mildura – irymple urban transition area urban design guidelines,

prepared for mildura rural city council

by hansen partnership pty ltd

april 2008 (FINAL REPORT)

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appendices

1 introduction

The aim of this project was to prepare Urban Design Guidelines to guide the future development of land in Benetook Avenue (between Fifteenth and Fourteenth Streets), and land along Fifteenth Street (between Benetook and Sandilong Avenues), Mildura.

This document was commissioned by Mildura Rural City Council as a means of assisting Council in considering future development applications within this area and to provide guidance to land owners, stakeholders and developers on specific design standards that should be considered when building.

1.1 planning context:

This document stems from a number of reports and studies that examines the future development of the urban transition area, formerly known as the non-urban break, between the townships of Mildura and Irymple. They are summarised below:

mildura – irymple interface study, may 2006

The Mildura-Irymple Interface Study seeks to "*Provide Council with a long term Vision and accompanying Urban Design Framework to guide future planning scheme policy and controls, subdivision, development and use in this important area of Mildura*."

The Study includes numerous observations and recommendations in relation to future development along Benetook Avenue and Fifteenth Street and the provision of additional business and industrial land in these locations.

The Study articulates the key objectives for the Benetook Avenue precinct were as follows:

- To consolidate peripheral sale retailing and associated opportunities with(in) the core Fifteenth Street Precinct.
- To establish Benetook Avenue as a high exposure service orientated commercial experience with ribbons of landscape between large building forms.
- To create development form that provides a sense of frontage and street presence that portrays a sensible arrangement of back to back and fronts to street in a confined setting that minimises the detrimental impact on surrounding residential areas, through substantial landscape buffer within both business and residential sectors.

Key objectives for the Fifteenth Street precinct were as follows:

- Reinforce Fifteenth Street as the 'public face' of the '*urban transition'* between Mildura and Irymple.
- Develop Fifteenth Street as an urban strip incorporating a diversity of uses and forms that are underpinned by a strong landscape presence that maintains a notion of transition in identity between the two adjoining towns.
- Facilitate the development of urban uses at an appropriate time in the future that responds to the land supply situation of Mildura and Irymple.

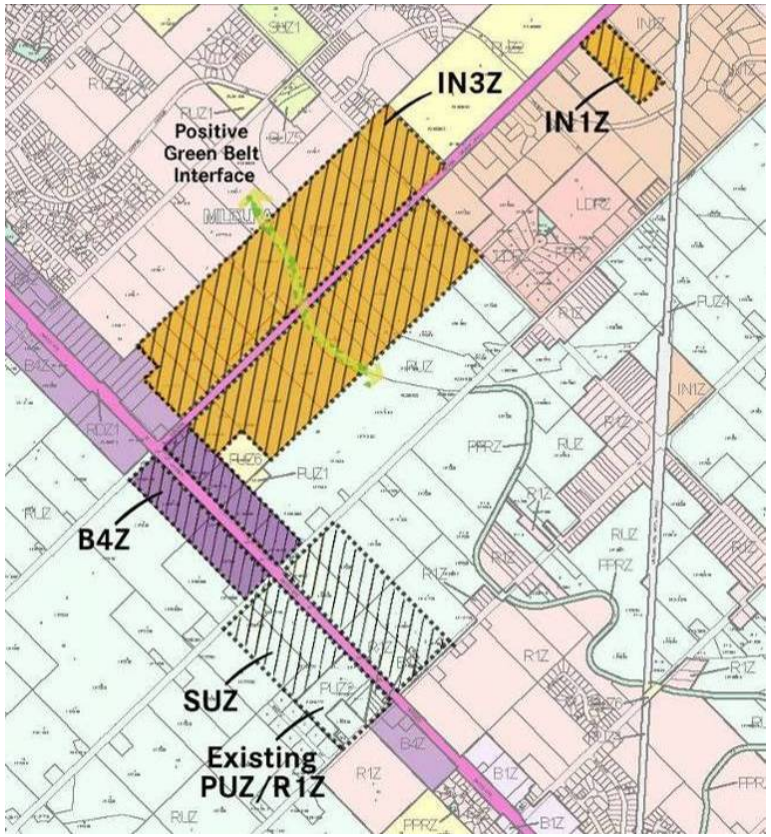
industrial land strategy update, december 2006

The aim of the Industrial Land Strategy Update was to review and update Council's earlier industrial strategies and to determine if (and where) additional industrial land rezonings can be strategically justified at the current time of which the study took place.

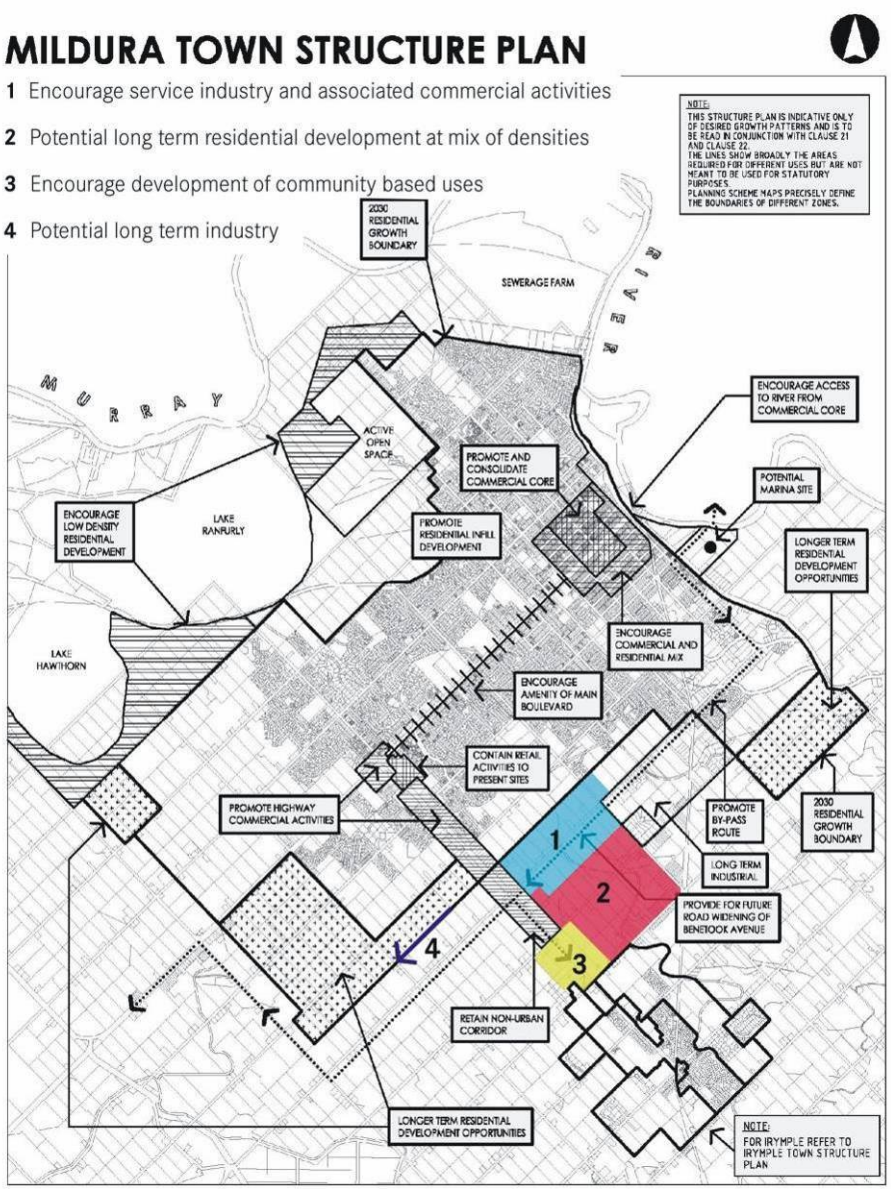
The study found that:

- The preferred location for Business 4 development (eg. along Fifteenth Street between Benetook Avenue and Cowra Avenue) by "repositioning" the recently approved 20 ha of B4Z on Benetook Ave to Fifteenth Street;
- Provide service industry development along Benetook Avenue by rezoning both sides of this designated Truck Route (between Fourteenth and Fifteenth Streets) to Industrial 3;
- Provide community uses on Fifteenth Street between Cowra and Sandilong Avenues by applying a Special Use Zone; and
- Achieving the stated urban design outcomes in each of the above identified areas by the corresponding application of appropriate Overlay Controls.

- Being transparent about the long term potential residential development outcome for land between Cowra Avenue and the back of the proposed IN3Z land fronting Benetook Avenue.



The outcome of this study results in the following changes to the Mildura Town Structure Plan, as illustrated overleaf.



etiwanda residential development plan, january 2007

Council has adopted the residential development plans (RDP's) for four areas in Mildura that are expected to be the focus of residential development in the city in the near future. One of the areas assessed was land fronting Etiwanda Avenue which extends mid block to Benetook Avenue (abutting existing B4Z and FZ land).

The RDP identifies a "shared buffer" between residential, B4Z and FZ land along the mid-block spine.

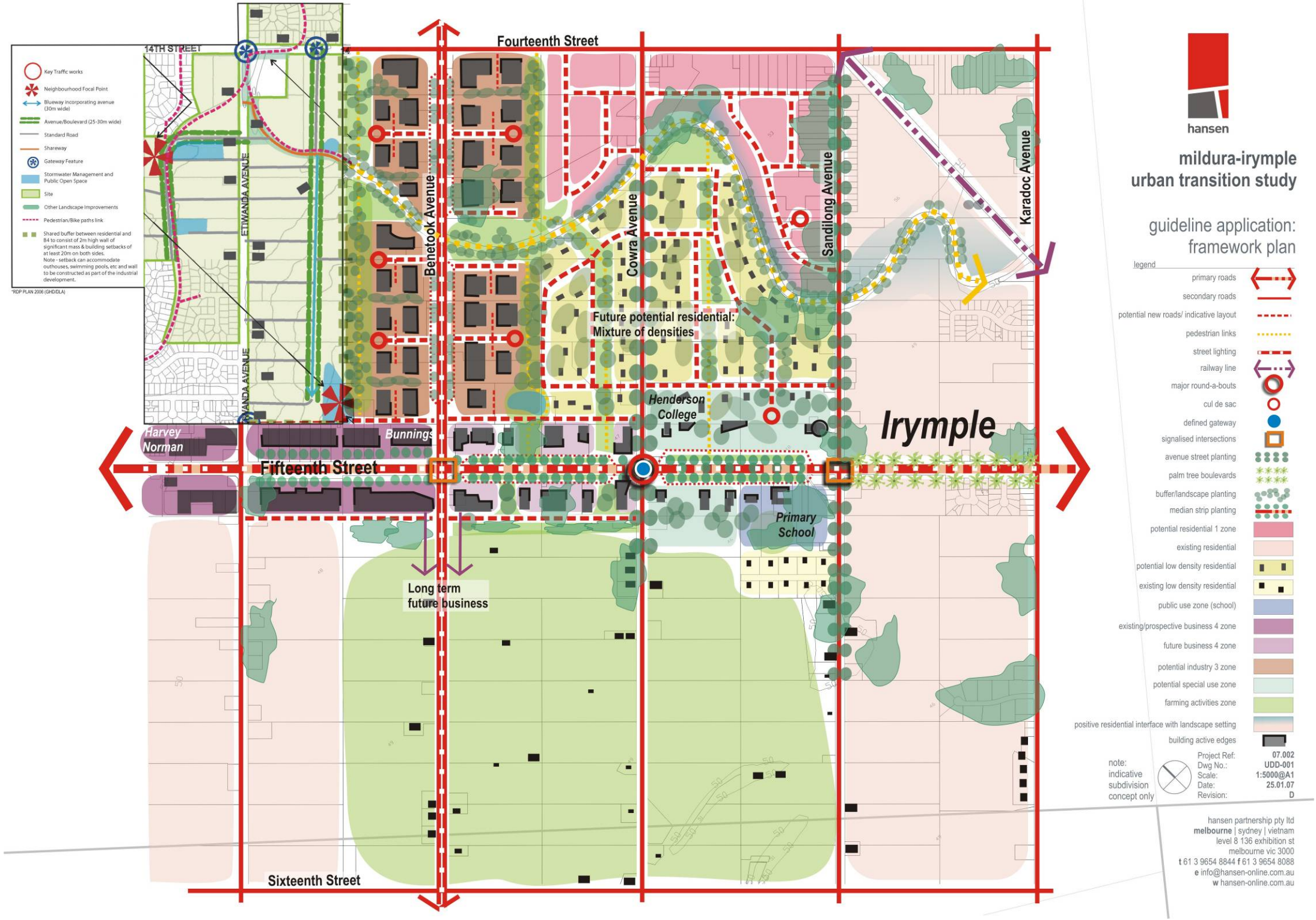
Details regarding the building setbacks and landscape treatment within the buffer (primarily within future industrial land) are entailed within the Urban Design Guidelines.

1.2 policy synthesis

In summary the notable advancements to the Mildura–Irymple transition area plan include:

- Rezoning of land on Benetook Avenue (between Fourteenth and Fifteenth Street) to Industrial 3 Zone.
- Rezoning of land on Fifteenth Street (between Benetook and Cowra Avenue) to a Special Uses (business) Zone.
- Rezoning of land on Fifteenth Street (between Cowra and Sandilong Avenue) to Special Use (community uses) Zone.
- Land on Benetook Avenue, south-west of Fifteenth Street to be a future investigation area for Industrial growth.
- The introduction of the Etiwanda Residential Development Plan, indicating a 'shared buffer' at the boundary of future industrial land, continuation of pedestrian and bicycle opportunities along the 'Green Belt', and the establishment of a new 'Avenue/ Boulevard' between Etiwanda and Benetook Avenue.

The following diagram illustrates the amalgamation of the studies listed above.


Key Traffic works
Neighbourhood Focal Point
Blueway incorporating avenue (30m wide)
Avenue/Boulevard (25-30m wide)
Standard Road
Shareway
Gateway Feature
Stormwater Management and Public Open Space
Site
Other Landscape Improvements
Pedestrian/Bike paths link
Shared buffer between residential and B4 to consist of 2m high wall of significant mass & building setbacks of at least 20m on both sides. Note - setback can accommodate outhouses, swimming pools, etc and wall to be constructed as part of the industrial development.
*RDP PLAN 2006 (GHD/DLA)
14TH STREET
ETWANDA AVENUE
ETWANDA AVENUE
Fourteenth Street
Benetook Avenue
Cowra Avenue
Sandilong Avenue
Karadoc Avenue
Future potential residential: Mixture of densities
Henderson College
Irymple
Harvey Norman
Bunnings
Fifteenth Street
Primary School
Long term future business
Sixteenth Street
hansen
mildura-irymple urban transition study
guideline application: framework plan
legend
primary roads
secondary roads
potential new roads/ indicative layout
pedestrian links
street lighting
railway line
major round-a-bouts
cul de sac
defined gateway
signalised intersections
avenue street planting
palm tree boulevards
buffer/landscape planting
median strip planting
potential residential 1 zone
existing residential
potential low density residential
existing low density residential
public use zone (school)
existing/prospective business 4 zone
future business 4 zone
potential industry 3 zone
potential special use zone
farming activities zone
positive residential interface with landscape setting
building active edges
note: indicative subdivision concept only
Project Ref: 07.002
Dwg No.: UDD-001
Scale: 1:5000@A1
Date: 25.01.07
Revision: D
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2 benetook avenue industrial precinct

The following urban design guidelines apply to land fronting Benetook Avenue, between Fifteenth Street and Fourteenth Street, Mildura.

The diagram below indicates the extent of area affected.

2.1 statement of intent

This part of Benetook Avenue will be the first front of commercial and industrial development in Mildura east, extending north from the corner of the Highway. Also, Benetook Avenue will incorporate a generous landscape setback and an access way aligned with large format industrial buildings with attractive offices in front. Most buildings will have a well designed office or shop frontages, with service sheds and the like appended to the rear. Where lots are deep enough, an internal street network provides access to a rear row of industrial buildings. A 50m wide buffer is defined between the rear of industrial uses and any adjoining residential land. A further buffer is formed within potential residential land to the western and eastern sides of this industrial precinct.

2.2 design objectives

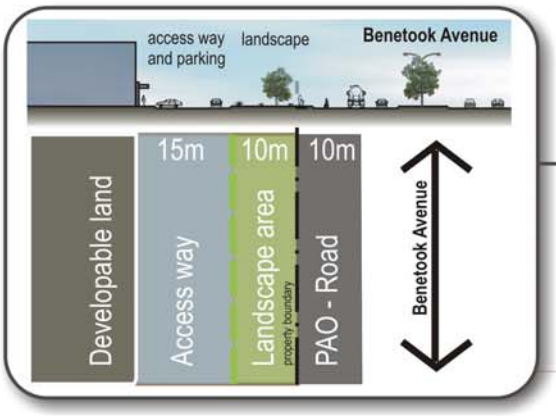
- To implement the design and development guidelines for the Benetook Avenue Precinct in accordance with the *Urban Design Guidelines – Mildura Irymple Urban Transition Area* (April 2008).
- To protect the amenity of abutting residential development.
- To achieve a high quality landscaped streetscape and industrial address along Benetook Avenue in a coordinated and consistent manner.
- To ensure that buildings do not dominate the Benetook Avenue streetscape.
- To ensure that signage does not dominate the streetscape image or lead to visual clutter.
- To provide safe and well defined access routes for vehicles and pedestrians.

The following diagram is the Benetook Avenue Precinct Plan:

mildura- irymple urban design guidelines

benetook avenue precinct plan

hansen



10m PAO
Public Acquisition Overlay

Fourteenth St

330m

10m setback from Fourteenth Street (4m landscape street edge)

Proposed Industrial corridor

frontage

Encourage access-way connections between lots

Indicative Internal Accessways

Benetook Avenue

Future Possible Residential

New Etiwanda Boulevard with cycle lanes

New pedestrian crossing

Greenbelt Link Pedestrian and cycle paths 20m wide

Etiwanda Residential Development

50m setback (including 20m landscaping and 30m access area)

rear

Benetook Avenue

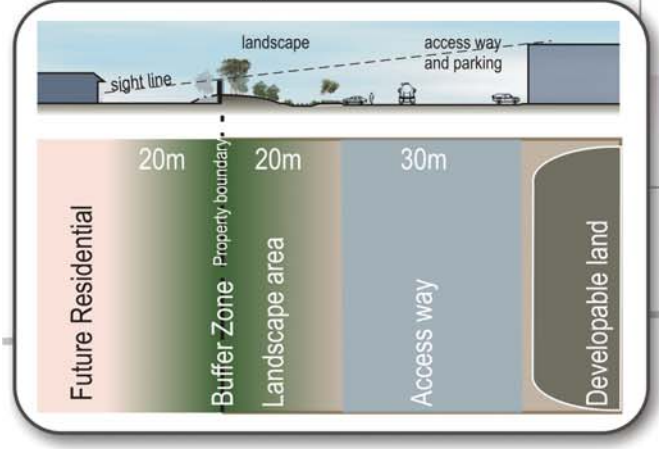
Indicative Internal Accessways

50m

Storm Water Management Area

50m

Storm Water Management Area



Existing Commercial Development

25m

25m

Future Commercial Development

Fifteenth St

Note: Building envelopes are indicative only. New development must have regard to the Mildura - Irymple Urban Transition Area Urban Design Guidelines.

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2.3 urban design guidelines

2.3.1 subdivision and site layout

preferred subdivision models

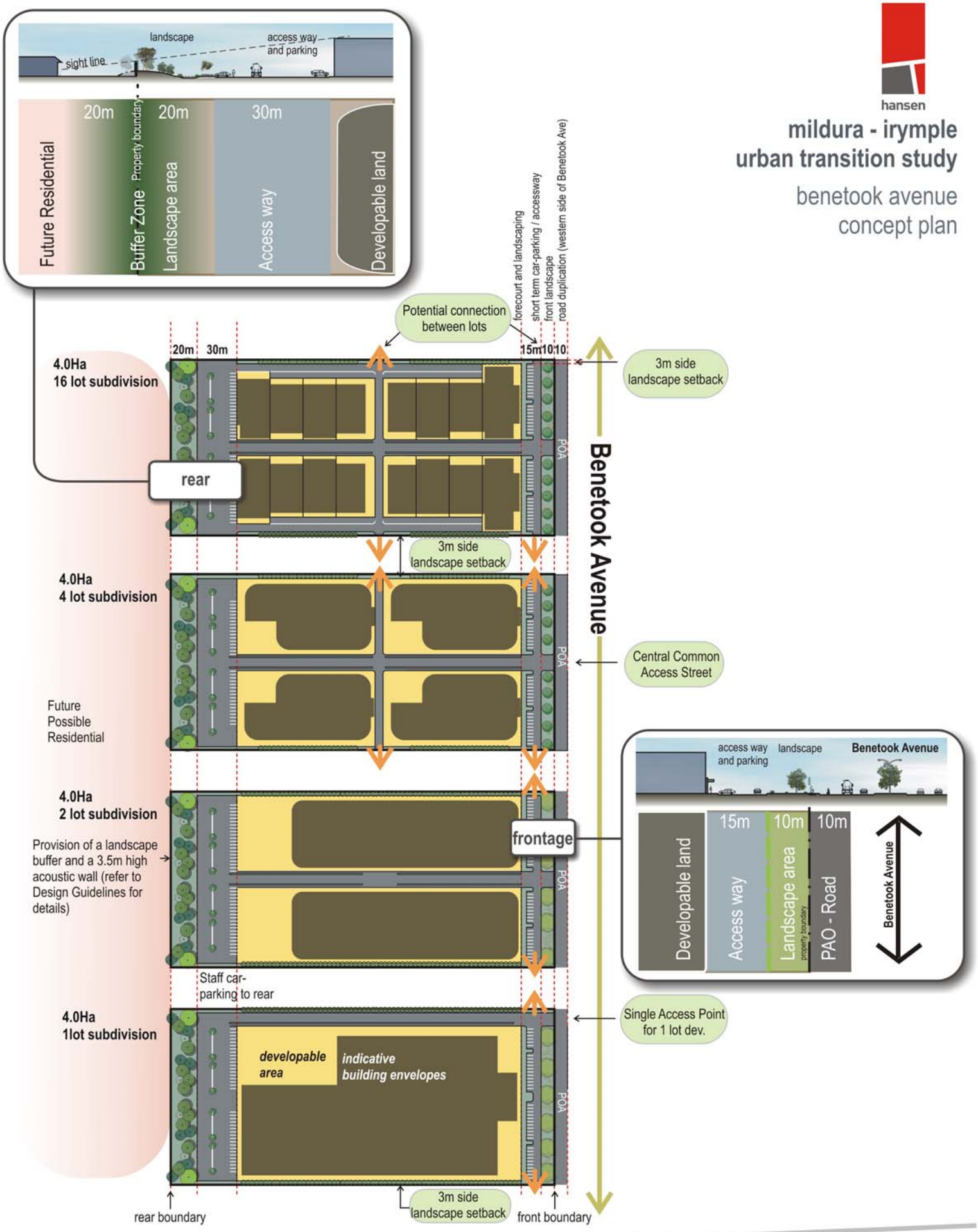
The current subdivision pattern along this part of Benetook Avenue is varied and there are a range of lot sizes in different shapes. For convenience sake, these lot sizes have been broken into the following categories:

- Small lots: below 1 ha
- Medium lots: 2 ha – 3ha
- Large lots: above 3 ha

The following design guidelines are:

- Existing lots in excess of 3ha may be subdivided into smaller allotments. Further subdivision of lots should result in a maximum of 2 frontages to Benetook Avenue.
- Existing lots less than 1ha in area should be amalgamated with larger lots to accommodate for new industrial forms.
- Subdivision behind the primary lot frontage should be configured in a geometric/ grid formation.
- Vehicle access and connectivity is encouraged to occur at the front accessways of the property and if possible, mid block between adjacent properties to form a network of internal streets.
- All buildings should have an address towards the street other than on smaller subdivision arrangements, where new buildings should front internal roads.
- Backs or sides of buildings should not face any street.
- Allotments abutting the 'Green Belt' should incorporate dual frontages towards the Green Belt with its primary frontage towards Benetook Avenue.

Overleaf is an example of the types of models that are encouraged.



Note: Subdivision sizes may vary. Building envelopes are indicative only. New development must have regard to the Mildura - Irymple Urban Transition Area Urban Design Guidelines.

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revision:	final

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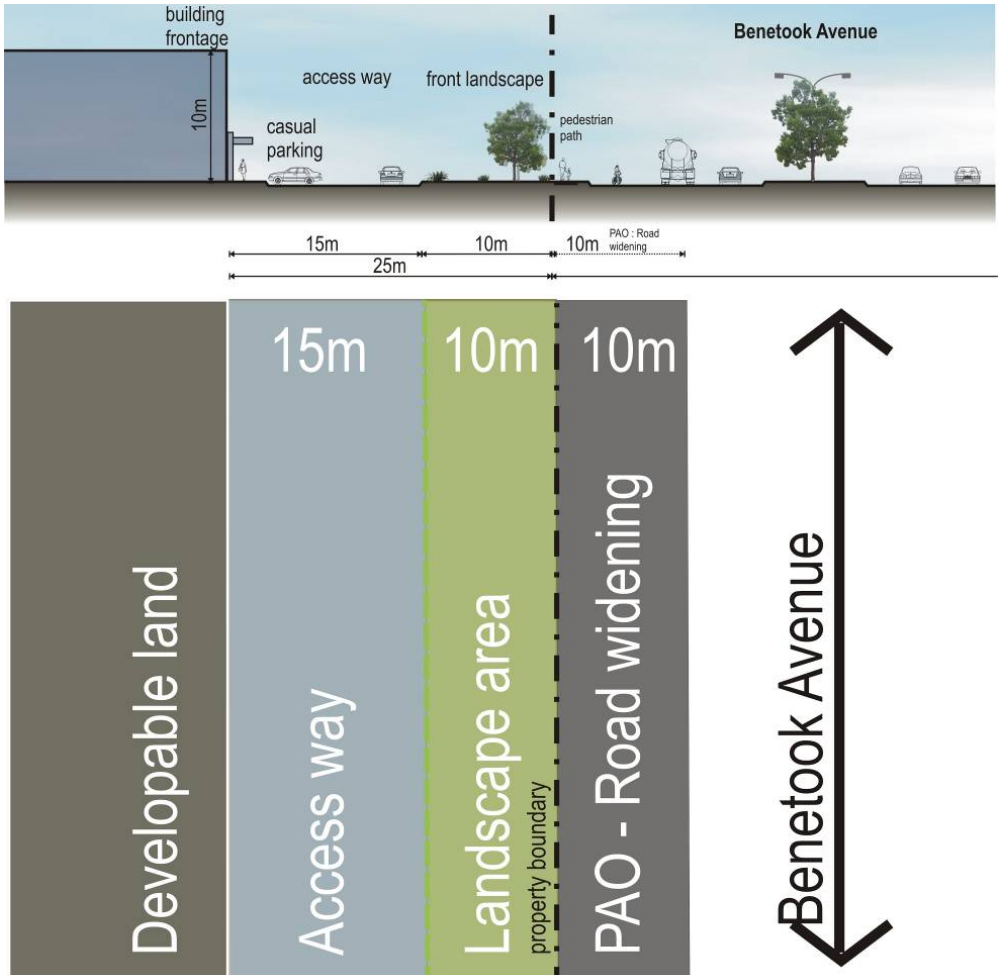
front setbacks

Front setbacks to Benetook Avenue are necessary to achieve a high quality streetscape and industrial address in a coordinated and consistent manner. Within this setback, it will provide for landscaping, limited signage, convenience car parking and an accessway which may ultimately connect with adjoining lands. The following design guidelines are:

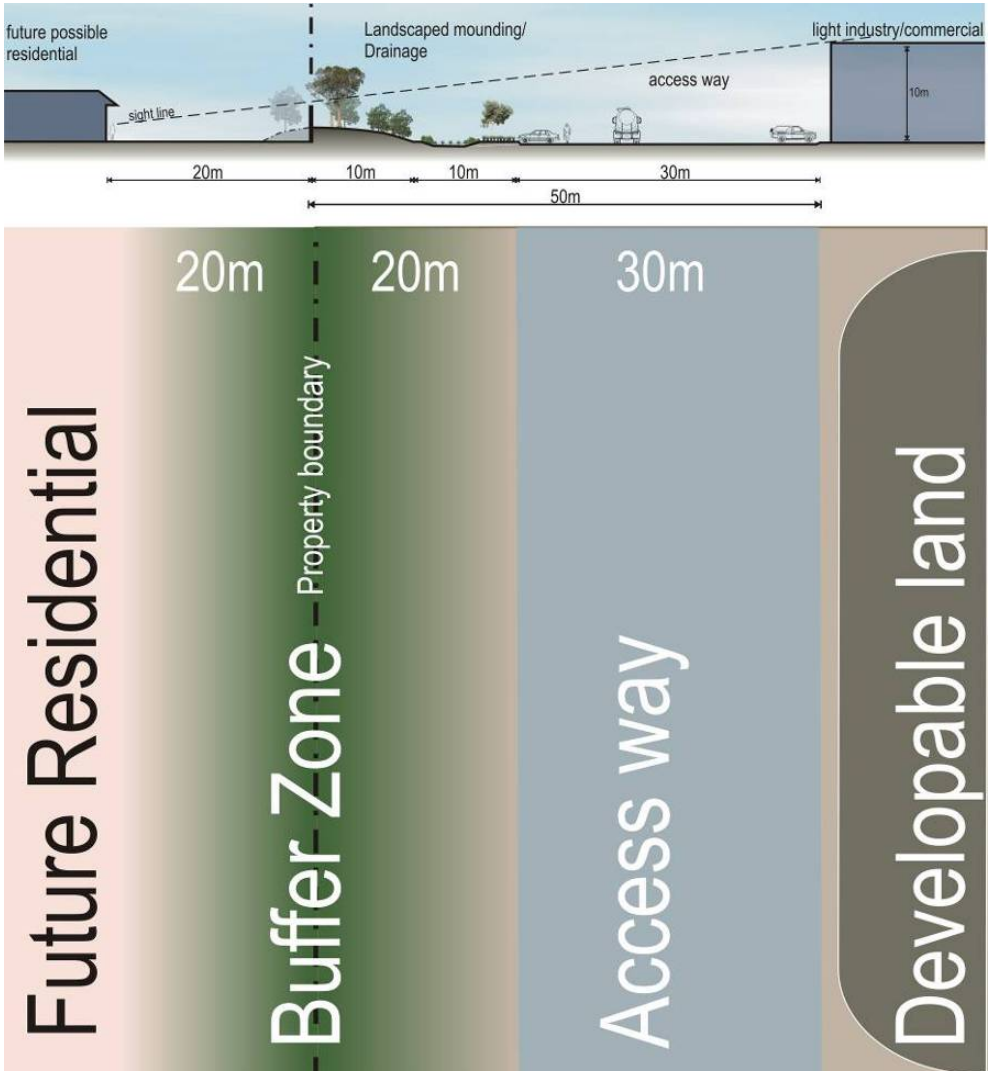
- Buildings must be setback a minimum of 25m from the Benetook Avenue boundary. The following mandatory components within the building front setback must include:
  - 10m landscaped front setback from the street (see 2.3.4 landscape for further details)
  - 15m access way parallel to the street frontage to allow for:
    - 1 strip of 90° car parking (4.8m in length – AS 2890,User Class 1-C1)
    - 2 way aisle (6.2m in width – AS 2890, User Class 1)
    - 4m entrance forecourt



rear setbacks

Rear setbacks are critical to achieve the essential 'spacer' from new industrial uses and abutting future residential land. This does not mean that land within this setback cannot be utilised, but is the preferred area for car parking, drainage services and limited storage. Additionally, a strip of buffer landscaping is required to provide a softer and polite edge to the commonly incompatible uses. The design guidelines are:

- Buildings must be setback a minimum of 50m from the rear boundary of land within the Residential 1 or Farming Zone. Within the building rear setback it must include the following mandatory components:
  - 20m landscaped rear setback from the property boundary (see 2.3.4 landscape for further details)
  - 30m access way to allow for:
    - vehicle circulation
    - car parking bays (4.8m in length – AS 2890, User Class 1-C1)
    - 2 way aisle (6.2m in width – AS 2890, User Class 1)
    - limited storage which must not be stacked above 6m



side setbacks

Side setbacks are essential to ensure adequate space between buildings is provided. Typically, industrial buildings are large in format and clear breaks in building forms is needed to assist in the relief of built form elements within the streetscape and to allow access to natural daylight. The design guidelines are as follows:

- Buildings must be setback a minimum of 10m from the Fourteenth Street boundary. There must be a minimum 4m landscape buffer along the front boundary to Fourteenth Street.
- Buildings must be setback a minimum of 3m from the side boundary.
- Where vehicular access is provided to the rear of the site, there must be a minimum 3m setback from the side boundary to allow for the provision of a landscaped buffer.

2.3.2 building design

height

Buildings associated with Industrial 3 Zone land require adequate space and the necessary height for functional and practical purposes. Often large working/ storage sheds with an office space will be the fundamental components of the development. Whilst it is important to meet these needs, building should not be overwhelming to the Benetook Avenue streetscape. The design guidelines are as follows:

- Buildings should not exceed a maximum height of 10m above ground level.
- Front offices should not exceed a maximum height of 8m above ground level.

street address

It is important that new industrial development address the street to establish a clear sense of address and maximise street exposure. New developments should present offices in front of large format sheds. The design guidelines are as follows:

- All buildings must have an address towards the street other than on smaller subdivision arrangements, where new buildings should front internal roads.
- Backs or sides of buildings should not face any street.
- Allotments abutting the 'Green Belt' should incorporate dual frontages towards the Green Belt with its primary frontage towards Benetook Avenue.

façade presentation

It is important that new industrial development present an attractive façade to the streetscape. As Benetook Avenue is recognised as a principal truck route and accommodates relatively high traffic volumes, the building's street presentation will play a fundamental role in how the place is perceived. The following design guidelines are:

- All roof-mounted mechanical equipment must be screened from view by parapet walls or screening which should complement the building form and present as an integrated component.
- Buildings and associated works must be attractively designed and contemporary in style. All buildings must be progressive in design, concept and finish.

- All industrial sheds should include an office/ display frontage component located towards the street frontage, effectively masking the box form from the street.
- Offices should present an attractive façade complementary to the rest of the development.
- Buildings must incorporate a clear legible entrance defined by strong building elements such as porticos, verandahs or awnings.
- Entrances should have well defined pedestrian access to car parking and street footpaths.
- Long blank walls to the frontage and side elevations of offices are discouraged.
- Encourage the use of different materials, finishes and colours and vertical division to all elevations to provide visual interest to expansive elevations.

roof form

The appearance of the roof form of new industrial buildings will affect the Benetook Avenue streetscape image. Particularly at oblique views, extensive roof forms can be an overwhelming and visually dominant element. It is important that any new roof form should be low in profile to minimise its visibility. The following design guidelines include:

- Buildings are encouraged to incorporate low pitched, flat or curved roof forms to the 'big box' with front offices reflecting a complimentary roof form with the rest of the development.
- High pitched roof forms are discouraged.

materials

It is important that appropriate material choice is considered in the design, function, and form of new industrial buildings. Given Mildura's climatic conditions, high quality and durable materials should be used to preserve the building's longevity. Subtle changes in material use are able to provide visual interest to extensive elevations. The following design guidelines are:

- A range of materials are encouraged to be applied to front offices and/or small subdivided buildings. These buildings should be highly glazed to allow visual interplay with the street and internal access ways.
- Building material should incorporate non reflective materials. Metal roof finishes must be Zincalume or Colourbond.

- Tilt up concrete slabs should be articulated using three dimensional imprint relief, or window fenestration in appropriate areas.
- Insulation is encouraged to the rear/or sides parts of the building to limit noise emanating to potential residential interface areas.

building colours

In building design, colour serves a number of aesthetic purposes. However, it is important that building colours do not detract the quality of the streetscape and are visually dominant. Whilst some bold colouring is encouraged in some strategically placed areas of the building, for example, defining the main entry of the building, the majority of the building should reflect more earthy tones. The design guidelines include:

- Variation in colours should be kept to a minimum and shall be in subdued tone. Accent colours may be used to express corporate identity.
- Extensive use of primary colours on walls should be avoided.

signage

It is important that signage do not dominate the streetscape image and provide substantial visual clutter. Attractive building frontages with well considered and integrated signage should be able to speak for themselves and be the main focal point in public view. The following design guidelines are:

- Development which contains a number of premises should consolidate signage into a single directory board, low in profile and located within the landscaped front setback.
- These signs should not be larger than 2m x 1m and no higher than 1.8m.
- Visual clutter created by too many signs must be avoided.
- Signage is encouraged to be integrated with the office building form of the development but must not be painted on the walls or windows of the building.
- Signs should be designed to complement the style of the building and be proportionate in scale.
- Signage should not be located on the roof or exceed the parapet height of the building.
- Animated signs or the use of coloured neon lighting are not encouraged.
- Advertising and business identification signage is not permitted at the rear of the property or on the rear façade of any building.

pa systems (public address systems)

For the amenity of residential land (and future) abutting industrial sites the following design guidelines include,

- Wall mounted public address systems should be integrated with the design of the elevation or concealed from public view.
- Usage of public address systems should not be operated outside normal working hours of 7.00am – 6.00pm, unless in case of emergencies.

2.3.3 access and movement

access

Access into, and circulation within individual properties should provide safe and well defined routes for vehicles and pedestrians. The use of landscaping, paving materials, lighting, and signage assist in defining these areas which will contribute to the overall safety, quality and sense of direction within each site. The following design guidelines are:

- Internal roads / accessway should be designed to encourage cross connectivity between subdivisions. As a 15m accessway at the front of the property is required, land occupiers should mediate with neighbouring sites for implementation or make it available over time.
- Only one vehicular access point is to be provided onto Benetook Avenue for every existing allotment.

- Truck accessways must be in accordance with Australian Standard 2890-2.
- A visitor parking area and access aisle must be provided at the front of every lot, behind the landscape setback.
- All vehicles including those delivering to or servicing the site must be able to enter and exit the site in a forward direction.
- All driveways and car parking areas must be constructed of an impervious all-weather seal coat such as concrete or bitumen.

car parking

It is important that the placement and design of car parking cells should be well considered. In general, the location of car parking cells should be to the rear and sides of the building. It is also encouraged that such cells should provide landscaped canopy planting or attractive shading devices to offer shade relief from the local climatic conditions. The following design guidelines are:

- Adequate provision of on-site car parking for employees and visitors should be provided.
- Car parking is not to encroach upon the required landscape setback areas.
- In the event of there being insufficient provision of car parking, overflow on street car parking will not be considered as a reason to reduce the car parking requirement.
- Car space dimensions must be in accordance with Australian Standards: AS 2890-1 (User Class 1- C1, as a minimum) and be Disability Discrimination Act compliant.
- Car parks must be clearly marked.

loading, services and storage

It is important that loading, services and storage areas are not visually obtrusive. The visual impact of these areas should be minimised, especially from views from public areas or along view corridors. Also, such places should be well ordered and a safe environment. The following design guidelines are:

- Adequate provision for loading and unloading of vehicles must be made together with an area set aside for industrial waste collection.
- All loading and unloading facilities must be located to the side of the site and where possible located within the building.
- Loading areas must be screened so as not to be visible from public view. Screening devices should be integrated with the building form.

- Loading should not be located in the front setback areas.
- Materials, supplies or equipment should be stored within the building.
- Loading provisions and areas must be accordance with Clause 52.07.

2.3.4 landscape

Landscaping in front of buildings, to the side in between lots and to the rear are important elements in the development of the land along Benetook Avenue. A uniform 10m landscape reservation from the street frontage of Benetook Avenue will provide an attractive business address. Avenue plantings should be the prevailing streetscape element which softens the presentation of industrial buildings well set behind. Landscaping setbacks must achieve the following:

front:

- The softening and filtering of views to buildings from Benetook Avenue including larger native canopy trees in avenue formation and low lying native understorey plants to allow visual exposure from the street.
- The planting of native shade trees in association with car parking areas;
- An irrigation system which implements water wise, water sensitive urban design and low water use plant materials.
- Identification that no storage or displays are to be located within these areas.

side:

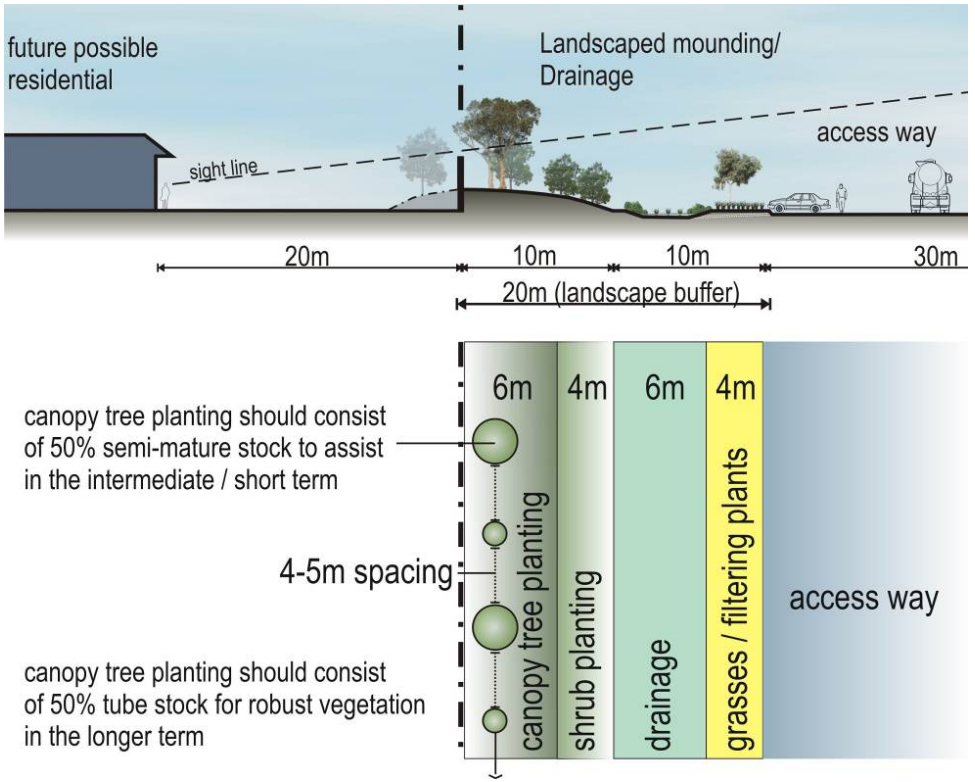
- 3m wide side setback from the boundary for landscaping.
- Consistent avenues of planting in either tree or shrub species along both side boundaries.
- Provision of some grassed areas, landscaping at building entrances and canopy trees in car-parking areas should be maximised at every opportunity to create a pleasant environment for workers and visitors.

buffer landscaping (rear)

The earth berm required to the rear of industrial lots supported by the acoustic wall will accelerate initial vegetation height. The implementation and maintenance of the berm is the responsibility of the land owner at the time of development. The following design guidelines include:

- The mounding should have a minimum batter ratio 1:3 to support canopy vegetation with a width maximum of 10m and a height of 1.5m.
- The rear landscaping buffer should:
    - use suitable planting species to provide a thick vegetation cover along the rear boundary (refer to Preferred Planting List, section 5)
    - use a mix of taller and shrubby vegetation.
    - include 50% of canopy trees planted by tube stock and the other 50% should be semi-matured stock of a minimum height of 2m.
    - provide adequate spacing of canopy trees of a maximum 5m.
    - ensure slope to be battered to inhibit erosion.
    - ensure mounding is a suitable fill grade to support vegetation.
    - provide a minimum of 6m for a stormwater and sewer drainage easement.
    - incorporate drainage swales for filtration of surface runoff from hard surfaces such as car park areas.
    - incorporate a combination of native grasses and vegetated areas.
    - not contain any storage sheds or plant infrastructure.
    - be maintained in a sustainable way to ensure vegetation is established.
    - be established and maintained by the developer.

The diagram below is an illustration of the listed components:



lighting

Lighting is important to contribute to the security, safety and efficient use of the development. The following design guidelines include:

- Lighting must not cast glare onto adjacent sites, the street or abutting future residential land.
- Overhead lights must not be higher than the building height and must be baffled to prevent light spilling onto adjoining lots.

fencing

The following design guidelines are:

front:

- Any front fencing onto Benetook Avenue should be permeable and should have a maximum height of 1.8m.
- Chain wire or mesh/cyclone fencing is not encouraged.

side:

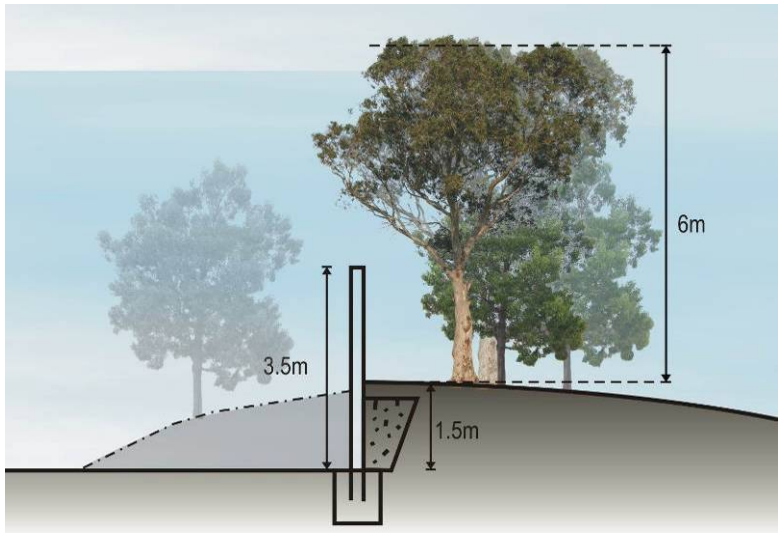
- Side fences should be consistent with front fences and should be co-ordinated with neighbouring properties to allow any cross movement.
- Chain wire or mesh/cyclone fencing is not encouraged within 25 metres of Benetook Avenue.

rear buffer walls

An acoustic wall to the rear of industrial lots abutting residential (or anticipated) land is important in reducing emitted noise and also assist in ameliorating visual impact upon future abutting residential properties. The following design guidelines include:

rear:

- A 3.5m high acoustic wall must be erected on the rear boundary of each lot abutting a residential or farming zone at the expense of the permit applicant.
- The design and presentation of the wall should be consistent with neighbouring properties.
- The rear acoustic wall should be supporting a landscaped mound of 1.5m high on the inside face with batter slopes of 1:3 where practicable to allow for planting.



- The outward presentation of the wall is encouraged to reflect its context with consideration given to the design of the face panels. A combination of texture; periodic articulation; rebates; feature moulding or varying panels can achieve the preferred presentation and should be finished in a painted or textured finish with the use of earthy tones.
- The presence of white ants in the surrounding environment presents particular challenges to the durability of the acoustic barrier in materials other than galvanised steel beams, masonry and concrete panels. These walls should be finished in a painted or textured finish with the use of earthy tones.
- The rear buffer wall should achieve the following:
    - Barriers should be constructed of durable materials (preferably concrete or masonry) having a minimum design life of 40 years, and be guaranteed for this period.
    - Barrier materials should be resistant to vandalism (use of textured finish or graffiti resistant paint) and components should be easily replaceable.
    - All components should have a low flame, fuel and smoke ratings.
    - Barriers should be built so that noise will not pass underneath them due to soil erosion or settlement or digging animals.
- Acoustic properties of the wall are to ensure that industrial noise is reflected /absorbed and noise transfer is reduced to levels consistent with AS 1055.3-1997 category R3.

sustainability

Building construction and operation have an enormous impact on the environment and water management and resource is a significant issue within this locality. New developments should provide opportunities to reduce this impact by applying practical solutions when building. For example, the use of swales and bio-retention systems in the rear landscape setback can be an environmentally friendly way to treat runoff from hard surface car parks, and some waste water from industrial uses. Design guidelines include:

- Rain water harvesting from roof areas into integrated collection tanks should be provided to encourage the use of recycled water for industrial purposes and maintenance of required landscaping.
- Hard surface car-parks should drain to the swale system, providing necessary moisture to the established vegetation in the landscaped mound and buffer areas.
- Details of storm water storage should be provided on the site plans and must be screened from public view.
- The design of storm water drainage should take into account of Environmentally Sustainable Design principles, and should provide for rainwater runoff reuse for landscaping irrigation.
- All new development should have regard to Mildura Rural City Council (MRCC) Water Sensitive Urban Design (WSUD) Guidelines.

maintenance

The following guidelines include:

- The occupier of the site will be required to keep the site and buildings in a safe and clean condition, and regularly maintain the site landscaping.
- Chemicals and waste products must be contained within the boundaries of each lot and must not discharge onto adjoining land.

3 fifteenth street special use (business) precinct

The following urban design guidelines apply to land fronting Fifteenth Street, between Benetook Avenue and Cowra Avenue, Mildura.

The diagram below indicates the extent of area affected.

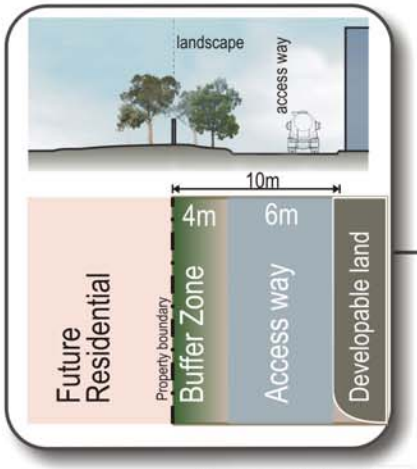
3.1 statement of intent

A Special Use Zone with a business focus will be applied to this part of Fifteenth Street. This will reinforce Fifteenth Street as the 'public face' of the urban transition between the townships of Mildura and Irymple. It will not consist of continuing 'big box' forms like that occurring to the west of Benetook Avenue but as a place with restricted retail and associated business services within a landscaped setting well setback from the road. A shift in form and function will occur along this part of the spine, reiterating the experience along Fifteenth Street as a series of 'events'. Buildings will be tall as others along the spine, but not be as wide as those that exist to the west. This allows for the careful positioning of car parking and landscape between buildings so as to reduce the continuing hard urban face image. Breaks between buildings form landscape spaces which will connect with a network of linear open spaces and pedestrian networks leading to the north. The highway is not defined by large signposts and car parks, but quality roadside sales and trade outlets set within a more generous context. Service access for these uses will be neatly contained behind the frontage.

3.2 design objectives

- To implement the design and development guidelines for the Fifteenth Street Special Use (Business) Precinct in accordance with the Urban Design Guidelines – Mildura Irymple Urban Transition Area (April 2008).
- To ensure that development is located back from the street frontage behind a generous landscape setback.
- To locate car parking and landscaping between buildings to reduce hard surface areas.
- To provide open space breaks between buildings to form landscape spaces to connect with the open space network.
- To provide a different built form environment than that further to the west on Fifteenth Street.

The following diagram is the Fifteenth Street Special Use (Business) Precinct Plan:



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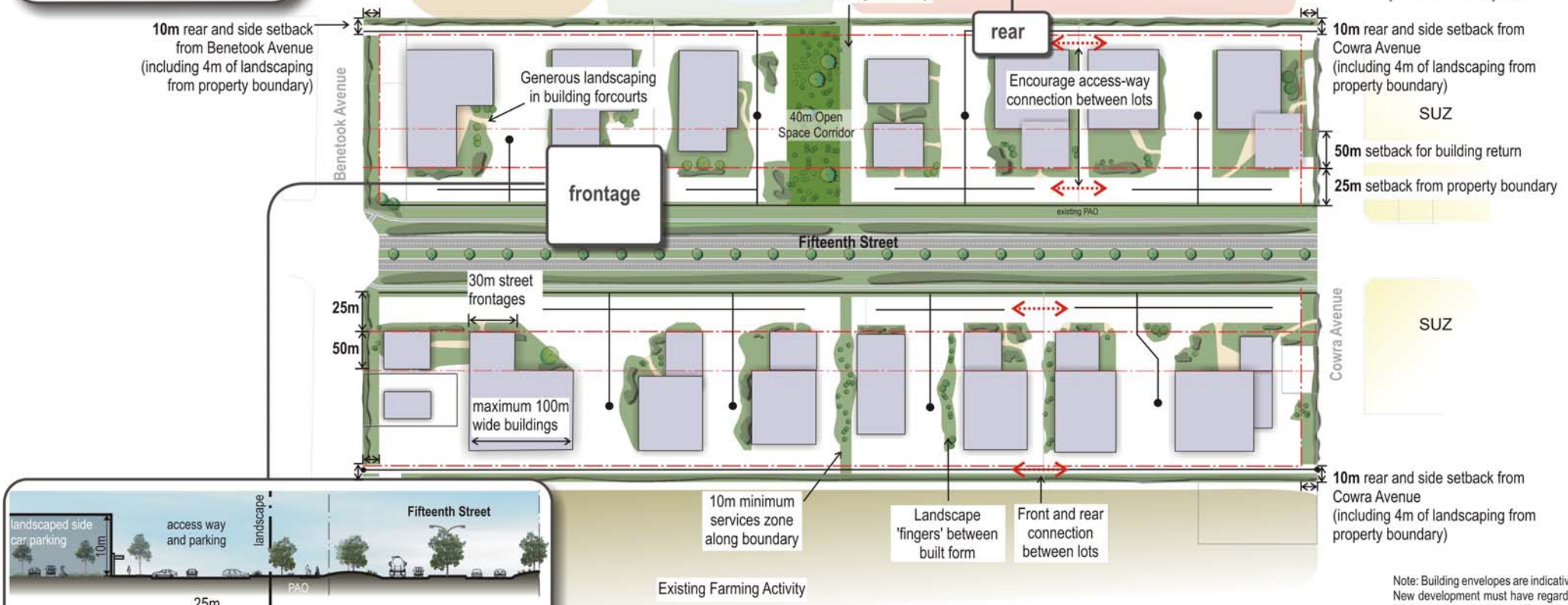
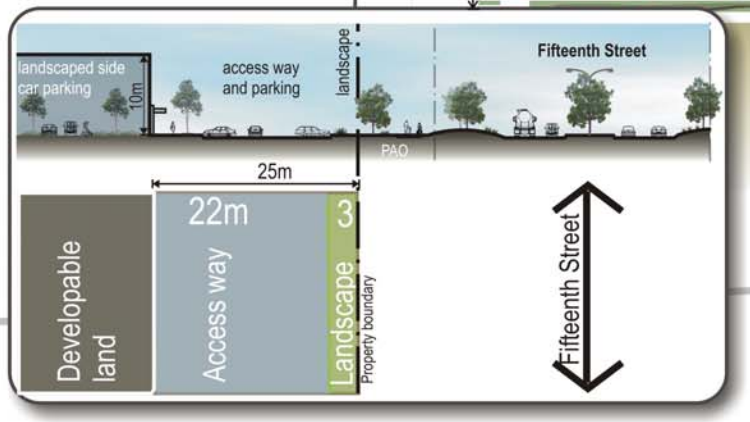
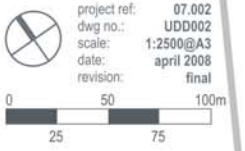
fifteenth street special use (business) precinct plan





Note: Building envelopes are indicative only. New development must have regard to the Mildura - Irymple Urban Transition Area Urban Design Guidelines.



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revision: final

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3.3 urban design guidelines

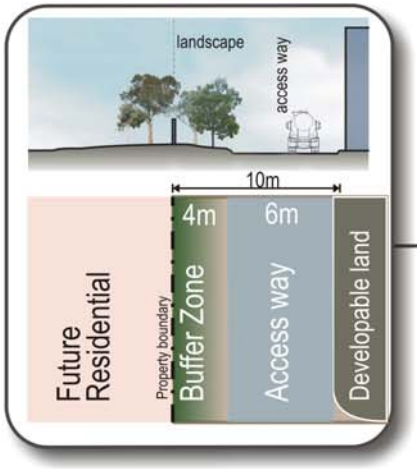
3.3.1 subdivision and site layout

preferred subdivision models

The current subdivision arrangement along Fifteenth Street, between Benetook Avenue and Cowra Avenue, are relatively shallow compared to the large and deep industry lots available on Benetook. Whist this area is the preferred place for Business 4 Zone to occur, it is important that this place is somewhat different to the typical bulky goods environment found to the west of Benetook. The following design guidelines include:

- Existing lots exceeding 1.5 ha may be subdivided in half to accommodate no more than two building forms fronting Fifteenth Street.
- Smaller lots below 0.5 ha may be amalgamated with larger lots to accommodate new business forms.
- Vehicle access and connectivity is encouraged to occur at the front and rear accessways of the property with adjacent properties to form a network of internal connected streets.
- All buildings should have an address towards the street.
- Backs or sides of buildings should not face any street.
- Allotments abutting the future ‘green space corridor’ should have regard to this interface and may incorporate street frontage that wraps around towards the ‘green corridor’.

Overleaf is an example of the types of models that are encouraged.



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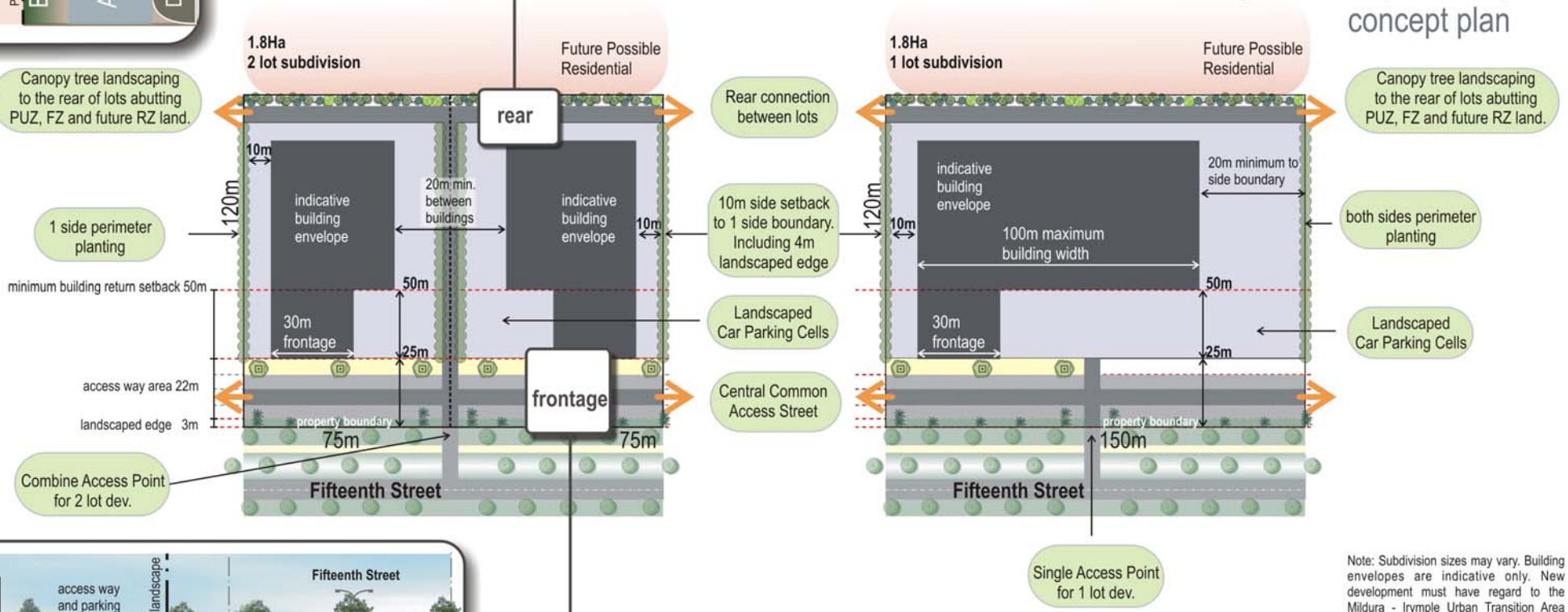
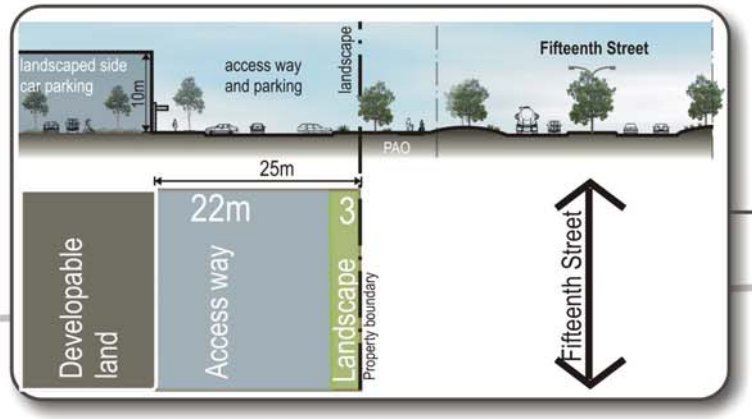
fifteenth street special use (business) concept plan





Note: Subdivision sizes may vary. Building envelopes are indicative only. New development must have regard to the Mildura - Irymple Urban Transition Area Urban Design Guidelines.

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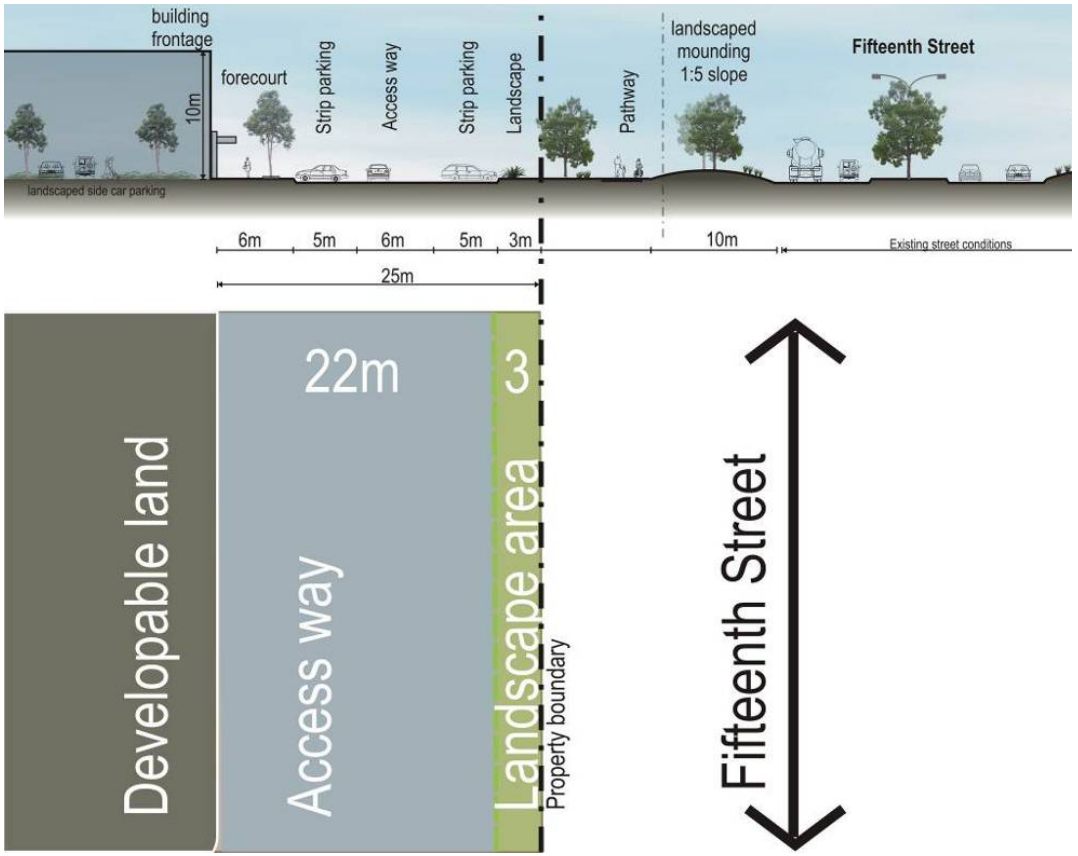
front setbacks

Front setbacks to Fifteenth Street are necessary to achieve a different feel to the typical bulky goods present to the west. It is envisaged that new commercial buildings will be well setback from the street behind a strong landscaped boulevard. A landscaped mound will immediately present to the street but views towards the main frontages will be accessible. Within this setback, it will provide for landscaping, limited signage, convenience car parking and an accessway which may ultimately connect with adjoining lands. The following guidelines include:

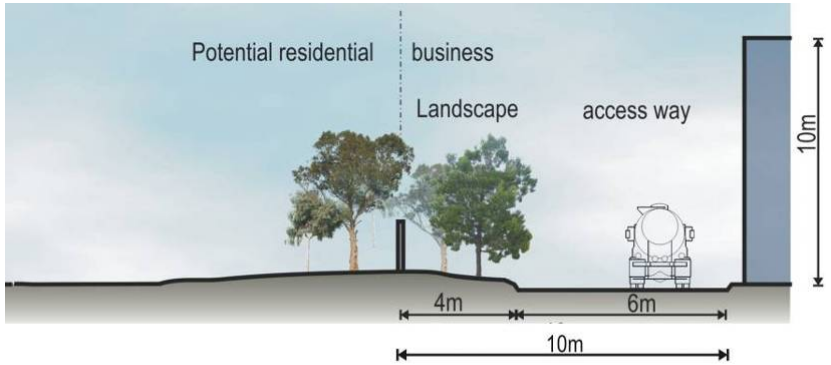
- Buildings must be setback a minimum of 25m from the Fifteenth Street boundary. The following mandatory components within the building front setback must include:
  - 3m landscaped front setback from the street
  - 22m access way parallel to the street frontage to allow for:
    - 2 strips of 90° car parking bay (4.8m in length – AS 2890,User Class 1-C1)
    - 2 way aisle (6.2m in width – AS 2890, User Class 1)
    - 6m landscaped entrance forecourt/ pedestrian path
- A 50m setback must be applied to any building return.

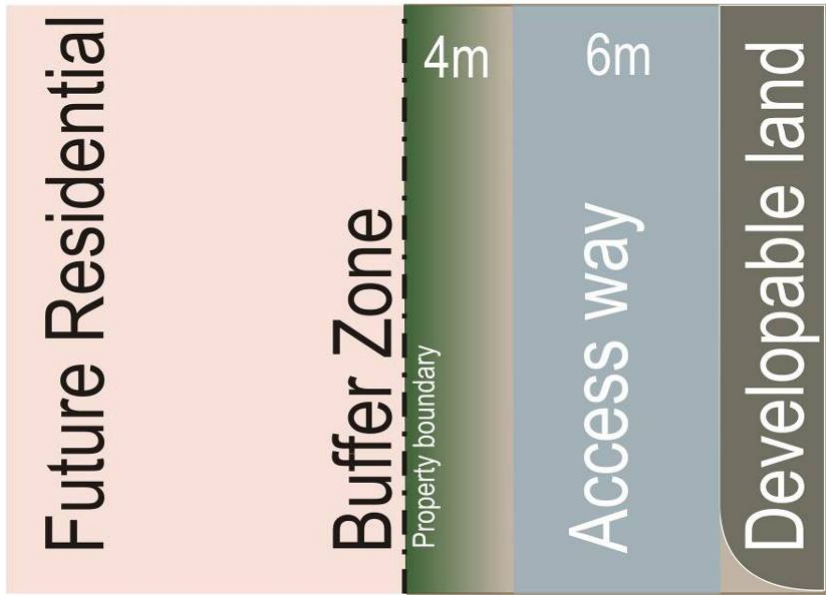


rear setbacks

Rear setbacks must apply to land abutting future residential land to the rear. Whilst B4Z land tend to accommodate developments more compatible to sensitive land uses, such as residential zone land, it is still important that adequate setbacks are in place. It is recommended that land within this rear setback should locate a rear accessway, which can ultimately connect with other adjoining sites, to relieve internal traffic congestion to ingress and egress points to Fifteenth Street.

- Buildings must be setback a minimum of 10m from the rear boundary. Within the building rear setback it should include the following components:
  - 4m landscaped rear setback from the property boundary
  - 6m access way to allow for:
    - rear vehicle circulation
    - screened loading or storage areas





side setbacks

Side setbacks is essential within this part of Fifteenth Street to allow 'green gaps' to occur between discrete commercial buildings. Generous spacing between buildings is required to effectively realise a 'transition' in development form along Fifteenth Street, distinguishing a separation between the townships of Mildura and Irymple. Future commercial buildings in this area will be sparser, separated with ribbons of landscaping. The following design guidelines include:

- Buildings must be setback a minimum of 10m from the Benetook Avenue boundary;
- Buildings must be setback a minimum of 10m from the Cowra Avenue boundary;
- For those sites in excess of 1.5ha, buildings must be setback a minimum 10 metres from both side boundaries; and
- Where vehicular access is provided to the rear of the site, there must be a minimum 3 metre setback from the side boundary to allow for the provision of a landscaped edge.

3.3.2 building design

height

It is important that a moderate building scale within this place is maintained. It is envisaged that new buildings will reflect a similar building height than those existing to the west of Benetook Avenue. The design guidelines are as follows:

- Buildings should not exceed a maximum height of 10m above ground level.

street address

It is important that new commercial development address the street to establish a clear sense of address and maximise street exposure. New retail premises should have their primary outlook towards the street with a clearly marked entrance. The design guidelines are as follows:

- All buildings must have an address towards the street.
- Backs or sides of buildings should not face any street.
- Allotments abutting future 'green space corridor' should have regard to this interface and may incorporate a street frontage that wraps around towards the 'green corridor'.
- All buildings must not exceed a width of 100m.

façade presentation

It is important that new commercial development present an attractive façade to the streetscape. A series of new high quality shop fronts within relatively narrow profile will be visible from the street, with the majority of the building set behind. The following design guidelines are:

- Buildings and associated works should be attractively designed, contemporary in style and be progressive in design, concept and finish.

- The main building frontage should be no more than 30m wide facing the street. Further building setbacks should be applied to provide a generous building return of at least 50m from the street boundary.
- Façade design should continue to all external elevations of the building.
- Building frontages are encouraged to have a light weight appearance.
- Ground levels of buildings should incorporate a high degree of glazing to encourage pedestrian identity.
- Buildings should incorporate a clear legible entrance defined by strong building elements such as porticos, verandahs or awnings.
- Entrances should have well defined pedestrian access to car parking and street footpaths.
- Long blank walls to the frontage and side elevations are discouraged by use of different material, finishes and colours.
- Encourage vertical division to all elevations to provide visual interest to expansive elevations.
- Buildings should not exceed a width of 100m.

roof form

It is essential that new commercial developments incorporate a low profile roof form. The skyline of this place should be defined by anticipated canopy tree landscaping. The following design guidelines include:

- High pitched roof forms are discouraged.
- All roof-mounted mechanical equipment must be screened from view by parapet walls or screening which should complement the building form and present as an integrated component.

materials

It is important that appropriate material choice is considered in the design, function, and form of new industrial buildings. Given Mildura climatic conditions, high quality and durable materials should be used to preserve the building's longevity. Subtle changes in material use are able to provide visual interest to extensive elevations. The following design guidelines are:

- Encourage a range of materials to be applied to all elevations. These buildings should be highly glazed to allow visual interplay with the street and internal access ways.
- Monotonous repetition of material or colour is to be avoided.
- Building materials should incorporate non reflective materials. Metal roof finishes must be Zincalume or Colourbond.

- Tilt up concrete slabs is discouraged other than at the loading or 'back of lot' area and should be articulated using three dimensional imprint relief, or window fenestration in appropriate areas.
- A mixture of building materials is encouraged including masonry, weatherboard, stone, some tilt concrete and contemporary light weight materials.
- Insulation is encouraged to the rear/or sides parts of the building to limit noise emanating to potential residential interface areas

building colours

In building design, colour serves a number of aesthetic purposes. However, it is important that building colours do not detract the quality of the streetscape and are visually dominant. Whilst some bold colouring is encouraged in some strategically placed areas of the building, for example, defining the main entry of the building, the majority of the building should reflect more earthy tones. The design guidelines include:

- Variation in colours should be kept to a minimum and shall be in subdued tone. Accent colours may be used to express corporate identity.
- Extensive use of primary colours on walls should be avoided.

signage

It is important that signage do not dominate the streetscape image and provide substantial visual clutter. Attractive building frontages with well considered and integrated signage should be able to speak for themselves and be the main focal point in public view. The following design guidelines are:

- Development which contains a number of premises should consolidate signage into a single directory board, low in profile and located within the landscaped front setback.
- These signs should not be larger than 2m x 1m and no higher than 1.8m.
- Visual clutter created by too many signs must be avoided.

- Signage is encouraged to be integrated with the building form of the development and must not be painted on the walls or windows of the building.
- Signs should be designed to complement the style of the building and be proportionate in scale.
- Signage should not be located on the roof or exceed the parapet height of the building.
- Animated signs or the use of coloured neon lighting are not encouraged.

3.3.3 access and movement

access

Access into, and circulation within individual properties should provide safe and well defined routes for vehicles and pedestrians. The use of landscaping, paving materials, lighting, and signage assist in defining these areas which will contribute to the overall safety, quality and sense of direction within each site. The following design guidelines are:

- Internal roads should be designed to encourage cross connectivity between subdivisions. As a 22m accessway at the front of the property is required, land occupiers should mediate with neighbouring sites for implementation or make it available over time.
- Only one vehicular access point is to be provided onto Fifteenth Street for every existing allotment.
- A double row of car parking bays and an access aisle must be provided at the front of every lot behind the landscape setback.
- All vehicles including those delivering to or servicing the site must be able to enter and exit the site in a forward direction.
- All driveways and car parking areas must be constructed of an impervious all-weather seal coat such as concrete or bitumen.

car parking

It is important that the placement and design of car parking cells should be well considered. In general, the location of car parking cells should be to the rear and sides of the building. It is also encouraged that such cells should be landscaped with canopy planting or provided with shading devices to offer shade relief from the local climatic conditions. The following design guidelines are:

- Adequate provision of on-site car parking for employees and visitors should be provided.
- Car parking is not to encroach upon the required landscape setback areas.
- Truck accessways must be in accordance with Australian Standard 2890-2.
- Car space dimensions must be in accordance with Australian Standards: AS 2890-1 (User Class 1-C1 as a minimum) and be Disability Discrimination Act compliant.
- Car parks must be clearly marked.
- Within the car park area, one canopy tree should be provided for every three car spaces.

loading, services and storage

It is important that loading, services and storage areas are not visually obtrusive. The visual impact of these areas should be minimised, especially from views from public areas or along view corridors. Also, such places should be well ordered and a safe environment. The following design guidelines are:

- Adequate provision for loading and unloading of vehicles must be made together with an area set aside for waste collection.
- All loading and unloading facilities must be located to the side of the site and where possible located within the building.
- Loading areas must be screened so as not to be visible from public view. Screening devices should be integrated with the building form.
- Loading should not be located in the setback areas.
- Materials, supplies or equipment should be stored within the building.
- Loading provisions and areas must be accordance with Clause 52.07 or to AS 2890.2.

3.3.4 landscape

As Fifteenth Street is the principle connector between Irymple and Mildura the environment should reflect a marked break or transition from the larger bulky forms along Fifteenth Street west of Benetook Avenue to the lower scale of Irymple. Generous landscaping adjacent to and between buildings will assist in this transition 'feel'.

In order to achieve a defined difference in development outcome the smaller building forms along Fifteenth Street should be set in a landscaped environment; both in the front setbacks and surrounding the building forms. Generous landscape fingers between buildings should be maintained to preserve the long range views to the landscape beyond. The design guidelines are as follows:

front:

- The planting of large native canopy trees in avenue formation and low lying native understorey plants to allow visual exposure from the street;
- The planting of native shade trees in association with car parking areas at a rate of one canopy tree per 3 car spaces;
- An irrigation system which implements water wise, water sensitive urban design and low water use plant materials.
- Identification that no storage or displays are to be located within these areas.

side:

- Generous landscaping strips of up to 4 metres in width of native canopy trees and low lying native understorey plants connecting front setbacks with landscaping to the rear.
- Buildings should be set in a landscape forecourt with the use of shrubs and feature trees.
- Open car parks should be landscaped with natural elements and integrated pedestrian pathways.
- Provision of a 40 metre open space corridor connecting the retarding basin and possible future residential areas on the north east side of Fifteenth Street.

rear:

- The landscape buffer of 4m is:
  - not to contain any storage sheds or plant infrastructure.
  - to consist of a mixture of shrub and canopy vegetation to soften the rear boundary wall.
  - be maintained in a sustainable way to ensure vegetation is established.
  - be established and maintained by the developer.

sustainability

Building construction and operation have an enormous impact on the environment and water management and resource is a significant issue within this locality. New developments should provide opportunities to reduce this impact by applying practical solutions when building. For example, the use of swales and bio-retention systems can be

an environmentally friendly way to treat runoff from hard surface car parks. The following design guidelines are:

- Rain water harvesting from roof areas into integrated collection tanks should be provided to encourage the use of recycled water for industrial purposes and maintenance of required landscaping.
- Hard surface car-parks should drain to the swale system, providing necessary moisture to the established vegetation in the landscaped mound and buffer areas.
- Details of storm water storage should be provided on the site plan and must be screened from public view.
- The design of storm water drainage should take into account of Environmentally Sustainable Design principles, and should provide for rainwater runoff reuse for landscaping irrigation.
- All new development should have regard to MRCC Water Sensitive Urban Design (WSUD) Guidelines.

lighting

Whist lighting is important to contribute to the security, safety and efficient use of the development, it is essential that it does not impact on the amenity of the surrounding areas. The following design guidelines include:

- Lighting must not cast glare onto adjacent sites, the street or abutting future residential land.
- Overhead lights must not be higher than the building height and must be baffled to prevent light spilling onto adjoining lots.

fencing

The following design guidelines include:

- Any front fencing onto Fifteenth Street must be permeable and should be recessed in from the front boundary.
- Side fences should be consistent with front fences and should be co-ordinated with neighbouring properties to allow any cross movement.

maintenance

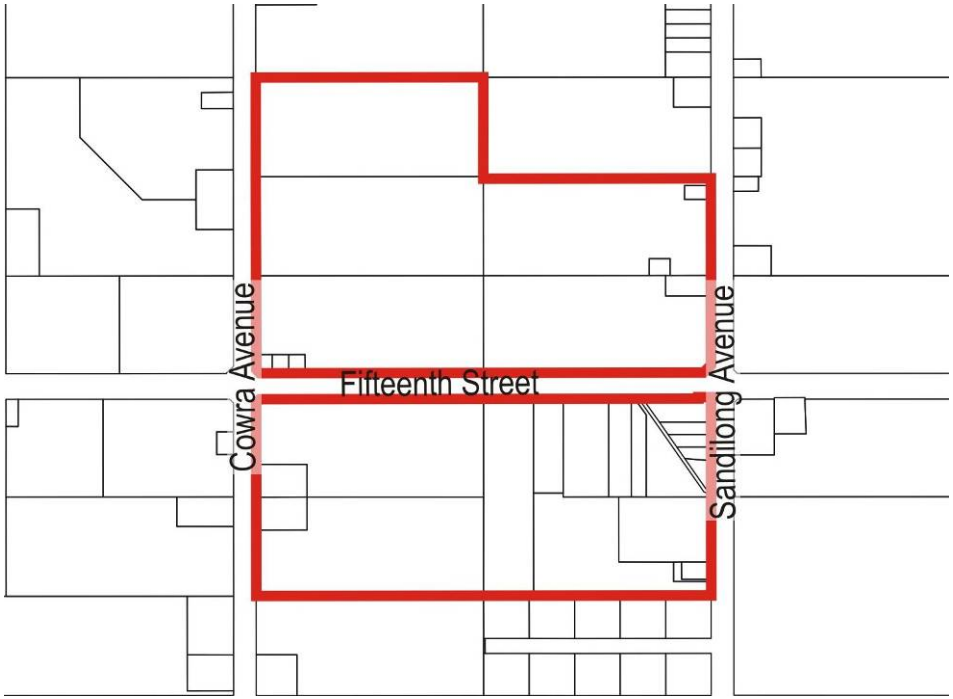
The following guidelines include:

- The occupier of the site will be required to keep the site and buildings in a safe and clean condition, and regularly maintain the site's landscaping.
- Chemicals and waste products must be contained within the boundaries of each lot and must not discharge onto adjoining land.

4 fifteenth street special use(community) precinct

The following urban design guidelines apply to land fronting Fifteenth Street, between Cowra Avenue and Sandilong Avenue, Irymple.

The diagram below indicates the extent of area affected.



4.1 statement of intent

The eastern portion of Fifteenth Street, between Cowra and Sandilong Avenue is part of Irymple, indeed a point of demarcation is the junction between the Highway and Cowra Avenue. The Highway frontage to the east of this junction has an open sense of place and will continue to be inhabited by institutions, including the Irymple Primary School, Henderson College and other future community, civic and/or recreational facilities. The prevailing experience in the passage through this part of Fifteenth Street is and will continue to be of landscape.

4.2 design objectives

- To implement the design and development guidelines for the Fifteenth Street Special Use (Community Uses) Precinct in accordance with the Urban Design Guidelines – Mildura Irymple Urban Transition Area (April 2008).
- To ensure that buildings demonstrate a low scale form appropriately setback from the road reserve.
- To establish a significantly landscaped frontage.
- To locate surface car parking to the rear of buildings.
- To provide breaks between buildings to form landscape spaces to connect with the open space network.

The following diagram is the Fifteenth Street Special Use (Community Uses) Precinct Plan:

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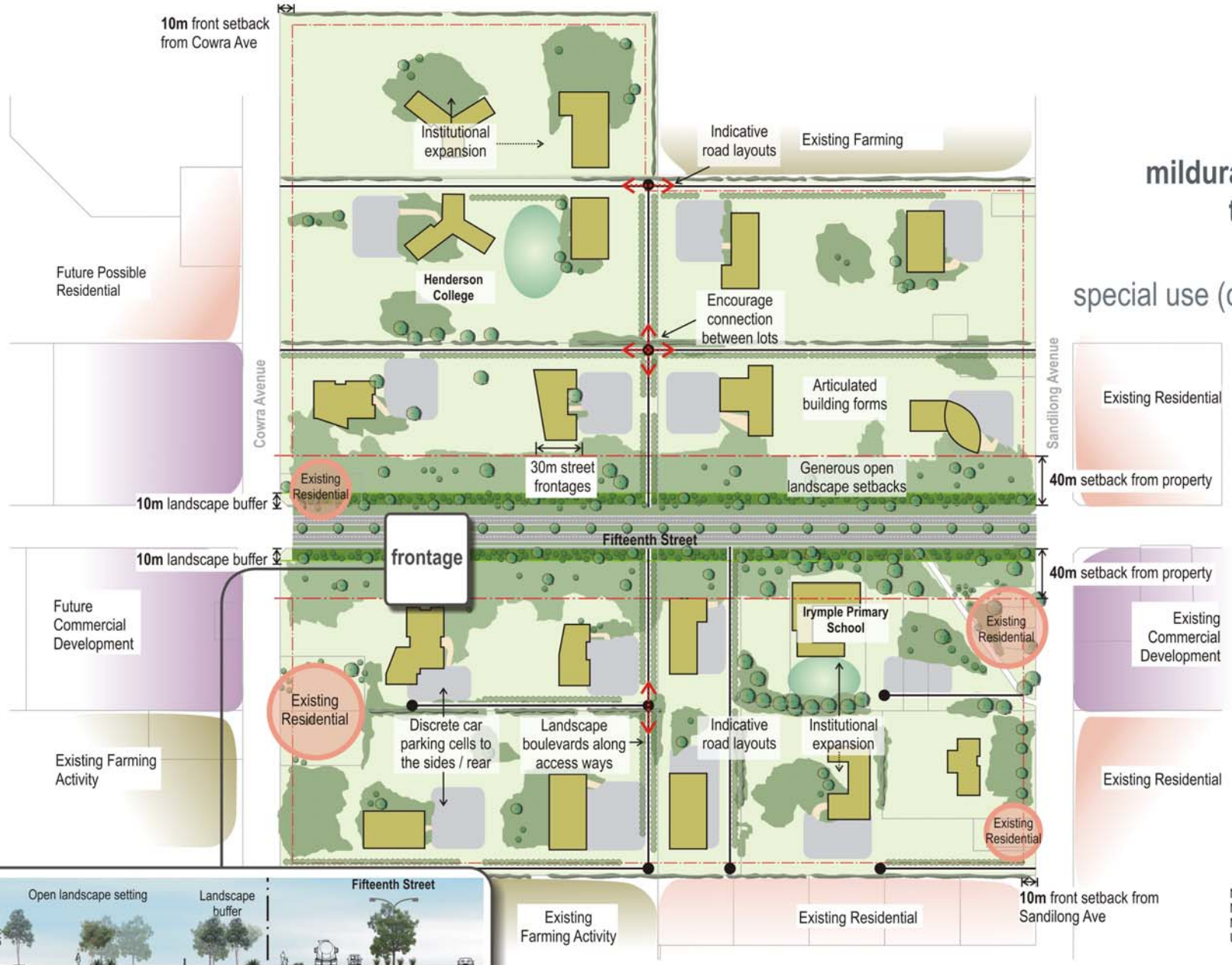
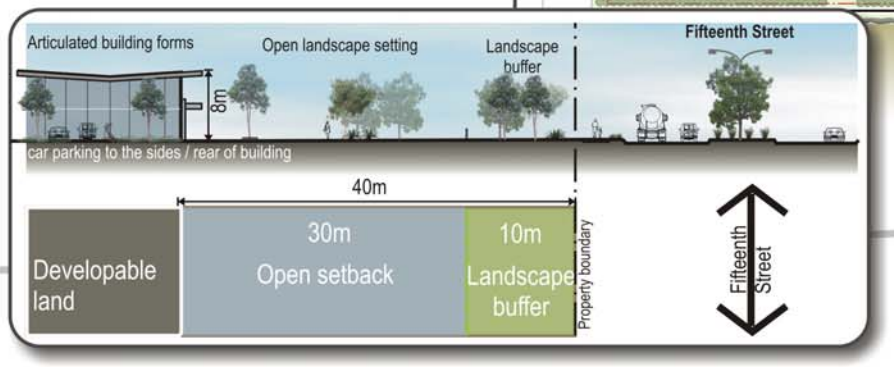
fifteenth street special use (community uses) precinct plan





Note: This Precinct Plan is indicative only. New development must have regard to the Mildura - Irymple Urban Transition Area Urban Design Guidelines.

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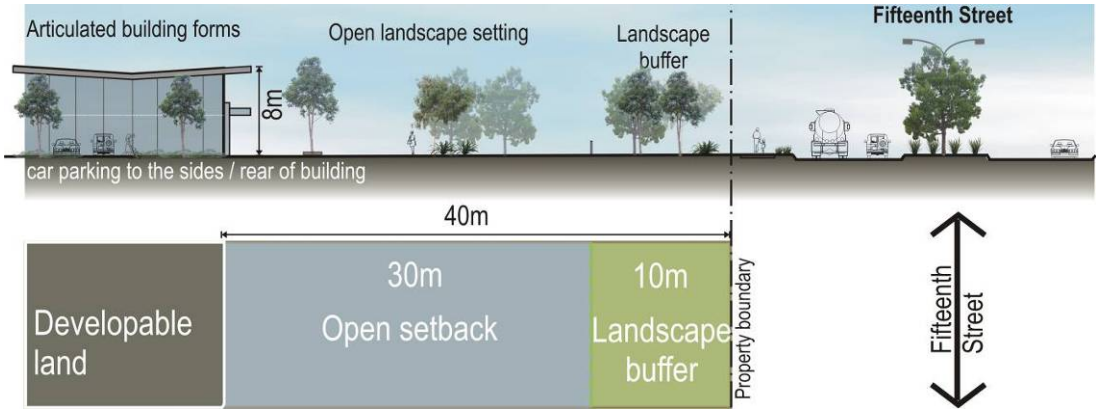
4.3 urban design guidelines

4.3.1 site layout

front setbacks

This part of Fifteenth Street should represent a clear distinction between the townships of Mildura and Irymple. Generous front landscaped setbacks will provide an attractive open setting and assist in recognising the transition of place. Discrete car parking cells will be located to the sides or to the rear of the building and will not be allowed within this setback area. The following guidelines include:

- Buildings must be setback a minimum of 40m from the Fifteenth Street boundary. The following mandatory components within the building front setback must include:
  - 10m landscaped front setback from the street
  - 30m open space setback
  - No car parking should be within this area
- Buildings must be setback a minimum of 10 metres from the Cowra and Sandilong Avenue boundaries;
- A 50m setback must be applied to any building return fronting Fifteenth Street.



side setbacks

Side setbacks is essential within this part of Fifteenth Street to allow 'green gaps' to occur between discrete building forms. Generous spacing between buildings is required to ensure a 'transition' in development form along Fifteenth Street, distinguishing a separation between the townships of Mildura and Irymple. Future buildings in this area will be sparser, separated with ribbons of landscaping. The following design guidelines include:

- For those sites in excess of 1ha, buildings must be setback a minimum 10 metres from one side boundary;
- For those sites in excess of 1ha, buildings must be setback a minimum 4 metres from the other side boundary; and
- Where vehicular access is provided to the rear of the site, there must be a minimum 3 metre setback from the side boundary to allow for the provision of a landscaped edge.

4.3.2 building design

height

It is important that this place reflects a low building profile and buildings are not the dominant element within the streetscape. Different from the anticipated taller building forms west of Cowra Avenue, new building will be similar to a domestic scale. The design guidelines are as follows:

- Buildings should not exceed a maximum height of 8m above ground level.

street address

It is important that new development address the street to establish a clear sense of address and maximise street exposure. New buildings should have their primary outlook towards the street with a clearly marked entrance. The design guidelines are as follows:

- All buildings must have an address towards the street.
- Backs or sides of buildings should not face any street.

façade presentation

It is important that new development present an attractive façade to the streetscape. Articulated and interesting building forms are strongly encouraged that are responsive to the local setting. The following design guidelines are:

- Buildings and associated works should be attractively designed, contemporary in style and be progressive in design, concept and finish.
- The main building frontage should be no more than 30m wide facing the street. Further building setbacks should be applied to provide a generous building return of at least 50m from the street boundary.
- Façade design should continue to all external elevations of the building.
- Building frontages are encouraged to have a light weight appearance.
- Ground levels of buildings should incorporate a high degree of glazing to encourage pedestrian activity.
- Buildings should incorporate a clear legible entrance defined by strong building elements such as porticos, verandahs or awnings.
- Entrances should have well defined pedestrian access to car parking and street footpaths.
- Long blank walls to the frontage and side elevations are discouraged by use of different material, finishes and colours.
- Encourage vertical division to all elevations to provide visual interest to expansive elevations.

roof form

As a generous and an open setback is required from Fifteenth Street, it is important that new buildings incorporate a distinctive and interesting roof form to announce itself within the landscaped setting. The following design guidelines include:

- Interesting roof forms that are integrated with the total building design are strongly encouraged.
- All roof-mounted mechanical equipment must be screened from view by parapet walls or screening which should complement the building form and present as an integrated component.

materials

It is important that appropriate material choice is considered in the design, function, and form of new buildings. Given Mildura climatic conditions, high quality and durable materials should be used to preserve the building's longevity. Subtle changes in material use are able to provide visual interest to extensive elevations. The following design guidelines are:

- Encourage a range of materials to be applied to all elevations. These buildings should be highly glazed to allow visual interplay with the street and internal access ways.
- Monotonous repetition of material or colour is to be avoided.
- Building materials should incorporate non reflective materials. Metal roof finishes must be Zincalume or Colourbond.
- Tilt up concrete slabs is discouraged other than at the loading or 'back of lot' area and should be articulated using three dimensional imprint relief, or window fenestration in appropriate areas.
- A mixture of building materials is encouraged including masonry, weatherboard, stone, some tilt concrete and contemporary light weight materials.
- Insulation is encouraged to the rear/or sides parts of the building to limit noise emanating to potential residential interface areas

building colours

In building design, colour serves a number of aesthetic purposes. However, it is important that building colours do not detract the quality of the streetscape and are visually dominant. Whilst some bold colouring is encouraged in some strategically placed areas of the building, for example, defining the main entry of the building, the majority of the building should reflect more earthy tones. The design guidelines include:

- Variation in colours should be kept to a minimum and shall be in earthy tones. Accent colours may be used to express corporate identity.
- Extensive use of primary colours on walls should be avoided.

signage

It is important that signage do not dominate the streetscape image and provide substantial visual clutter. Attractive building frontages with well considered and integrated signage should be able to speak for themselves and be the main focal point in public view. The following design guidelines are:

- Development which contains a number of premises should consolidate signage into a single directory board, low in profile and located within the landscaped front setback.
- These signs should not be larger than 2m x 1m and no higher than 1.8m.
- Visual clutter created by too many signs must be avoided.
- Signage is encouraged to be integrated with the building form of the development and must not be painted on the walls or windows of the building.
- Signs should be designed to complement the style of the building and be proportionate in scale.
- Signage should not be located on the roof or exceed the parapet height of the building.
- Animated signs or the use of coloured neon lighting are not encouraged.

4.3.3 access and movement

accessways

Access into, and circulation within individual properties should provide safe and well defined routes for vehicles and pedestrians. The use of landscaping, paving materials, lighting, and signage assist in defining these areas which will contribute to the overall safety, quality and sense of direction within each site. The following design guidelines are:

- Only one vehicular access point is to be provided onto Fifteenth Street from an existing lot.
- Car parking bays should not be located within the 40 metres setback area specified, unless the applicant can satisfy Council that the purposes and design guidelines have been addressed.
- All vehicles including those delivering to or servicing the site must be able to enter and exit the site in a forward direction.
- All driveways and car parking areas must be constructed of an impervious all-weather seal coat such as concrete or bitumen.

car parking

It is important that the placement and design of car parking cells should be well considered. The location of car parking cells should be to the rear and sides of the building. It is also encouraged that such cells should be landscaped with canopy planting or provided with shading devices to offer shade relief from local climatic conditions. The following design guidelines are:

- Adequate provision of on-site car parking for employees and visitors should be provided.
- Car parking is not to encroach upon the required landscape setback areas.
- On street car parking is not permitted.
- Car space dimensions must be in accordance with Australian Standards: AS 2890-1 (User Class 1-C1 as a minimum) and be Disability Discrimination Act compliant.
- Car parks must be clearly marked.

loading, services and storage

It is important that loading, services and storage areas are not visually obtrusive. The visual impact of these areas should be minimised, especially from views from public areas or along view corridors. Also, such places should be well ordered and a safe environment. The following design guidelines are:

- Loading areas must be screened so as not to be visible from public view. Screening devices should be integrated with the building form.
- Loading must not take place in the front setback areas.
- Loading provisions and areas must be accordance with Clause 52.07 or to AS 2890.2.

4.3.4 landscape

landscaping

As Fifteenth Street is the principle connector between Irymple and Mildura the environment should reflect a marked break or transition from the larger bulky forms along Fifteenth Street west of Benetook Avenue to the lower scale of Irymple. Generous landscaping adjacent to and between buildings will assist in this transition 'feel'.

In order to achieve a defined difference in development outcome the smaller building forms along Fifteenth Street should be set in a landscaped environment; both in the front setbacks and surrounding the building forms. Generous landscape fingers between buildings should be maintained to preserve the long range views to the landscape beyond. The design guidelines are as follows:

Front:

- The planting of large native canopy trees in avenue formation and low lying native understorey plants to allow visual exposure from the street;
- An irrigation system which implements water wise, water sensitive urban design and low water use plant materials.
- Identification that no storage or displays are to be located within this area.

Side:

- Generous landscaping strips connecting front setbacks with landscaping to the rear;
- Buildings should be set in a landscape forecourt with the use of shrubs and feature trees.
- Open car parks should be landscaped with natural elements and integrated pedestrian pathways.

sustainability

Building construction and operation have an enormous impact on the environment and water management and resource is a significant issue within this locality. New developments should provide opportunities to reduce this impact by applying practical solutions when building. For example, the use of swales and bio-retention systems can be an environmentally friendly way to treat runoff from hard surface car parks. The following design guidelines are:

- Rain water harvesting from roof areas into integrated collection tanks should be provided to encourage the use of recycled water for industrial purposes and maintenance of required landscaping.
- Hard surface car-parks should drain to the swale system, providing necessary moisture to the established vegetation in the landscaped mound and buffer areas.
- Details of storm water storage should be provided on Site Development Plans, and must be screened from public view.
- The design of storm water drainage should take into account of Environmentally Sustainable Design principles, and should provide for rainwater runoff reuse for landscaping irrigation.
- All new development should have regard to MRCC Water Sensitive Urban Design (WSUD) Guidelines.

lighting

Whist lighting is important to contribute to the security, safety and efficient use of the development, it is essential that it does not impact on the amenity of the surrounding areas. The following design guidelines include:

- Lighting must not cast glare onto adjacent sites, the street or abutting future residential land.
- Overhead lights must not be higher than the building height and must be baffled to prevent light spilling onto adjoining lots.

fencing

The following design guidelines include:

- Any front fencing onto Fifteenth Street should be permeable and should be recessed in from the front boundary.
- Side fences should be consistent with front fences and should be co-ordinated with neighbouring properties to allow any cross movement.

maintenance

The following guidelines include:

- The occupier of the site will be required to keep the site and buildings in a safe and clean condition, and regularly maintain the site's landscaping.
- Chemicals and waste products must be contained within the boundaries of each lot and must not discharge onto adjoining land.

5 preferred plant species list

Rear buffer zone planting

The intent is to establish a suitable vegetation buffer between the rear interface of industrial developments and future residential land. To be planted on a 1.5m mound offset from the rear acoustic wall should include one row of native canopy trees.

Tree Botanical Name	Common Name	Min. pot size at installation (50% of stock)	Mature height and Spread
Acacia pendula	Weeping Myall	45L	6-10m x 6-8m
Acacia stenophylla	Eumong	45L	20m x 8m
Eucalyptus erythronema	Red Flowered Mallee	45L	4-9m x 4-7m
Shrub Botanical Name	**Common Name**	**Minimum size at installation**	**Mature height and Spread**
Callistemon “Harkness”	Harkness	tube	6m x 6m
Acacia stenophylla	Shoestring Acacia	tube	4m x 4m

Mildura Rural City Council’s recommended drought tolerant planting species.

Trees and Large Shrubs:

- Callistemon “Harkness”
- Acacia stenophylla
- Acacia pendula
- Geijera parvifolia
- Brachyciton populneus
- Pistacio chinensis
- Eucalyptus erythronema
- Eucalyptus “Torwood”
- Eucalyptus dundasii
- Callistemon “Kings Park Special”

Small Shrubs:

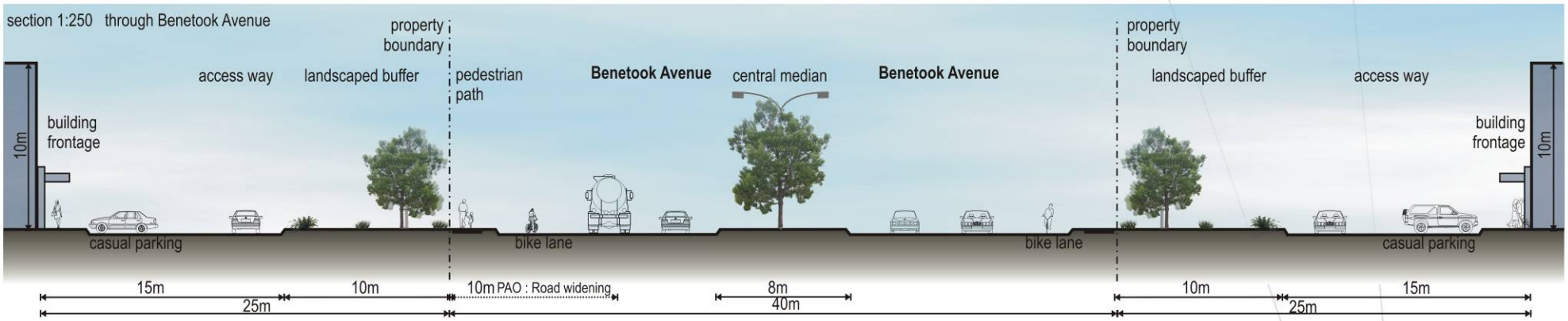
- Lomandra longifolia
- Lomandra sp
- Dianella
- Craspedia globosa
- Juniperus conferta
- Iris
- Kunzea pomifera
- Myoporum parvifolium
- Dietes sp
- Eremophila sp

appendix a:
benetook avenue industry precinct
fifteenth street business precinct
concept sections

hansen

mildura - irymple urban transition study

benetook avenue industry precinct indicative cross-section



Note: This cross section is indicative only and must not be used for construction purposes. Further investigation is required.

Project Ref:	07.002
Dwg No.:	204
Scale:	1:250@A3
Date:	30.01.07
Revision:	A

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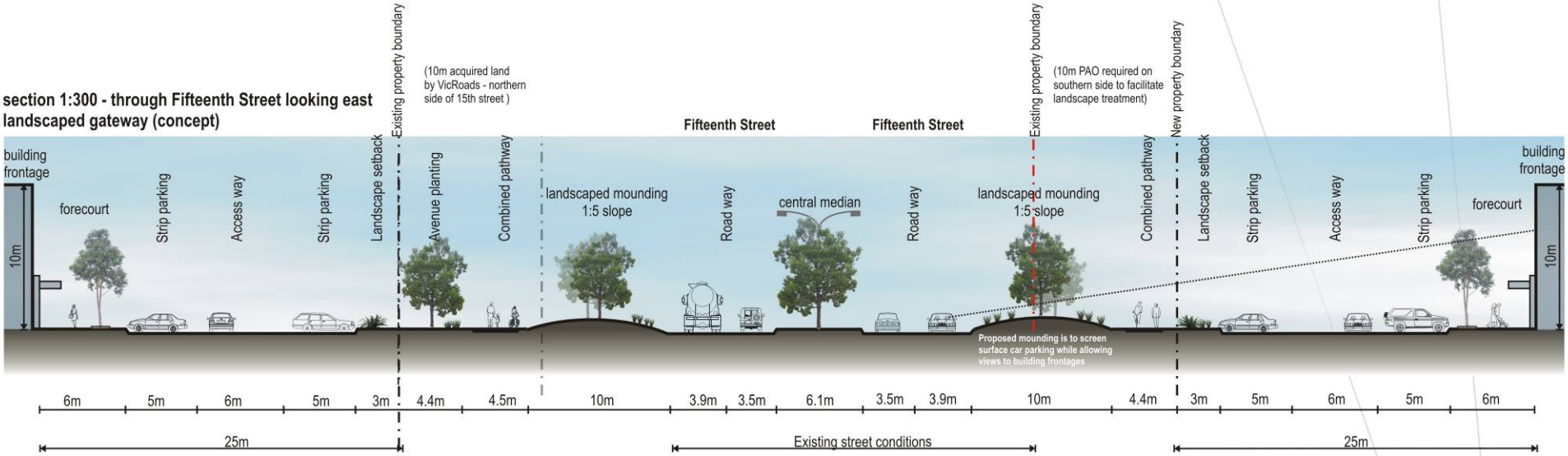
mildura - irymple urban transition study

fifteenth street business precinct indicative cross-section

section 1:300 - through Fifteenth Street looking east landscaped gateway (concept)



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