit is not required to construct a building or to construct or carry out works less than 40.0 metres above natural ground level.

development plan overlay

This overlay seeks to:

- To identify areas which require the form and conditions of future use and development to be shown on a development plan before a permit can be granted to use or develop the land.
- To exempt an application from notice and review if it is generally in accordance with a development plan.

Under this overlay a permit must not be granted to use or subdivide land, construct a building or construct or carry out works until a development plan has been prepared to the satisfaction of the responsible authority. This does not apply if a schedule to this overlay specifically states that a permit may be granted before a development plan has been prepared to the satisfaction of the responsible authority.

Under this overlay a permit granted must:

- Be generally in accordance with the development plan.
- Include any conditions or requirements specified in a schedule to this overlay.

salinity management overlay

This overlay seeks to:






















- To identify areas subject to saline ground water discharge or high ground water recharge.
- To facilitate the stabilisation of areas affected by salinity.
- To encourage revegetation of areas which contribute to salinity.
- To encourage development to be undertaken in a manner which brings about a reduction in salinity recharge.
- To ensure development is compatible with site capability and the retention of vegetation, and complies with the objectives of any salinity management plan for the area.
- To prevent damage to buildings and infrastructure from saline discharge and high watertable.

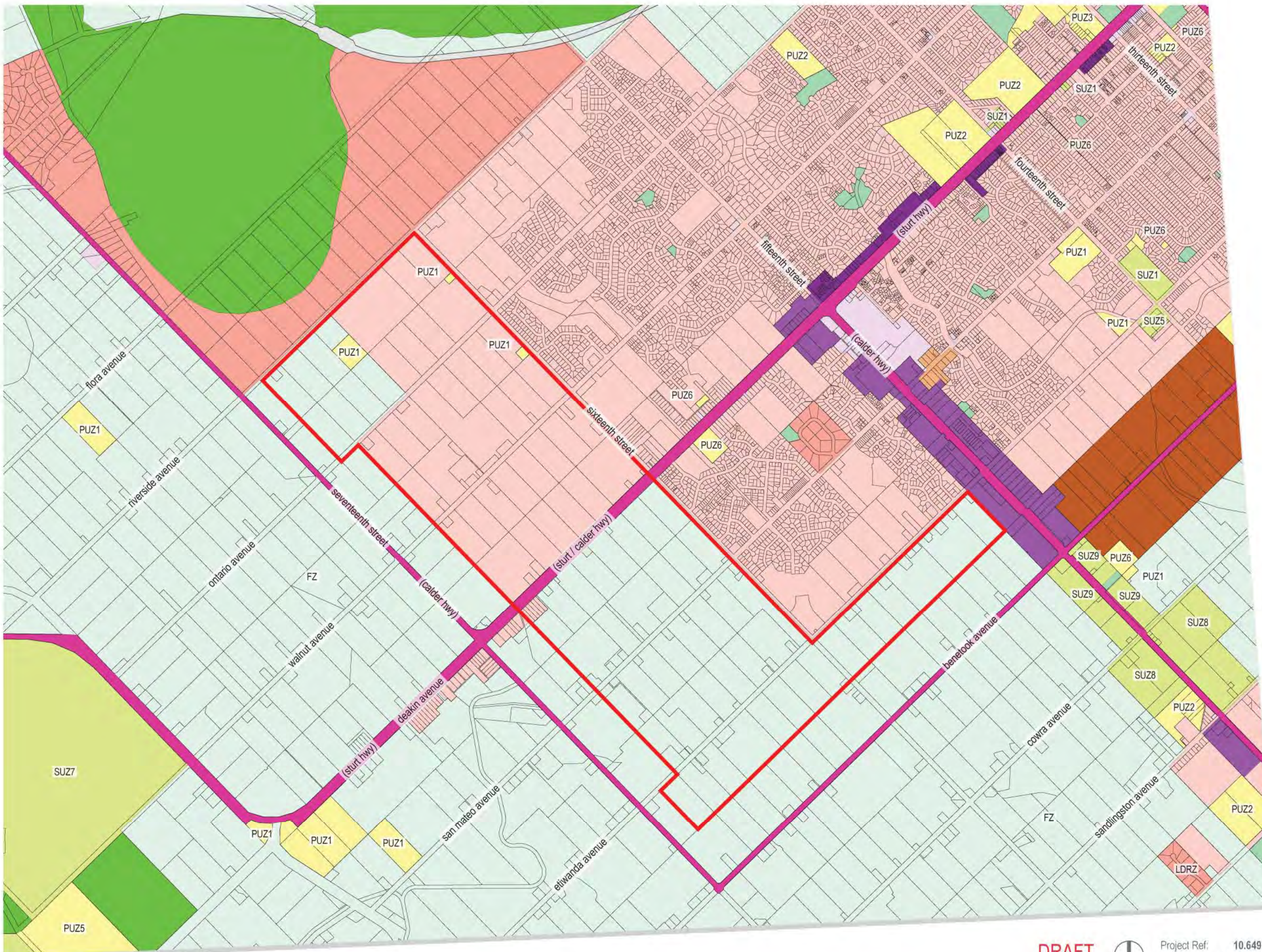


# mildura south urban design plan

## zoning map

### legend

- study area 
- business 1 zone (B1Z) 
- business 4 zone (B3Z) 
- business 5 zone (B5Z) 
- industrial 1 zone (I1Z) 
- industrial 3 zone (I3Z) 
- public conservation and resource zone (PCRZ) 
- public park and recreation zone (PPRZ) 
- public use zone - education (PUZ2) 
- public use zone - health and community (PUZ3) 
- public use zone - local government (PUZ6) 
- public use zone - service and utility (PUZ1) 
- public use zone - transport (PUZ4) 
- road zone - category 1 (RDZ1) 
- low density residential zone (LDRZ) 
- residential 1 zone (R1Z) 
- farming zone (FZ) 
- special use zone - schedule 1 (SUZ1) 
- special use zone - schedule 5 (SUZ5) 
- special use zone - schedule 8 (SUZ8) 
- special use zone - schedule 9 (SUZ9) 



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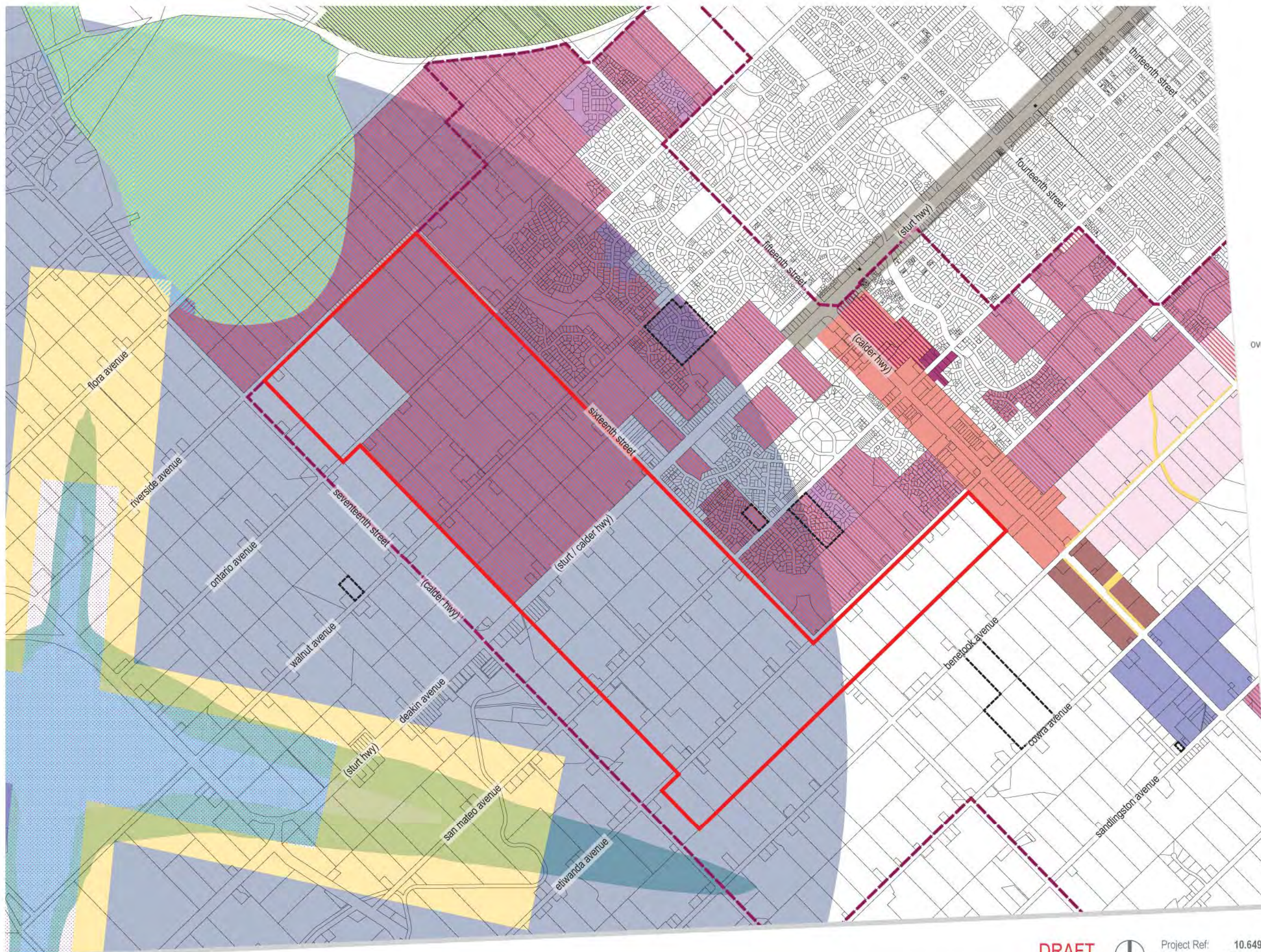
Project Ref: 10.649  
Dwg No.: UDD-002  
Scale: 1:20,000@A3  
Date: 21.03.11  
Revision: A

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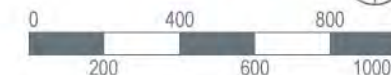


# mildura south urban design plan overlay map

- legend study area
- airport environs overlay (Aeo1)
  - airport environs overlay (Aeo2)
  - development plan overlay - schedule 1 & 2 (DPO1/2)
  - development contributions plan overlay - schedule 1 & 2 (DCP01/02)
  - design and development overlay - schedule 1 (DDO1)
  - design and development overlay - schedule 2 (DDO2)
  - design and development overlay - schedule 4 (DDO4)
  - design and development overlay - schedule 5 (DDO5)
  - design and development overlay - schedule 6 (DDO6)
  - design and development overlay - schedule 7 (DDO7)
  - design and development overlay - schedule 8 (DDO8)
  - design and development overlay - schedule 9 (DDO9)
  - design and development overlay - schedule 10 (DDO10)
  - design and development overlay - schedule 11 (DDO11)
  - salinity management overlay (SMO)
  - heritage overlay (HO)
  - public acquisition overlay (PAO)
  - environmental significance overlay - schedule 1 (ESO1)
  - land subject to inundation overlay (LSIO)
  - floodway overlay (FO)



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3 demographics

The following section provides a profile of demographic trends across Mildura LGA to better understand how the changing characteristics of the population will influence development within the Mildura South Precinct.

ABS Regional Population Growth data (2010) indicated Mildura LGA had a population of almost 53,900 persons in 2009. The following table shows historical population change for the Mildura LGA from 1981 to 2009 based on ABS data. The results indicate the population has grown by some 15,533 persons since 1981, equivalent to growth of over 40% over the period, or 1.4% per annum average growth.

Table 1 - Mildura LGA Population Change (1981-2009)

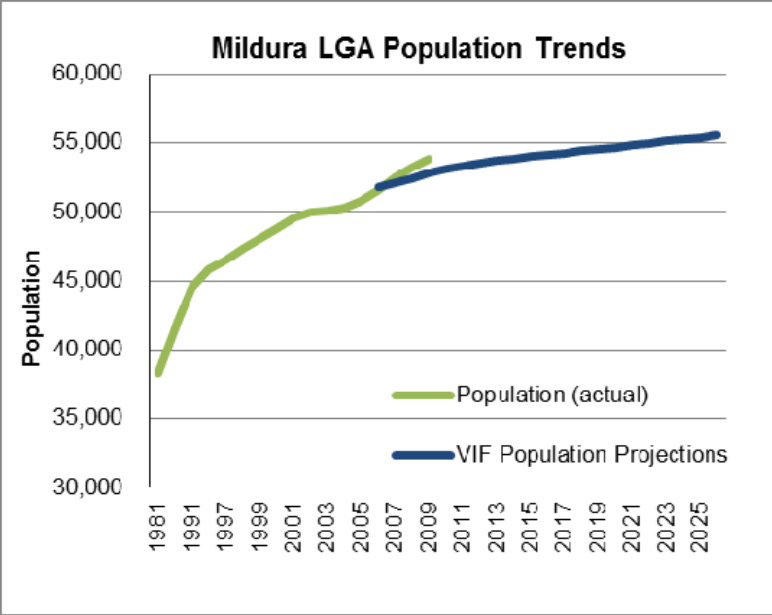
Year	Total Population	Change in Persons	Annual % Change
1981	38,344		
1986	41,506	3,162	1.6%
1991	44,537	3,031	1.5%
1996	45,811	1,274	0.6%
1997	46,483	672	1.5%
1998	47,300	817	1.8%
1999	48,057	757	1.6%
2000	48,797	740	1.5%
2001	49,616	819	1.7%
2002	50,015	399	0.8%
2003	50,044	29	0.1%
2004	50,313	269	0.5%
2005	50,797	484	1.0%
2006	51,590	793	1.6%
2007	52,519	929	1.8%
2008	53,254	735	1.4%
2009	53,877	623	1.2%

Source: ABS, 3218.0 Regional Population Growth, Australia (Released 30 March 2010)

Historically, annual growth rates in Mildura LGA have fluctuated significantly peaking at 1.8% between 1997 and 1998 and again between 2006 and 2007. Although declining since 2005, annual growth rates have been over 1% - equivalent to an additional 600 to 900 persons per annum.

Moving forward, Victoria in Future Population Projections (2008) show that Mildura LGA will experience significantly lower growth rates than historical trends.

Figure 1 - Mildura LGA Population Trends



Source: ABS, 3218.0 Regional Population Growth, Australia (Released 30 March 2010) and Victoria in Future Population Projections (2008)

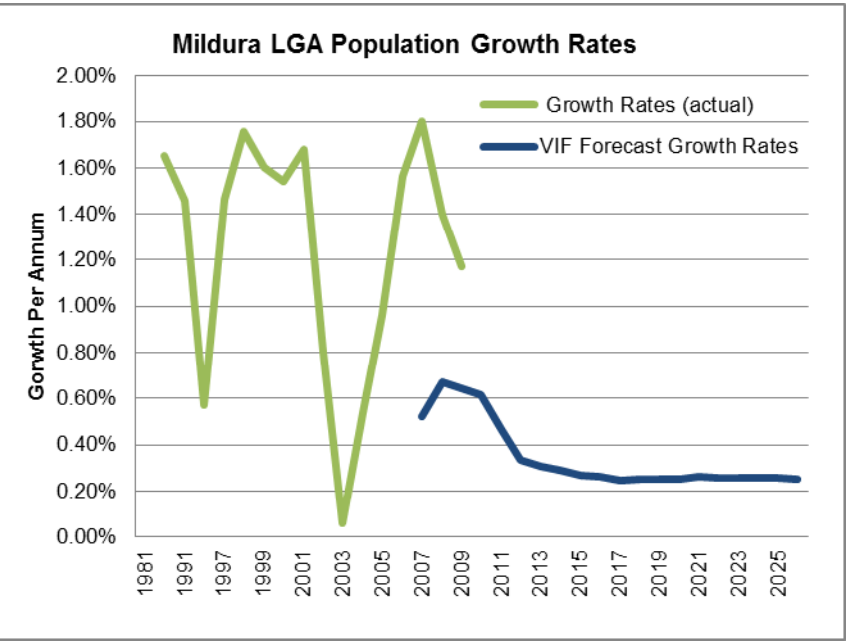
The table below indicates that from 2010 onwards the LGA is anticipated to experience little growth in the range of 0.2% to 0.5% per annum to 2026, equivalent to an additional 130 to 250 persons per annum. A population of 55,523 persons is expected by 2026.

Table 2 - Mildura LGA Forecast Population Growth (2006-2026)

Year	Total Population	Change in Persons	Annual % Change
2006	51,824		
2007	52,095	271	0.5%
2008	52,445	349	0.7%
2009	52,781	336	0.6%
2010	53,104	324	0.6%
2011	53,351	247	0.5%
2012	53,528	177	0.3%
2013	53,694	166	0.3%
2014	53,848	154	0.3%
2015	53,994	146	0.3%
2016	54,135	141	0.3%
2017	54,269	134	0.2%
2018	54,404	135	0.2%
2019	54,539	135	0.2%
2020	54,677	138	0.3%
2021	54,820	143	0.3%
2022	54,960	140	0.3%
2023	55,102	142	0.3%
2024	55,243	141	0.3%
2025	55,385	141	0.3%
2026	55,523	138	0.2%

Source: Victoria in Future Population Projections (2008)

Figure 2 - Mildura LGA Population Growth Rate



Source: ABS, 3218.0 Regional Population Growth, Australia (Released 30 March 2010) and Victoria in Future Population Projections (2008)

The table below shows the breakdown of the population by age from 1996 to 2006 based on ABS Census data. The results indicate a general aging of the population with growth particularly in residents aged 45 to 65 years. Conversely there has been a decline in the number of babies and low growth in the number of those aged 20 to 35 years.

Table 3 – Age Characteristics of Mildura LGA

Age	1996	2001	2006	Change 1996-2006	% Change 1996-2006
0-4 years	3,629	3,669	3,245	-384	-10.6%
5-14 years	7,175	7,707	7,846	671	9.4%
15-19 years	2,925	3,217	3,629	704	24.1%
20-24 years	2,616	2,592	2,814	198	7.6%
25-34 years	6,457	6,412	5,960	-497	-7.7%
35-44 years	6,779	7,282	7,095	316	4.7%
45-54 years	5,529	6,331	6,913	1,384	25.0%
55-64 years	4,198	4,522	5,483	1,285	30.6%
65-74 years	3,714	3,735	3,816	102	2.7%
75-84 years	1,863	2,235	2,789	926	49.7%
85 years and over	533	684	860	327	61.4%
Total	45,418	48,386	50,450	5,032	11.1%
Median Age	34	35	37		

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Research from the Department of Planning & Community Development shows the Mallee Region of which Mildura is part (together with the LGA's of Swan Hill,



Buloke and Gannawarra) loses population to most regions of Victoria.

The analysis shows the Mallee has consistently lost youth – especially to jobs and universities in Melbourne, Ballarat and Geelong. The Department of Planning & Community Development indicates that the youth is influenced by three factors:

- The higher reputation of university courses in Melbourne;
- The wide choice of courses in Melbourne; and
- The opportunity to move and experience city life.

The table below shows the decline in youth is forecast to continue, corresponding with an aging of the population – especially those aged over 60 years.

Table 4 - Mildura LGA Forecast Population Growth by Age Group 2006-2026

Age Group	2006	2011	2016	2021	2026	Change 2006-2026	% Change 1996-2006
0-4	3,348	3,398	3,316	3,277	3,259	-89	-3%
5-9	3,940	3,414	3,447	3,369	3,338	-602	-15%
10-14	4,157	4,018	3,459	3,498	3,432	-725	-17%
15-19	3,738	4,066	3,899	3,343	3,397	-341	-9%
20-24	2,916	3,165	3,287	3,186	2,716	-200	-7%
25-29	2,964	3,005	3,178	3,292	3,206	242	8%
30-34	3,316	3,037	3,046	3,223	3,341	25	1%
35-39	3,648	3,369	3,070	3,089	3,272	-376	-10%
40-44	3,740	3,670	3,379	3,085	3,113	-627	-17%
45-49	3,781	3,744	3,660	3,376	3,088	-693	-18%
50-54	3,273	3,758	3,718	3,638	3,363	90	3%
55-59	3,111	3,247	3,718	3,686	3,616	505	16%
60-64	2,414	3,087	3,211	3,686	3,671	1,257	52%
65-69	2,084	2,323	2,989	3,120	3,592	1,508	72%
70-74	1,759	1,977	2,207	2,864	3,008	1,249	71%
75-79	1,666	1,605	1,811	2,038	2,670	1,004	60%
80-84	1,116	1,366	1,331	1,521	1,726	610	55%
85 and over	853	1,103	1,410	1,529	1,714	861	101%
Total	51,824	53,351	54,135	54,820	55,523	3,699	

Source: Victoria in Future Population Projections (2008)

The following table shows the range of household and family types in Mildura LGA. The results indicate that whilst families are the predominant household type, couple families with children have decreased from 1996 levels. One parent and lone person households have increased significantly compared to other household types over the same period.

Table 5 – Household and Family Types in Mildura LGA

Household Type	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Families:					
<i>Couple family w/o children</i>	4,356	4,773	5,068	712	16.3%
<i>Couple family w. children</i>	5,878	5,885	5,755	-123	-2.1%
<i>One parent family</i>	1,613	1,904	2,146	533	33.0%
<i>Other family</i>	143	150	159	16	11.2%
Total Families	11,990	12,712	13,128	1,138	9.5%
Lone Person	3,782	4,214	4,876	1,094	28.9%
Group	437	475	480	43	9.8%
Other	630	744	883	253	40.2%
Total Households	16,839	18,145	19,367	2,528	15.0%
Average Household Size	2.6	2.6	2.5		

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

The table below shows there has been reasonable growth in home ownership levels since 1996, with rental levels also increasing moderately. Whilst detached dwellings remain the predominant dwelling type, there has been a significant increase in townhouse dwellings equivalent to over 120% growth. Over 570 additional townhouses were developed and occupied in the LGA between 2001 and 2006 alone.

Table 6 – Dwelling Characteristics in Mildura LGA

Characteristic	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Home Ownership:					
<i>Owned or Being Purchased</i>	11,166	12,062	12,731	1,565	14.0%
<i>Rented</i>	4,915	5,102	5,335	420	8.5%
<i>Other/Not Stated</i>	765	993	1,303	538	70.3%
Total Dwellings	16,846	18,157	19,369	2,523	15.0%
Dwelling Type:					
<i>Separate house</i>	13,655	14,823	15,910	2,255	16.5%
<i>Townhouse</i>	491	522	1,098	607	123.6%
<i>Flat-Unit-Apartment</i>	1,491	1,762	1,617	126	8.5%
<i>Other dwelling</i>	899	899	741	-158	-17.6%
<i>Not stated</i>	310	151	3	-307	-99.0%
Total Dwellings	16,846	18,157	19,369	2,523	15.0%

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Examining the resident workforce, since 1996 there has been a decline in residents working in agriculture, wholesale trade and information/telecommunications. Over the same period, there have been significant increases in residents working in retail, administration/support services, manufacturing, and health care.

Table 7 – Industry of Employment by Working Residents in Mildura LGA

Industry	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Agriculture, forestry & fishing	3,554	3,682	2,892	-662	-18.6%
Mining	39	101	62	23	59.0%
Manufacturing	1,422	2,013	2,295	873	61.4%
Electricity, gas, water & waste services	256	283	277	21	8.2%
Construction	920	1,135	1,442	522	56.7%
Wholesale trade	1,532	1,231	775	-757	-49.4%
Retail trade	2,051	2,489	2,885	834	40.7%
Accommodation & food services	1,061	1,278	1,369	308	29.0%
Transport, postal & warehousing	05	48	996	291	41.3%
Information media & telecommunications	321	243	209	-112	-34.9%
Financial & insurance services	380	369	398	18	4.7%
Rental, hiring & real estate services	181	227	221	40	22.1%
Professional, scientific & technical services	534	669	708	174	32.6%
Administrative & support services	386	581	852	466	120.7%
Public administration & safety	736	720	1,092	356	48.4%
Education & training	1,259	1,512	1,657	398	31.6%
Health care & social assistance	1,680	1,911	2,114	434	25.8%
Arts & recreation services	115	186	186	71	61.7%
Other services	621	676	629	8	1.3%
Inadequately described/Not stated	578	507	629	51	8.8%
Total	18,331	20,661	21,688	3,357	18.3%

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Working residents in both blue and white collar occupations have increased steadily since 1996. However, the number of working residents in managerial roles has decreased over the same period.



Table 8 – Occupation of Employment by Working Residents in Mildura LGA

Occupation	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Managers	3,985	3,996	3,748	-237	-5.9%
Professionals	2,277	2,788	3,074	797	35.0%
Technicians and trades workers(b)	2,287	2,686	2,961	674	29.5%
Community and personal service workers	1,242	1,633	1,812	570	45.9%
Clerical and administrative workers	2,006	2,313	2,456	450	22.4%
Sales workers	1,798	2,100	2,363	565	31.4%
Machinery operators and drivers	1,182	1,364	1,412	230	19.5%
Labourers	2,993	3,320	3,472	479	16.0%
Inadequately described/Not stated	561	461	389	-172	-30.7%
Total	18,331	20,661	21,687	3,356	18.3%

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Household incomes have significantly increased since 1996. Median household incomes increased from \$489/week in 1996 to \$781/week in 2006, with the proportion of households in lower income brackets having decreased over the period.

Table 9 – Weekly Household Incomes (Gross) in Mildura LGA

Income Level	1996	2001	2006	Change 1996-2006	% Change 1996-2006
\$250-\$349	1,563	1,381	1,415	-148	-9.5%
\$650-\$799	2,201	1,846	1,672	-529	-24.0%
\$1,200-\$1,399	603	1,003	1,148	545	90.4%
\$2,000-\$2,499	119	301	407	288	242.0%
\$3,000 or more	6	26	80	74	1233.3%
Partial income stated(c)	262	256	361	99	37.8%
All incomes not stated(d)	155	275	239	84	54.2%
Total	4,909	5,088	5,322	413	8.4%
Median household income (\$/weekly)	\$489	\$679	\$781		

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Implications for the development of the Mildura South Precinct include:

- Slow overall population growth forecast to 2026 which is likely to impact take-up and staging of residential and retail development in Mildura South.
- Significant aging of the population which is likely to result in demand for smaller dwellings(due to downsizing) as well as an increasing demand for seniors living and aging in place development.
- Declining household sizes due to an increasing number of older persons, lone person and one parent households.
- Significant increases in townhouse development likely as a response to the changes in the demographics of the LGA (mentioned above).
- Considerable rise in household incomes which results in increasing retail spend per capita.



## 4 local context

The following elements are considered to be of relevance to the local context of the study area:

- **designation of growth area**

One of the key things to note about the study area within the local context is its designation as one of three growth areas in Mildura. The study area boundary aligns with the furthest extent of the area of long terms growth identified within the Strategic Framework for Mildura. This area has therefore been designated previously as being developed to accommodate a substantial residential population. The Mildura 2030 Residential Growth Boundary defines part of the study area boundary

- **proximity to mildura cbd**

The study area is also located in relatively close proximity to the Central Business District (CBD) of Mildura which is approximately 4.5 km to the north east along Deakin Avenue.

- **relationship to ilymple**

While the study area has a direct relationship to the main urban area of Mildura, it is also important to acknowledge the proximity to Irymple to the east. The Irymple Structure Plan addresses land up to Sandilands Avenue, and Irymple Secondary College is closer to much of the study area than Mildura Secondary College to the north, highlighting the importance of this relationship. It is important to also acknowledge the directions within the Mildura-Irymple Interface Study which will see the development of additional industrial lands between the two urban areas.

- **mildura airport**

The Mildura Airport is located approximately a kilometre to the south west of the study area and the building controls relating to the airport extend into the study area, meaning there are additional controls on building height. The proximity to the airport is also important to consider in terms of employment opportunities and the role the area will play as the 'first glimpse' of Mildura for visitors arriving by air.

- **alternate heavy vehicle route**

The long term plan to provide an alternate route for heavy vehicles along Seventeenth Street and up Benetook Avenue must be considered as part of this work. The study area itself reflects the impact of this route, with the land

immediately adjacent to these roads sitting outside the boundary to reflect the need to restrict residential development immediately adjoining this route.

- **deakin avenue**

The presence within the study area of what will be the first 'urban' stretch of Deakin Avenue is of note within the local context. Deakin Avenue is the City's primary boulevard and a key route into the centre of town. It has a wide carriageway and carries a high volume of traffic. While the potential bypass route may reduce this volume somewhat Deakin will remain the key route into the city. As was noted in the existing Framework Plan, the volumes carried by this road have the potential to play a role in reducing integration between developments to either side of the Avenue.

- **existing schools**

The local context plan on the following page identifies the location of the existing Mildura South Primary School and, further north along Deakin Avenue, Mildura Secondary College and Chaffey College. As noted previously however the site is also proximate to the Irymple Primary and Secondary Schools. It was noted, and will be investigated as part of this project the establishment of an additional primary school to service the both the existing and future Mildura South communities.

- **mildura centro**

The study area is also close to Centro Mildura and the associated retail offer the Fifteenth Street precinct. this includes two supermarkets and specialist retail, as well as some bulky goods outlets, This retail area is expected to expand in the future with a Big W and other retail offer. The presence of such as large centre (acknowledged as a Major Activity Centre, will play a role in the type of retail offer it is economically feasible to establish within the study area, It also highlights the importance of providing good access to this important activity centre for future residents of the area.

- **proposed mildura south sporting precinct**

Preceding Council plans have established the need for a significant regional sporting complex to be established in Mildura's south. The large and important complex will be established on the south eastern corner of Sixteenth Street and Deakin Avenue. The position of this complex within the heart of this study area offers great opportunities for residents of the area but means the area around this complex will also need to acknowledge the wider role it will play in the regional as well as local context.






# mildura south urban design plan

## local context

### legend

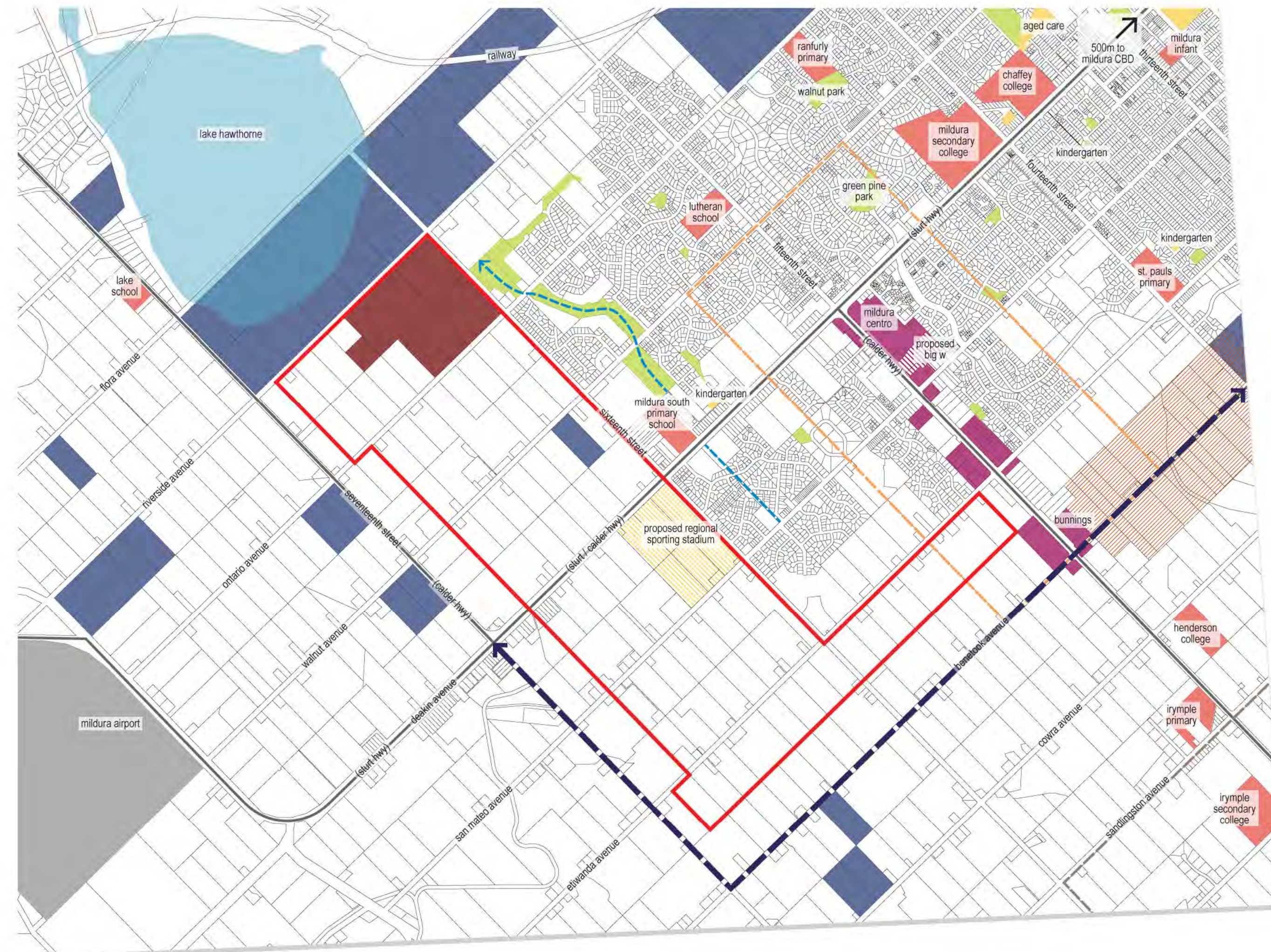
- study area 
- mildura airport 
- water 
- linear wetlands 
- public open space 
- community services / facilities 
- proposed regional sporting stadium 
- education facilities 
- retail 
- proposed retail 
- industrial precinct 
- FMIT land 
- college lease land 
- vicroads road 
- proposed heavy vehicle bypass route 
- fifteenth and deakin structure plan 
- iryple structure plan 

**DRAFT**



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## 5 urban structure and land use

The following elements are considered to be of relevance to the structure and land use context of the study area:

- **the chaffey subdivision**

The defining characteristic of the urban structure of the study area is the existing road structure and subdivision patters which reflect the ‘Chaffey’ pattern seen throughout Mildura. The Chaffey’s set out a clear pattern for subdivision with their irrigation district which produced regular block sizes of 10 hectares throughout the Mildura area. This subdivision patter remains relatively intact in the study area, with 20 parcels of land provided within each urban ‘block’. While some of these have been consolidated and some excision of dwellings has occurred, the regularity of the pattern remains.

- **college lease land**

There are a number of parcels within and around the study area which subject to College Lease. These parcels are owned in perpetuity and cannot be sold; rather, they are only able to be leased. As a result these parcels often do not accommodate development, even when it occurs around them. It is important for this plan to acknowledge the presence of one of these parcels and to plan accordingly for how it can be integrated into the area rather than anticipating development in line with other parcels in the area.

- **fmit land/ land advertised for sale**

A large area of land within the study area to the north is identified as land owned by the First Murray Irrigation Trust. This trust has been absorbed into Lower Murray Water. The future of this parcel of land will be crucial to the development of the area, particularly given the size of this parcel. Also important to consider is the large parcel that has been consolidated to the immediate south of this which also offers opportunities for immediate development in the area.

- **agricultural interface**

One of the key issues this plan must address is the interface of this land, which is intended to accommodate substantial residential populations, with agricultural land. The agricultural land does, and will continue to play an important role in Mildura’s economic development and identity. The future of the strip of agricultural land between the proposed bypass and the study area will need to be established, but the interface with these parcels, which are unlikely to accommodate residential

uses due to the presence of the bypass will need to be carefully managed to ensure no conflict between land uses.

- **residential interface**

There is also an existing residential interface along Sixteenth Street where the study area meets the currently developed urban area of Mildura. The interface between these areas will need to be considered to ensure that there is a sense of cohesion between the to urban areas.

- **subdivision patterns in existing urban areas**

This potential integration of the two areas is aided by the fact that most of the existing development to date that runs along Sixteenth Street has been orientated to front that street. However, beyond this ‘front row’ of dwellings, there is little uniformity in the subdivision pattern.

- **retail corridor**

Also of note in relation to the study area is the presence of a retail corridor to the north along Fifteenth Street. this corridor incorporate larger lot sizes to accommodate retail offers such as Bunnings and Big W, in addition to the existing Mildura Centro complex.



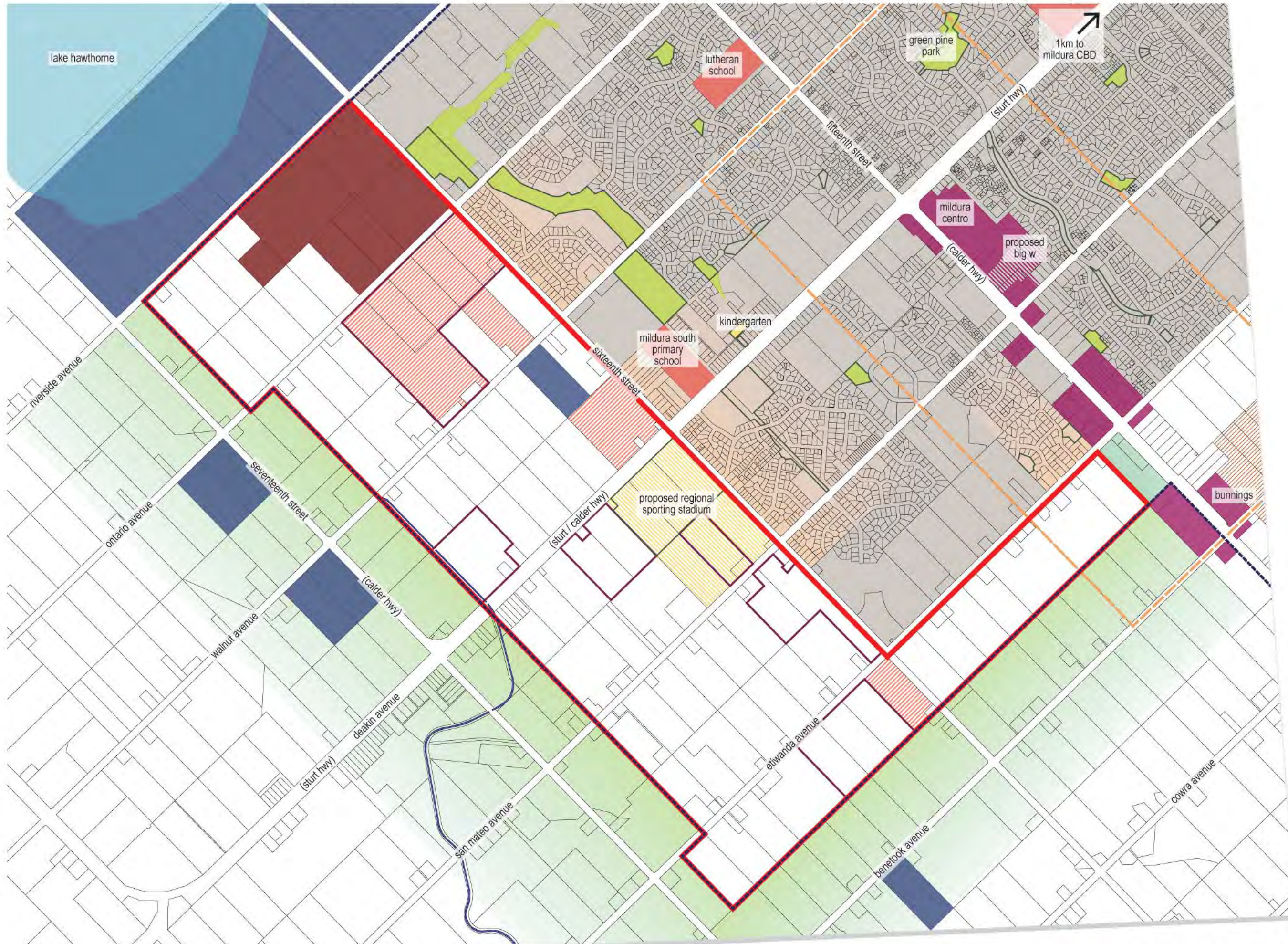


# mildura south urban design plan

## urban structure and land use

### legend

- study area 
- primary urban block structure 
- water 
- public open space 
- existing subdivision pattern 
- community services / facilities 
- proposed regional sporting stadium 
- education facilities 
- retail 
- proposed retail 
- industrial precinct 
- FMIT land 
- college lease land 
- MRCC sites 
- fifteenth and deakin structure plan 
- 2030 residential growth boundary 
- consolidated lots 
- land currently for sale 
- residential interface 
- farming interface 
- open irrigation channel 



**DRAFT**



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 Scale: 1:15,000@A3  
 Date: 21.03.11  
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## 6 environment

The following elements are considered to be of relevance to the environmental context of the study area:

- **lake hawthorn**

The study area immediately adjoins Lake Hawthorn, one of two semi permanent lakes to the immediate north of Mildura’s urban area. The proximity of the area to this important habitat and the impact of urban stormwater drainage on this lake, means a high level of care must be taken to ensure that development of the study area does no impact on the health of the lake, and to identify ways in which the development of the area may assist in revitalising the lake.

- **land under vine**

One of the key features of the area currently is the preponderance of land which is currently under vine. This is perhaps the key characteristic of the area at the moment and the transition from these vineyards to a residential area will need to be carefully managed. As can be seen from the following graphic, with the exception of land in the northern corner, almost the entire area is under vine.

- **salinity**

The management of salinity in the area will perhaps be one of the key considerations, particularly in relation to the provision of infrastructure. The graphic on the following page show clearly that the entire area is considered at ‘medium’ risk of salinity and that three significant parcels are considered at ‘high’ risk of salinity. The development of these areas, in particular, will need to be undertaken in a way which does not impact on salinity levels.

- **topography**

The study area is generally quite flat, although there are some minor variations in the landscape, with a higher point to the south between Etiwanda and San Mateo Avenues and a low point to the north adjoining Lake Hawthorn. The urban design of the growth area will need to respond to the topography by generating areas of visual interest within a relatively uniform landscape.

- **linear wetlands**

A series of linear wetlands are in the process of being developed to the north within the existing Mildura South area. These wetlands will be naturalistic, but will also provide BBQ shelters and playgrounds to serve the residents. It is understood the

wetland system takes stormwater runoff from as far as Irymple. There is also a stormwater retention basin proposed at the junction of Etiwanda Avenue and Sixteenth Street. As highlighted, the management of stormwater within this area will be a key consideration of the Urban Design Plan and the incorporation of additional wetland systems will need to be assessed.

- **existing built form**

While the study area has very little existing built form, what is present can be almost exclusively characterised by its distribution along the main street frontages. Built form is of a low scale and low key nature, including a number of sheds, as befits the current agricultural use of the land.

- **date palm avenue**

An existing avenue of date palms is present within the study area, running along the south side of Deakin Avenue below Sixteenth Street along the frontage where the Mildura South Recreation Reserve is proposed.

- **deakin avenue masterplan**

A masterplan has been prepared for Deakin Avenue which includes the sections between Sixteenth and Seventeenth Street in the study area. The masterplan envisages the retention of swale drains along the verges, with power underground and newly constructed foot and cycle paths. The planting will include Salmon Gums along both the verge and within a central median strip as well as the introduction of new lighting.

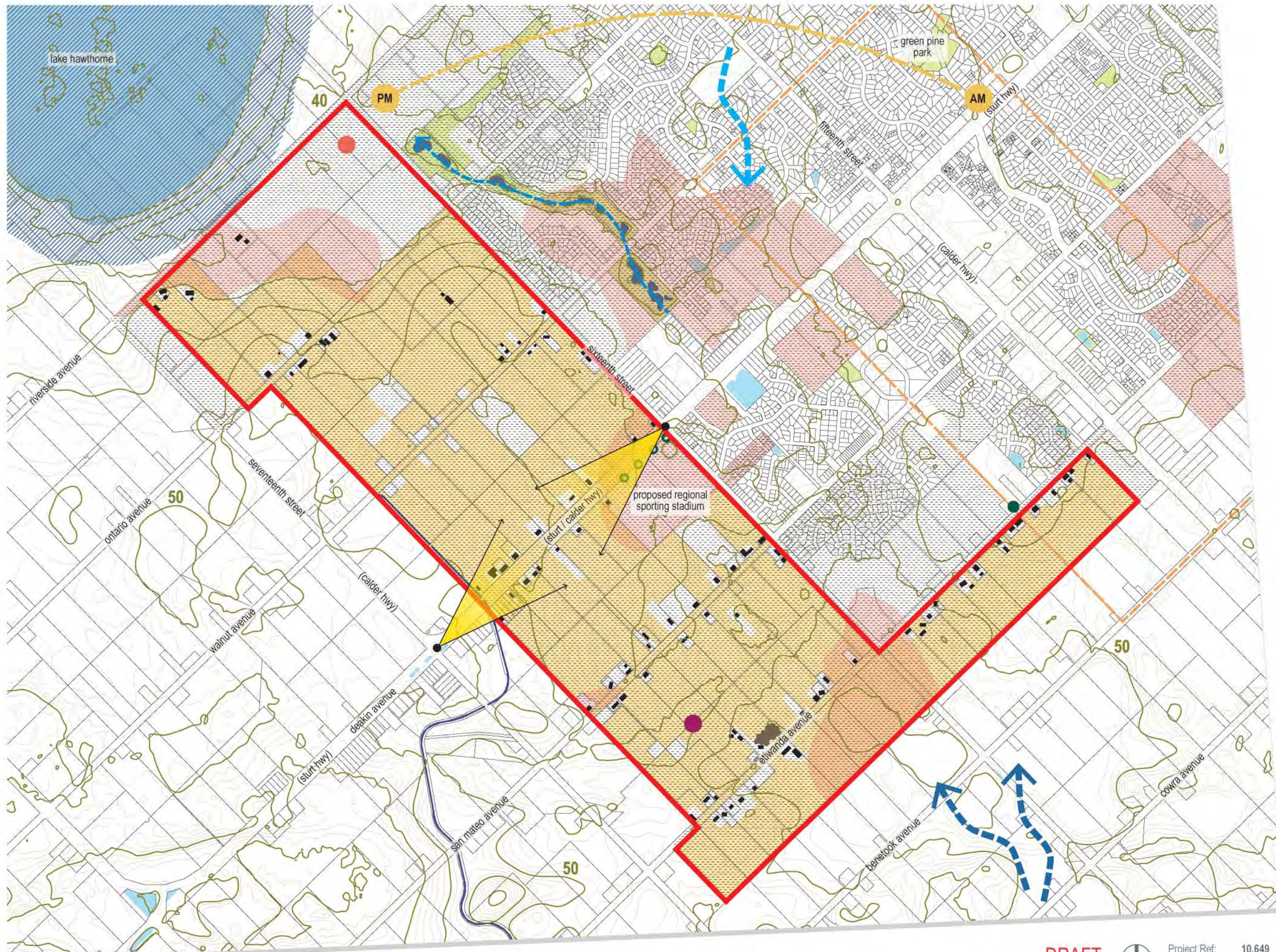




# mildura south urban design plan environment

## legend

- study area 
- lake hawthorne 
- drainage basins 
- constructed wetlands 
- linear wetlands 
- public open space 
- contours 
- high points 
- low points 
- key views 
- solar access 
- prevailing winds (summer) 
- prevailing winds (winter) 
- open irrigation channel 
- established date palms 
- historic pine tree 
- existing wood lot 
- land under vine 
- land effected by salinity: medium risk 
- land effected by salinity: high risk 
- cultural heritage 
- existing built form 
- fifteenth and deakin structure plan 



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## 7 access and movement

The following elements are considered to be of relevance to the access and movement within the study area:

- **potential heavy vehicle bypass**

The long term plan to provide an alternate route for heavy vehicles along Seventeenth Street and up Benetook Avenue must be considered as part of this work. The study area itself reflect the impact of this route, with the land immediately adjacent to these roads sitting outside the boundary to reflect the need to restrict residential development immediately adjoining this route.

- **gateways**

The intersection of Deakin Avenue and Seventeenth Street is one of the key gateways within the wider City of Mildura. It will function as the main entrance to the city for any visitors arriving either by plane or along the Calder Freeway. As such it is important that this gateway is recognised and provided an appropriate first impression of the city. An additional gateway that is likely to be developed is the intersection of Sixteenth Street and Deakin Avenue which will form a gateway to this new growth area from the existing urban area but will also be important in terms of its relationship with the Mildura South Sporting Precinct which will be a destination within the wider region.

- **deakin avenue**

Deakin Avenue is recognised as the key roadway within the City of Mildura and plays a strong role in defining the identity of the City. A number of masterplans have been prepared for this road over the years, which will need to be considered carefully as part of this project. The preferred layout of the roadway, of the three options presented in the Strategic Framework Plan will need to be identified.

- **bus routes**

One of the key considerations in planning a growth area is ensuring that new residents have access to appropriate means of alternate transport. Currently there are two bus routes which provide access to the study area. Route 250/300 runs along Seventeenth Street, up Deakin Avenue within the study area before diverting along Sixteenth and up San Mateo Avenue before returning to Deakin Avenue via Fifteenth Street. This provides a link between Merbein and the Mildura CBD. Route 601 runs along Fifteenth Street and through a small potion of the new estates north of the study area before running along Walnut Avenue to Sixteenth, along Sixteenth

and then up San Mateo before rejoining Fifteenth Street, linking the local area but providing little access beyond the immediate locale.

- **key junctions**

In addition to the key junction of Deakin Avenue and Seventeen Street (or the Calder Freeway), which is also identified as a key ‘gateway’, there are a number o other intersection which re either currently ‘key’ or are likely to become so. These are beyond the study area but need to be considered in this project. These are the intersection of Deakin and Fifteenth, where Mildura Centro is located and the intersection of Fifteenth and Benetook which will increase in importance as the bypass develops and provides access to an identified industrial area.

- **road layout**

Mildura is blessed with a strong regular grid pattern of roads which carries through to the study area. This strong gird pattern provides a strong urban structure to area. The roads are aligned on a 45 degree angle in regular blocks of around 500 x 1000m. There has been little development of additional local roads within this main grid within the study area. It is noted also that the existing urban area to the north is dominated by a relatively ad-hoc arrangement of cul-de-sacs with few clear through roads.





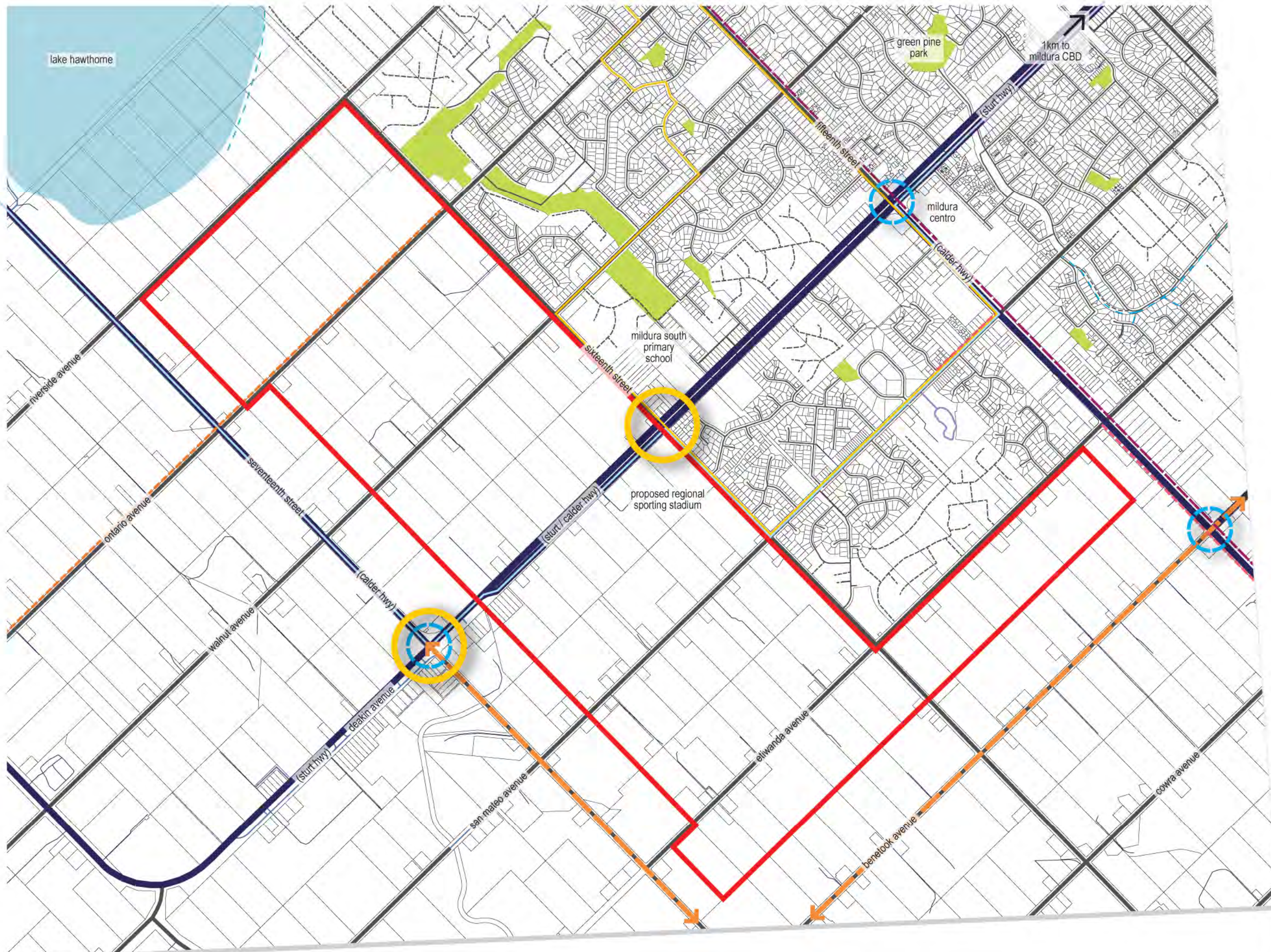
# mildura south urban design plan access and movement

- legend study area
- gateways
  - key traffic junctions
  - vicroads roads
  - primary roads
  - local roads
  - future local roads
  - unsealed roads
  - proposed heavy vehicle bypass route
  - bus routes
  - constructed shared path
  - exclusive bicycle lane
  - bicycle marking signage

DRAFT

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## 8 findings of framework review

The background review has identified that since 2007 there has been a significant shift in population and demographic trends, the release of the Precinct Structure Planning Guidelines (2007), and the adoption a number of strategic documents by Mildura Rural City Council, all of which have implications for the Mildura South Strategic Framework Plan. Most notable is the slowing of population growth rates which may affect the rate of development within the Mildura South precinct, having an impact on land supply, infrastructure delivery, and the provision of community services and facilities. In addition to the slowing down of growth rates is the increase in smaller household sizes and an ageing population, both of which highlight the need to ensure housing diversity and the appropriate services are supplied within the precinct.

The other notable issue identified in the background review was the effect of salinity within the study area. The Site Salinity Management Guidelines (SKM, 2009) has identified that the area has a salinity risk ranging from ‘moderate’ to ‘high b’. One of the areas identified as having a ‘high b’ salinity risk is the location of the proposed sporting stadium, which the guidelines recommend should not be used for irrigated areas or water features which would require the retention of waters at levels which would significantly impact on surrounding groundwater levels. Given these recommendations, consideration needs to be given to the appropriateness of the current location for the proposed sporting complex, or how a development in this location would manage the salinity issues.

The key issues that need to be considered in the review are highlighted in the diagram below and have been determined from the extensive background review, undertaken by the consultant team. The diagram illustrates each of the issues that would be considered in a ‘triple bottom assessment’, highlighting the ones that have been identified as needing further consideration and assessment in the review. A summary of these issues are list below.

**Land supply:** The MSF identifies a population for Mildura of around 86,000 by 2031, however growth rates have slowed which indicates that staging and timing of delivery of development is likely to take longer than predicted. This will also have implications for the provision of community services and facilities.

**Retail opportunities:** The MSF identifies the provision of two neighbourhood activity centres, with one anchored by a small supermarket, however the Mildura Retail Strategy (2010) recommends a neighbourhood activity centre that is

anchored by full line supermarket, which could be further supported by local convenience centres.

**Transport:** It has been identified that no roads have been gazetted within Mildura South and as a result B-double vehicles can use any road. This caused issues at a number of intersections and results in damage to traffic control systems such as roundabouts, etc.

**Housing densities:** MSF implies a residential density of 11 dwellings per hectare throughout the site; however Precinct Structure Planning Guidelines (2009) stipulates that an average of 15 dwellings per net residential hectare should be achieved.

**Community facilities:** To ensure the precinct meets current policy, it is recommended that one of the proposed childcare facilities is co-located with the primary school.

**Recreational opportunities:** Since the MSF, the area for the proposed Mildura South Sporting Stadium has been extended. Pending the approval of amendment C56, the area will double in size and include the provision of extra recreation and community facilities.

**Public transport:** Bus routes serving the site has increased since 2007. Bus stops will need to be identified to ensure that 95% of dwellings will be within 400m of an existing/proposed stop to meet Precinct Structure Planning Guideline standards (2009).

**Public open space:** MSF identifies that public open space should be provided within 150-300m of dwellings “where appropriate”, however Precinct Structure Planning Guidelines (2009) stipulates that at least 95% of dwellings should be located within 400m of local open space. To meet this standard the number and location of local open spaces will need to be reassessed.

**Salinity:** Information in the MSF is dated and incorrect and requires updating to incorporate findings and recommendations included in the Site Salinity Management Guidelines (2009). These guidelines have identified the site as having an assessed salinity risk ranging between ‘moderate’ to ‘high b’. One of the areas identified as having a ‘high b’ salinity risk is at the Deakin Ave and 16th Street intersection, which is the location of the proposed sporting stadium. The guidelines recommend recommends that sites classified as ‘High b’ should not be used for irrigated areas (e.g. sporting fields or parks) or water features (e.g. wetlands) which would require the retention of waters at levels which would significantly impact on

surrounding groundwater levels.

**Climate change:** There are a few references made to climate change, particularly with regard to the prolong drought period. There is also no reference to flash flooding, which will have serious impacts on stormwater systems.

economic	social	environmental
land supply	housing diversity	public open space
population growth	educational facilities	water quality
housing densities	community facilities	stormwater management
employment opportunity	recreational opportunities	sewerage
retail opportunity	bcycle provision	salinity
transport	public transport	climate change
	heritage	native vegetation
		biodiversity



Issue	MSF recommendation	Changes since MSF	Implications for MSF	Issues to be addressed in Precinct Structure Plan
Land supply	Full development (population of 9,000) by 2031.  Mildura Irymple Residential Land Strategy (Maunsell, 2003) indicated annual average population growth rate is around 1.9%, equating to a requirement for around 500 new dwellings per annum.	Population growth slows: average of 1.4% per annum population growth in MRC since the early 1980's. However, forecast growth to 2026 (VIF Population Projections 2008) averages around 0.2% to 0.5% per annum.  The MSF indicates previous population forecasts for MRC (Mildura Irymple Residential Land Strategy) indicated a population of around 86,000 by 2031. However, extrapolating the VIF Projections to 2031, a population for MRC of around 56,000 results.	If population forecasts in the Mildura South Precinct are revised in line with VIF projections – staging and timing of delivery of development is likely to be longer term than predicted.  This will further be influenced by development of other residential subdivisions outside the Precinct.  This has implications not only on residential lot take-up, but demand and staging of infrastructure, retail floorspace and community service provisions.  Due to slowing population growth, the rezoning of lands in the Mildura South Precinct may not be a priority given sufficient supply of lands (e.g. Merbein, Irymple, Red Cliffs and Ouyen).	
Population growth	Residential and population densities are based on the assumption of 2.6 persons per dwelling.  Residential density of 3.5 lots per acre based upon an approximate area for the study area of 1,000 acres (gross).	Demographic change: significant aging of the population which is forecast to continue through to 2026 (VIF Population Projections 2008).  Since 1996, MRC has experienced declining household sizes and an increasing number of lone person households.	Likely to result in increased demand for smaller dwellings (due to downsizing) and seniors living/aging in place development.  Increased number of townhouse opportunities – especially around activity centres and near public transport nodes (walking catchment)  Total population forecast for the Precinct may change if household sizes continue to decline.	
Housing densities	Residential density of 3.5 lots per acre based upon an approximate area for the study area of 1,000 acres (gross).	Precinct Structure Planning Guidelines (2009) states that “housing across a precinct structure plan should achieve an average density of at least 15 dwellings per net residential hectare, which will be achieved by providing a range of lot sizes. ”  Note: ‘net residential hectare’ refers to the total land available for residential development, excluding land for public open space and public infrastructure.  Mildura Planning Scheme Review (2010) identifies the possibility of MRCC adopting a Housing Strategy.	A minimum residential density of 15 dwellings per net residential hectare will need to be seriously considered. This will result in an increase in the number of dwellings in the precinct and therefore may substantially alter the predicted population, which will have implications on the amount of public infrastructure and services that will need to be provided.  If a housing strategy is conducted then residential requirements for the study area will need to reflect objectives of the strategy.	



Retail opportunity	<p>Two neighbourhood activity centres in the Mildura South Precinct, with one anchored by a supermarket.</p>	<p>Expansion of the Fifteenth Precinct Activity Centre (Mildura Centro focus) to include a proposed new Big W, Coles supermarket and additional specialty floorspace.</p> <p>Mildura Retail Strategy (2010) recommends that a residential catchment of 9,000 (MSF, 2007) would support a neighbourhood centre containing a full-line supermarket, and potentially a network of well-located local shops/centres which provide for daily convenience retail needs of residents - pending further investigation.</p>	<p>While the study area could support a neighbourhood activity centre of 5,000-7,000sqm, the proximity of the Centro Mildura precinct and the configuration of the site would seriously impact the viability of a proposal at this scale.</p> <p>Hill PDA's modelling indicates the Mildura South Precinct could sustain up to 9,000sqm of shop front floorspace by 2031. Of this 8,000sqm is associated to retail.</p> <p>Modelling recognises centres outside of the Precinct will capture the majority of expenditure (over 60% of total retail expenditure) - largely in department stores, clothing, bulky goods, personal services, restaurants/cafés. A proportion of supermarket expenditure will also still escape to higher order centres.</p> <p>Hill PDA's modelling assumes no capture of expenditure from outside the Mildura South Precinct.</p> <p>The number of future residents to reside between the Fifteenth Precinct and the Mildura South Precinct (land subject of recent and increasing number of subdivision applications) is unknown. These residents may form part of the trade area of activity centres in the Mildura South Precinct.</p>	<p>Either one large Neighbourhood Centre or two smaller centres (one large and one small neighbourhood centre) could result.</p> <p>Larger neighbourhood centres should be:</p> <p>Anchored by a reasonable sized supermarket plus café's, specialty shops and shopfront commercial.</p> <p>Located in the central heart of the Precinct with excellent street frontage and be well accessed by major roads in order for the centre to service the Precinct as well as passing traffic.</p> <p>Adjacent to a park and/or school providing drawcards to the centre.</p> <p>Consider being surrounding by medium density development (e.g. townhouses).</p> <p>Take advantage of retail being easily accessible when residents are driving home.</p> <p>Accessible by public transport.</p> <p>Designed on a main street theme, however there is a need to make sure traffic generation is not too high as to generate land use conflicts. If conflicts arise it may be better to contain the retail to one side of the road.</p> <p>Smaller neighbourhood centre centres should be:</p> <p>Convenient for top-up shopping and may include petrol, a convenience store and take-away food shop.</p> <p>Capture passing trade</p> <p>Easily accessible not only for those residents within the Precinct, but those located east of Sixteenth Street.</p> <p>On a main road and therefore are convenient to both residents and passing traffic.</p> <p>Separated by some considerable distance from larger or higher order centres.</p>
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	A minimum stage 1 development would be in the order of 720sqm, including a 240sqm supermarket.		<p>240sqm supermarket is more in line with a convenience store or general store. Given 4,000sqm of supermarket or grocery store floorspace would be demanded by 2031 (based on a catchment of 9,000 people) a supermarket of 2,500sqm to 3,000sqm would be supportable.</p> <p>The supermarket could open around 2 years ahead of achieving industry target turnover levels so as to meet residents' needs for services in advance.</p> <p>This would still allow expenditure to escape the Precinct to other supermarkets (e.g. Mildura Centro).</p>	
		The Precinct structure Planning Guidelines (2009) state that 80-90% of households should be within 1km of an activity centre of sufficient size to allow for provision of a full-line supermarket.	The MSF notes that Centro Mildura is approximately 1km from the intersection of Deakin Avenue and Sixteenth Street. Given that most of the residential area with the site falls south of this intersection, to meet the PSP Guidelines, provision of a larger activity centre containing a full-line supermarket will need to be considered.	
Transport		The plan does not show recommendations made to realign Walnut Ave within the study area to reduce vehicle number and to decrease traffic speed	.	Should identify roads which are controlled by Vic Roads, which will require VR approvals, and which may be able to access state and federal funding.
				Freight traffic: it should be noted that no roads have been gazetted and as a result B-double vehicles can use any road in the city, this is an issue at a number of intersections - resulting in damage to traffic control systems such as roundabouts, etc.



Housing diversity	<p>Residential density of 3.5 lots per acre based upon an approximate area for the study area of 1,000 acres (gross).</p> <p>Total of 3,500 lots forecast for the study area.</p> <p>Provision of aged care housing – to be located near activity centre and close to greenway.</p>	<p>Demographic profile identifies an increase in smaller household sizes and an ageing population.</p>	<p>3.5 lots per acre appears to be a rough calculation to determine the overall dwelling yield for the Precinct.</p> <p>Actual anticipated completed residential lot sizes have not been provided apart from suggesting higher densities around proposed.</p> <p>Market analysis indicates demand for residential lot sizes of around 650sqm-750sqm.</p> <p>Market analysis indicates increasing demand for smaller (townhouse) lots of around 400-500sqm.</p> <p>Consideration needs to be given to the amount of retirement village/aged car housing.</p>	
Educational facilities	<p>One primary school and to integrated children's services facilities</p>	<p>At the time of the 2007 MSFPP, the closest Primary School was the Mildura South Primary School and it was at capacity.</p> <p>DEECD indicated the need to reassess the need for a primary school once the 2006 Census was available.</p> <p>Current policy supports the co-location of early years' facilities with primary schools. This is particularly advantageous in engaging with disadvantaged and vulnerable families in early years' pathways. DEECD and Community Childcare supported co-location in consultation undertaken for the 2007 MSFPP.</p>		<p>Consultation with DEECD will need to be undertaken to confirm ongoing requirement and location of a primary school.</p> <p>If required, co-locate early years' facilities with primary school.</p>
Community facilities	<p>One or two medical centres</p>	<p>The Municipal Health and Wellbeing Plan has a focus on increasing the availability of GP's, counselling services, mental health services and allied health services.</p> <p>In the absence of a municipal early years' plan and detailed population forecasts for Mildura, Capire is unable to provide an indication of the size and service mix of the children's services facilities.</p>	<p>Level of provision is supported, however it is recommended that one of the facilities is co-located with the primary school (in the current MSFPP, one facility is located in a neighbourhood centre and one facility is free-standing).</p> <p>Provision should be made for both private and community health care service providers.</p>	<p>Consultation with the Northern Mallee Primary Care Partnership should be undertaken to confirm spatial requirements.</p> <p>Consultation should be undertaken with Council's family services team and Community Childcare.</p>



Recreational facilities		<p>Extension of Mildura South Regional Sporting Stadium</p> <p>Mildura Planning Scheme Review (2010) identifies Amendment C56, which is currently on exhibition. It seeks to apply the Public Acquisition Overlay to land described as Lot 1 and 2 LP 140287 (653 and 663 San Mateo Avenue), Lots 1 and 2 LP 437895 (677 and 685 San Mateo Avenue) and Lot 1 TP 844, 949 and 687 San Mateo Avenue Mildura) as a result of the preparation of the Mildura Recreation Masterplan Review.</p>	<p>The extension of the Mildura South Sporting Stadium has provided additional flexible community activity/meeting spaces which are considered sufficient to service the future population.</p> <p>The integrated children's facilities should provide space for complimentary family-based activities such as playgroups and parent groups.</p> <p>The extension of the Mildura South Sporting Stadium has provided required additional recreational facilities, particularly for youth.</p>	.
Bicycle provision	<p>Shared pedestrian/cycle path is proposed along the Greenway (Sixteenth St).</p>	<p>The Precinct structure Planning Guidelines (2009) state that: Marked bicycle lanes are provided on all collector streets. On all arterial roads, provide a shared bicycle/footpath (segregated where possible) and on road bicycle lanes wherever possible.</p> <p>Dedicated off-street shared pedestrian and cycle paths are established through open space areas. Where relatively high levels of pedestrians and cyclists are expected, segregated paths exist.</p>	<p>More bicycle lanes need to be factored into the precinct, particularly as the MSF encourages active transport to the neighbourhood facilities and greenway.</p> <p>Explore options of separate pedestrian and cycle paths, particularly along the Greenway (where a high pedestrian/cycle traffic is expected and encouraged).</p>	
Public transport	<p>The MSF highlights current bus routes but does not identify existing/future bus stops so it is unclear if all dwellings would be within 400m of access to public transport.</p>	<p>The Precinct structure Planning Guidelines (2009) state that: 95% of dwellings are located not more than 400 metres street walking distance from the nearest existing or proposed bus stop. See Clause</p> <p>Bus access to the site has increased.</p> <p>Route 601 runs down San Mateo Avenue, passes the site along Sixteenth St, and continues up Walnut Av.</p> <p>Route 250 comes down San Mateo Avenue, runs down Sixteenth St to Deakin Avenue, heads south down Deakin Avenue to Seventeenth Street, Runs along Seventeenth Street to Commercial St where it does a loop and then heads along the same route to Mildura CBD.</p>	<p>Provision of public transport has to the study area has increased, with one bus route running through the site. This may mean that future development will now meet PSP Guidelines.</p>	<p>Must identify the provision of new bus routes and identify exiting and future bus stops.</p>



Public open space	<p>Local space needs to be provided with 150-300m of safe walking distances to all dwellings “where appropriate”.</p> <p>Active open space is provided at the proposed Mildura south sporting stadium.</p>	<p>The Precinct structure Planning Guidelines (2009) state that precincts should provide a network of quality, well-distributed, multi-functional and cost effective open space, catering for a broad range of users that includes:</p> <p>Local parks within 400m safe walking distance of at least 95% of all dwellings;</p> <p>Active open space within 1 kilometre of 95% of all dwellings;</p> <p>Linear parks and trails, most often along waterways, but also linked to vegetation corridors and road reserves within 1 kilometre of 95% of all dwellings. See Clause 56.05-2</p>	<p>The PSP Guidelines give a measureable target for local open space to ensure that nearly <u>all</u> dwellings in the precinct (95%) had easy access to local open space. This may mean that more pockets of open space may need to be dispersed throughout the precinct to meet this standard.</p>	
Stormwater management		<p>Increased rainfall experienced ion Mildura.</p> <p>Acquisition and expansion of the proposed sporting complex.</p>	<p>Given recent extreme rainfalls MRCC will probably reassess flooding issues which may impact upon site drainage requirements.</p> <p>Existing LMW infrastructure and future infrastructure may impact on the facilities to be provided within the complex.</p>	<p>Add comments regarding dual use drainage reserves and incorporation of public open space into drainage basins, meandering linear paths, overland flow paths for extreme paths.</p> <p>Fire fighting should be included in potable water section.</p>
Sewerage		<p>PS amendments since 2007: the proposed sewer pump station near the corner of Sixteenth Street and Etiwanda Avenue is about to become a reality with a contract recently let for its construction. The pump station is expected to be commissioned within 6 months. Initially the pump station will serve Stage 7 &amp; 8 of Mirage Estate and then a greater catchment including some of the land in the study area.</p>	<p>Revision of sewerage provision plans in light of current infrastructure development.</p>	<p>Add section potable water: a from the need for trunk and reticulation sewers to serve development there will also be a need for trunk and reticulation potable water mains with the trunk mains being located in the main road corridors.</p>



Salinity	Salinity information is based on 2004 assessment.	<p>Site Salinity Management Guidelines (2009) identified the site as having an assessed salinity risk ranging between ‘moderate’ to ‘high b’. The guidelines note the following recommendations for ‘high(b)’:</p> <p>Providing that the required actions are implemented, land identified to be at high(b) risk of urban salinisation is recommended for uses other than irrigated areas (e.g. sports fields or parklands) or water features (e.g. wetlands) that involve the retention of water at levels which would significantly impact surrounding ground water levels. These land uses should be avoided due to the potential for rising regional ground water levels as a result of additional water to the underlying groundwater.</p> <p>It should be noted here that there is a potentially high cost involved in the reduction and maintenance of regional groundwater below a level that would impact on urban development.</p> <p>The guidelines recommends that these areas be subject to a Salinity Action Statement (SAS) as part of the planning process.</p>	<p>One of the areas identifies as being a ‘high (b)’ risk is the site for the new recreational stadium and sporting grounds. In light of the 2009 guideline recommendations, the appropriateness of the proposed current location for the sporting stadium need to reassessed.</p> <p>Consideration may need to be given for how development throughout the precinct deals with salinity issues.</p>	.
Climate change				<p>There are a few references made to climate change, particularly with regard to the prolong dry period. This needs to be highlighted.</p> <p>Reference needs to be given to more frequent flash flooding events and this will have a significant impact on stormwater systems within the precinct.</p>





appendix 1

hillPDA economic assessment of framework plan







## Memo

**TO** Jane Keddle, Hansen Partnership

**SUBJECT** Mildura South Precinct

**FROM** Victoria Tompsett **JOB REF. NO.** M11010

**DATE** 28 March, 2011 **NO. PAGES** 16

Jane

The following provides an overview of the relevant demographic, market and retail demand changes since the Mildura South Strategic Framework Plan was undertaken in 2007. The analysis below is high level and is provided in draft form.

### Demographic Trends

The following section provides a profile of demographic trends across Mildura LGA to better understand how the changing characteristics of the population will influence development within the Mildura South Precinct.

ABS Regional Population Growth data (2010) indicated Mildura LGA had a population of almost 53,900 persons in 2009. The following table shows historical population change for the Mildura LGA from 1981 to 2009 based on ABS data. The results indicate the population has grown by some 15,533 persons since 1981, equivalent to growth of over 40% over the period, or 1.4% per annum average growth.

**Table 1 - Mildura LGA Population Change (1981-2009)**

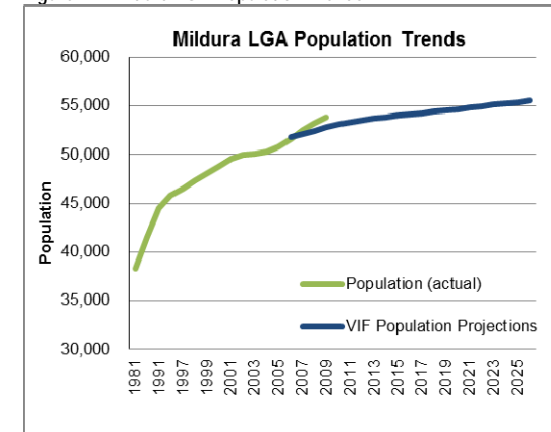
Year	Total Population	Change in Persons	Annual % Change
1981	38,344		
1986	41,506	3,162	1.6%
1991	44,537	3,031	1.5%
1996	45,811	1,274	0.6%
1997	46,483	672	1.5%
1998	47,300	817	1.8%
1999	48,057	757	1.6%
2000	48,797	740	1.5%
2001	49,616	819	1.7%
2002	50,015	399	0.8%
2003	50,044	29	0.1%
2004	50,313	269	0.5%
2005	50,797	484	1.0%
2006	51,590	793	1.6%
2007	52,519	929	1.8%
2008	53,254	735	1.4%
2009	53,877	623	1.2%

Source: ABS, 3218.0 Regional Population Growth, Australia (Released 30 March 2010)

Historically, annual growth rates in Mildura LGA have fluctuated significantly peaking at 1.8% between 1997 and 1998 and again between 2006 and 2007. Although declining since 2005, annual growth rates have been over 1% - equivalent to an additional 600 to 900 persons per annum.

Moving forward, Victoria in Future Population Projections (2008) show that Mildura LGA will experience significantly lower growth rates than historical trends.

**Figure 1 - Mildura LGA Population Trends**



Source: ABS, 3218.0 Regional Population Growth, Australia (Released 30 March 2010) and Victoria in Future Population Projections (2008)

The table below indicates that from 2010 onwards the LGA is anticipated to experience little growth in the range of 0.2% to 0.5% per annum to 2026, equivalent to an additional 130 to 250 persons per annum. A population of 55,523 persons is expected by 2026.

**Table 2 - Mildura LGA Forecast Population Growth (2006-2026)**

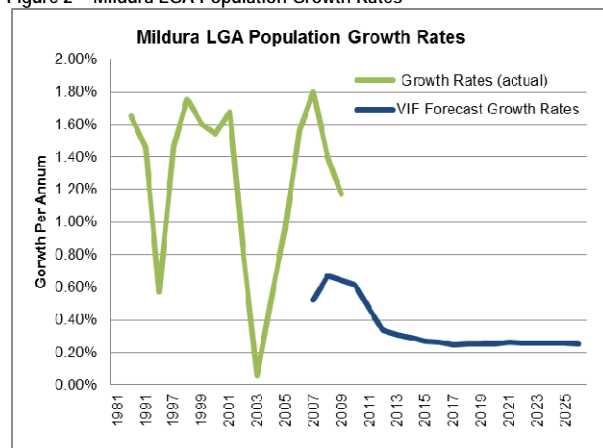
Year	Total Population	Change in Persons	Annual % Change
2006	51,824		
2007	52,095	271	0.5%
2008	52,445	349	0.7%
2009	52,781	336	0.6%
2010	53,104	324	0.6%
2011	53,351	247	0.5%
2012	53,528	177	0.3%
2013	53,694	166	0.3%
2014	53,848	154	0.3%
2015	53,994	146	0.3%
2016	54,135	141	0.3%
2017	54,269	134	0.2%
2018	54,404	135	0.2%
2019	54,539	135	0.2%
2020	54,677	138	0.3%
2021	54,820	143	0.3%
2022	54,960	140	0.3%



Year	Total Population	Change in Persons	Annual % Change
2023	55,102	142	0.3%
2024	55,243	141	0.3%
2025	55,385	141	0.3%
2026	55,523	138	0.2%

Source: Victoria in Future Population Projections (2008)

Figure 2 - Mildura LGA Population Growth Rates



Source: ABS, 3218.0 Regional Population Growth, Australia (Released 30 March 2010) and Victoria in Future Population Projections (2008)

The table below shows the breakdown of the population by age from 1996 to 2006 based on ABS Census data. The results indicate a general aging of the population with growth particularly in residents aged 45 to 65 years. Conversely there has been a decline in the number of babies and low growth in the number of those aged 20 to 35 years.

Table 3 – Age Characteristics of Mildura LGA

Age	1996	2001	2006	Change 1996-2006	% Change 1996-2006
0-4 years	3,629	3,669	3,245	-384	-10.6%
5-14 years	7,175	7,707	7,846	671	9.4%
15-19 years	2,925	3,217	3,629	704	24.1%
20-24 years	2,616	2,592	2,814	198	7.6%
25-34 years	6,457	6,412	5,960	-497	-7.7%
35-44 years	6,779	7,282	7,095	316	4.7%
45-54 years	5,529	6,331	6,913	1,384	25.0%
55-64 years	4,198	4,522	5,483	1,285	30.6%
65-74 years	3,714	3,735	3,816	102	2.7%
75-84 years	1,863	2,235	2,789	926	49.7%
85 years and over	533	684	860	327	61.4%
Total	45,418	48,386	50,450	5,032	11.1%
Median Age	34	35	37		

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Research from the Department of Planning & Community Development<sup>1</sup> shows the Mallee Region of which Mildura is part (together with the LGA's of Swan Hill, Buloke and Gannawarra) loses population to most regions of Victoria.

The analysis shows the Mallee has consistently lost youth – especially to jobs and universities in Melbourne, Ballarat and Geelong. The Department of Planning & Community Development indicates that the youth is influenced by three factors:

- The higher reputation of university courses in Melbourne;
- The wide choice of courses in Melbourne; and
- The opportunity to move and experience city life.

The table below shows the decline in youth is forecast to continue, corresponding with an aging of the population – especially those aged over 60 years.

Table 4 - Mildura LGA Forecast Population Growth by Age Group 2006-2026

Age Group	2006	2011	2016	2021	2026	Change 2006-2026	% Change 1996-2006
0-4	3,348	3,398	3,316	3,277	3,259	- 89	-3%
5-9	3,940	3,414	3,447	3,369	3,338	- 602	-15%
10-14	4,157	4,018	3,459	3,498	3,432	- 725	-17%
15-19	3,738	4,066	3,899	3,343	3,397	- 341	-9%
20-24	2,916	3,165	3,287	3,186	2,716	- 200	-7%
25-29	2,964	3,005	3,178	3,292	3,206	242	8%
30-34	3,316	3,037	3,046	3,223	3,341	25	1%
35-39	3,648	3,369	3,070	3,089	3,272	- 376	-10%
40-44	3,740	3,670	3,379	3,085	3,113	- 627	-17%
45-49	3,781	3,744	3,660	3,376	3,088	- 693	-18%
50-54	3,273	3,758	3,718	3,638	3,363	90	3%
55-59	3,111	3,247	3,718	3,686	3,616	505	16%
60-64	2,414	3,087	3,211	3,686	3,671	1,257	52%
65-69	2,084	2,323	2,989	3,120	3,592	1,508	72%
70-74	1,759	1,977	2,207	2,864	3,008	1,249	71%
75-79	1,666	1,605	1,811	2,038	2,670	1,004	60%
80-84	1,116	1,366	1,331	1,521	1,726	610	55%
85 and over	853	1,103	1,410	1,529	1,714	861	101%
Total	51,824	53,351	54,135	54,820	55,523	3,699	

Source: Victoria in Future Population Projections (2008)

<sup>1</sup> Mildura, Victoria in Future 2008 Regional Presentation, Department of Planning & Community Development.



The following table shows the range of household and family types in Mildura LGA. The results indicate that whilst families are the predominant household type, couple families with children have decreased from 1996 levels. One parent and lone person households have increased significantly compared to other household types over the same period.

Table 5 – Household and Family Types in Mildura LGA

Household Type	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Families:					
Couple family w/o children	4,356	4,773	5,068	712	16.3%
Couple family w. children	5,878	5,885	5,755	-123	-2.1%
One parent family	1,613	1,904	2,146	533	33.0%
Other family	143	150	159	16	11.2%
Total Families	11,990	12,712	13,128	1,138	9.5%
Lone Person	3,782	4,214	4,876	1,094	28.9%
Group	437	475	480	43	9.8%
Other	630	744	883	253	40.2%
Total Households	16,839	18,145	19,367	2,528	15.0%
Average Household Size	2.6	2.6	2.5		

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

The table below shows there has been reasonable growth in home ownership levels since 1996, with rental levels also increasing moderately. Whilst detached dwellings remain the predominant dwelling type, there has been a significant increase in townhouse dwellings equivalent to over 120% growth. Over 570 additional townhouses were developed and occupied in the LGA between 2001 and 2006 alone.

Table 6 – Dwelling Characteristics in Mildura LGA

Characteristic	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Home Ownership:					
Owned or Being Purchased	11,166	12,062	12,731	1,565	14.0%
Rented	4,915	5,102	5,335	420	8.5%
Other/Not Stated	765	993	1,303	538	70.3%
Total Dwellings	16,846	18,157	19,369	2,523	15.0%
Dwelling Type:					
Separate house	13,655	14,823	15,910	2,255	16.5%
Townhouse	491	522	1,098	607	123.6%
Flat-Unit-Apartment	1,491	1,762	1,617	126	8.5%
Other dwelling	899	899	741	-158	-17.6%
Not stated	310	151	3	-307	-99.0%
Total Dwellings	16,846	18,157	19,369	2,523	15.0%

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Examining the resident workforce, since 1996 there has been a decline in residents working in agriculture, wholesale trade and information/telecommunications. Over the same period, there have been significant increases in residents working in retail, administration/support services, manufacturing, and health care.

Table 7 – Industry of Employment by Working Residents in Mildura LGA

Industry	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Agriculture, forestry & fishing	3,554	3,682	2,892	-662	-18.6%
Mining	39	101	62	23	59.0%
Manufacturing	1,422	2,013	2,295	873	61.4%
Electricity, gas, water & waste services	256	283	277	21	8.2%
Construction	920	1,135	1,442	522	56.7%
Wholesale trade	1,532	1,231	775	-757	-49.4%
Retail trade	2,051	2,489	2,885	834	40.7%
Accommodation & food services	1,061	1,278	1,369	308	29.0%
Transport, postal & warehousing	705	848	996	291	41.3%
Information media & telecommunications	321	243	209	-112	-34.9%
Financial & insurance services	380	369	398	18	4.7%
Rental, hiring & real estate services	181	227	221	40	22.1%
Professional, scientific & technical services	534	669	708	174	32.6%
Administrative & support services	386	581	852	466	120.7%
Public administration & safety	736	720	1,092	356	48.4%
Education & training	1,259	1,512	1,657	398	31.6%
Health care & social assistance	1,680	1,911	2,114	434	25.8%
Arts & recreation services	115	186	186	71	61.7%
Other services	621	676	629	8	1.3%
Inadequately described/Not stated	578	507	629	51	8.8%
Total	18,331	20,661	21,688	3,357	18.3%

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Working residents in both blue and white collar occupations have increased steadily since 1996. However, the number of working residents in managerial roles has decreased over the same period.

Table 8 – Occupation of Employment by Working Residents in Mildura LGA

Occupation	1996	2001	2006	Change 1996-2006	% Change 1996-2006
Managers	3,985	3,996	3,748	-237	-5.9%
Professionals	2,277	2,788	3,074	797	35.0%
Technicians and trades workers(b)	2,287	2,686	2,961	674	29.5%
Community and personal service workers	1,242	1,633	1,812	570	45.9%
Clerical and administrative workers	2,006	2,313	2,456	450	22.4%
Sales workers	1,798	2,100	2,363	565	31.4%
Machinery operators and drivers	1,182	1,364	1,412	230	19.5%
Labourers	2,993	3,320	3,472	479	16.0%
Inadequately described/Not stated	561	461	389	-172	-30.7%
Total	18,331	20,661	21,687	3,356	18.3%

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006



Household incomes have significantly increased since 1996. Median household incomes increased from \$489/week in 1996 to \$781/week in 2006, with the proportion of households in lower income brackets having decreased over the period.

**Table 9 – Weekly Household Incomes (Gross) in Mildura LGA**

Income Level	1996	2001	2006	Change 1996-2006	% Change 1996-2006
\$250-\$349	1,563	1,381	1,415	-148	-9.5%
\$650-\$799	2,201	1,846	1,672	-529	-24.0%
\$1,200-\$1,399	603	1,003	1,148	545	90.4%
\$2,000-\$2,499	119	301	407	288	242.0%
\$3,000 or more	6	26	80	74	1233.3%
Partial income stated(c)	262	256	361	99	37.8%
All incomes not stated(d)	155	275	239	84	54.2%
Total	4,909	5,088	5,322	413	8.4%
Median household income (\$/weekly)	\$489	\$679	\$781		

Source: ABS Census Community Profile Mildura LGA, Time Series 1996-2006

Implications for the development of the Mildura South Precinct include:

- Slow overall population growth forecast to 2026 which is likely to impact take-up and staging of residential and retail development in Mildura South.
- Significant aging of the population which is likely to result in demand for smaller dwellings(due to downsizing) as well as an increasing demand for seniors living and aging in place development.
- Declining household sizes due to an increasing number of older persons, lone person and one parent households.
- Significant increases in townhouse development likely as a response to the changes in the demographics of the LGA (mentioned above).
- Considerable rise in household incomes which results in increasing retail spend per capita.

### Retail Floorspace Demand

The 2007 Framework Plan provides some conflicting advice with regards to recommended retail provision in the Mildura South Precinct – namely what amount of retail floorspace would be sustainable within the Precinct and whether one or two centres are preferred.

As a result, Hill PDA has undertaken a high level review of retail floorspace demand generated by future residents in the Mildura South Precinct. This has also been based on a review of the recent 2010 Mildura Retail Strategy by Essential Economics, which considered demand for retail floorspace from across the LGA. The 2010 Strategy concluded that it was possible for Mildura South to accommodate a retail centre in the future to meet the needs of the anticipated new residential population on site.

To understand the context of retail supply in the broader LGA, the 2010 Strategy identifies retail provision within the LGA as including:

- Mildura CBD – a regional centre of 63,100sqm of floorspace.

- Centro Mildura – a subregional centre of 18,800sqm of floorspace.
- Fifteenth Street – a centre of 46,800sqm of floorspace of which 31,200sqm is homemaker related.
- Urban Mildura – neighbourhood centre in Deakin Avenue.
- Town Centres – Merbein and Red Cliffs.
- Local Centres – network of local centres with around 10 shops each or standalone stores.

The above hierarchy together with proposed developments will impact on where future residents in Mildura South will shop, and the level of retail that will be required within the Precinct to service the new population. Proposed retail development as highlighted in the 2010 Strategy includes:

- A 10,600sqm retail development adjacent to Mildura Centro which will include a Big W discount department store and associated retailing.
- Coles supermarket opposite Mildura Centro.
- IGA supermarket of 2,060sqm with associated retailing (total of 4,200sqm) in Irymple.
- Woolworths supermarket of 3,600sqm in Irymple, with a further 2,140sqm of retail proposed in a later stage.
- 3,000sqm of retail associated with the Marina development.

Mildura Centro is relatively close to the Mildura South Precinct (1.5km) and is effectively located between the Precinct and Mildura CBD. As such, Mildura Centro is likely to be the main shopping destination for new residents in Mildura South. This will only be strengthened by the proposed Big W and Coles supermarket.

One of the main considerations in determining the trade area served by any retail centre is the proximity of the subject to competing centres (including their respective size, retail offer and attraction). Mildura Centro is likely to capture the majority of retail expenditure generated by new residents in Mildura South. However, notwithstanding this, there is still a role for convenience or top-up shopping in the Mildura South Precinct to meet the needs of local residents.

As a result, Hill PDA has determined demand for retail floorspace in the Mildura South Precinct by deriving the likely expenditure levels generated by the anticipated resident population of the Precinct upon full development in 2031.

Household expenditure was sourced from:

- ABS Household Expenditure Survey 2003-04 which provides household expenditure by broad commodity type by household income quintile; and
- The Marketinfo 2009 database which is generated by combining and updating data from the Population Census and the ABS Household Expenditure Survey (HES) using “microsimulation modelling techniques”.

Marketinfo combines the data from the Census, HES and other sources to derive total HES by commodity type. This data, which was validated using taxation and national accounts figures, quantifies around 14% more expenditure than the ABS HES Survey.



According to 2009 Marketinfo data, the average retail spend per capita of residents in Mildura LGA is around \$12,300 per annum. It is recognised that according to the 2010 Mildura Retail Strategy, the average retail spend per capita of residents across the main trade area of Mildura LGA is around \$11,300 per annum. However, the 2010 Retail Strategy was based on 2007 Marketinfo data, compared to the 2009 Marketinfo data as utilised by Hill PDA.

Hill PDA has assumed similar household expenditure patterns for the Mildura South Precinct as those of the Mildura LGA as indicates in the following table.

**Table 10 – Retail Spend Per Capita in 2010 (\$2009)**

Retail Store Type	Retail Spend per Capita	% of Total Retail Spend
Supermarkets, Grocery Stores	\$ 3,985	32.4%
Specialty Food Stores	\$ 1,203	9.8%
Fast-Food Stores	\$ 591	4.8%
Restaurants, Hotels, Clubs	\$ 666	5.4%
Department Stores	\$ 1,110	9.0%
Clothing Stores	\$ 668	5.4%
Bulky Goods Stores	\$ 1,886	15.3%
Other Personal, Household Goods Retailing	\$ 1,916	15.6%
Selected Personal Services	\$ 274	2.2%
<b>Total</b>	<b>\$ 12,300</b>	<b>100.0%</b>

Based on these assumptions, the table below shows the Mildura South Precinct will generate around \$144m of retail expenditure based on 9,000 residents occupying the Precinct in 2031. This takes into account retail spend per capita increasing at an average rate of around 1.2% to 1.3% per annum in accordance with historic growth since 1986.

**Table 11 – Expenditure Available by the Mildura South Precinct in 2031 (\$2009)**

Retail Store Type	Retail Spend per Capita 2031	Total Expenditure in 2031* (\$m)
Supermarkets & Grocery Stores	\$ 5,181	\$ 46.6
Specialty Food Stores	\$ 1,564	\$ 14.1
Fast-Food Stores	\$ 769	\$ 6.9
Restaurants, Hotels and Clubs**	\$ 866	\$ 7.8
Department Stores	\$ 1,443	\$ 13.0
Clothing Stores	\$ 869	\$ 7.8
Bulky Goods Stores	\$ 2,452	\$ 22.1
Other Personal & Household Goods	\$ 2,491	\$ 22.4
Selected Personal Services***	\$ 357	\$ 3.2
<b>Total</b>	<b>\$ 15,991</b>	<b>\$ 143.9</b>

\* Based on 9,000 residents occupying the precinct in 2031.

\*\* Turnover relating only to consumption of food and liquor (excludes all other types of revenue such as accommodation, gaming and gambling).

\*\*\* Selected Personal Services includes hair and beauty, laundry, clothing hire and alterations, shoe repair, optical dispensing, photo processing and hire of videos

In order to estimate retail spend in 2031 upon full development, it is acknowledged that some trade will be lost to higher order centres outside the Precinct, especially to Mildura Centro and Mildura CBD. Potential expenditure captured within the Mildura South Precinct was calculated by applying capture rates to household expenditure. These assumed capture rates are shown in the following table.

**Table 12 – Mildura South Precinct Capture Rates**

Retail Store Type	Capture Rate	Expenditure Captured in 2031* (\$m)
Supermarkets & Grocery Stores	75%	\$ 35.0
Specialty Food Stores	65%	\$ 9.1
Fast-Food Stores	40%	\$ 2.8
Restaurants, Hotels and Clubs	40%	\$ 3.1
Department Stores	0%	-
Clothing Stores	0%	-
Bulky Goods Stores	0%	-
Other Personal & Household Goods Retailing	20%	\$ 4.5
Selected Personal Services	50%	\$ 1.6
<b>Total</b>		<b>\$ 56.1</b>

\* Based on 9,000 residents occupying the precinct in 2031.

The assumptions indicate, for example, that retail provision in the Mildura South Precinct will capture 75% of supermarket expenditure generated by local residents. Therefore the remaining 25% of expenditure will go to supermarkets and grocery stores in other retail centres such as Mildura Centro.

Given the provision of higher-order comparative goods shopping such as fashion, bulky goods, and the like in Mildura Centro and Mildura CBD, it has been assumed that retail centres within the Mildura South Precinct are unlikely to provide for these retail store types and is therefore unlikely to retain this expenditure.

Based on the assumed capture rates, the Mildura South Precinct will capture \$56.1m of retail expenditure in 2031, equivalent to around 40% of all retail expenditure available in the Precinct.

Forecast demand for retail floorspace is calculated by dividing household expenditure by benchmark turnover rates. The 2010 target turnover rates incorporate a 0.6% per annum escalation between 2010 and 2031. By applying the assumed turnover rates to expenditure captured, the Mildura South Precinct is forecast to demand around 8,000sqm (NLA) of retail floorspace upon full development in 2031 as indicated in the following table.

**Table 13 – Target Turnover Rates and Demand for Retail Floorspace in 2031**

Retail Store Type	Turnover in 2010 (\$/sqm)	Turnover in 2031 (\$/sqm)	Retail Floorspace Demand in 2031* (sqm)
Supermarkets & Grocery Stores	\$ 8,500	\$ 8,613	4,060
Specialty Food Stores	\$ 7,000	\$ 7,093	1,290
Fast-Food Stores	\$ 7,000	\$ 7,093	390
Restaurants, Hotels and Clubs**	\$ 4,000	\$ 4,053	769
Department Stores	\$ 3,000	\$ 3,040	-
Clothing Stores	\$ 4,500	\$ 4,560	-
Bulky Goods Stores	\$ 3,000	\$ 3,040	-
Other Personal & Household Goods	\$ 4,500	\$ 4,560	983
Selected Personal Services***	\$ 3,000	\$ 3,040	528
<b>Total</b>			<b>8,020</b>

\* Turnover relating only to consumption of food and liquor (excludes all other types of revenue such as accommodation, gaming and gambling). \*\* Selected Personal Services includes hair and beauty, laundry, clothing hire and alterations, shoe repair, optical dispensing, photo processing and hire of videos. Source: ABS Retail Survey 1998-99 (escalated to 2007 dollars), JHD Retail Averages, Hill PDA and various consultancy studies

Of the 8,000sqm demanded in 2031, it is recognised that around half is attributed to supermarket or grocery store floorspace, with the remainder dedicated to a range of specialty stores, café's, take-away food, and personal services (e.g. hair dresser, dvd hire, dry cleaning).



Further to demand for retail is demand for shopfront space occupied by non-retail commercial users. Such uses include real estate agents, medical services, travel agents, banks, etc. There are different types of commercial space such as:

- Non-retail in shopfront space like a travel agent, bank, doctors and so on, these make up around 5% to 7% of retail shopfront space in a retail centre; and
- Non-shopfront commercial spaces being stand-alone commercial buildings and shop top commercial above retail.

As a rule of thumb around 10% to 15% of specialty stores should be provided to accommodate these uses and a further 3% to 4% of specialty stores are assumed to be vacant at any one time. As a result, the Mildura South Precinct could sustain up to 9,000sqm of shop front floorspace by 2031.

In terms of staging, note that a supermarket based centre should open around 2 years ahead of achieving industry target turnover levels so as to meet residents' needs for services in advance. Under such a scenario retailers are often happy to open early to keep ahead of the competition under full knowledge that growth in the trade area will enable them to trade at industry benchmark levels in the short term.

Whilst the Precinct could contain a single centre, it is recognised that the arterial nature of Deakin Avenue (which effectively splits the Precinct in half) could result in two neighbourhood centres being preferred for the Mildura South Precinct.

Given around 8,000 to 10,000 residents are required for a full line supermarket, this two centre option could allow for:

- One larger neighbourhood centre with one supermarket, café's, specialty shops and shopfront commercial; and
- One smaller neighbourhood centre with convenience retail.

For the larger neighbourhood centre, the following should be considered:

- The centre could include one large supermarket, however it will have to be located in the central heart of the Precinct with excellent street frontage and be well accessed by major roads in order for the centre to service the Precinct as well as passing traffic.
- Adjacent to a park and/or school providing drawcards to the centre.
- Larger neighbourhood centres benefit from being surrounding by medium density development (e.g. townhouses). However, medium density housing in this area needs some special attributes to achieve marketability – such as opposite parkland, good views, a large village centre, etc.
- The design of the centre should take advantage of retail on the left side of roads for easily accessible shopping when residents are driving home.
- Centres should be accessible by public transport.
- The main street theme is favourable; however there is a need to make sure traffic generation is not too high as to generate land use conflicts. If conflicts arise it may be better to contain the retail to one side of the road.

Smaller neighbourhood centres work well when:

- They are on a main road and therefore are convenient to both residents and passing traffic;
- Are surrounded by high density residential or employment uses; or
- Are separated by some considerable distance from larger or higher order centres.

As a result, for a small neighbourhood centre to work in the Precinct:

- The centre should be convenient for top-up shopping, and may include petrol, a convenience store and take-away food shop.
- Captures passing trade and residents commuting home.
- Easily accessible not only for those residents within the Precinct, but those located east of Sixteenth Street.

### Residential Development

Development activity across the Mildura LGA has been subdued over recent years. The following market (and other) factors have been identified as contributing to this:

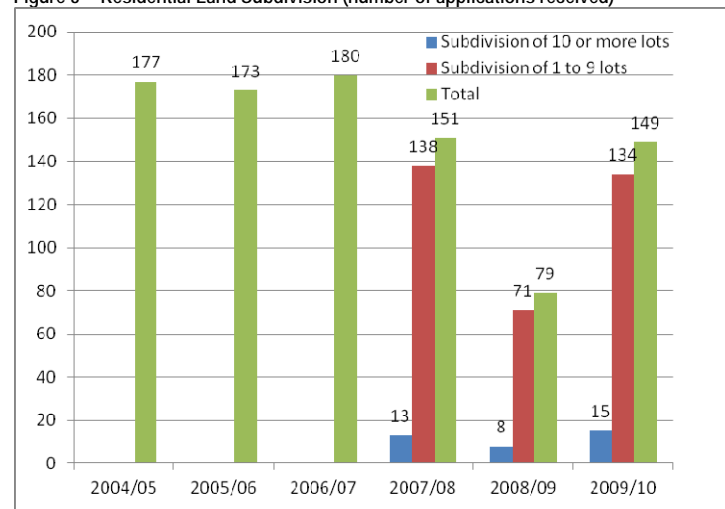
- Droughts and water restrictions, which act as a deterrent to developers who envisage low demand for completed lots through lower levels of metropolitan to rural migration etc.
- A slow rate of development/sub-division approvals during a period where Council was focussing on updating their planning controls, particularly focussing on the Fifteenth Street commercial precinct.
- Limited access to finance for development, in line with the global economic conditions, which is considered to be the biggest contributing factor to development in the region.

Further to the above limitations, there are few developers in the region who are large enough to develop major projects. Sentiment in the market suggests that only 2 or 3 local developers have this capability. A significant factor reducing the local pool of major developers is the ability to gain finance.

An emerging trend enabling larger scale development is the formation of syndicates; however this only reflects a minority portion of the market - estimated to be less than 25%.

The following graph indicates the number of applications for residential land sub-division over the last 6 years. It is evident that the number of subdivision applications significantly dropped in 2008/09. Furthermore, of those applications in recent years, the majority were for smaller subdivisions of between 1 and 9 lots.



**Figure 3 - Residential Land Subdivision (number of applications received)**

Note: Subdivision applications by number of lots not available for 2004/05 to 2006/07.

Source: Planning Permit Activity in Victoria, years, 2006-07, 2007-08, 2008-09 and 2009-10

There have been few recent transactions of residential development sites in Mildura. Discussions with local agents have indicated the most recent sale was of a 19.5 acre (78,810 sqm) residential site on the corner of Sixteenth Street and Deakin Avenue. The property is reported to have sold for \$120,000 per acre (around \$30/sqm) which is considered to be very high in the current market.

To indicate the sentiment of the current market for development sites, we have examined development land as currently the market.

The table below indicates asking prices of around \$30,000 to \$100,000 per acre for larger development sites and around \$325,000 to \$500,000 per acre is being asked for smaller development sites. Obviously, typical factors such as location, access, proximity to services and amenities and topography will affect values.

**Table 14 – Residential Development Sites for Sale**

Address	Land Size	Development Yield	Asking Price
**Cnr Ontario Ave and Sixteenth St, Mildura	271,082 sqm (67 acre)	NA	\$5,695,000 (\$85,000 per acre)
**Lot 2 Walnut Ave, Mildura	36,414 sqm (9 acre)	NA	\$530,000 (\$59,000 per acre)
**Cnr Deakin Ave and Sixteenth St, Mildura***	78,810 sqm (19.5 acre)	NA	\$2,000,000 (\$102,500 per acre)
**Cnr Etiwanda Ave and Sixteenth St, Mildura	37,426 sqm (9.25 acre)	NA	\$265,000 (\$28,500 per acre)
Riverside Ave, Mildura	46,550 sqm (11.5 acre)	NA	\$400,000 (\$35,000 per acre)
560-564 Deakin Ave, Mildura	2,675 sqm (0.65 acre)	7 townhouse lots* of approximately 380sqm.	\$250,000 (\$378,000 per acre) (\$35,714 per lot)

Lot 7, Eighth St, Mildura	2,219 sqm (0.55 acre)	4 lots ranging in size from 372sqm to 585sqm.	\$180,000 (\$328,000 per acre) (\$45,000 per lot)
Karadoc Ave, Irymple	8,092 sqm (2 acre)	14 townhouse lots comprising 10 x 462sqm lots and 4 x 495sqm to 594sqm lots.	\$1,000,000 (\$500,000 per acre) (\$71,429 per lot)

Source: Hill PDA Research, Online property/listings websites.

\* With planning permit for 7 dwellings and sub-division.

\*\* Property located within the study area.

\*\*\* As discussed above, this property is reported to have sold for the equivalent of \$120,000 per acre.

Hill PDA's market investigations have also identified a number of development projects currently on offer in Mildura. The following table provides examples of the key characteristics of these developments.

**Table 15 – Residential Subdivisions with Serviced Lots for Sale**

Development Name	Address	Description	Prices	Land Size
Ontario Heights	Ontario Ave	A 3 stage development, with the 3rd stage recently being completed and placed on the market. Completed development will comprise 100 lots. Approximately 80 have been sold to date (over an 18-24month period).	From \$69,000	Typical lot size 650sqm to 750sqm
Vintage Estate	Walnut Ave	Currently selling stage 3 of the development (comprising 18 lots).	\$65,000-\$92,000	443sqm to 1,100sqm
Tower Estate	Fourteenth St	A new subdivision comprising 30 lots (plus a townhouse development lots).	\$75,000-\$90,000	653sqm to 826sqm
Ontario Green	Ontario Ave	A 2 stage development currently selling the first stage. The development will comprise approximately 77 lots upon completion. Approximately 22 lots have been sold to date (over a 6 month period) out of 46.	From \$72,000	475sqm to 1,202sqm
Bozzi Heights	Sixteenth St (Cnr Walnut Ave)	A new development comprising approximately 45 lots, approximately 28 lots have been sold to date.	From \$69,500	Typical lots size, 720sqm to 760sqm
Beauford Heights	Fifteenth St	A new subdivision. Approximately 30 lots have been sold to date, with another 16 currently on the market.	\$88,000-\$102,000	684sqm to 861sqm

As indicated in the table above, new lot sizes within these developments range from 440sqm to 1,200sqm. While this is a fairly broad range, a large proportion of these lots (80%) fall between 600sqm and 850sqm.

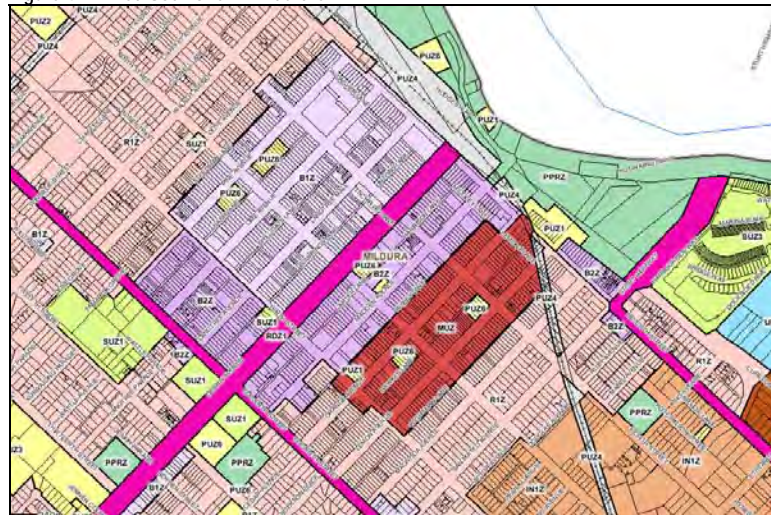
Smaller lots, less than 500sqm, are usually developed with townhouses and are estimated to comprise less than 10% of all new lots within the above developments. Irregular and large parcels created as a result of sub-division and/or layout restrictions are also designed to enable townhouse development.

Values are fairly constant across all new estates within Mildura (excluding boutique or specialised developments such as the Dockside Mildura Marina). For a standard 600sqm to 650sqm lot, prices are starting at around \$70,000 a lot. Prices of more than \$90,000 for up to an 850sqm lot are rare.



There is only one mixed use precinct within Mildura LGA from which to understand demand for such land. However, this precinct is located immediately to the south-east of the Mildura CBD. As a result, the market dynamics of this location will differ to those in the Mildura South Precinct.

Figure 4 - Mixed Use Zone in Mildura CBD



Notwithstanding this, it is noted that the types of uses most common in this existing mixed use zone includes the likes of:

- Residential: typically detached residential dwellings. Other forms of accommodation include backpacker accommodation and some attached townhouse dwellings.
- Automotive: uses include car yards, mechanics, and tyre retailers.
- Professional services: including property, counselling, accounting services etc.

There are currently two properties on the market within the mixed use zones (103 Ninth Street and 117-119 Lemon Avenue). One is vacant and the other includes a dilapidated house, both are being marketed as development sites. Agents advise that land values for vacant mixed use land are in the range of \$230/ sqm to \$240/ sqm.

Despite the recent economic downturn local agents indicate that land within this zone is usually in high demand. The success of this area is its location on the fringe of the CBD in proximity to employment, a major retail and commercial centre, and being easily accessible via arterial roads.

For smaller centres, the constraint of mixed use zones however, is that they often are quickly developed into residential due to the higher values attributed to such development. This is often to the detriment of providing retail and local facilities to meet the demands of residents. Alternatively, if there is no market for retail in a particular location, a mixed use zone allows development of other uses until such time as the market changes.

Regards

Victoria Tompsett  
Principal, Hill PDA





appendix 2

capire social infrastructure assessment of existing framework







# Community Infrastructure Analysis Stage 1

Mildura South Precinct Plan/Structure plan and  
Mildura South Development Plan

9<sup>th</sup> March, 2011

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## 1 Purpose of this study

This is the first stage of a desktop community infrastructure analysis to support the preparation of the Mildura South Precinct Plan/Structure Plan and the Mildura South Development Plan.

This report reviews the proposed community infrastructure provision in the existing Mildura South Strategic Framework Plan (MSSFP). Consideration has been given to:

- Available documentation that provides rationale for the community infrastructure identified in the MSSFP
- The recent extension of the Mildura South Sporting Stadium
- Changes in population and household growth forecasts
- Levels of existing community infrastructure and plans for community infrastructure in the surrounding area that will impact on the precinct.
- The spatial distribution of existing and planned community infrastructure

## 2 Existing community infrastructure

Table 1 provides an overview of community infrastructure within 1km of the study area, as detailed in the MSSFP.

Table 1: Existing community infrastructure within 1km of Mildura South study area

Service Name	Service Type	Address	Capacity
<b>Mildura South Primary School</b>	Education	1587 Deakin Avenue, Mildura	<i>Current enrolments: 643 students (DEECD)</i> Constructed to accommodate 475 students with current enrolments of 643, this is expected to grow and stabilise around 700. It is noted that as a 'rule of thumb' 200 houses would generate 30 children. Therefore a study area with 3,500 dwellings would generate 525 children. In urban areas the Victorian provision is one primary school per 3,000 households. (2007 plan)
<b>Mildura South Kindergarten</b>	Early Years	Terry Street, Mildura South	At the time of the previous study Mildura South Kindergarten was identified to have a 2 year waiting list.
<b>Mildura South MCH</b>	Early Years	Cnr. Lillie Lane and Deakin Avenue Mildura South	

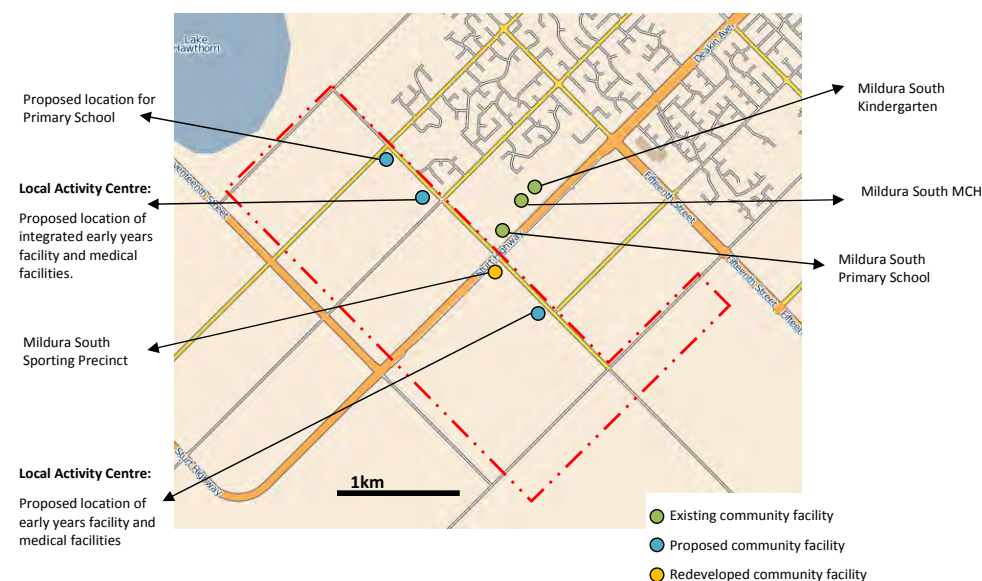
In addition, the Mildura South Sporting Stadium has recently been extended and now includes the following:

Table 2: Mildura South Sporting Stadium Development

Service Name	Service Type	Address	Description
<b>Mildura South Indoor and Outdoor Sport and Recreation Precinct</b>	Sport and Recreation (incorporating community meeting space)	Corner of Deakin Avenue and Sixteenth Street	<i>The precinct is proposed to include:</i> <ul style="list-style-type: none"> <li>• An integrated indoor/outdoor facility</li> <li>• Provide approximately 4000m2 of indoor program space with emphasis on program flexibility</li> <li>• Social club space of outdoor field users integrated into upstairs area above seating and a part of the indoor stadium with dividable walls to enable separate functions, with dedicated space set aside for food and beverage and club's history/memorabilia, key notes and honour boards.</li> </ul>

Figure 1 illustrates the spatial distribution of existing and planned community infrastructure in the study area.

Figure 1: Spatial distribution of community infrastructure surrounding study area





### 3 Proposed community infrastructure

Table 3 provides an overview of community infrastructure proposed for Mildura South in the MSSFP.

Table 3: MSSFP proposed community infrastructure (2007 report)

Service Name	Service Type	Address	Description
<b>Primary School</b>	Education	Corner of Sixteenth Street and Ontario Avenue	Department of education advised the need to reassess the situation when 2006 ABS data is available  Co-location of facilities was identified by both Department of Education and community childcare.
<b>Two integrated Children's services facilities</b>	Early Years	Local activity centres	Community Child Care advised that the provision of an integrated services facility, on a non-for-profit basis, would include kindergarten, child care, and maternal child health and play group operations.
<b>One or two medical centres</b>	Health	Local activity centres	

### 4 Changes in population forecasts

The MSSFP proposes 3,000 dwellings and estimates a total population of 8,400 people. Apart from the total number of residents, the MSSFP does not provide an indication of the likely demographic profile of the Mildura South population. The MSSFP was prepared prior to the 2006 Census. The Census, as well as demographic research undertaken for other strategic Council plans since the MSSFP indicates that Mildura's population is characterised by:

- An ageing population. The proportion of residents 80 years and over has increased by 14% between 1996 and 2006.
- Rental stress. The number of households experiencing rental stress has increased by 11% since 2001.
- Comparatively high rates of volunteerism.
- A trend away from employment in the agricultural industry.
- An increasingly multicultural population.
- Comparatively low education levels.
- Comparatively high level of psychiatric hospital admissions.
- Comparatively high levels of chronic and preventable health risks.
- A high level of self-reported distress – largely due to the impacts of the drought.

For communities with demographic characteristics such as these, affordable and accessible services and facilities are integral.

### 5 Changes in strategic context

The following Council strategies and studies that influence community infrastructure have been prepared since the development of the MSSFP:

- Review of Mildura Planning Scheme, 2010
- Building on Strengths, 2008
- Mildura Social Indicators Report, 2008
- Mildura Retail Strategy, 2010
- Youth Agenda 2008-2012
- Municipal Health and Wellbeing Plan 2009-2013

In addition, a guide to social infrastructure provision in Victorian growth areas was prepared (Australian Social Recreation Research Pty. Ltd, 2009).

The key considerations in regard to community infrastructure provision arising from the above documents are summarised below.

- Support for the development of community hubs with a range of services and organisations that can provide support to children and young people and their families, with sport at the centre to engage and build a sense of community. Sport is identified as a primary prevention activity in reducing the risk of a range of adverse life outcomes for at-risk young people, and the opportunity to improve access to education and training programs, health services and other community programs by providing outreach to a sporting club in a purpose-built facility.
- The Mildura urban area is expanding to a point where demand may arise in the future for small neighbourhood shopping nodes to service the weekly convenience shopping needs of local catchments. The potential for a neighbourhood centre is likely to arise in Mildura South.
- Local youth are more likely to access services where they are offered on an outreach basis in a setting that is familiar to the young person and their family, rather than a centre-based youth or community health service.
- Support for the optimisation of young people's use of existing public spaces/facilities and associated service delivery to achieve creative multi-use.
- The Municipal Health and Wellbeing Plan promotes expansion of a range of recreational opportunities; access to open spaces; improved public and community transport opportunities; development of community enterprises; promotion of positive ageing and improved availability of a range of health services.
- For a population of 8,400 people, neighbourhood level community infrastructure is generally required, which includes:
  - Flexible community/meeting spaces – for art, youth activities, neighbourhood house activities, meetings, seniors activities.
  - Kindergarten/s
  - Long day care
  - Government primary schools
  - Accommodation services



## 6 Key Findings and Recommendations

Based on the desktop study undertaken for the Stage 1 review of the MSFPP, the following recommendations are made in regard to the community infrastructure proposed in the 2007 MSFPP.

Community infrastructure item	Recommendation	Rationale
Primary School	Consultation with DEECD will need to be undertaken to confirm ongoing requirement and location of a primary school.  If required, co-locate early years' facilities with primary school.	DEECD indicated the need to reassess the need for a primary school once the 2006 Census was available.  At the time of the 2007 MSFPP, the closest Primary School was the Mildura South Primary School and it was at capacity.
Two integrated children's services facilities	Level of provision is supported, however it is recommended that one of the facilities is co-located with the primary school (in the current MSFPP, one facility is located in a neighbourhood centre and one facility is free-standing).  In the absence of a municipal early years' plan and detailed population forecasts for Mildura, Capire is unable to provide an indication of the size and service mix of the children's services facilities.  Consultation should be undertaken with Council's family services team and Community Childcare.	Current policy supports the co-location of early years' facilities with primary schools. This is particularly advantageous in engaging with disadvantaged and vulnerable families in early years' pathways. DEECD and Community Childcare supported co-location in consultation undertaken for the 2007 MSFPP.  At the time of the 2007 MSFPP, the local kindergarten was at capacity.
One or two medical centres	Supported.  Provision should be made for both private and community health care service providers.  Consultation with the Northern Mallee Primary Care Partnership should be undertaken to confirm spatial requirements.	The Municipal Health and Wellbeing Plan has a focus on increasing the availability of GP's, counselling services, mental health services and allied health services.

Additional observations that have arisen out of the Stage 1 desktop review include:

- The extension of the Mildura South Sporting Stadium has provided additional flexible community activity/meeting spaces which are considered sufficient to service the future population. The integrated children's facilities should provide space for complimentary family-based activities such as playgroups and parent groups.
- The extension of the Mildura South Sporting Stadium has provided required additional recreational facilities, particularly for youth.
- Mildura appears to have significant youth issues. Consideration should be given to providing spaces (not necessarily in the form of purpose-built facilities) for incidental, no cost opportunities for youth recreation, social interaction and access to services.





appendix 3

aurecon infrastructure assessment of current framework







Page	Section	Sub-section	Identified issues	Amendment
15		4.1 Site description	FMIT	Remove all references to FMIT and replace with LMW
16		4.2 Residential Land Staging	Staging	As requested by LMW, staging is to be reviewed by other SA's to ensure cost effective development of the site
17		4.2 Environment	Water Quality	Review of statement "Salinity and nutrient levels in the municipality's water system will be at their lowest concentration in 40 years" how is this justified particularly given comments on p 23 Salinity Management Overlay
		Salinity	Should be an individual section	<p>The information contained in the Strategic Framework document is dated and incorrect and requires updating incorporating findings and recommendations included in the Site Salinity Management Guidelines (SKM, 2009). The SMO (figure 3) also needs revision.</p> <p>The site has an assessed salinity risk ranging between moderate to high risk, with a significant majority deemed to have a moderate risk. However, two locations have been deemed to have a high salinity risk located in the vicinity of the Deakin Ave and 16th Street intersection (will need to be reviewed for the proposed sporting complex) and also along Riverside Ave between 16th and 17th Streets (refer to Figure 3. SKM, 2009).</p> <p>The Site Salinity Management Guidelines (SKM, 2009) recommends that these areas be subject to a Salinity Action Statement (SAS) as part of the planning process. The SAS recommends that sites classified as High b should NOT be used for irrigated areas (e.g. sporting fields or parks) or water features (e.g. wetlands) which would require the retention of waters at levels which would significantly impact on surrounding groundwater levels. These land uses should be avoided due to the potential for rising regional groundwater levels as a result of additional water to the underlying groundwater. The site will require relevant planning conditions to be attached to the development of the site.</p> <p>Refer to pages 15 for example planning conditions for affected site and Appendix B1 for Options for Salinity Management</p>
24		4.2 Site constraints / opportunities	Not all authorities are identified	
24		4.3 Existing conditions	Date Plan spelling	
28		4.4 Transport	Study Area	Sixteenth STREET not avenue
				A new section should be included to identify roads which are controlled by Vic Roads and refer to Figure 8, which will require VR approvals, and which may be able to access state and federal funding
		Freight Traffic	Freight movement	<p>It should be explained somewhere that VicRoads is not responsible for the entire road reserve, responsibility is split between VR and MRCC. This varies depending upon the layout of the road reserve and infrastructure provided</p> <p>It should be noted that no roads have been gazetted and as a result B-double vehicles can use any road in the city, this is an issue at a number of intersections - resulting in damage to traffic control systems such as roundabouts, etc</p>
30		4.4 Transport Usage	spelling	Car is by far the ... replace bar with by
		Airport growth	missing Virgin airlines	add virgin
31		4.4 Bicycle Planning	update	Has the items listed in first paragraph of p.31 been done given it is now 2011 and the reference strategy was 2000-2010
32		4.4 Climate change	greenhouse effect	<p>this is not true, modify or remove</p> <p><a href="#">There are a few references made to climate change. particularly with regard to the prolonged dry period. I think these need to be changed to include reference to more frequent flash flooding events too.</a></p> <p><a href="#">Stormwater may need to be looked at with regards to flash flooding also.</a></p>
34		4.5 The study area	Replace FMIT with LMW	as per identified issues
34		4.5 Activity Centre Network	Remove Mildura City Plaza	Centro Mildura has been used for a number of years
				Remove comments regarding recent expansion
				Is the vacant café / roadhouse still vacant
35		4.5 Community facilities	school access	Insufficient school places available locally, is this still the same situation or have schools expanded or new built?
36		4.5 Strategies for main activity concentrations	Remove reference to Mildura Centre Plaza	Centro Mildura should be used



	fifteenth street precinct	Remove refernce to Mildura Centre Plaza	Centro Mildura should be used
39	4.6 Existing consitions	Include introduction to Topoqraphy	Make reference to Figure 10 and modify to show site topography and how the site is divided for drianage also
	Stormwater drainage	Drianage strategy	No reference to other authorities - such as APA, Telstra, NBN, Vic Roads, etc Awaiting return of Lee Jones to MRCC, to review the text and ensure that the surrent drainage strategy is included - particularly regarding the drainage strategy relating to the proposed sporting complex
		West side	Basin will be installed at the intersection of sixteenth Street & Deakin Ave for sporting complex, some water will be harvested for irrigation, this will be connected to
		East side	Drainage from Cowra above 15th Street may be drained to exsiitng stormwater management reserve at the intersection of Etiwanda Ave and 16th Street
		Summary	Add comments regarding dual use drainage reserves and incorporation of public open space into drainage basins, meandering linear paths, overland flow paths for extreme paths Given recent extreme rainfalls MRCC will probably reassess flooding issues which may impact upon site drainage requirements.
		General comment MCMA would like flash flooding included in drainage comments	Source control and wetland treatment comments to be inserted. <a href="#">There are a few references made to climate change. particularly with regard to the prolong dry period. I think these need to be changed to include reference to more frequent flash flooding events too.</a>
40	4.6 Sewerage / Water	Response from LMW below	<a href="#">Stormwater may need to be looked at with reqards to flash flooding also.</a> <a href="#">Since the preparation of the Framework Plan report LMW has assumed the role and responsibilities of the former FMIT. Comments contained in the report attributed to the FMIT are generally endorsed by LMW except as varied herein.</a>
		Add section Potable Water	<a href="#">Apart from the need for trunk and reticulation sewers to serve development there will also be a need for trunk and reticulation potable water mains with the trunk mains being located in the main road corridors.</a>
41		PS amendments since 2007	<a href="#">The Sewerage Provision Concept (Figure 11 on Page 41) is still considered valid except the proposed sewer pump station near the corner of Sixteenth Street and Etiwanda Avenue is about to become a reality with a contract recently let for its construction. The pump station is expected to be commissioned within 6 months. Initially the pump station will serve Stage 7 &amp; 8 of Mirage Estate and then a greater catchment including some of the land in the studv area.</a>
41	Subsurface drainage	FMIT replaced by LMW	<a href="#">Also on Page 41 there is a sub heading titled "Subsurface drainage" under which it is mentioned that there may be the opportunity to connect aging drains to the stormwater system as land is developed. Where this is not achievable or desirable for any reason and the drain is no longer required LMW has a general policy of requiring the drain to be decommissioned generally by requiring the developer to meet the cost of either removing the drain or filling the drain with cement grout to protect the interest of lot owners who may wish to construct structures over or in vicinity of defunct drains. Lower Murray Water would also like to see the drainage / stormwater arrangements with the MRCC within the precinct area formalised to ensure maintenance and operational activities are clearly defined.</a>
		Show easements on Figure 11	<a href="#">Part of the study area contains LMW's Mildura South high pressure irrigation system. It is highly unlikely that LMW would be prepared to allow residential allotments to connect to that supply as it would not be viable on economic grounds. Exceptions may be made in the case of large developments such as a sporting complex. Where sections of the high pressure system require to be disconnected their decommissioning would be required possibly by removal of those pipelines or making redundant. It should also be noted that easements are currently being created over LMW's high pressure irrigation pipelines and some of these may be of significant width which may impact on the development plan and future development</a>
		Summary	<a href="#">The second dot point under the heading "Summary" on Page 41 refers to "rain water" where the obvious intent is to use the term "raw water" however the dot point may be best deleted in its entirety in view of the limitations stated for the use of raw water in earlier comments above.</a>



		Genral comments to incorporate into potable, sewer and drainage sections	A significant development shown in the Indicative Masterplan and Vision Plan is the proposed sporting complex at the corner of Deakin Avenue and Sixteenth Street which has been the subject of various reports including the Indoor Sport Stadium Strategy – Final Report November 2009 – prepared by the SGL Group on behalf of Council. Council already owns 12 hectares of land for the development and it is noted that proposed Planning Amendment C56 seeks to apply a Public Acquisition Overlay over a further 12 hectares adjacent the land Council owns for future acquisition and expansion of the proposed sporting complex. Existing LMW infrastructure and future infrastructure may impact on the facilities to be provided within the complex
41		Fire fighting should be included in potable water section No other services discussed	Fire fighting requirements etc, should be included in the potable water section or a section of it's own.  Should include comments from Telstra, APA, Vic Roads. MCMA, Powercor, etc This section should be consolidated to include all engineering services, could be split across existing and futurer demand / requirements, etc. However this current section includes comments on existing and future opportunities.
44	4.7 Assessing the social landscape	Figure 12	Blue dots along southern boundary not included in legend - what are these? Should the legend include an item for land that is currently and actively used for agricultural purposes
45	4.8 Other issues	Should this section be called Aboriginal &/or Cultural Heritage or somehtina similar	
46 ???	blank page	blank page	
47 5.X	Detailed design	utility integration and planning	Ensure that utility requirements are included in the design through the propoer consideration, consultation and design of common utility reserves, Powercor explicitly requested the following My main concern is that adequate road easement be set aside, particularly within the proposed internal residential access roadways, for the installation of all services including Electricity, Water, Telstra, Neighbourhood Cable, Gas, etc. Powercor will require differing road easement widths depending on the final cable design configuration but 2.5m clear easement (not including kerbing or footpaths) can be used as a guide to provide for the installation of underground cables and street lighting.
50	7 Draft vision plan	Walnut realignment not included in vision plan, what else is missing	The plan (Figure 13) does not show recommendations made to relaign Walnut Ave within the study area ro reduce vehicle number and to decrease traffic speed. Reference TBA.
59	8 Transport Rationale	No comments from Vic Roads	Awaiting comments from Vic Roads regarding Strategic Framework, to be provided upon receipt. This would inlcude constraints on intersections, access / egress, pedestrain crossings, bus stops, etc
63	8 Option 1	Figure does not include utility corridor in accordance with Powercor requirements	This will affect drain location, planting density and alignment, footpath position, etc. No street lighting identified
64	8 Option 2	Figure does not include utility corridor in accordance with Powercor requirements	This will affect drain location, planting density and alignment, footpath position, etc. No street lighting identified
65	8 Option 3	Figure does not include utility corridor in accordance with Powercor requirements	This will affect drain location, planting density and alignment, footpath position, etc. No street lighting identified
66	8 Service Rationale	All services have not been addressed as part of the SFP	Comments relating to services can be found on SA Comments tab that are to be integrated into the revised report
68	8	Blank page	
69	9 High qulaity streets and open spaces	No mention of service corridor requirements	The section does not contain any comments regarding service corridors, positioning and integration of infrastrcuture assets into the design
72	9 Stormwater management and open space areas	no comment	MRCC comment to be provided
75	9 Bush Boulevard (Deakin Ave)	63-64 above	
82	9 Table 8	building floor levels	set above 1% AEP flood level (for local flsh flooding)
82	9 Table 8	Utility access	Perhaps comments on sub-surface service/utility pits
82	9 Table 8	Utility services	All utilities to be supplied via sub-surface systems for visual amenity and safety reasons.
87	9 Table 10	Swales and wetlands	Where possible incorporate public open space into drainage basins, swales and wetlands



93

Appendix 1

List of authorities consulted in this project

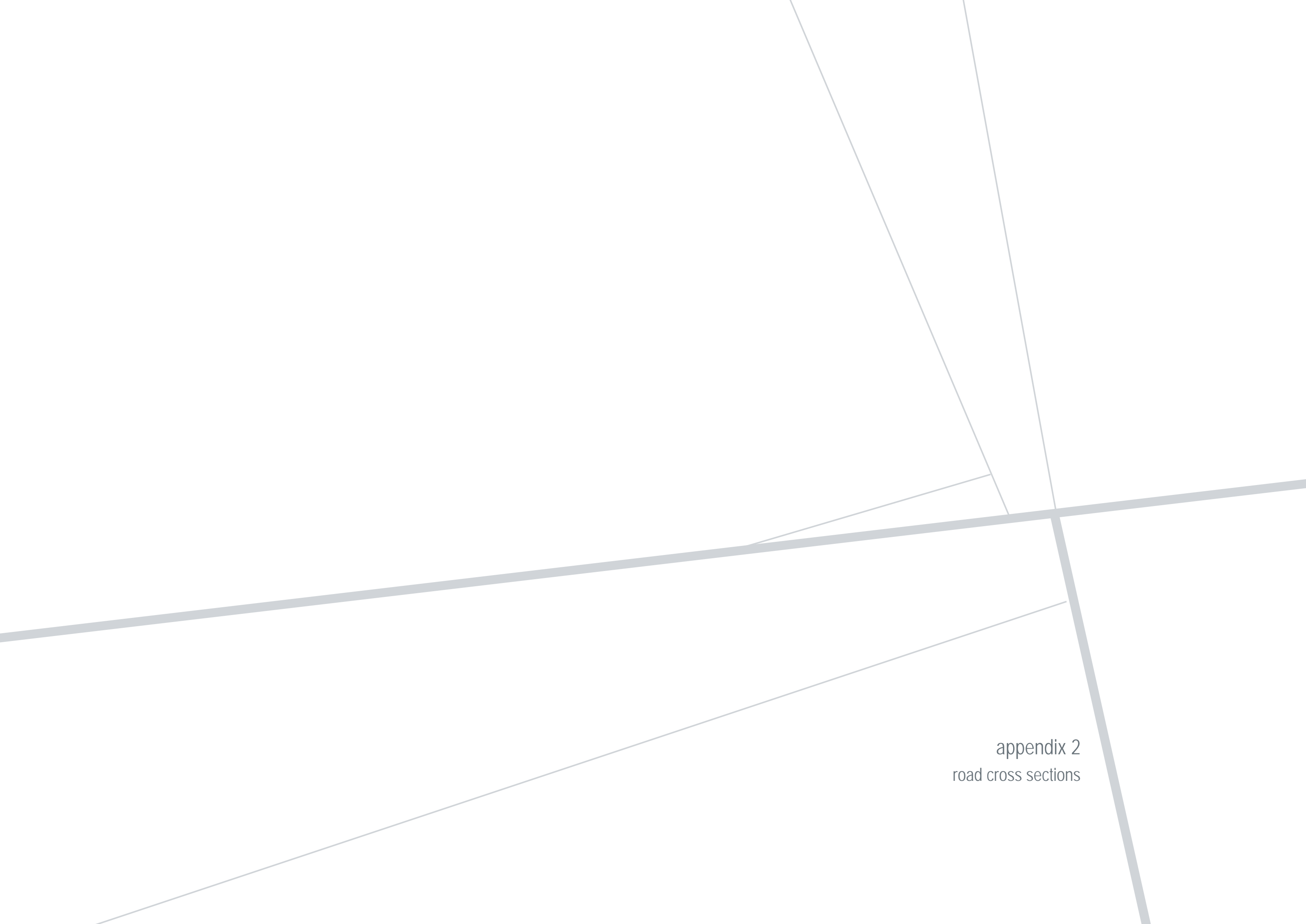
additonal utilities should be consulted.

In additon to the listed authrotiries we have consulted with MRCC (engineering), CFA, NBN Co., Telstra, APA, Powercor, MCMA (DPI), Neighbourhood Cable. FMIT should be removed from the list

Note:

Additional comments on SA Comments tab these should be incorporated into the project.



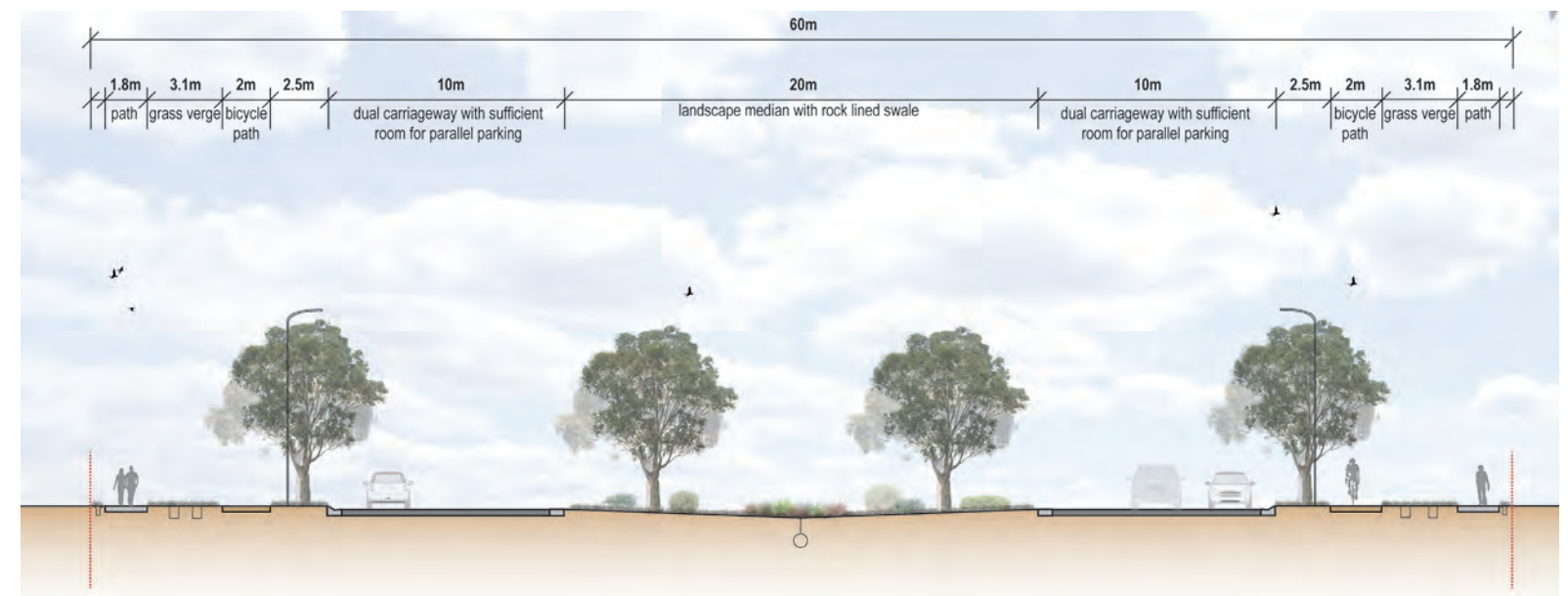
The image features an abstract geometric composition. A thick, dark gray line runs diagonally from the bottom left towards the top right. Another thick, dark gray line runs diagonally from the top left towards the bottom right, intersecting the first line. A third, thinner dark gray line runs horizontally across the middle of the frame. Several thin, light gray lines are also present, some parallel to the thicker lines and others intersecting them at various angles. The background is a solid, light gray color.

appendix 2  
road cross sections

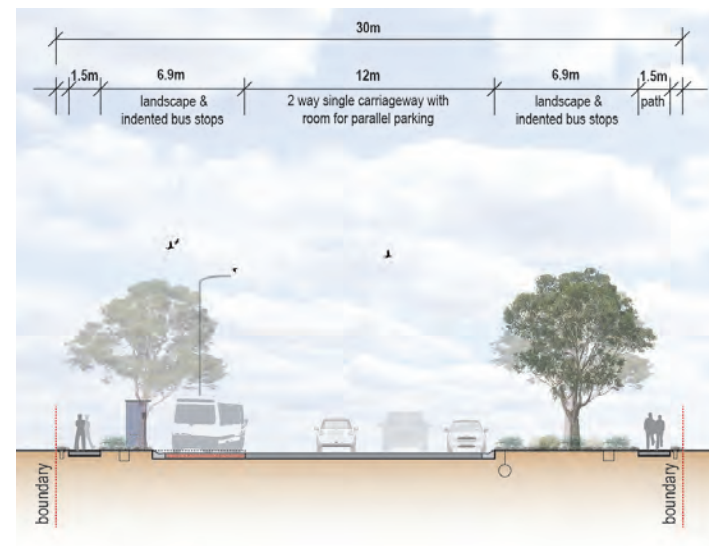




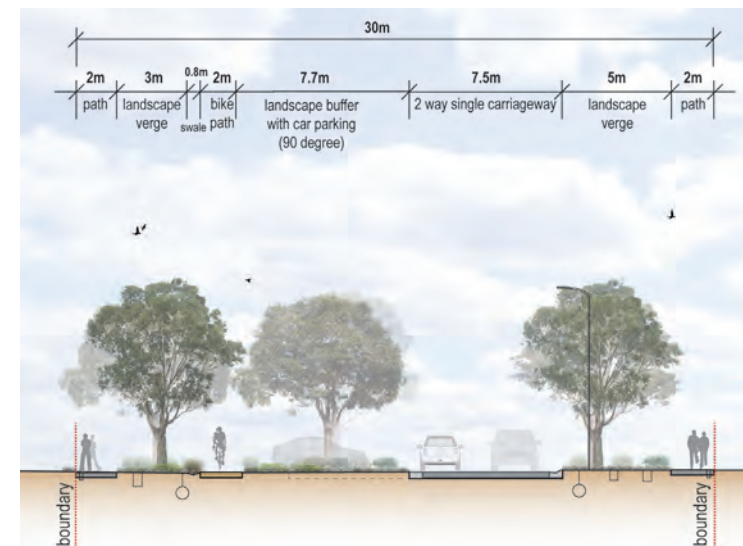




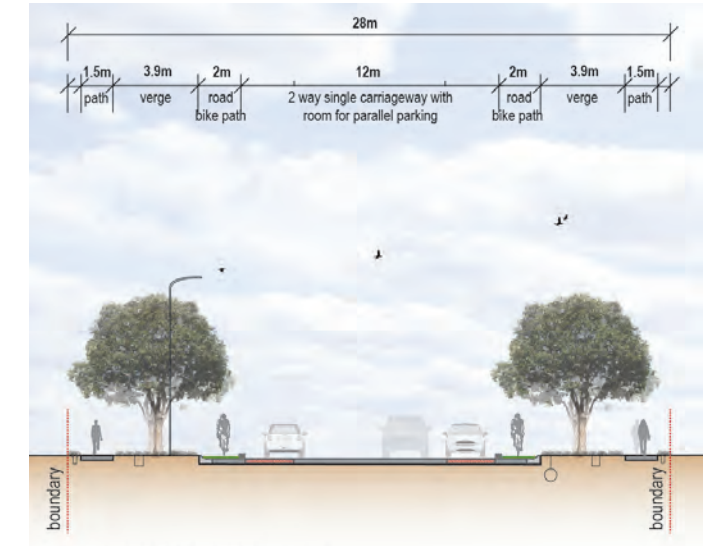
**deakin avenue layout**  
1:200@a3



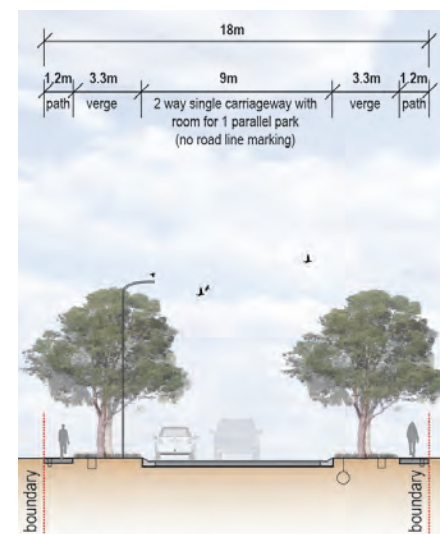
**avenue layout**  
1:200@a3



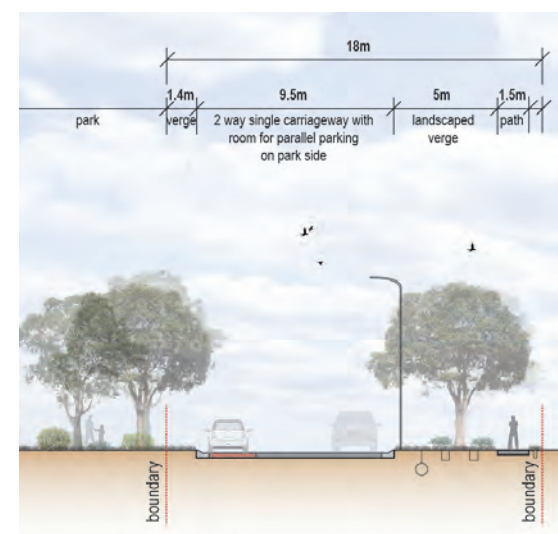
**greenway layout**  
1:200@a3



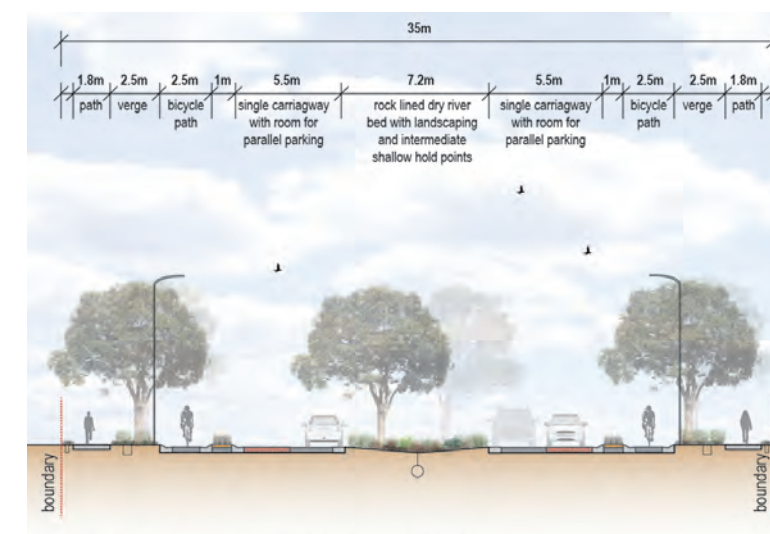
**secondary road layout**  
1:200@a3



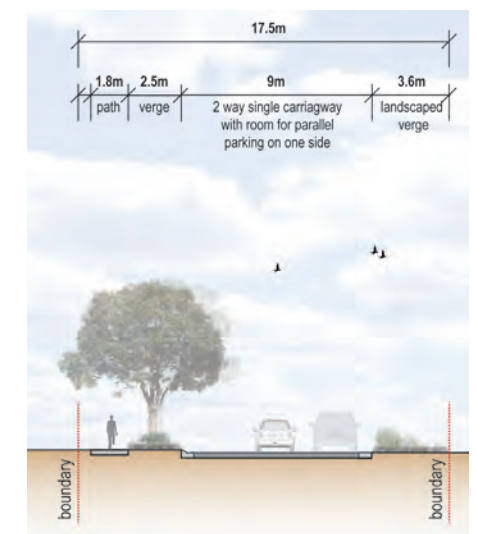
**local road layout**  
1:200@a3



**edge road layout**  
1:200@a3



**parkway layout (both sides developed)**  
1:200@a3



**parkway layout (one side developed)**  
1:200@a3



