



hansen



Mildura Rural City Council



MILDURA SOUTH NEIGHBOURHOOD ACTIVITY CENTRE **MASTERPLAN**

Prepared by **Hansen Partnership**
for **Mildura Rural City Council**

September 2019

DRAFT - 3



Contents

INTRODUCTION	3
PART 1: BACKGROUND	4
Mildura South Context	4
Planning Policy Context	7
Reference Documents	8
PART 2: ISSUES & OPPORTUNITIES	10
Stakeholder Engagement	10
Consolidation of Issues and Opportunities	10
PART 3: MASTERPLAN RECOMMENDATIONS	13
A Vision for Mildura South NAC	13
Masterplan Ambitions, Objectives & Strategies	14
Masterplan Precincts	17
Precinct 1: Commercial Heart	18
Precinct 2: Alternative Residential	22
Precinct 3: Integrated Community Precinct	25
Precinct 4: Village Green	27
Design Themes	30
PART 4: IMPLEMENTATION RECOMMENDATIONS	31

Version	Draft	Draft 2	
Issue Date	27.06.2019	9.08.2019	

INTRODUCTION

In 2019, Hansen Partnership were engaged by Mildura Rural City Council to prepare an Urban Design Masterplan for the land designated as the Mildura South Neighbourhood Activity Centre (NAC), subject to the Urban Growth Zone (UGZ1).

Project background

The future Mildura South Neighbourhood Activity Centre forms part of the Mildura South Precinct Structure Plan adopted through Amendment C75 in 2015.

The Amendment sought to implement the strategic intent of the Mildura South Urban Design Plan Precinct Structure Plan (MSPSP) and the Mildura South (Sixteenth and Deakin West) Development Plan (MSDP) which were adopted by Council in 2014. These documents set out Council's plan for managing residential growth and the rationale for the development of a Neighbourhood Activity Centre at Sixteenth Street and Ontario Avenue, to the north-east of the PSP study area.

The Amendment introduced the Urban Growth Zone (Schedule 1) to the land identified for the NAC. As outlined in the Precinct Structure Plan and Development Plan, the NAC illustrates indicative areas for commercial, public open space, community and medium density residential uses in association with an indicative street network that corresponds with the existing road network of Mildura and roads proposed within the broader Mildura South PSP study area. The precise boundaries of the future rezoning of the land will be determined by this Urban Design Masterplan.

The Development Plan (2014) outlined the following indicative land use parameters that make up the 8ha NAC study area. These include:

- 2ha to be allocated for retail uses which should include a 3,500-4,000m² full line supermarket and associated retail and commercial uses suitable for a neighbourhood centre;
- 2ha to be allocated for community use;
- 2ha to be allocated for public open space; and
- The remaining land – approximately 2ha - to be used for residential with higher density around the retail area.

Since the preparation of the Development Plan and prior to the preparation of this Masterplan, a detailed retail and commercial demand analysis for the NAC was prepared by Tim Nott to determine the appropriate type and extent of Activity Centre uses required to support the Mildura South Growth Area (refer to the Reference Document Section on page 6).

Furthermore, in the absence of any detailed strategic analysis for Community Infrastructure, the team has engaged internal council departments and landowners to understand the breadth of possible community uses likely to be realised in this location, based on local understanding of the market (refer to Stakeholder Engagement Summary on page 7).

What is an Urban Design Masterplan?

An Urban Design Masterplan is a document that sets out the future form and character of a particular place or locality. It is principally an urban design tool that provides a physical framework for managing change and setting new directions for the development of a place across both public and private land over time. Community values are considered alongside the needs of government departments, servicing agencies and commercial stakeholders in the overarching desire to contribute positively to the urban form of a place. A masterplan also integrates non-physical initiatives and opportunities with the built form outcomes.

Masterplans are more detailed than Structure Plans and aim to create clear parameters for the creation of practical actions, ideas and solutions that consider constraints and provide guidance for capital budgets and future planning scheme controls. A degree of flexibility is built into Masterplans in order to ensure that a particular place can adapt to different circumstances over time.

They are also intended to clearly articulate a 'vision' for what a place could be and, as such, act as a catalyst for positive change, particularly within the built environment.

Purpose of this Urban Design Masterplan

In accordance with Schedule 1 of the Urban Growth Zone, an Urban Design Masterplan for the Activity Centre must be prepared to the satisfaction of the Responsible Authority, prior to the approval of any planning permit for the subdivision or construction of a building on the land.

The preparation of a Masterplan for the Mildura South NAC acknowledges the vision and objectives established under the earlier Development Plan and Structure Plan. It seeks to provide clarity to ensure the land reaches its full potential as a vibrant, amenable and sustainable destination for existing and future local residents. The Masterplan is the key planning and design document that will manage development within the private realm and provide direction about public works. It outlines the preferred land use, building design, public realm, transport and infrastructure directions. In doing this, the Masterplan identifies a number of key initiatives and actions to be implemented over the next 20 years.

How the Masterplan will be used

The Urban Design Masterplan will be used:

- To guide the allocation and arrangement of land uses and destinations.
- To guide built form outcomes relating to commercial, community and higher density residential development.
- To guide public realm and streetscape outcomes in the NAC having regard to the future surrounding street network.
- To inform Council's capital works program and annual budget.
- To promote a range of partnerships and potential sources of funding for many of the initiatives identified in the Plan.

Structure of this document

This document contains three parts, comprising:

- **Part 1:** Background analysis of the physical context, policy context and previous relevant reference documents.
- **Part 2:** Issues & Opportunities, including engagement with Stakeholder & Landowner
- **Part 3:** Recommendations for the NAC.
- **Part 4:** Implementation Table.

PART 1: BACKGROUND

MILDURA SOUTH CONTEXT

The Study Area

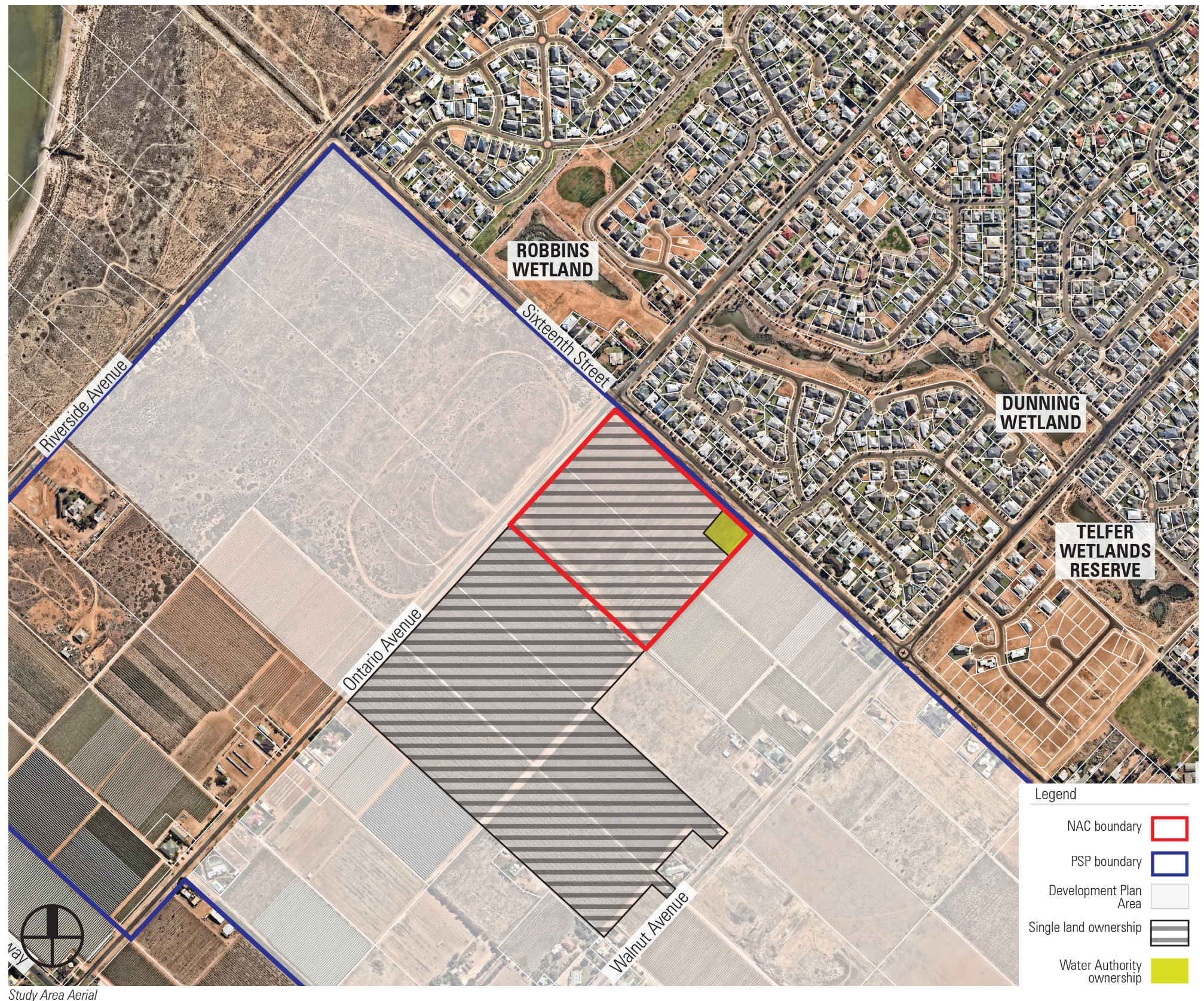
Mildura South NAC forms part of the approved Mildura South PSP area, delivered through Amendment C75. The study area is 8ha in size, positioned to the corner of Sixteenth Street and Ontario Avenue, approximately 5km to the south-west of the Mildura central business district. The study area is positioned on 2 main roads with a frontage to Ontario Avenue of approximately 260m and to Sixteenth Street of 300m. This land is currently vacant, formerly comprising a vineyard and associated horticultural uses. It is understood the study area has 2 landowner entities including a 2550m² parcel to the south-east corner of the site owned by Lower Murray Water and the remainder of the land, privately owned.

The earlier PSP and Development Plan processes determined the suitability of the NAC in this location based on extensive background research and review of existing commercial and retail catchments, ensuring adequate separation from the existing supermarkets on Fifteenth Street within and adjoining the Centro Shopping Centre. This research also highlighted the importance of new retail and commercial facilities being positioned along multiple main road frontages to maximise visual exposure and facilitate safe, convenient access from surrounding (existing and future) residential areas.

As identified within the Development Plan, the Neighbourhood Activity Centre is proposed to accommodate a combination of commercial and retail, community, medium-density residential and public open space functions. While nominal land use budget was proposed in the earlier project phases, the purpose of this work is to further refine the designation of land use and built form while having regard to the surrounding context and ambitions for future development in the Mildura South PSP area. It is also acknowledged the PSP nominates a smaller local activity centre between the proposed recreation reserve and proposed primary school site.

The diagram opposite illustrates the location of the NAC in the context of the broader PSP and Development Plan boundaries, including the land ownership pattern within and surrounding the study area.

The following page illustrates the location of the NAC in the context of the broader Mildura township including its proximity to the Mildura CBD and Fifteenth Street Activity Centre.



MILDURA SOUTH NEIGHBOURHOOD ACTIVITY CENTRE MASTERPLAN

ACTIVITY CENTRE CONTEXT

Legend

- Neighbourhood Activity Centre boundary
- PSP Boundary
- Mildura CBD
- Mildura Central (and surrounding commercial)
- Supermarket (full-line)
- Commercial 1 Zone
- Commercial 2 Zone
- General Residential Zone
- Future residential development
- Low Density Residential Zone
- Public open space
- Education
- Health
- Bus route
- Mildura Station
- 400m radius from potential supermarket



The following key existing conditions of the surrounds are summarised as follows:

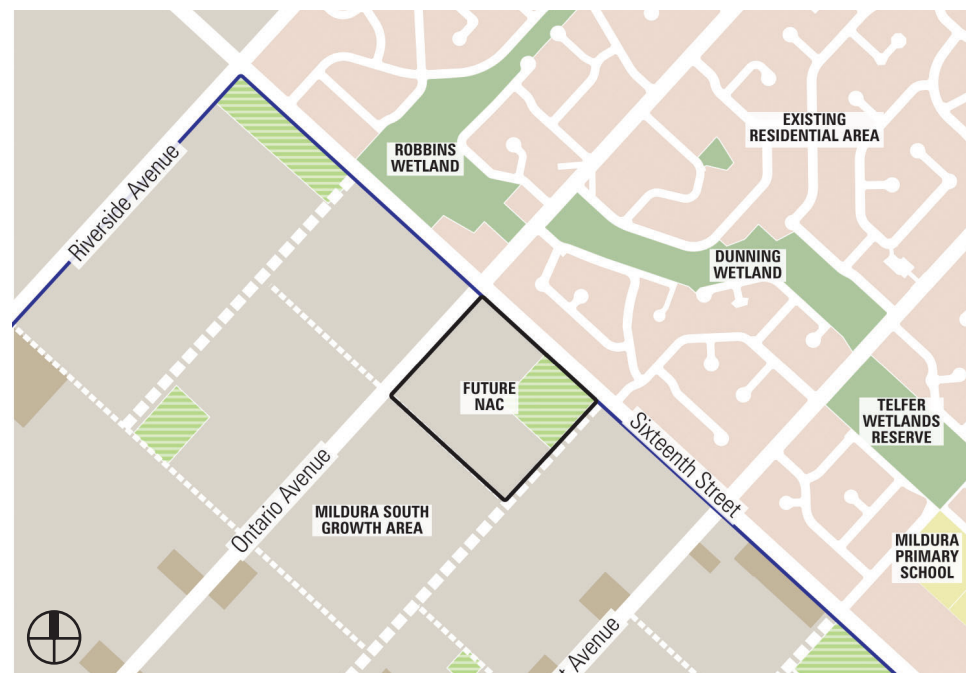
Land Use & Urban Structure

Within the immediate surrounds of the study area, an established residential neighbourhood is located opposite of Sixteenth Street to the north-east, comprising predominately single storey brick dwellings with open front gardens (void of street fences), arranged around a curvilinear road network with cul-de-sacs.

To the north-west of the NAC, opposite Ontario Avenue is further future residential land designated under the Mildura South PSP. Further to the north is Lake Hawthorn and Lake Ranfurly, forming the western 'edge' of Mildura. Both lakes are environmentally sensitive, with drainage from the Mildura South growth area directed to Lake Hawthorn.

The south of the NAC also forms part of the approved PSP area comprising future residential development of predominately single and double storey houses and new public open spaces. Currently this land comprises horticultural uses arranged in the traditional 4ha blocks, accommodating vineyards and associated dwellings and production sheds. Further to the south of the NAC study area, along Sixteenth Street are recently constructed single dwellings with direct vehicle access from this road reserve. South of the growth area is the Calder Highway which will form the long term boundary of the Mildura township, acknowledging the Mildura Airport further to the south-west of this major road.

Existing retail services exist at the Centro Shopping Centre on Fifteenth Street and Deakin Avenue, approximately 2.5km to the north-west of the study area. This precinct comprises a full-line supermarket, other anchor big-box retailers such as Big W, Target as well as smaller retail and non-retail uses. A second full-line supermarket is located opposite this site on a separate parcel.



Existing & proposed land use & urban structure in accordance with Development Plan

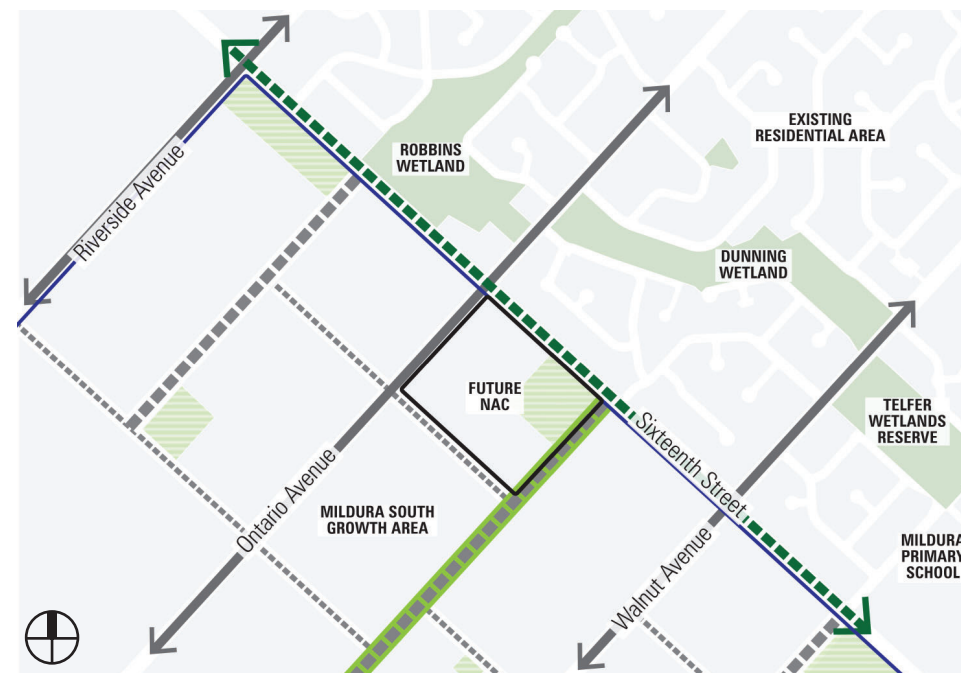
Access and Movement

Sixteenth Street to the north-east, forms the boundary between the existing Mildura South residential areas and the Growth Area. The road reserve is approximately 30m wide and designated as a future 'Greenway' prioritising pedestrian and cycle movement with a dedicated shared user path proposed to be located along the south-west side of the road reserve. A bus route currently operates along Sixteenth Street, and further routes to the Mildura South Growth Area are anticipated as the area develops. Cross-overs to the south-west side of this road are sought to be minimised in accordance with the recently approved DDO14 – Sixteenth Street Greenway Interface (Amendment C100 Part 2), requiring rear-loaded access for lots with a primary frontage to this road.

Ontario Avenue to the north-west boundary of the study area is a key vehicular movement corridor extending from Sixth Street in the north of the Mildura township to Sturt Highway in the south (and Mildura Airport). As part of the Development Plan and PSP, this 30m wide road reserve is proposed to be upgraded to an 'Access Avenue' accommodating primary traffic movement within the development area, including bus routes and stops.

With regard to other future roadways in proximity to the NAC, Elsey Parkway to the south-east boundary will facilitate the primary north-south pedestrian and cycle movement through the wider development area. This reserve is proposed to be developed in 2 stages, with the ultimate outcome comprising a central median with separated bike paths, parallel parking and carriageways framed by new landscape.

Helen Road is proposed along the south-west boundary of the NAC as a dedicated secondary road providing connections between Ontario Avenue and Elsey Parkway. Under the Development Plan, this road is designated as a 28m road reserve accommodating footpaths with generous landscape verges, dedicated bike lanes, parallel car parking and traffic in both directions.



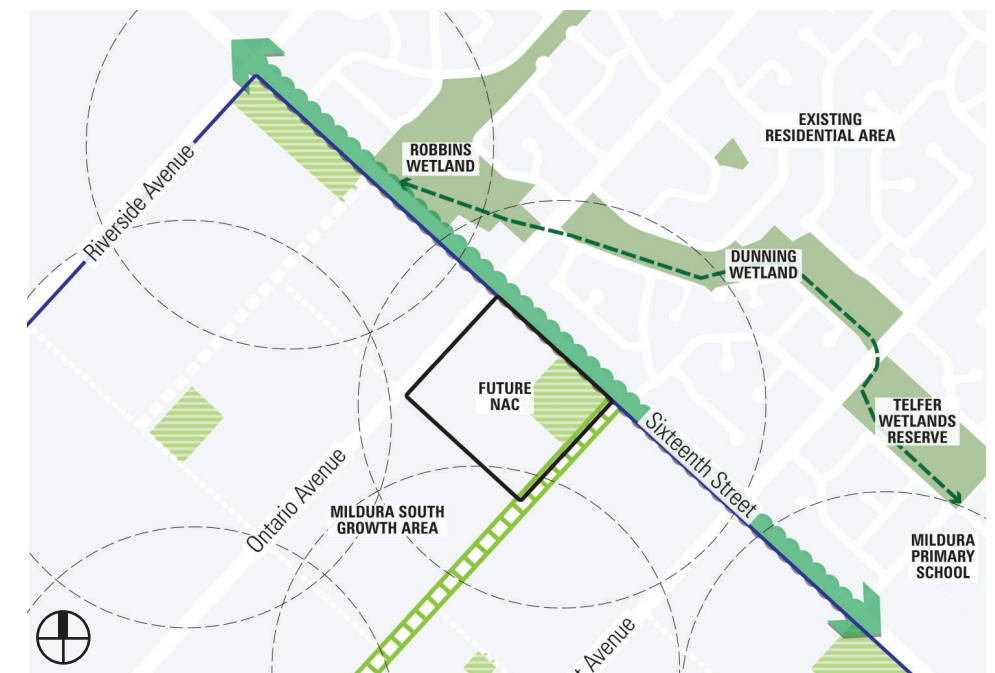
Existing & proposed access & movement in accordance with Development Plan

Landscape and Public Realm

The surrounding context is largely void of significant canopy vegetation, particularly outside of the established residential areas of the township. Medium height native canopy vegetation exists along the nature strip along the north-east side of Sixteenth Street and to original dwellings on larger lots at Ontario Avenue comprising mature native trees along boundaries. It is acknowledged that the proposed future Sixteenth Street Greenway is designated for improved landscape intervention including canopy trees, grassed verges and landscaped swales.

As previously highlighted, the lakes to the north-west of the subject site are of significant environmental value and contribute to the original landscape character found within this part of Mildura. These areas, while unassuming, comprise remnant indigenous vegetation and reflect more recent open space and wetland upgrades to the north of the NAC at Robbings wetland and Ontario Park Drive.

With regard to the existing public realm condition, the north-east side of Sixteenth Street currently comprises a 7m wide verge including 2m footpath and nature strip. The residential area beyond Sixteenth Street comprises a similar public realm condition comprising 4m wide verge and 1.5m wide footpaths. A number of streets comprise footpaths on 1 side of the road.



Existing & proposed landscape & public realm in accordance with Development Plan

PLANNING POLICY CONTEXT

A range of State, Regional and Local planning policies, plans and reports are relevant to the planning, development and management of the Mildura South NAC. The following is a brief summary:

Planning Zones

The Neighbourhood Activity Centre is subject to **Schedule 1 to the Urban Growth Zone (UGZ1)**. The key purpose of the Zone is to manage the transition of non-urban land and provide for a range of uses and development in accordance with a Precinct Structure Plan.

In accordance with Schedule 1 of the Urban Growth Zone, an Urban Design Masterplan for the Activity Centre must be prepared to the satisfaction of the Responsible Authority, prior to the approval of any planning permit for the subdivision or construction of a building on the land.

The Zone Schedule nominates the following zones of which the exact boundary are to be determined as part of this Masterplan/ Urban Design Framework process:

- Commercial 1 Zone (Clause 34.01);
- Public Park and Recreation Zone (Clause 36.02);
- Public Use Zone (Clause 36.01); and
- Residential Growth Zone (Clause 32.07).

The precise boundary of the Commercial 1 Zone, Public Use Zone and Residential Growth Zone will be determined by the Urban Design Framework/Master Plan approved under the schedule.

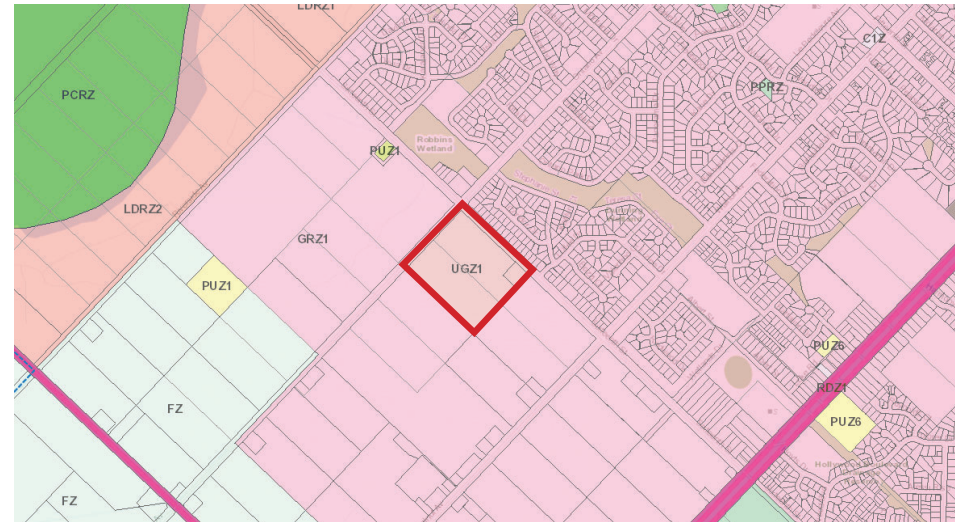
Planning Overlays

The following overlays apply to the study area:

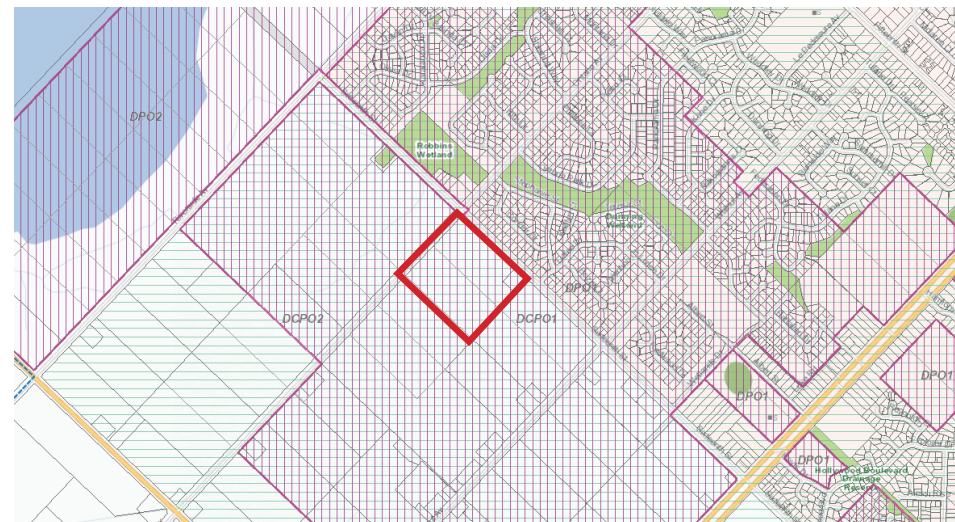
Design and Development Overlay – Schedule 8 (DD08) Mildura Airport – Obstacle Height Area No.1 applies to the study area. The Objective of this policy is to ensure that building height does not adversely affect the operation of the Mildura Airport.

The Development Contribution Plan Overlay, Schedule 1 (DCP01) affects the entire land located within the Mildura South Growth Area. The purpose of this Overlay is “to identify areas which require the preparation of a development contributions plan for the purpose of levying contributions for the provision of works, services and facilities before development can commence”.

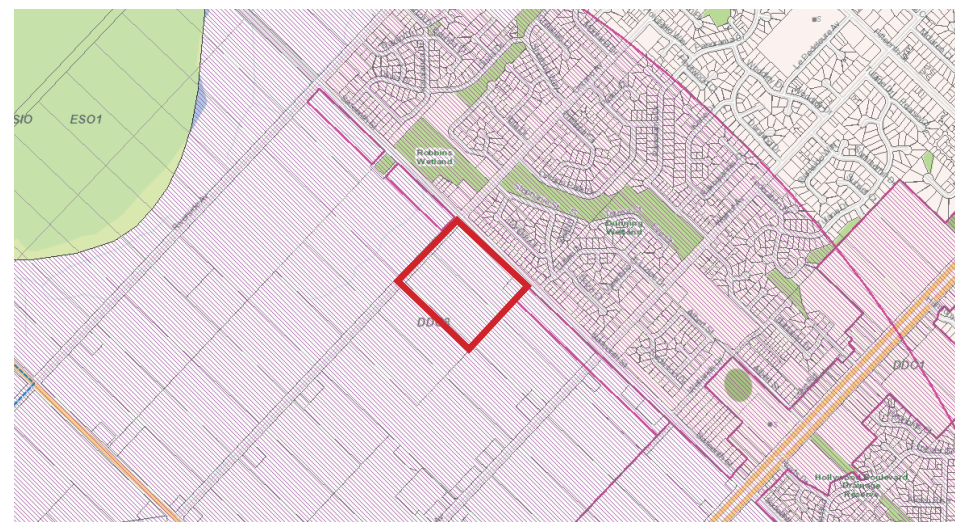
Salinity Management Overlay (SMO) affects the entire study area. As identified under this Overlay, the study area has a Level 2 – Moderate Risk.



Planning Zones



Planning Overlays: DCPO & DPO



Planning Overlays: DDO

Planning Policy

State Planning Policies are the overarching policies that relate to the use of land and its development throughout Victoria. Along with strategic direction for metropolitan Melbourne established through Plan Melbourne, this masterplan also seeks to improve the planning of key regional areas through the creation of regional strategies. The regional strategy relevant to Mildura Rural City Council is the Loddon Mallee North Regional Growth Plan (Clause 11-01-1R). This Strategy seeks to promote growth of Mildura as a regional city. Relevant to this project, a key strategy of Clause 11 is to “Consider the distinctive characteristics and needs of regional and local places in planning for future land use and development.”

The Planning Policy Framework (PPF) covers issues of State importance that address settlement planning, residential development, environmental and landscape values, natural resource management, built environment and heritage, housing, economic development, transport and infrastructure.

Clause 15 of the PPF sets out objectives that guide positive urban design and built form. These objectives provide the foundation for the recommendations of this project seeking to “create urban environments that are safe, functional and high quality with a sense of place and cultural identity.”

Clause 16 of the PPF sets out objectives to provide for housing diversity that improves housing choice, particularly in those locations well serviced by public transport and activities.



Extract of Loddon Mallee Regional Growth Plan

Local Policy

The Local Planning Policy Framework (LPPF) is made up of two key sections: Municipal Strategic Statement (MSS) and Local Planning Policies. The Municipal Strategic Statement sets out the vision for Council and more specifically the Mildura urban area, acknowledging the township is expected to increase in population in the coming years and the Mildura South Area is 1 of 2 key precincts to accommodate this anticipated growth.

Clause 21.04- Settlement and Housing, recognises Mildura South as one of the 2 main urban growth areas for the municipality. Relevant to the NAC, Objective 5 seeks to provide a diversity of housing to meet the needs of Mildura’s current and future communities. Relevant Strategies include:

- Strategy 5.4 Support the development of medium density housing options, particularly townhouse development in response to changing demographics.
- Strategy 5.9 Encourage the provision of accessible housing to support ageing in place, and support development that considers future adaptability in design.

Clause 21.07-4: New Residential Development seeks to ensure that neighbourhood design and the development of new dwellings is responsive to Mildura’s climate and considers the likely impacts of climate change (Objective 6). Relevant Strategy includes:

- Strategy 6.2 Ensure that neighbourhood design encourages the use of active transport and public transport over private vehicular usage.

Objective 8, seeks too consider the impacts on health and wellbeing outcomes for future residents in the design of new subdivisions, and require that new subdivisions are planned to provide best practice in urban design for ‘healthy living’. Relevant Strategies include:

- Strategy 8.1 Require that new residential areas are designed to facilitate attractive, safe and legible connections for pedestrians and cyclists between key areas of activity and within neighbourhoods.
- Strategy 8.4 Require new residential neighbourhoods to incorporate greenways or linear parks to connect key areas of activity and encourage active transport and incidental exercise.
- Strategy 8.6 Require the design of development adjoining key public spaces such as parks or identified key pedestrian routes to respond to this.

Clause 21.08 – Economic Development identifies the Mildura South Growth area to accommodate future neighbourhood centre facilities in association with the established major retail centres including the Mildura CBD, City Gate Activity Centre and the Fifteenth Street Precinct. A key objective of this policy is to “achieve balanced and sustainable retailing facilities that serve the needs of, and are accessible to, residents and visitors”.

Clause 21.10 – Local Areas outlines out the strategic direction for development of the Mildura South area as a result of the Mildura Housing and Settlement Strategy and subsequent Mildura South Strategic Framework plan, Mildura South Development Plan and Precinct Structure Plan. The Policy acknowledges longer term development will be delivered within this Growth Area.

Reference Documents

The NAC The following documents were reviewed as part of the background analysis:

- Mildura South Neighbourhood Activity Centre Economic Assessment (August 2018)
- Sixteenth Street Greenway Interface: Amendment C100 Part 2 (June 2018)
- Mildura South (Sixteenth & Deakin West) Development Plan (October 2014)
- Mildura South Urban Design Plan: Precinct Structure Plan (October 2014)

A summary of each document and its relevance to the Mildura NAC is outlined below:

Mildura South Neighbourhood Activity Centre Economic Assessment: (Tim Nott, August 2018)

This report provides an economic assessment of the proposed Mildura South Activity Centre having regard to residential development and retail/commercial development.

With regard to residential development opportunities, the report determined that the provision of medium density housing, including terrace housing or townhouses, is appropriate in this context and there is a demonstrated demand for such housing throughout Mildura. It was highlighted that medium-density housing in the Growth Area (in proximity to services and public transport) allows the area to be a “more complete community in itself, catering for a wide range of household types, aspirations and price points”.

With regard to Retail/Commercial offerings, it was determined that a medium-sized super market would be able to support the anticipated Growth Area population of 8,000 people including a range of speciality shops and non-retail uses. It was recommended that a medium-sized supermarket is delivered in the short-term while providing opportunities for expansion (and future-proofing) in the event the catchment exceeds the requirements of this retail offering. The notational area requirements can be referred to in the table below:

Sixteenth Street Greenway Interface: Amendment C100 Part 2 (Hansen Partnership, June 2018)

The amendment applies to land located on the south-west side of Sixteenth Street, Mildura between Deakin Avenue and Riverside Avenue (excluding the study area). The amendment introduces a new DDO Schedule 14(Sixteenth Street Greenway Interface) to the Mildura Planning Scheme. The DDO seeks to guide the development of residential land along the south-west side of Sixteenth Street consistent with the strategic vision and objectives outlined within the Mildura South PSP and Development Plan (Sixteenth and Deakin West).

Specifically, the DDO applies design requirements to the development of lots including the orientation of dwellings to the street frontage and siting of vehicle access to the rear of lots (to reduce crossovers along Sixteenth Street).

The purpose for these design requirements is to facilitate a protected shared user path along the Sixteenth Street Greenway and reduce opportunities for vehicle and cycle/pedestrian conflict along this important road reserve.

Mildura South (Sixteenth & Deakin West) Development Plan & Precinct Structure Plan (Hansen Partnership, October 2014)

The Mildura South Development Plan (Amendment C75) is the overarching planning document guiding the development of the Mildura South growth area defined by Deakin Avenue, Sixteenth Street and Riverside Avenue, including the land designated as the Neighbourhood Activity Centre on Sixteenth Street and Ontario Avenue. The Development Plan is based on a Precinct Structure Plan (PSP) which has been prepared for the broader Mildura South growth area (south of Sixteenth Street).

Critical to the NAC, the report outlines the rationale for the location of the centre along the future greenway spine to ensure key activities are accessible by sustainable transport modes and can service as a key destination between existing and future residential communities.

The Development Plan outlines the following relevant principles for development:

- Design the centre as an integrated whole with community facilities and parkland.
- Ensure that fine grain speciality shops/ hospitality uses are provided adjacent to both the village green and the Greenway. Discourage establishment of any drive-thru takeaway outlets within the centre.
- Include higher density housing within the centre where achievable.
- Locate the village green at the intersection of Sixteenth Street and the new Parkway.
- Locate the community facilities to the south of the parkland
- Provide direct pedestrian access to the supermarket from both Sixteenth Street and car parking areas.
- Ensure clear and amenable pedestrian access is provided to and between different land uses within the centres.
- Incorporate generous pedestrian pavement areas between parkland and the retail development sufficient to accommodate generous landscaping and outdoor dining opportunities.
- Require access to loading to be provided from Ontario Avenue rather than Sixteenth Street.
- Locate car parking off Ontario Avenue and provide a skin of residential or commercial uses at the interfaces. Where a skin of uses is not provided, require generous landscape screening to be provided, where access is not required.

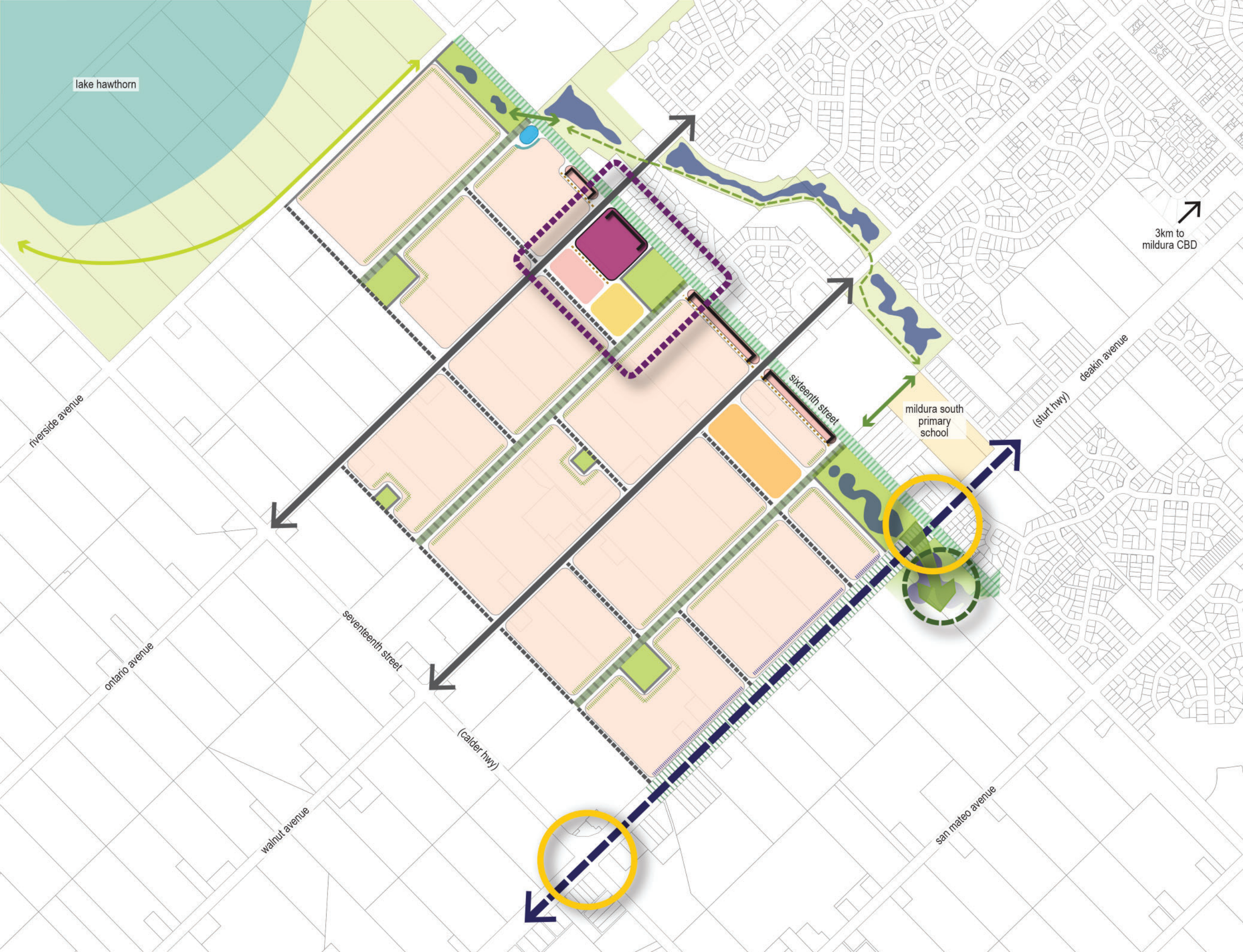
Refer to Appendix A for a comprehensive review of background documents including a table of recommendations outlining key considerations found within the earlier Development Plan (2014), Economic Assessment Report (2018) and the Sixteenth Street Masterplan (2016) and how they may influence the curation of the masterplan in following Stages. The table is broken into 3 themes including access and movement, public open space and land use mix.

mildura south development plan

development plan

legend

- sixteenth and ontario avenue activity centre
- retail and commercial
- higher density residential
- residential development cells
- community hub
- potential future non residential uses (school or aged care site)
- public open space
- wetlands / retention basin
- utility area
- robust urban street edge
- boulevard built form and siting response
- park edge built form and siting response
- gateway features
- future active recreational uses
- existing open space pedestrian connection
- new open space connection
- potential long term connection to lake hawthorn
- connection to major area of future open space
- deakin avenue boulevard
- greenway
- avenues
- parkways
- secondary road
- edge road
- rear access lane



3km to mildura CBD

mildura south primary school

Project Ref: 10.649
 Dwg No.: UDD-017
 Scale: 1:10,000@A3
 Date: 27.02.14
 Revision: C



PART 2: ISSUES & OPPORTUNITIES

Stakeholder Engagement

Consultation between relevant internal and external stakeholders provides the opportunity for masterplanning projects such as this to be more fully understood, to be better informed, and to encourage greater 'buy in', improving the opportunity for a more implementable outcome. Stakeholder Consultation was held over two days on the 8th and 9th of April in Mildura. Three Stakeholder groups were identified across three separate sessions, facilitated by Hansen Partnership, to identify and discuss the critical issues and opportunities that will impact the future development of the Neighbourhood Activity Centre. The three stakeholder groups included the Land owner and consultants, Internal Council Departments (including Planning, Engineering, Community Care Services/ Early Years); and External Authorities (Bus operations & DEWLP). The key themes discussed in the workshops can be summarised as follows:

Council internal departments

- While there was support for the NAC accommodating an Early Learning Centre, it was acknowledged that the State Government prefers new facilities to be co-located with Primary Schools. It was determined that the existing Mildura South Primary School is at capacity and has limited potential for expansion or integration of new/complementary uses.
- Council are currently in the process of preparing a community use strategy to identify types and sizes of facilities required across the municipality. It is difficult to determine the exact requirements for community uses within the NAC.
- While the PSP identifies land for a primary school, the location of any potential future primary school in the vicinity is yet to be determined by the State Government.
- Strong support for the integration and alignment of community uses with public open space.
- Council see merit in the masterplan accommodating for a broad (and flexible) range of community services such as adult learning centre, childcare, maternal health, outreach programs, library outstand, medical and health promotion and multi-faith meeting facilities;
- Opportunities to facilitate youth engagement activities and facilities to engage young local residents with their community.
- Council support privatised or non-council owned community uses as part of the 2ha (approximately) land allocation.
- Retirement living or alternative housing options for down-sizers was supported by Council as a way for their aging population to maintain physical connections with services and facilities.
- Council planners were supportive of rear-loaded housing products as a means of limiting crossovers and facilitating a high quality public realm within the NAC.

- Council were supportive of future-proofing any commercial and retail offering by allowing for the expansion of a medium sized supermarket if required.

External Stakeholders

- The location of the proposed bus interchange within the NAC may present safety and amenity issues and there is a preference for other locations to be further explored.
- The bus operator is currently undertaking a review of existing and future bus route operations and at the present time, have limited information regarding the alignment of any future bus route or bus route extension within the future NAC.
- The bus operator was supportive of a new bus stop/ or interchange located within proximity to the commercial and community uses within the NAC.
- A school bus interchange may be co-located with township bus stops, acknowledging safety and pedestrian access requirements.

Land Owner

- The landowner has an approved planning permit for a 187 lot residential subdivision to the immediate south-west of the NAC study area, pending endorsed plans. A key component of the Condition 1 requirements is to acknowledge the preferred road alignment of Helen Road and Elsey Parkway as illustrated within the PSP and Development Plan.
- Discussion on the commercial/retail land designation is appropriately sized to a portion suitable land holding for short to long term needs for future community. It acknowledges demand for shopping centres in the area, including Centro at Fifteenth Street. A small to medium sized supermarket is preferred in this instance.
- Ensuring the land dedicated to medium density residential development offers a level of flexibility to deliver a product suited to the future housing market in this area of the Mildura township.
- It was acknowledged that a 3000m² parcel of land to the corner of Sixteenth Street and the future Elsey Parkway is currently owned by the Water Authority, requiring Council to purchase land to deliver the public open space and road reserve.
- The alignment of any bus route within the broader development plan area must have regard to minimum carriageway requirements efficiency of bus stop distribution.
- The landowner saw merit in the NAC offering an alternative housing product such as a park frontage townhouse or dwelling with rear-loaded access. This could potentially be a preferred future housing type appealing to down-sizers or young professionals who would like to live in close proximity to services and benefit from a high amenity outlook.

Consolidation of Issues & Opportunities

The following section identifies a summary of the key issues and opportunities associated with the development of a masterplan for the NAC study area, informed by a review of background documentation, including the earlier Development Plan and PSP as well as consultation with relevant stakeholders.

Access & Movement

Issues:

- Ensuring the NAC masterplan and surrounding residential subdivision acknowledges the proposed road network hierarchy approved in the earlier PSP and Development Plan.
- Bus interchanges can present amenity and safety issues when positioned along streets with high pedestrian volumes. Consider alternative locations that will still provide convenient pedestrian connectivity to activities and services.
- Facilitating safe and manageable loading/unloading infrastructure for any proposed supermarket or retail premises, having regard to proximity to major intersections and future residential areas.
- Any new road access through the NAC from Sixteenth Street should have regard to pedestrian and cycle safety given the alignment of the 3m shared user path along the study area boundary.

Opportunities:

- Prioritise new vehicle crossovers for commercial and retail uses including those for loading and unloading to Ontario Avenue.
- Position car parking to the periphery of the NAC study area with vehicle access gained from main roads while accommodating direct pedestrian connections to activities and services.
- Advocate for new bus routes servicing the NAC to operate along Ontario Avenue and Sixteenth Street, avoiding Elsey Parkway given its designation as a key on-road cycleway.
- Consider the alignment of a dedicated cycle facility within the NAC street network facilitating direct connections with the Sixteenth Street Greenway.
- Ensure the internal Main Street is dedicated to pedestrian access between commercial/retail and community/public open space uses.

Land Use

Issues:

- The extent of the supermarket provision having regard to economic reports prepared by various parties which suggest a medium sized supermarket is adequate in servicing the existing and future residential community, however 1 report advocating for land to be set aside for potential future expansion of the commercial/retail offering.
- Prior to the completion of a future needs assessment, it remains unclear as to the exact provision and type of community uses required within the NAC to service the future residential population.
- Medium-density housing products are vastly different to those found in metropolitan areas. Consideration is required to determine a suitable dwelling option that offers housing diversity while meeting the needs (and market demand) of the future residential community.
- Consideration for the dwelling typology for residential parcels with frontage to Ontario Avenue or Helen Road.

Opportunities:

- Opportunity for community uses to be positioned directly adjacent to the proposed public open space.
- Opportunity to deliver a range of community uses in an integrated hub including but not limited to early learning centre, adult learning, youth services, health promotion and medical, library outstand, community meeting rooms, multi-faith services and amenities.
- Acknowledge the recently approved DDO8 along Sixteenth Street and seek to provide a similar rear-loading medium density housing type that benefits from outlook to public open space and proximity to services and facilities.
- Facilitate the short-medium term development of a medium sized supermarket with associated retail and non-retail offerings.
- Set aside land for potential future expansion of the commercial offering, exploring implementation opportunities for the delivery of a full-line supermarket or alternative development options in the event it remains unviable.

Built Form

Issues:

- Managing commercial and/or retail interfaces to Sixteenth Street having regard to the future character of the Greenway.
- Managing the staged development of land within the NAC ensuring a high quality centre can be delivered in the short-term.
- Ensuring residential products are of a high quality construction and financially viable in the local context.

Opportunities:

- Seek to position active/vibrant retail uses to the internal Main Street with outlook to the public open space and pedestrian-oriented main street.
- Position commercial and non-retail uses to the Sixteenth Street Greenway.
- Position built form to the Sixteenth Street and Ontario Avenue intersection to maximise exposure and access.
- Residential built form to offer a mix of 1 and 2 storey forms to cater to a range of owners and occupiers including down-sizers and young families.
- Community buildings to provide opportunity to temporarily expand or open toward the public open space.

Public Realm & Landscape

Issues:

- The area is largely void of any significant vegetation and the soil may present salinity issues limiting the growth of new vegetation in the future.
- Managing the staged development of new streets and public spaces within the NAC to encourage walking and cycling in the short-term.

Opportunities:

- Build on the proposed landscape concept established under the Sixteenth Street Greenway Masterplan and facilitate a green public realm providing extensive canopy vegetation for shade and amenity.
- Establish a focal point at the commercial node and internal Main Street such as a forecourt or urban plaza to draw pedestrians into the NAC from Sixteenth Street.
- Facilitate a diverse range of activities and functions within the public open space catering to all-ages.
- Council to aim to deliver public open space within the short-term to encourage investment within the centre.
- Refer to the Issues and Opportunities diagram on the opposite page, providing a review of the earlier concept sketch within the Development Plan.

MILDURA SOUTH NAC URBAN DESIGN FRAMEWORK

ISSUES & OPPORTUNITIES (Review of Development Plan Concept)

Opportunities

ACCESS & MOVEMENT

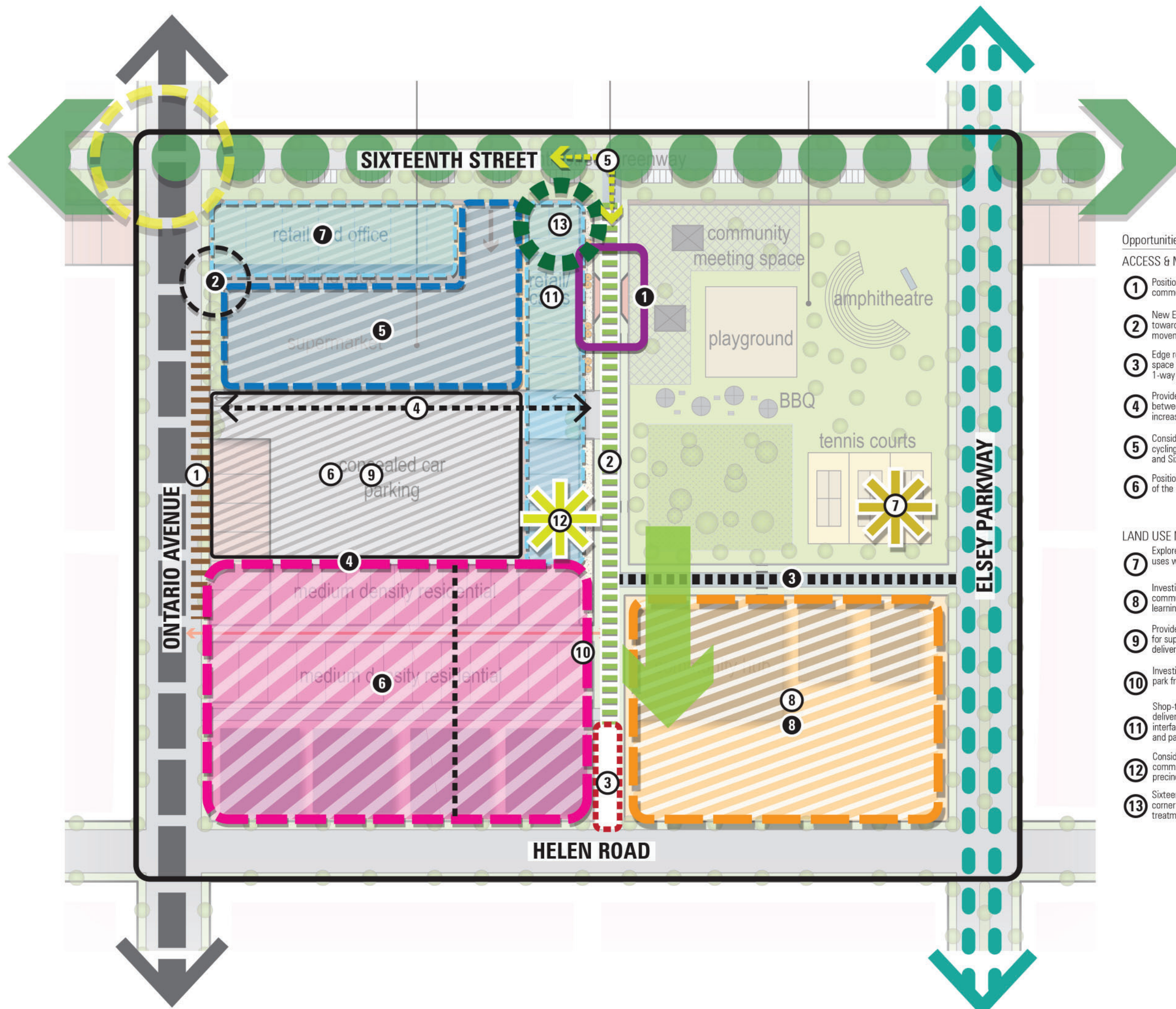
- ① Position vehicle crossovers for commercial uses to Ontario Avenue
- ② New Edge Road to be prioritised toward pedestrian and cycle movement through the NAC.
- ③ Edge road to the west of the open space may be suited to no-thru or 1-way access to Helen Road.
- ④ Provide a vehicle and pedestrian link between car park and Edge Road to increase permeability of centre.
- ⑤ Consider alignment of dedicated cycling network between the NAC and Sixteenth Street
- ⑥ Position car parking to the periphery of the NAC, access from main roads.

LAND USE MIX

- ⑦ Explore opportunity for community uses within public open space
- ⑧ Investigate potential for integrated community use hub and early learning centre adjacent to POS.
- ⑨ Provide future expansion opportunity for supermarket with flexibility to deliver residential or other uses.
- ⑩ Investigate opportunity to deliver park frontage townhouse product.
- ⑪ Shop-top accommodation could be delivered at Sixteenth Street interface overlooking public realm and park.
- ⑫ Consider integrating privately-owned community uses within commercial precinct.
- ⑬ Sixteenth Street and Edge Road corner to accommodate gateway treatment within public realm.

Issues

- ① Location of bus interchange along Edge Road, comprising pedestrian safety and movement.
- ② Location of proposed loading area in proximity to future signalised intersection.
- ③ Investigate suitability of Loop Road around public open space dividing community uses.
- ④ Provision of vehicle access and parking to medium density residential lots.
- ⑤ Future population projection supports medium-sized supermarket. Consider viable floor space configuration that will allow for future expansion.
- ⑥ Understanding market viability of medium density products in NAC context and Mildura more broadly.
- ⑦ Consider suitability of interfaces and activation between commercial/retail uses and Sixteenth Street Greenway.
- ⑧ Council's requirement for the community uses is yet to be determined however there will be a need for a range of facilities.



PART 3: MASTERPLAN RECOMMENDATIONS

URBAN DESIGN MASTERPLAN

The following chapter contains the vision and masterplan for the Mildura South NAC, framed by a series of overarching ambitions, objectives and strategies, to guide the use and development of the NAC. The masterplan recognises the potential of the site to deliver a vibrant, amenable and sustainable destination for existing and future residents.

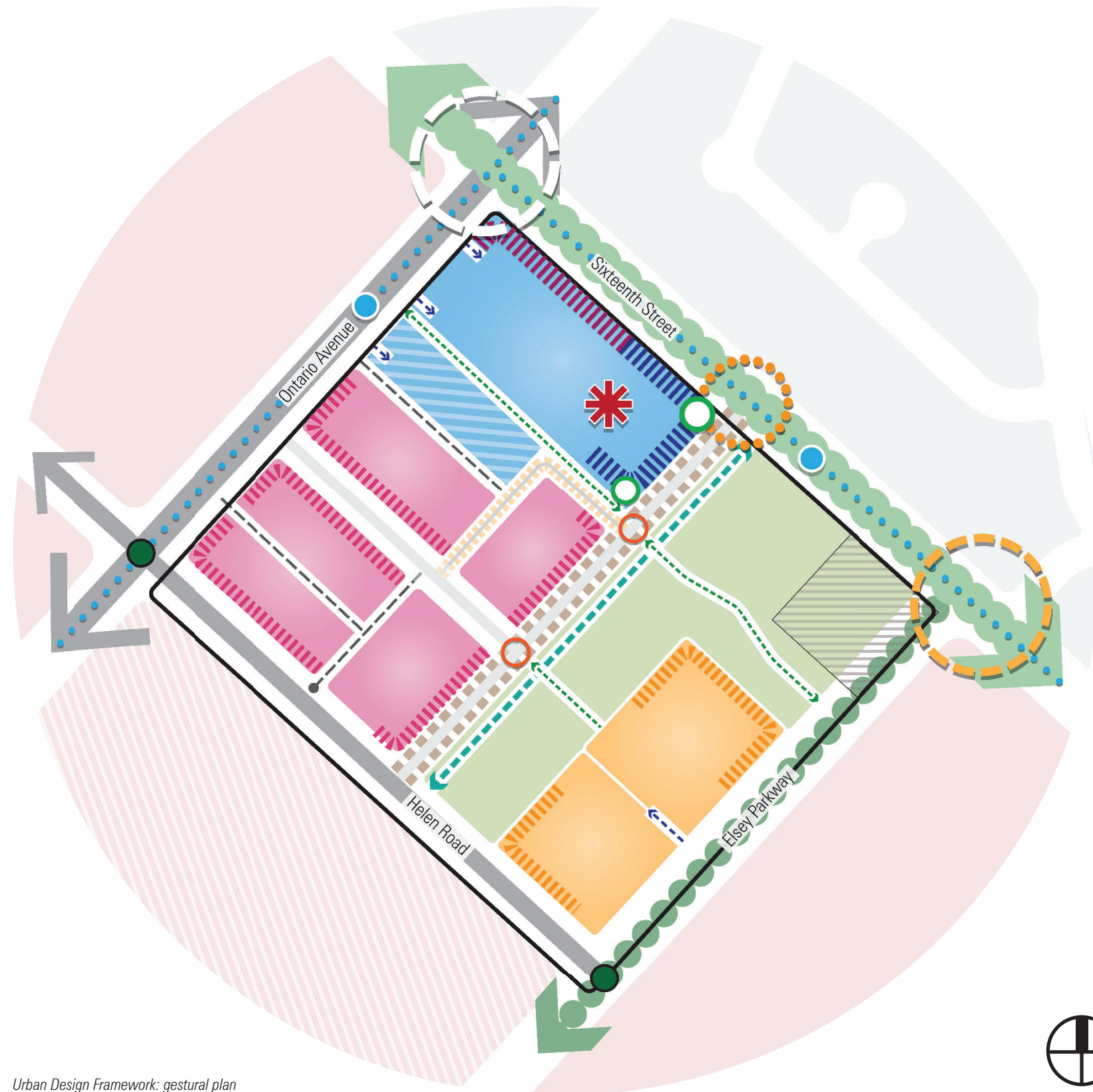
An important consideration of the masterplan is to facilitate a flexible approach for future development, allowing detailed design processes to find the best 'fit' for the study area, having regard to timing of staged development. This masterplan therefore has a degree of in-built flexibility and should not be read as a prescriptive document.

A Vision for Mildura South NAC

A vision for Mildura South Neighbourhood Activity Centre, as it relates to the existing and future residential community, was developed with reference to the earlier Precinct Structure Plan and Development Plan as well as consultation with relevant Stakeholders.

The Vision for Mildura South NAC is:

- A Neighbourhood Activity Centre which supports a diverse mix of commercial, retail and service-based uses to meet the needs of the future residential population with consideration of long-term expansion opportunities.
- A Neighbourhood Activity Centre which supports a range of inclusive community-oriented activities and services targeted toward a diverse population, centred around a generous and welcoming public open space.
- A vibrant, inviting and safe NAC supporting a public realm which facilitates walking and cycling to key destinations and surrounding residential areas.
- An Activity Centre which offers diverse housing types for all age groups, family types and lifestyles benefiting from green outlook and proximity to services and facilities.



Urban Design Framework: gestural plan

Legend	
Neighbourhood Activity Centre boundary	
Supermarket	
Non-retail/ commercial uses interface	
Active retail uses interface	
Retail and commercial	
Long term expansion opportunity/ temporary car park	
Dwelling frontages	
Medium density housing	
Community use frontage	
Community/ civic/ institution uses	
Public open space	
Future pedestrian crossing	
Plaza/ forecourt	
Future signalised intersection	
Future T-intersection upgrade	
Giveaway sign & raised crossing	
Potential future roundabout	
Shared user path (2-way)	
Pedestrian link	
Car park / vehicle access	
Potential bus route/ stop	
Future greenway	
Avenue	
Secondary access road	
Local Access Street	
Parkway	
Main Street	
Access Place	
Access lane	
Approved residential subdivision (subject to endorsed plans)	
Proposed residential subdivision	
Water Authority parcel	

Masterplan Ambitions, Objectives & Strategies

The Vision for Mildura NAC can be realised through 4 overarching ambitions and associated strategies. This includes:

1. *A Neighbourhood Activity Centre that embraces its role as a key destination for established and future residential areas.*
2. *A Neighbourhood Activity Centre which supports sustainable and convenient lifestyles.*
3. *A Neighbourhood Activity Centre which facilitates the equitable and safe movement of people.*
4. *A Neighbourhood Activity Centre which celebrates its unique regional and environmental setting.*

These masterplan ambitions include a guiding objective and associated strategies to clarify the preferred future land use, built form and design outcomes.

Ambition 1

A Neighbourhood Activity Centre that embraces its role as a key destination for established and future residents.

Objective:

To establish a resilient and adaptable activity centre that offers an adequate range of services to the community in the medium and long term as the Mildura South Growth Area evolves.

Strategies:

- Support the development of a retail and commercial precinct comprising a medium to full-line supermarket, complemented by a suite of specialty retail and commercial uses positioned to address Sixteenth Street and the Main Street.
- Acknowledge the Main Street as a local pedestrian priority street through the positioning of more active frontages and alfresco dining areas to this edge to maximise vibrancy and outlook.
- Acknowledge the role of Sixteenth Street as a future cycle corridor and support the positioning of commercial frontages with some retail activity for its activation.
- In the short-term support the implementation of a landscape buffer the Sixteenth Street interface to create a welcoming 'green' entry into the precinct.
- Establish a public plaza at the corner of Sixteenth Street and the Main Street as a legible 'front' door to the NAC for pedestrians and cyclists.
- Future-proof the commercial and retail offering of the NAC by accommodating the potential expansion of the supermarket to a full-line facility, including the expansion of associated commercial/retail floorspace and car parking requirements.
- Minimise the under-utilisation of land in the precinct (in the short term) by supporting multi-purpose functions of the car park and vacant sites for events, markets or temporary activities including urban farming and community gardens.
- Support the positioning of a medical centre (or similar) at the corner of Sixteenth Street and Ontario Avenue as a complementary function to the NAC.
- Create a new, inviting public open space providing a range of passive and active recreation functions, centred around high-quality landscape with a focus on shade during summer months. The new open space will be framed by community retail activities with direct pedestrian and cycle links to the future Greenway and Parkway.

Ambition 2

A Neighbourhood Activity Centre which supports sustainable and convenient lifestyles.

Objective:

To provide diverse housing options and community facilities which benefit from direct outlook to public open space and proximity to retail and commercial services.

Strategies:

- Establish medium-density housing products suited to a regional housing market including attached townhouses or duplexes (up to 3 storeys) at the south-west of the NAC which benefit from outlook to a public open space as well as proximity to services and facilities.
- Support the provision of smaller housing products that cater to a more diverse demographic and reinforce an alternative urban lifestyle that is distinctive from typical residential products found outside the NAC.
- Position an integrated community hub to the intersection with Helen Road and Elsey Parkway benefiting from a direct abuttal with future public open space. This facility is to provide opportunities for a range of community services including but not limited to early childhood learning centre, adult learning centre, maternal child health care, library outpost, gymnasium, meeting rooms and function centre or youth outreach services.
- Ensure future commercial, residential and community development does not adversely impact on access and amenity of the public realm with a consideration toward avoiding overshadowing, mitigating visual bulk and supporting passive surveillance.
- Ensure new buildings in the NAC are embedded with environmentally sustainable design principles by achieving best practice water sensitive design outcomes and minimising carbon footprint.

Ambition 3

A Neighbourhood Activity Centre which facilitates the equitable and safe movement of people.

Objective:

To establish a legible street network which acknowledges the peripheral road hierarchy recommended under the Development Plan and accommodates vibrant and safe pedestrian connections between commercial, retail, open space, community and residential uses.

Strategies:

- Recognise the established road hierarchy set out in the Development Plan including the alignment of Ontario Avenue, Elsey Parkway and Helen Road by continuing the 'grid' street network into the NAC.
- Prioritise sustainable transport within the NAC, with priority pedestrian access along the north- south aligned Main Street. The Main Street will be supported by east- west pedestrian/ cycling links.
- Establish a 10m wide Access Place between commercial and residential uses, offering pedestrian only connection between the car park and Main Street to avoid rat-running.
- Facilitate pedestrian and cycle connections from existing and future residential areas, acknowledging the role of the Sixteenth Street Greenway as a designated sustainable transport corridor.
- Position 2 consolidated at-grade car parks to the periphery of the NAC, accessed from Ontario Avenue and Elsey Parkway, to reduce vehicle movement along the Main Street and facilitate a pedestrian-focused centre.
- Loading/ servicing and car parking for commercial/ retail facilities is to be provided off Ontario Avenue to avoid large vehicles from traversing along the Main Street.
- Advocate for the location of new bus stops to Ontario Avenue, adjacent to the commercial uses and Sixteenth Street, adjacent to the public open space, facilitating direct pedestrian connections to key activities and services.
- Maintain the ambition of the Sixteenth Street greenway as a pedestrian and cycle focused corridor, by limiting the establishment of new crossovers into the NAC from this road.
- Townhouses fronting the Main Street are to be provided with garages at the rear, accessible via a laneway to facilitate uninterrupted pedestrian paths along key streets through the NAC.
- Advocate for the signalisation of the Ontario Avenue and Sixteenth Street intersection as well as the upgrade of the Elsey Parkway and Sixteenth Street intersection to facilitate the safe movement of people to and from the NAC.

Ambition 4

A Neighbourhood Activity Centre which celebrates its unique regional and environmental setting.

Objective:

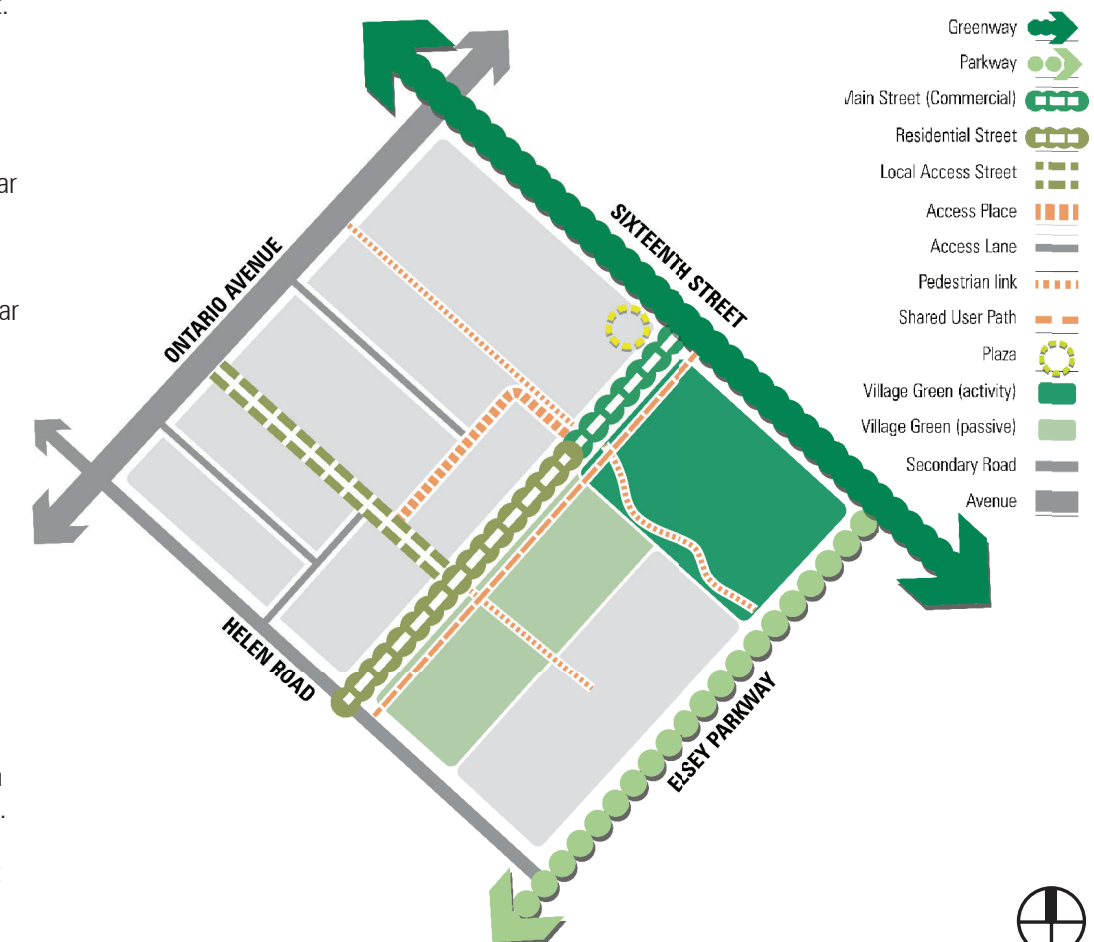
To establish a public realm that reflects a sense of localness and acknowledges the surrounding landscape character while managing climate constraints and sustainability opportunities.

Strategies:

- Acknowledge the slope of the NAC area through the design and management of onsite detention storage for 1 in 100 year storm events within car park areas, public open spaces and/or development footprints.
- Explore opportunities for benchmark Water Sensitive Urban Design (WSUD) initiatives as part of place creation in future streetscape design to manage stormwater run-off and quality to distribute back into the public realm to maintain landscaping.
- Implement a series of diverse public open spaces at key entries and within the NAC, connected by a network of green streets supporting pedestrian and cycle movement.
- Support the integration of public art, quality building frontages, active uses and tree planting at and around primary entry points to enhance the sense of arrival.
- Encourage creative artistic community-led expression within the public realm, particularly in the short to medium term, supporting multi-purpose functions of the car parks and temporarily vacant sites for events, markets which contribute to a visually engaging place creation.
- Establish generous landscape buffers around the perimeter of the NAC, with particular focus along the Greenway and to Elsey Parkway incorporating native (and where possible indigenous) planting that references the Murray River environs.
- New streets to accommodate substantial canopy vegetation and other shade mechanisms to facilitate a comfortable public realm during summer months.
- At-grade car parking should comprise substantial tree planting at the perimeter and between bays for shading and amenity purposes.
- The public realm and open space framework within the NAC will be defined by four key public realm types, exhibiting a distinction in landscape character, while utilising a complementary suite of materials and finishes that contributes to wayfinding and placemaking. The public realm types include:
 - Urban Plaza:** An urban plaza at the northern end of the Main Street in association with the retail node. It will comprise primarily paved areas with some garden beds. It will accommodate seating, relaxing and gathering areas with urban and feature ambient lighting. An integrated signage for wayfinding that reference local context should be encouraged to enhance its sense of identity as a place.

- Greenway/Parkway/ Main Street:** These are priority pedestrian and cycling routes which are tree lined with low understorey planting in garden beds. Tree species between the east- west and north- south aligned streets may vary to assist with wayfinding and sense of place.
- Village Green:** The village green will be a welcoming open, grassed area for informal passive and active recreational activities. It will perform as a neighbourhood play space and gathering space, including formal equipment such as play equipment, exercise equipment and barbecue facilities. Future play space will be located to the north eastern corner, taking advantage of activities and surveillance provided by the retail node. To the south-west, at the interface with residential and community uses, the park will offer more contemplative areas of recreation including native garden beds, large shade trees and environmental learning spaces such as a dry creek bed or native fruit and vegetable gardens.
- Pedestrian Links:** are pedestrian linkages that connect car parking structure to various destinations in the NAC. These paved paths are to be well- lit and tree-lined, or provided with canopy for shading. Passive surveillance onto this space from residential/retail/ commercial buildings are essential for improved perception of safety.

The diagram below illustrates the proposed distribution of public realm types within the NAC.



Distribution of public realm types

MILDURA SOUTH NEIGHBOURHOOD ACTIVITY CENTRE MASTERPLAN

INDICATIVE CONCEPT PLAN

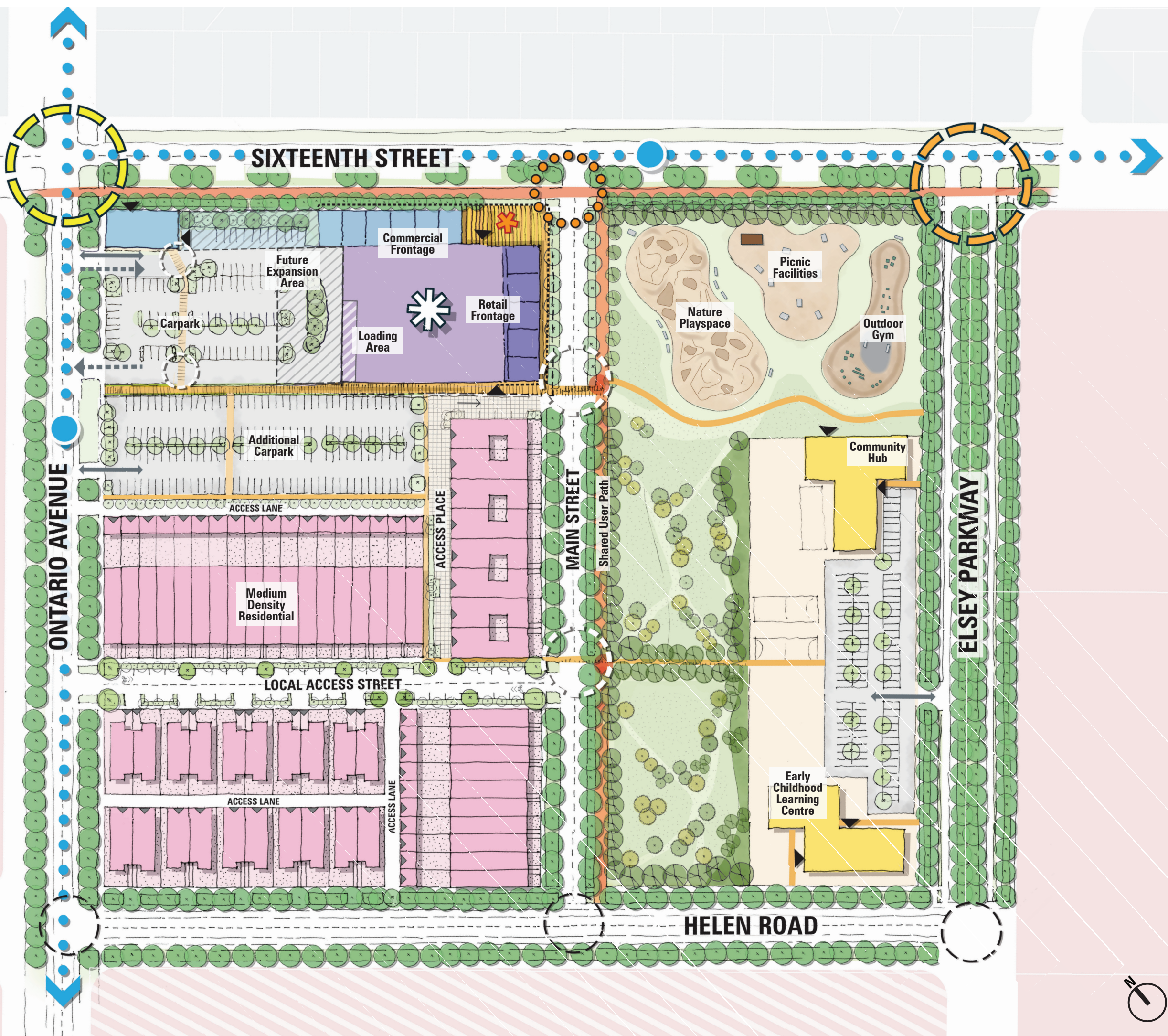
Legend

Land Use and Activity

- Retail anchor
- Entry plaza
- Supermarket
- Supermarket expansion area
- Speciality retail
- Commercial
- Medium Density Residential
- Community and civic
- Public open space
- Existing residential subdivision
- Approved residential subdivision
- Proposed residential subdivision
- Indicative park seating nodes
- Potential public toilet
- Extent of awning

Access and Movement

- Pedestrian desire line
- Loading access/egress
- One-way street
- Car park entry/exit
- Shared user path
- Designated shared street (slow vehicle speeds)
- Future signalised intersection
- Future T-intersection upgrade
- Giveway sign & raised crossing
- Wombat Crossing
- Cyclist giveway point (surface treatment & signs)
- Potential future roundabout
- Potential bus route/ bus stop
- Building address
- Garage access
- Potential loading dock



Masterplan Precincts

The Masterplan is divided into four precincts, determined by the varied uses and development outcomes required across the NAC. Refer to the diagram opposite for an illustration of the precinct extents. The precincts can be defined as:

- Precinct 1: Commercial Heart
- Precinct 2: Alternative Residential
- Precinct 3: Integrated Community Hub
- Precinct 4: Village Green

These precincts have been curated through a consideration of the ambitions from the earlier Development Plan and Precinct Structure Plan as well as consultation with relevant stakeholders. The purpose of the precincts is to recognise the importance for the Neighbourhood Activity Centre to provide for diverse uses and ensure built form and public realm outcomes are suited to the needs of the existing and future community.

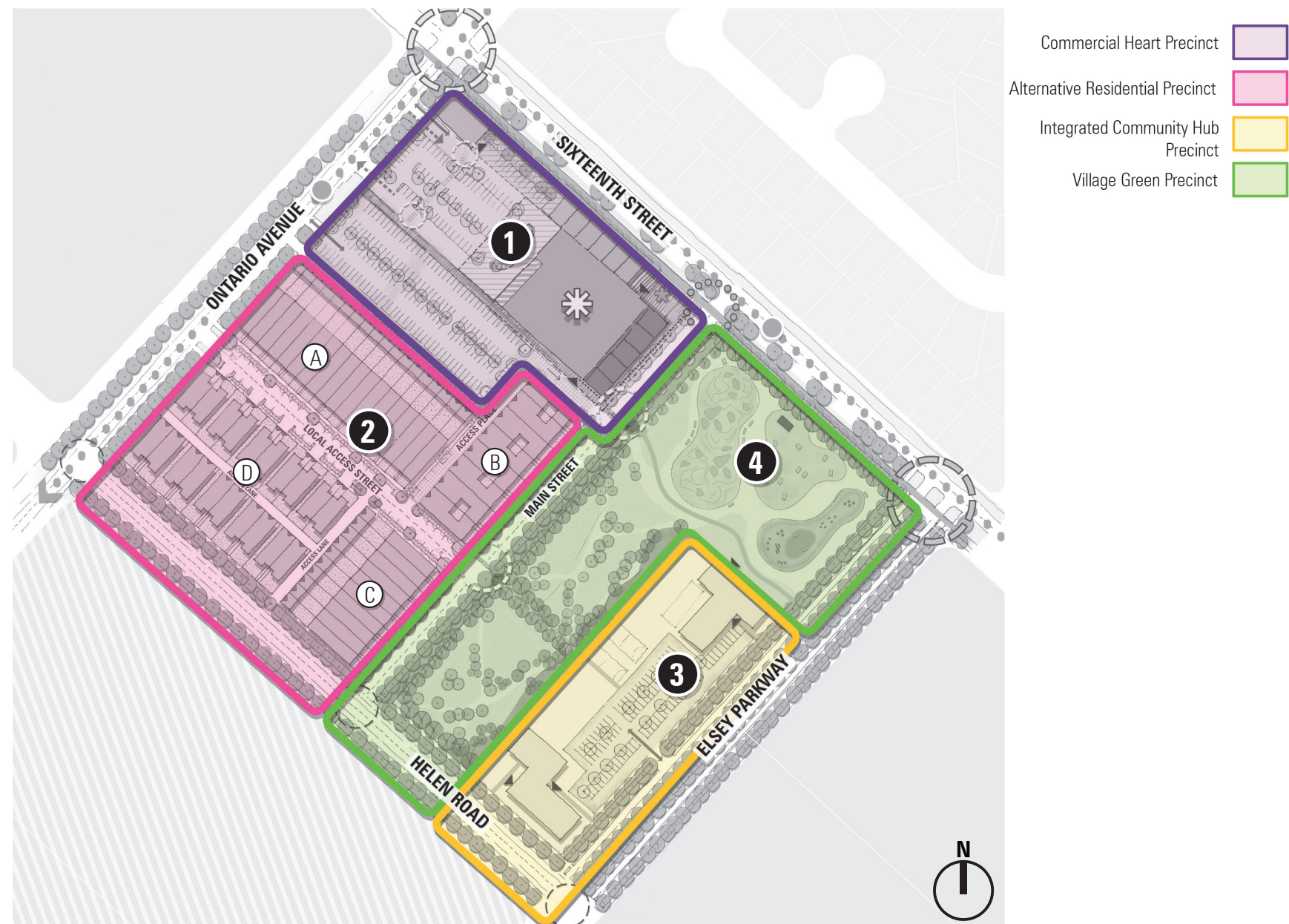
A breakdown of designated precinct areas (indicative) are outlined in the following table:

	Description	Approximate Area (m ²)
Precinct 1		
Commercial	To Sixteenth Street frontage	1000
Retail	Medium-sized supermarket	2500
	Specialty Retail to Main Street	750
Car Parking	Supermarket Car Park	2000
	Future expansion area	4100
Road reserve	Main Street	5650
Total Precinct Area		1.6ha
Precinct 2		
Residential	Medium Density Block A	5800
	Medium Density Block B	2700
	Medium Density Block C	3100
	Medium Density Block D	5700
Road reserve	Helen Road, Local Access Street & Lanes	8700
Total Precinct Area		2.6ha
Precinct 3		
Community	Early Childhood Learning Centre	4000
	Community Centre	5400
Road reserve	Elsy Parkway & Helen Road	4600
Total Precinct Area		1.4ha
Precinct 4		
Public Open Space		17000
Road reserve	Main Street, Helen Road & Elsey Parkway	7000
Total Precinct Area		2.4ha
Total Masterplan Area		8ha

The following section includes specific guidance for precinct including an overarching description of the Precinct's future character, strategies outlining the 'key moves' for the siting and development of uses within the precinct including an illustrative precinct plan and finally a series of targeted design guidelines which seek to shape specific built form, access, landscape and public realm outcomes having regard to the future role of the precinct.

The intent of the precinct plans (as per the overall masterplan sketch) are to illustrate clear examples of how the strategies and design guidelines can be applied to the NAC to achieve feasible development outcomes. It is acknowledged any future development application on the site may vary from the masterplan while still responding to the design guidelines.

The Strategies and Design Guidelines for the precincts have regard to the state-wide Urban Design Guidelines for Victoria found within the State Planning Policy Framework of the Victoria Planning Provisions. These guidelines are underpinned by best practice knowledge and are relevant to the planning and design of regional townships as well as metropolitan areas.



Designation of Masterplan Precincts

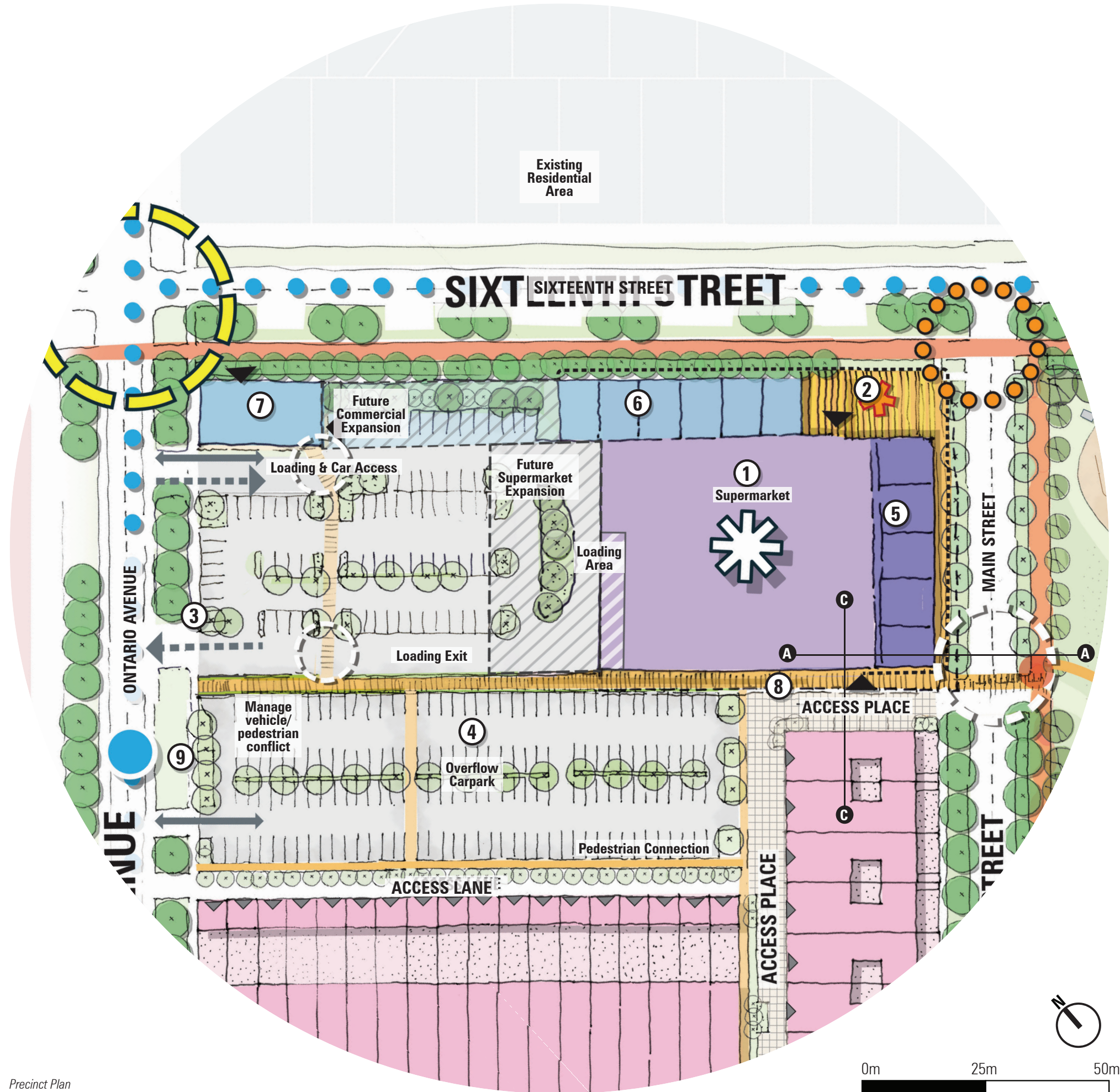
Precinct 1: Commercial Heart

Precinct Description

The Commercial Heart will be a vibrant anchor into the Mildura South Growth Area offering a range of retail, commercial and service based uses, benefiting from direct connections with the future Sixteenth Street Greenway and Village Green. The precinct will accommodate car parking and vehicle access from Ontario Avenue, to facilitate a pedestrian-oriented 'main street' setting to the internal Main Street.

Precinct Strategies

1. In the short-medium term, deliver a Neighbourhood Activity Centre comprising a **mid-sized supermarket** (of 2200-2500m²) addressing Sixteenth Street and the Main Street. This retail anchor will be 'sleeved' by specialty retail and commercial uses to take advantage of visual exposure along these streets. Pedestrian access to the supermarket should be from Main Street, with an opportunity for an additional entry from the Access Place.
2. Establish a **new public plaza** at the corner of Sixteenth Street and Main Street incorporating outdoor seating, public art, shade structure/awnings and end of trip facilities for cyclists.
3. Position **car parking and loading facilities** associated with commercial uses behind the retail frontage, with access off Ontario Avenue. Dedicated pedestrian crossings through the car park should be established to manage pedestrian safety.
4. **Future-proof** the NAC for potential floorspace expansion by retaining a minimum 4,000sqm land holding, which can be used for car parking, or other interim multi-purpose functions such as open space, markets or temporary activities. Future expansion including a full line supermarket should continue to activate Sixteenth Street and retain 'back of house' (loading, car parking) off Ontario Avenue.
5. Position **fine grain speciality shops** and hospitality uses to the Main Street and built to the street (and plaza) boundaries. These uses will benefit from outlook to the public open space and opportunity to activate the public realm, including a new public plaza. Outdoor dining should be encouraged to establish a vibrant, inviting entry into the NAC.
6. **Non-retail and commercial uses** are to be positioned to the Sixteenth Street Greenway, benefiting from green outlook while acknowledging the role of the street as a critical cycle corridor.
7. Position a **free-standing commercial form/ medical centre** at the Ontario Avenue and Sixteenth Street junction to provide a visual anchor to the NAC. Built form should be built to the street boundaries, with pedestrian entries directly accessible off the footpath. Car parking should be located to the side, or rear with landscape screening to manage its visual presentation along Sixteenth Street.
8. Establish a **continuous, legible and safe pedestrian connection** from Ontario Avenue to the Main Street through the car park via a 10m wide Access Place between the commercial precinct and future medium density residential land. This link should be provided with passive surveillance, well-lit and universally accessible.
9. Advocate for a new **bus stop** at on Ontario Avenue, providing access via the new pedestrian link to the Main Street.
10. Acknowledge the sloping topography of the precinct through **onsite detention and storage of stormwater within at-grade car parks** to manage flooding impacts to surrounding commercial and retail development



Precinct Plan

Design Guidelines

Building Massing and Design

- The preferred maximum building height is 2 storeys, or 8m. There is opportunity to increase building height at the corner of Ontario Avenue and Sixteenth Street to 3 storeys, or 12m to demarcate this key junction of the NAC.
- Ensure the massing of the primary commercial building appears as a 'suite of forms' to street frontages, offering division and grain as well as a mix of colours and material treatments to avoid the appearance of a singular, monotonous form. This includes ensuring tenancies comprises individual entries to the street and are located along pedestrian desire lines.
- Establish a minimum of 2 pedestrian entries into the supermarket with the primary entry from the Main Street and Sixteenth Street intersection and the secondary access from the Access Place and Main Street intersection.
- Utilise materials and finishes which exhibit depth, texture and fine grain details that exhibit commercial character including (but not limited to) glazing, brick, stone, vertical cladding, powder-coated seam cladding or corrugated iron and textured precast concrete. Aluminium cladding products should generally be avoided or used sparingly.
- New development should incorporate weather protection, or canopy, extending over the public realm (to the back of kerb) as part of the building design to allow for continuous undercover walkways for pedestrians. This includes to Sixteenth Street, Main Street and Access Place. Consider integrating landscape within canopies (i.e. climbing species).
- The design of commercial buildings should incorporate highly functional and adaptable spaces to accommodate various uses over time. This may include allowing for the consolidation of tenancies to accommodate to the needs of new local businesses.

For further guidance, refer to **Section 5.1 (Buildings in Activity Centres)** of the Urban Design Guidelines for Victoria.

Building Setbacks

- Setback built form to the corner of Sixteenth Street and the Main Street to accommodate a public plaza as an entry feature to the NAC.
- Position built form to boundary along the Main Street (excluding the plaza) and to the Access Lane to accommodate outdoor dining and a pedestrian footpaths outlook to the public open space.
- Position built form to boundary along Sixteenth Street (0m setback). Allow for the expansion of non-retail and commercial uses along the Sixteenth Street frontage to connect with the free-standing form at the corner with Ontario Avenue overtime.
- Built form to the corner of Ontario Avenue and Sixteenth Street should be built to the street boundaries along Sixteenth Street and Ontario Avenue to hold the junction.
- Position built form to boundary to the Access Place, providing outlook to the pedestrian path between Ontario Avenue and Main Street.

Building Presentation to Streets

- A minimum 70% of the street frontage should be transparent glazing and minimise the presentation of visible 'blank' walling along Sixteenth Street and Main Street.
- Ensure pedestrian entries (to all uses) are designed and sited to avoid steps or complicated ramp structures at building frontages. Any required level transitions are to be level transition contained within the building envelope.
- To the Access Place and linear pedestrian link, the supermarket interface should seek to provide transparent glazing where possible. Where glazing cannot be achieved (due to internal storage or services) consider the integration of textured materials, art murals, tree planting/ landscape buffers and super-graphics to minimise blank walls and enhance the commercial precinct's identity when viewed from the public realm.
- Encourage operable glazed frontages to the Main Street, where hospitality uses are proposed to encourage active uses to 'spill' out onto the footpath.
- New commercial and retail buildings should be designed to respond to the fall of the land ensuring pedestrian entries are void of steps at doorways which inhibit accessibility or alternatively provide over engineered ramp structures which detract from the building design.
- Establish a decorative semi-transparent fence or screen with landscape buffers (including trees) to the perimeter of the loading and unloading area to screen views from the commercial car park and minimise pedestrian/ vehicle conflict.
- Encourage uses which operate during evening periods to maximise the use of the NAC outside of daytime business hours, providing light spill and activity within the public realm.



Example of a mixed use Supermarket form addressing multiple street frontages



Example of Supermarket form providing entries and outlook to car park

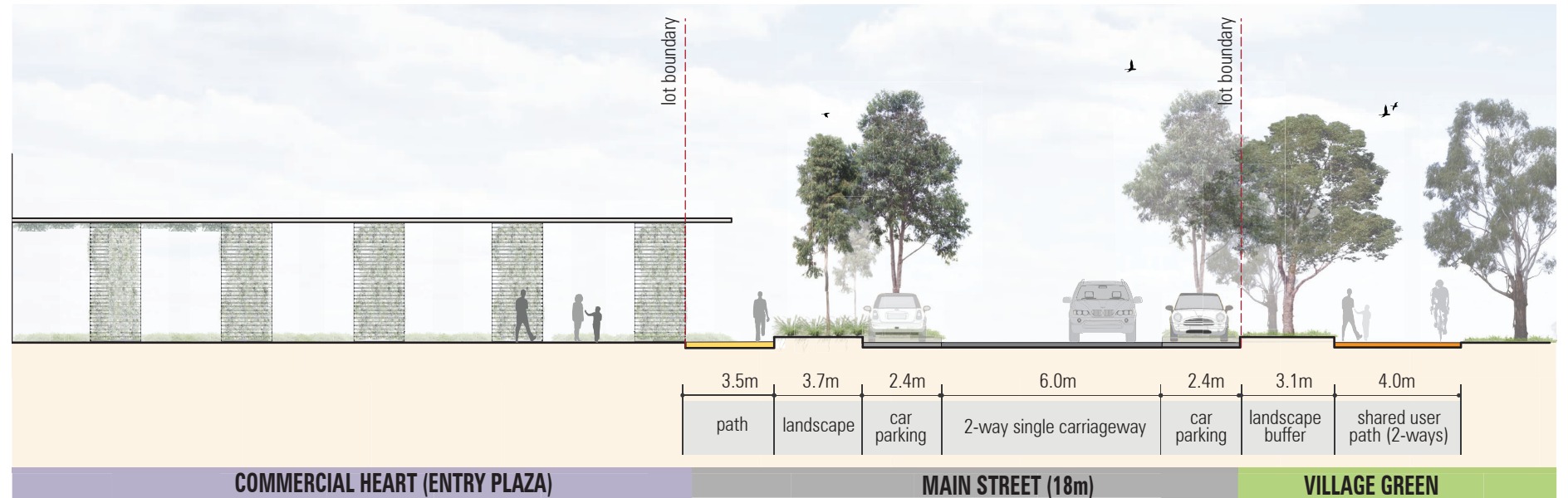


Example of fine grain frontages to open plaza

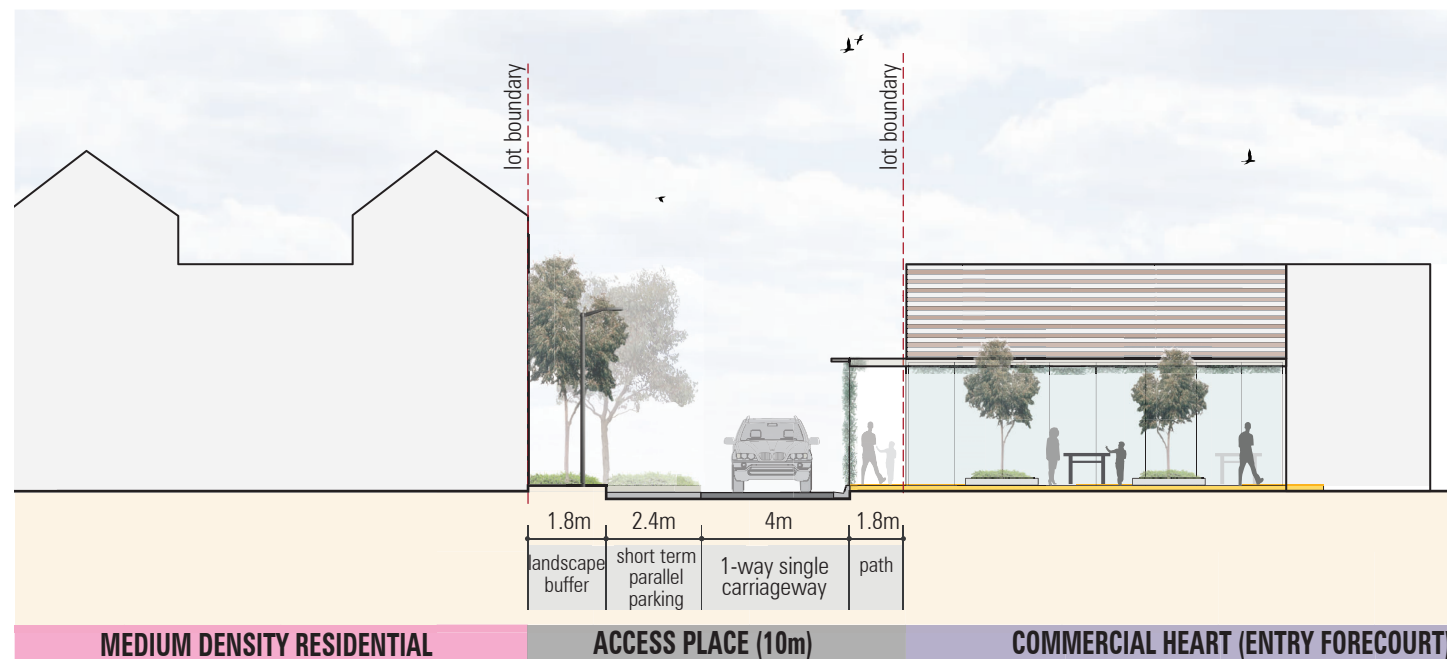
Vehicle access and parking

- Avoid new crossovers to Sixteenth Street to ensure pedestrian and cycle safety is maintained, acknowledging the road is identified as a future pedestrian and cycle corridor (in accordance with Amendment C100).
- Position all vehicle crossovers into at-grade parking and loading areas from Ontario Avenue.
- Designate a loading access and car parking access shared crossover from Ontario Avenue to the south-west of the Ontario Avenue and Sixteenth Street intersection. Position a second dedicated egress crossover, for heavy vehicles only from Ontario Avenue to the south, ensuring loading and unloading operations can be maintained in a forward direction (loop format).
- Facilitate a continuous and raised east - west pedestrian footpath between Ontario Avenue and the main street. The pedestrian path should include low level landscape and pram ramp access to designated pedestrian paths within the car park.
- Manage potential pedestrian vehicle conflict along the pedestrian link (between Ontario Avenue and the main street) by restricting vehicle movement across this path and instead providing separate crossovers to the south of Ontario Avenue.
- Provide short-term loading bays to service specialty retail and disabled parking along the Access Place.
- Implement dedicated pedestrian crossings through the car park between Sixteenth Street and the linear pedestrian link to the Main Street.
- Establish a raised (wombat) crossing at the Main Street extending from the Access Place pedestrian link, connecting to the Village Green.
- Implement a landscaped pinch point between the Access Lane and at-grade car park to restrict rat-running while prioritising pedestrian access and prioritise pedestrian movement.
- Ensure the Access Place is managed as a 'slow' street (10km/h) including 1-way traffic short-term parking and landscape buffer to the residential interface.
- Integrate secure bike parking and a bike station to the Main Street public plaza and within the Access Place.
- Provide short-term parallel parking to both sides of the Main Street, framed with canopy trees and landscape to either side of the road reserve.

For further guidance, refer to **Section 2.7 (On-Street Parking)** and **Section 2.8 (Car Parking Lots)** of the Urban Design Guidelines for Victoria.



Section AA - Proposed Main Street configuration



Section CC - Proposed access place configuration

Landscape & Public Realm

- The landscape palette within this precinct should reference the horticultural surrounds of the locality, balanced with native, drought tolerant species to provide for lower maintenance landscape offering.
- Frame car parking to street frontages including Ontario Avenue and Sixteenth Street with generous landscape setbacks (minimum 2m wide) to screen views to impermeable surfaces and provide shade to the public realm.
- Provide high quality landscaping including trees within the car park to provide shade and amenity, noting residential interfaces to the south-west.
- Implement distinctive surface treatments within streetscapes and car parks to define pedestrian priority areas, outdoor dining, plazas and shared zones.
- Implement a special pavement zone along the Access Lane to the west of the supermarket, providing opportunities for temporary road closures and encourage slow vehicle movement.
- Implement a minimum 3.5m footpath plus a minimum 2.5m nature strip along the internal Main Street incorporating canopy trees and under-storey planting, maintaining views to the Village Green.
- Ensure the Main Street, comprises seating areas at building entries and along pathways for street engagement and amenity.
- Restrict footpath trading (other than outdoor dining) along Sixteenth Street and the main street to maintain pedestrian view lines and minimise footpath disruption through the precinct.
- Establish a minimum 1.5m wide landscape buffer to the residential interface along the Access Place (opposite the commercial building) providing canopy trees and shrubs to this edge.
- Ensure any required retaining walls are designed to be no greater than 1m in height and are treated with textured materials which complement the preferred character of the Activity Centre.

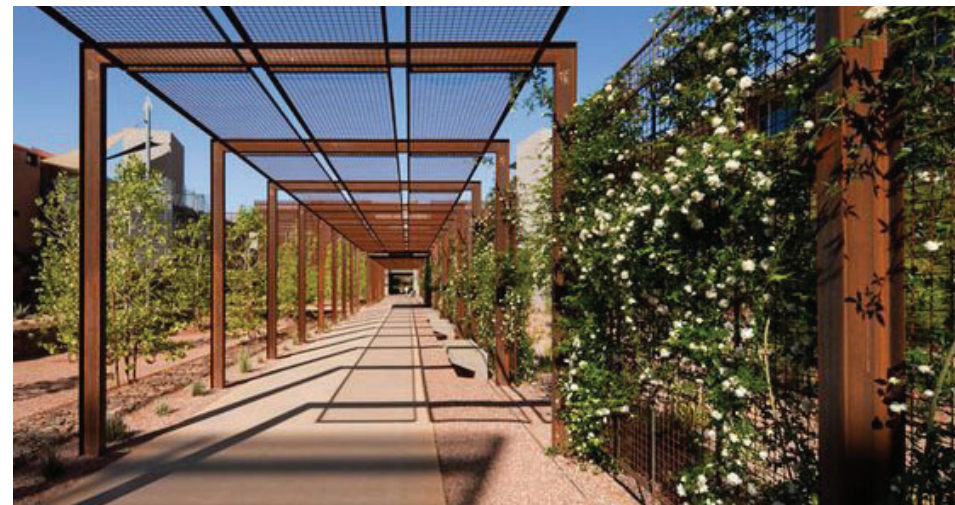
For further guidance, refer to **Section 3.2 (Streets Spaces and Plazas) & Section 6 (Objects in the Public Realm)** of the Urban Design Guidelines for Victoria.

Stormwater Management

- The below ground piped system located within Sixteenth Street, Ontario Avenue and within the NAC area shall be designed to convey a 1 in 5 year storm event (all precincts).
- The overland flow path for volumes above the 1 in 100 year event to be conveyed out into Sixteenth Street and Ontario Avenue (all precincts).
- Onsite detention storage for a 1 in 100 year storm event must be designed to be accommodated within the NAC area, such as car park areas and/or development footprints.



Example of Supermarket car-park with dedicated pedestrian crossings



Example of a shade structure with integrated climbing landscape.



Example of an outdoor dining space at frontage to main commercial building footprint

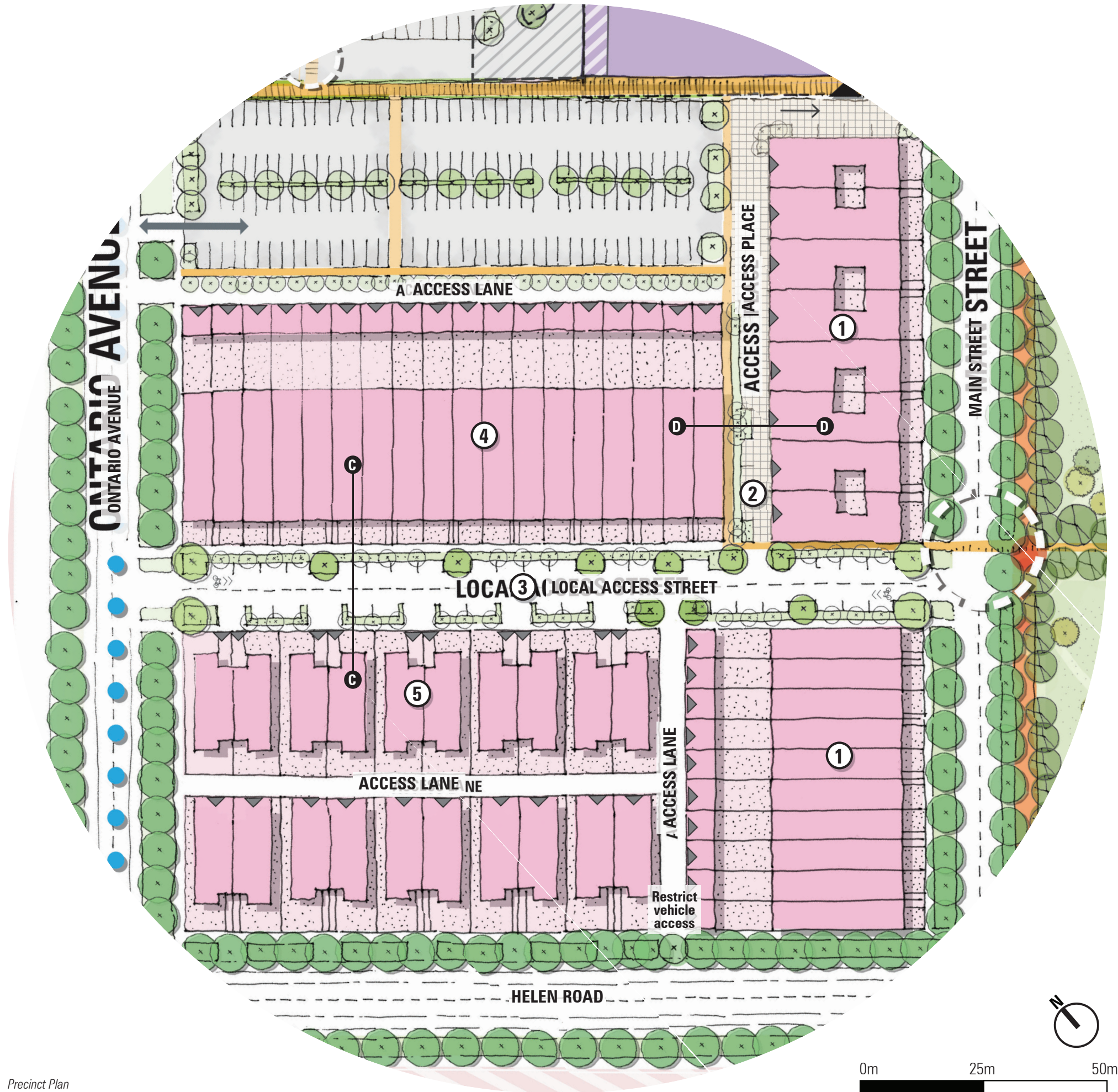
Precinct 2: Alternative Residential

Precinct Description

The Alternative Residential Precinct comprises a variety of high quality medium density dwelling types offering alternative lifestyle options that cater to a variety of household types including down-sizers and young families. Future residents will benefit from amenity, services and public transport within a walking distance, minimising over-reliance on car trips. Living population in the NAC will contribute to its day and night activation and vibrancy.

Precinct Strategies

1. Establish a **mix of medium density residential terraces and townhouses** (up to 3 storeys) along the Main Street of the NAC, comprising rear loaded laneway access, as well as ground and upper level private open spaces benefiting from outlook to future public open space and walking distance to key services and facilities.
2. Implement a 10m wide Access Place, extending between the commercial precinct and Local Access Street, offering **pedestrian access and visitor parking** to attached dwellings with park frontages. This road will be 1 way for east-bound traffic.
3. Implement an east-west 18m **Local Access Street** between Ontario Avenue and the Main Street providing outlook and access to future dwellings. Dwellings will provide passive surveillance onto the public realm, set within a native planting regime in nature strips and footpaths to both sides of the street.
4. Establish **medium density townhouses** (up to 3 storeys) fronting the local access street with rear loaded access adjacent to the commercial car park.
5. Support **semi-detached townhouses** at the south western corner at the intersection with Helen Road and Ontario Avenue, in transition between the NAC and detached residential precinct beyond.



Precinct Plan

Building Siting and Design

- Standard single storey detached dwellings within the NAC are generally discouraged.
- Lot sizes will generally be between 300 to 350sqm and should accommodate attached, or detached townhouses with sufficient area for secluded private open space (a minimum 35sqm).
- Townhouses of 2-3 storeys should be encouraged with a mix of 2 and 3 bedroom dwellings that cater to a range of household types.
- Buildings should be setback a minimum 5m from the street frontage accommodating front gardens including a minimum of one canopy tree (mature height of 8m).
- Dwelling entries must be clearly defined and identifiable from the street including separate pedestrian pathways to front doors.
- Dwelling orientation and separation, including upper level setbacks must be designed to maximise direct sunlight into private open space and public footpaths.
- Dwelling siting and setbacks must minimise reliance on window or balcony screening to mitigate overlooking issues.
- Utilise materials and finishes which are suited to a residential context and exhibit depth, texture and fine grain details including (but not limited to) bricks, stone or painted and natural lightweight panel/ cladding system (non-reflective).
- Roofing materials should include low profile or slimline tile roofing or powder-coated corrugated iron.
- Attached dwellings should adopt a varied palette of materials and façade articulation that enables visual breaks and dwelling definition.

For further guidance, refer to **Section 5.3 (Higher Density Residential Buildings)** of the Urban Design Guidelines for Victoria.

Fencing & Services

- Dwellings should have no, or low front fences (1m high or less) and should be visually permeable. Where fencing along side boundaries are visible from the public realm, it should be 1m high, or less.
- Side fencing along pedestrian footpaths and roads should be visually permeable.
- Ensure service infrastructure such as air conditioning units are concealed and are not visually prominent from the street. Locate infrastructure services to minimise acoustic impact on adjacent properties.
- Private open space should be clear of site services.
- Dedicated bin collection areas should be located to the rear or along secondary side streets.

Private open space and landscape

- Ensure all dwellings are provided with adequately sized private open space in the form of ground level courtyard, balcony or upper level courtyard/ rooftop area.
- Ensure private open space is highly functional and incorporates canopy vegetation and a pergola to support use during peak summer months.
- Provide 50% permeable surfaces to front setbacks, incorporating garden beds, lawn areas, gravel and permeable paving.
- Encourage the integration of plants that are drought resistant and easy to maintain.
- Ensure any required retaining walls within private open space are designed to be no greater than 1m in height and are treated with textured materials or integrated with landscape.

Public realm and landscape

- The landscape palette for this precinct should adopt a native theme referencing the Murray River and lake surrounds, including large native trees within nature strip to provide shade and amenity.
- Grassed verges are generally discouraged in favour of native, drought tolerant species.
- Incorporate paving bands along laneways to define entries into garages and provide visual breaks along the linear concrete surface.

Stormwater Management

- Onsite detention storage for a 1 in 100 year storm event must be designed to be accommodated within the NAC area, such as gardens or swales within nature strips, permeable paving along on-street car parking and individual water collection within residential lots (rain water tanks).



Example of highly sustainable park frontage attached townhouses.



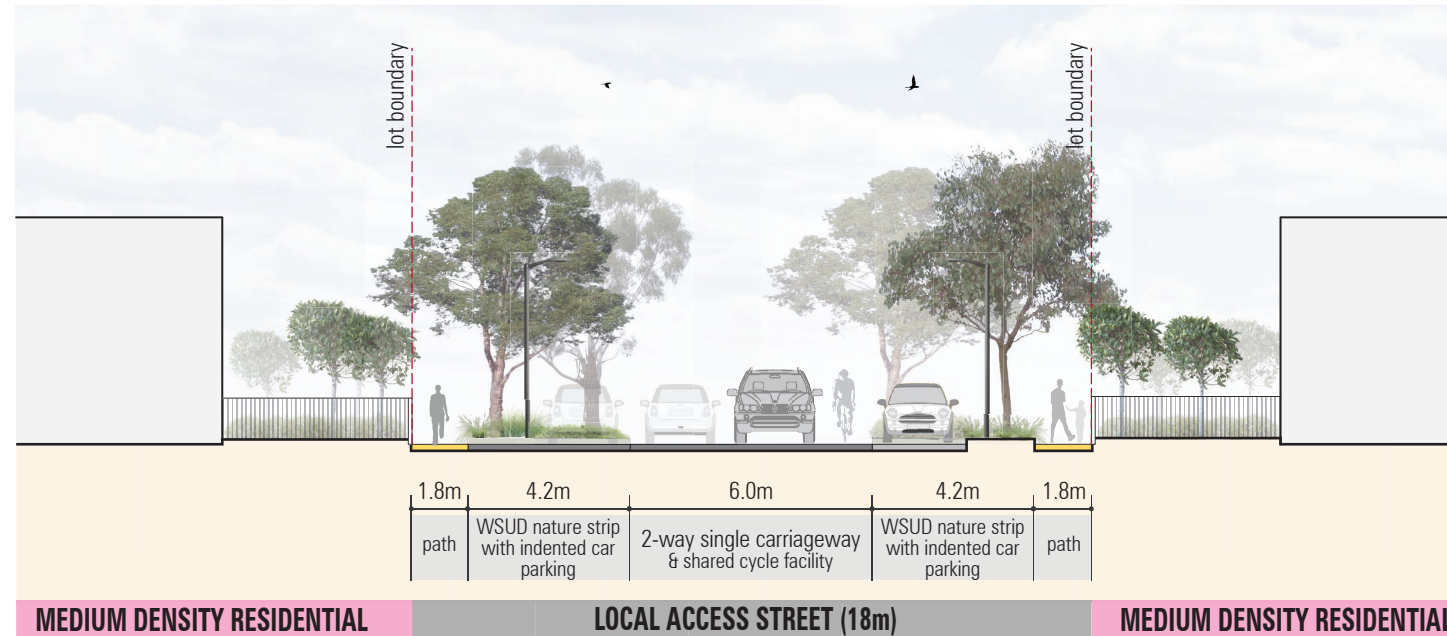
Example of an alternative housing product with limited crossovers from the primary street frontage.



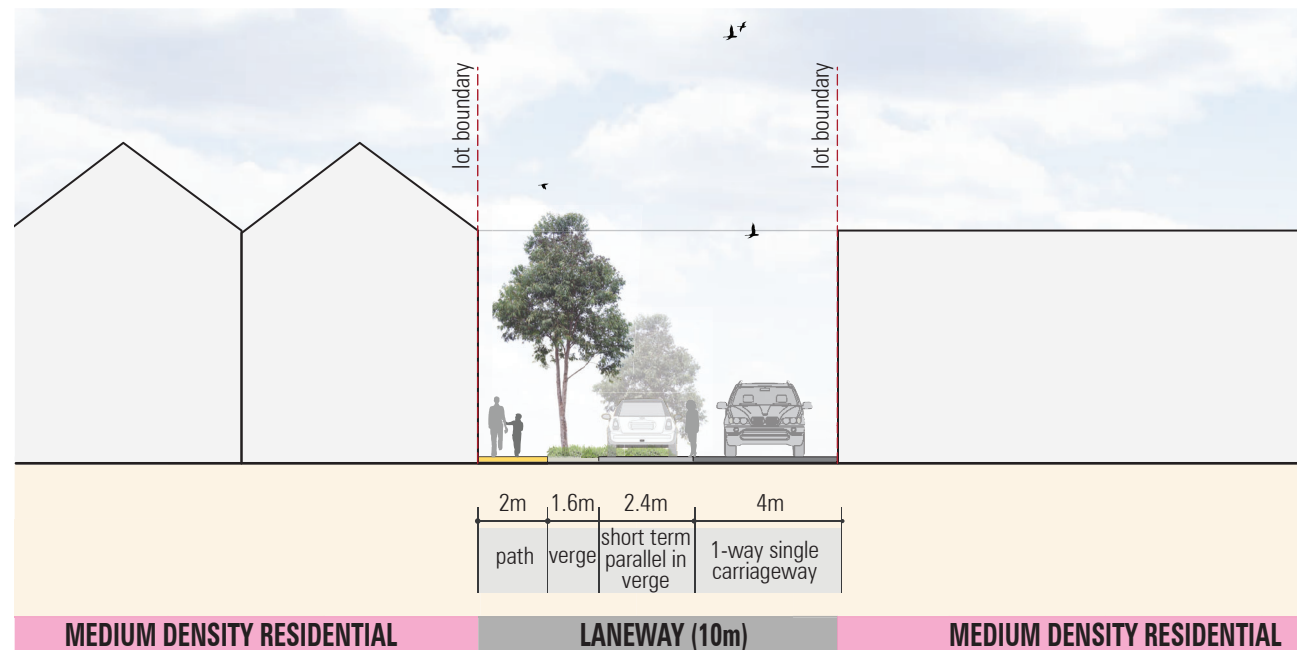
Example of attached duplex style dwellings with a combined crossover.

Vehicle access and movement

- Car parking and garages should be located away from pedestrian priority streets, or be designed to be recessive in the streetscape. Rear-loaded housing types are highly supported.
- Vehicle crossovers and driveways must be designed to prioritise the safety of pedestrians and minimise pedestrian- vehicular conflict.
- Tandem parking (within front setback) should not compromise the opportunity to establish landscaping within the front gardens.
- Provide 1 on street visitor car space for every 2 dwellings.
- Minimise the number of crossovers from residential lots onto Helen Road (designated secondary access road) by implementing an access lane to the rear of lots to protect cyclist safety.
- Restrict vehicle access onto Helen Road from the access lane (with landscape pinch point at intersection) to minimise rat running through the NAC and maintain pedestrian safety between Ontario Road and Village Green.
- Ensure the Local Access Street provides a minimum 1.8m wide pedestrian path and 4m wide nature strips to both sides of the street.
- Ensure crossovers are no greater than 4m wide. The consolidation of cross-overs are encouraged.
- Ensure driveways utilise materials and finishes, reflective of the surrounding landscape character Suitable materials include paving, exposed aggregate and coloured concrete incorporating paving bands. Permeable paving is highly encouraged.



Section CC - Proposed local access street



Section DD - Proposed access place

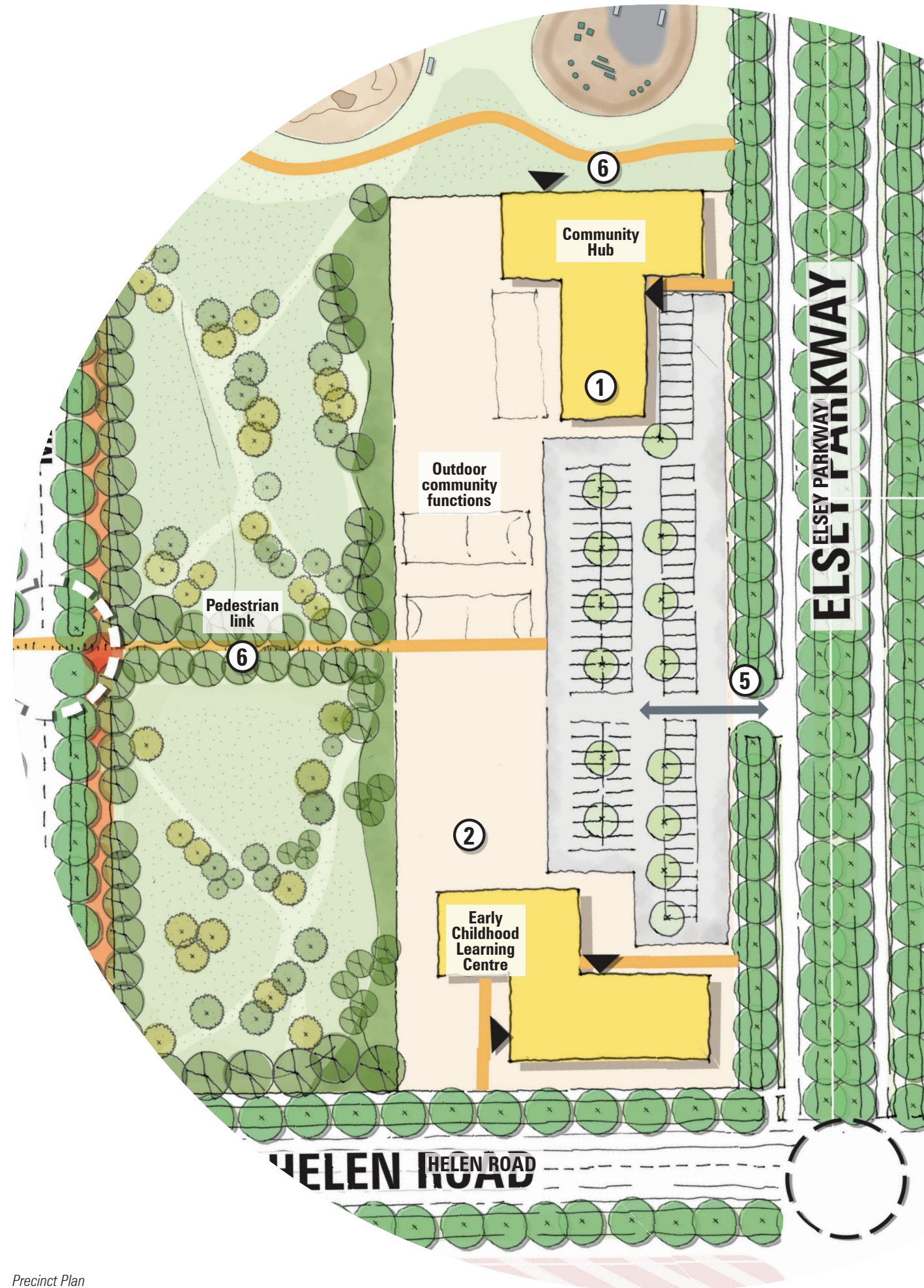
Precinct 3: Integrated Community Hub

Precinct Description

The Integrated Community Precinct will be a highly sustainable and functional precinct offering a wider range of services for a diverse population. The precinct will benefit from a direct frontage to Village Green and key pedestrian and cycle connections from the future Elsey Parkway. Uses established within the precinct will include a balance of public and private offerings, dependant on the nature of investment within the NAC over a medium-long term period while the residential area at its periphery is established.

Precinct Strategies

1. Establish **free-standing community buildings** positioned to address Elsey Parkway and the Village Green, offering outlook, pedestrian connectivity and potential expansion of uses during special events.
2. Support the development of **highly adaptable and functional** community buildings which can accommodate a diverse mix of uses both inside and outside. Uses may include privately owned community-based functions such as early childhood learning centres while allowing shared uses after hours.
3. Facilitate the integration of community uses which operate during both **day and evening** periods to maximise activation and surveillance within the NAC.
4. Ensure new community buildings **achieve benchmark measures Environmental Sustainable Design** and adopt low carbon footprint, integrating renewable energy, sustainable materials and passive heating/cooling to better manage long term maintenance costs for government and private community use providers.
5. Vehicle access is to be provided via a **single, crossover from Elsey Parkway** to a consolidated car parking servicing both buildings.
6. Provide **clear pedestrian connections** from surrounding precincts, through the public open space to the community buildings.
7. Acknowledge location of the precinct at the highest point in the NAC through management of **onsite detention and storage** of stormwater to avoid flooding of surrounding residential and commercial areas.



Precinct Plan



Design Guidelines

Building Siting and Design

- New buildings should not exceed 3 storeys in height and avoid overshadowing of footpaths and outdoor communal spaces.
- Buildings should be designed in the round to minimise visual exposure of 'back of house' from Elsey Parkway and the Main Street.
- Buildings should be setback a minimum 5m setback to Elsey Parkway and Helen Road to accommodate new landscape, wrapping from the public open space and car park edge between buildings and public footpaths.
- Buildings should be setback a minimum 3m setback to Public open space to accommodate landscape and open space areas for community uses.
- Ensure pedestrian entries (to all uses) are designed and sited to avoid steps or complicated ramp structures at building frontages. Any required level transitions are to be level transition contained within the building envelope.
- Building should incorporate operable façades to the public open space interface, allowing the expansion of uses for special community events.
- Encourage no fencing along the street frontage. Where fencing is to be provided for functional reason, it should be permeable to avoid inactive, blank walls and encourage passive surveillance to the surrounding public realm.
- Buildings should be designed to allow for flexibility and adaptable spaces to accommodate a range of uses.

Vehicle access and parking

- Avoid multiple crossovers to street frontages or crossovers within close proximity to the Helen Road and Elsey Parkway intersection which disrupt pedestrian and cycle paths.
- Refer to General Design Guidelines for design and management of at-grade car parking.

For further guidance, refer to **Section 2.7 (On-Street Parking)** and **Section 2.8 (Car Parking Lots)** of the Urban Design Guidelines for Victoria.

Landscape & Public Realm

- Frame street frontages to Helen Road and Elsey Parkway with generous landscape setbacks, comprising low shrubs and grasses as well as staggered canopy vegetation, to screen views to impermeable surfaces and provide shade to the public realm.
- Incorporate native and where possible indigenous species as part of the planting regime within all setbacks.
- Provide wayfinding signage along pedestrian paths at Elsey Parkway and within the public open space to entries of community buildings and various uses.
- Fencing to the public open space should be semi-transparent to allow outlook and passive surveillance between uses.
- Provide multiple (gated) access points from the Village Green to community uses to manage both connectivity and privacy between precincts (particularly for early childhood centres).

Stormwater Management

- Manage onsite water detention and storage for a 1 in 100 year storm event within the site including car parking areas and/or within the building footprint (rain water tanks).



Example of outdoor community spaces and facilities



Example of a low carbon footprint early childhood learning centre



Example of a community building screened with native landscape and trees

Precinct 4: Village Green

Precinct Description

The Village Green will be an inviting public open space in a highly accessible location at the edge of the future Greenway and Elsey Parkway. The open space will offer a range of active recreational and passive recreational activities, benefiting from direct abuttal with community uses and outlook from commercial and residential uses. The public open space will include canopy vegetation offering shade and respite to local residents, while accommodating community events during evenings and weekends to maximise the function of this important public asset.

Precinct Strategies

1. Establish precincts for uses within the public open space with the east functioning as an **active recreation** precinct, benefiting from direct connections to the Greenway and the Commercial Heart, while the south east offering **passive recreation** and contemplative spaces benefiting from direct outlook from the Lifestyle living precinct.
2. Establish **gradual shift in landscape character** within the park between the Commercial Heart Precinct, referencing the horticultural operations of the surrounds, toward the Lifestyle Living Precinct, referencing a rural native palette of the Murray River.
3. Position a **Nature Play** space to the north-east of the precinct benefiting from direct pedestrian connection and views from the Commercial Heart.
4. Establish an **outdoor gym station** adjacent to the Greenway and Parkway junction providing a bike station and rest area to maximise exposure and connections to residential areas.
5. Establish a **formal picnic, seating area** between the Playground and Greenway to facilitate passive surveillance and accommodate rest areas for families in the neighbourhood.
6. Establish a **flexible event space** between the Community Hub and Greenway comprising a large and open lawn area.
7. Implement a 3m wide **shared user path** along the boundary of the precinct, adjacent to the Main Street, providing off-road cycle connections between the Greenway and Helen Road to key destinations.
8. Establish a **linear passive recreation area** between the Community Hub and Lifestyle Living Precinct offering generous garden beds and canopy planting for shade and green outlook.
9. Implement key **pedestrian pathways** through the Precinct, connecting the Parkway with the Main Street at the Commercial Heart and local street.
10. Acknowledge the sloping topography of the precinct through **onsite detention and storage** of stormwater to avoid flooding of adjacent residential and commercial areas.



Precinct Plan

0m 25m 50m

Design Guidelines

Siting and Design

- Support the realisation of a small pavilion, or shade structures and public toilets. These structures should be located closer to other activity to benefit from passive surveillance while not dominating the Village Green.
- Future pavilions/ shelter should be designed as lightweight structures maintaining views between and avoiding the presentation of high blank walls to the public realm.
- Position the nature playspace to the north-east of the Village Green to benefit from pedestrian connectivity and outlook from the active retail uses of the Commercial Heart.
- Position park benches and flexible seating nodes (i.e. seating rocks or logs) surrounding by landscape to the periphery of the nature play area to allow parental/guardian surveillance.
- Establish a low and permeable fence and gate to the perimeter of the nature playspace to restrict children from running onto the street. Position the playground access to the inside of the Village Green (south).
- Avoid siting substations or service-related infrastructure in public open space.
- Position an outdoor gym to the intersection with the Parkway and Sixteenth Street encouraging arrival by walking and cycling. The outdoor gym should incorporate free-standing equipment and exercise facilities.

For further guidance, refer to **Section 3.3 (Local Parks)** of the Urban Design Guidelines for Victoria.

Landscape & Vegetation

- Establish lawn area in key locations including to the park frontage of the community precinct. Utilise drought tolerant, native planting or permeable surfaces such as compacted gravel where possible to avoid reliance on frequent maintenance and water.
- All grassed areas should be designed with slopes no steeper than 1:6 to manage ongoing maintenance such as mowing.
- Establish low planting in garden beds within the park, particularly to the interface with the community precinct as well as surrounding the nature playspace, picnic area and outdoor gym, to maintain views throughout the precinct.
- Establish tree planting every 10m along the shared user path adjacent to the Commercial Heart to provide views between retail uses and Village Green.
- Establish tree planting every 5m along the shared user path adjacent to the Residential Precinct to provide green outlook from dwellings and shaded recreation.
- Incorporate a mix of deciduous and evergreen canopy vegetation between the Community and Residential Precincts to provide a balance of shade and sunlight throughout the year.



Example of a nature play space



Example of pedestrian paths surrounded by native landscape



Example of an outdoor gym station



Example of a multi-functional path network providing active and passive uses

Public Realm

- Ensure the use of colour and materials for playground and public furniture elements has regard to the landscape character of the surrounds.
- Encourage the use of exposed aggregate or paving for new pedestrian paths in the park. Avoid the use of plain concrete.
- Implement a mix of lighting types including low level bollard, in-ground lighting and pole lighting along footpaths and at key activity areas at the north of the Village Green. Ensure lighting adjacent to the Residential precinct limits excessive spill or reflection into dwellings.

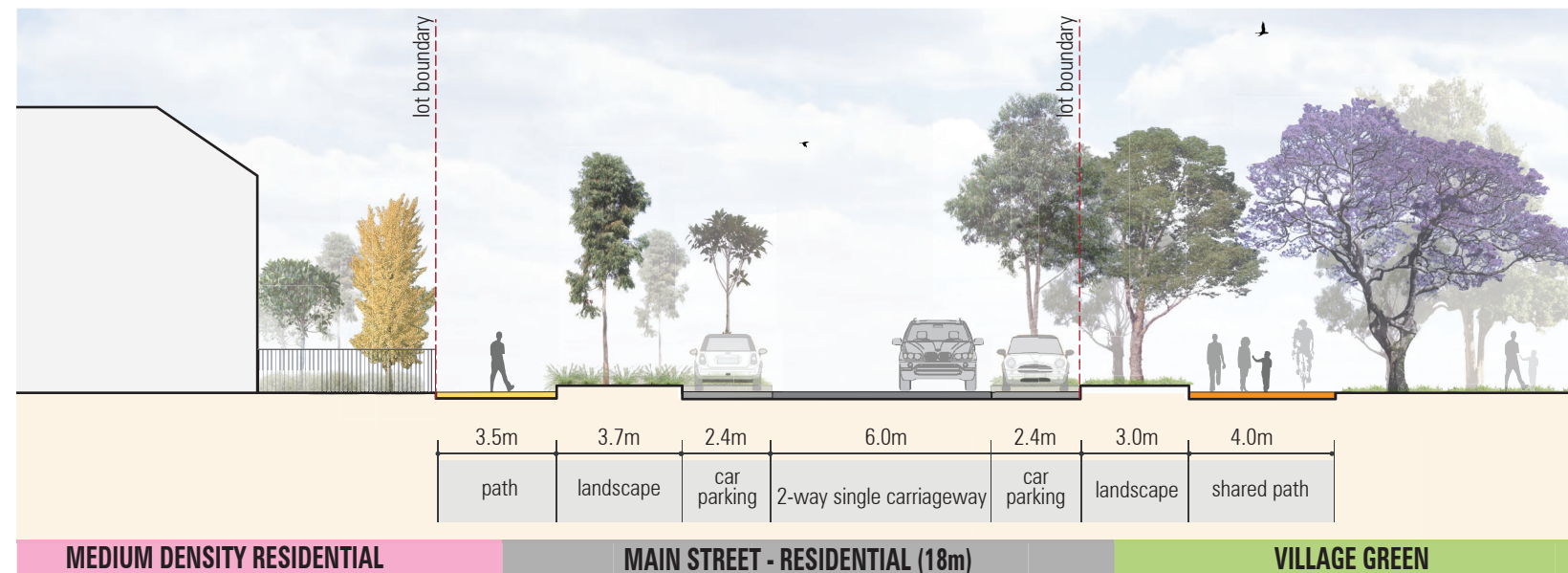
For further guidance, refer to **Section 6 (Objects in the Public Realm)** of the Urban Design Guidelines for Victoria.

Stormwater Management

- Manage onsite detention and storage for a 1 in 100 year storm event within permeable areas of the Village Green.

Access and Movement

- Establish 2 pedestrian crossings along the Main Street, including at the Access Lane adjacent to the Commercial Heart and the Local Access Street adjacent to the Alternative Residential Precinct, providing direct pedestrian and safe pedestrian access between precincts (and uses).
- Establish warning signs to cyclists along shared user path to give way to pedestrians crossing Main Street to the Village Green. Treatments could include painted surfaces and pole signs.
- Ensure pedestrian crossings are clearly defined along the Main Street integrating signage and where possible raised treatments (i.e. wombat crossings).
- Establish parallel parking to the Main Street at the park interface to
- Establish 2 landscaped pinch-points along the Main Street (removing 1 parallel car park to each side of the street) between Helen Road and the Access Lane to reduce the width of the road and visual extent of parallel car parking.
- Establish bike parking at key uses within the public open space including at the playground and outdoor gym.
- Investigate opportunity for roundabout at Helen Road and Main Street intersection to calm traffic along Helen Road. This will need to consider the transition of the Helen Road eastbound bike lane onto footpath level. Alternatively a T-intersection could be accommodated in tandem with a right-turn lane.



Section FF - Proposed Main Street (Alternative Residential to Village Green)



Example of a raised wombat crossing with landscape pinch-points



Example of a mid-block pinch-point



Example of a shared user path within public open space

Design Themes

The facilitation of a high-quality arrival experience and legible navigation through the future NAC is integral in ensuring a sense of place is achieved, framed by its unique regional landscape attributes. The NAC should exhibit a strong presence at the Sixteenth Street and Ontario Avenue junction, welcoming people on all modes of transport including pedestrians and cyclists.

The Masterplan has identified 3 key design themes which can influence design language, material and landscape palette for the precinct.

Murray River Heritage

The Murray River is a significant environmental and cultural asset of the Mildura Region. It is the longest river in Australia, supporting an extensive ecosystem of flora and fauna with evidence of Aboriginal occupation from over 20,000 years ago.

While views to the river cannot be experienced from within study area, its proximity to Lake Hawthorn and Lake Ranfurly to the north, provide exceptional landscape and material palette references. This character can be established within the residential and community interface streets as well as within the adjacent public open space (to the west of the NAC).

Horticultural Surrounds

The introduction of irrigation within the region in the late 19th century facilitated a rapid expansion of farming for the production of fruit and vegetables, establishing as a critical economic and employment contributor for Mildura.

Acknowledging the most recent use of the land as a vineyard and existing horticultural operations at the periphery of the Mildura South Growth Area, references to this unique character can be recognised within the public realm, particularly surrounding the Greenway and commercial area and potentially to vacant sites in the interim.

Greenway Interface

The proposed Sixteenth Street Greenway provides a useful reference for the future design of the public realm in the NAC. The ambition of the Greenway is to provide relatively uninterrupted pedestrian and cycle movement along the southern side of the road reserve, framed by new canopy vegetation, linear native under-storey planting and dry river bed swales.

This proposed treatment lends itself to expand into the adjacent public open space and Main Street within the NAC, to enhance the wayfinding experience of the study area as a pedestrian and cycle focused centre.

MURRAY RIVER HERITAGE



HORTICULTURAL SURROUNDS



GREENWAY INTERFACE



PART 4: IMPLEMENTATION RECOMMENDATIONS

The following section outlines a brief discussion on a range of issues, considerations and recommendations associated with the implementation of the Masterplan.

Issues & considerations

One of the key strengths of the Masterplan lies in its ability to set a template to guide and influence development approvals within the neighbourhood activity centre and the balance of the Masterplan area. It also functions to identify areas of public works and community facilities, such as the Integrated Community Hub (Precinct 3) and the Village Green (Precinct 4).

A key issue for the masterplan to contemplate relates to the potential funding of various civil and community infrastructure. In a typical Precinct Structure Plan process, during the rezoning of the land for future urban development it involves the preparation of the Development Contributions Plan Overlay (DCPO) which outlines a range of required developer contributions required to deliver identified civil and community infrastructure. From a review of the current planning controls a DCPO currently applies to the land, and sets out required financial contributions to be applied to future development.

However, a quite important consideration for the current Masterplan is that the public and community facilities outlined for Precincts 3 & 4 were not previously identified nor costed within the DCPO. This means there is no formal mechanism for Council to charge a developer contribution towards the cost of these identified facilities.

With regard to the proposed Integrated Community Hub (Precinct 3), the Masterplan designates that it is intended to be a: *'highly adaptable and functional community building which can accommodate a diverse mix of uses both inside and outside. Uses may include privately owned community-based functions such as early childhood learning centres while allowing shared uses after hours'*.

In order to further inform the size and type of community hub building required, as well as the intended future uses, it is necessary to undertake a detailed analysis of required community infrastructure. This additional piece of work would function to determine the size and requirements based on current and future needs and demand as the Mildura South growth front progressively develops. However, without this work having been completed, it creates uncertainty for Council regarding exactly what community facilities are needed to be delivered, as well as the financial ability to deliver such facilities to meet current and future demand.

Yet, in considering the broader question of the timely facilitation of development within the Masterplan area, Council does have an option to take a leading role. For example, Council could choose to take the lead in the facilitation of the Masterplan by opting to solely fund and develop such community facilities early. Should Council opt for this approach, it would function as a catalyst to encourage the timely development within the balance of the Masterplan area, particularly as it would be likely to stimulate sales and development of private land for residential development in the knowledge that community facilities are already in place, or in the process of being developed. However, should Council not be in a financial position to facilitate community infrastructure in this matter, there is potential to look at other public/ private partnership models to assist with its timely delivery.

Beyond such considerations, the Masterplan will act best as a mechanism to assess development proposals and functions as an advocacy tool for Council.

Potential staging

The potential staging of development within a PSP or Masterplan becomes a much greater consideration when dealing with large land parcels or development fronts, so as to ensure the appropriate sequencing of development relative to the roll out of civil infrastructure (power, gas, water sewerage etc). Due to the more compact size of land within the Masterplan area, sequencing of development is of lesser concern, although some initial investigations with servicing authorities is warranted.

Assuming that civil infrastructure does not raise any staging or sequencing issues, potential staging is more related to timing of the establishment of commercial and community facilities. Often a significant criticism of residents moving into new residential estates is the time lag between the completion of housing and the development of commercial and community facilities.

For obvious reasons commercial businesses are clearly not interested in developing and opening shops in the absence of an established commercial catchment. However, to avoid a potential delay in commercial businesses being established, Council could investigate a range of financial incentives such as rate reductions to encourage the earlier establishment of commercial businesses.

Likewise, as briefly discussed in the section above, Council could opt to facilitate the early development of the Integrated Community Hub (Precinct 3) and/ or the Village Green (Precinct 4).

Recommended actions

To ensure the masterplan has the greatest success of implementing its vision, this section identifies a number of recommended actions and specific projects across short, medium and long timeframes:

- Short term – 0 to 2 years
- Medium term – 3 to 5 years
- Long term – 6+ years

Each action has been further defined by the following categories to assist with their planning and delivery:

- Precinct – the precinct/s to which the action relates.
- Tool – how the action is to be implemented.
- Responsibility – person, department, or agency responsible for implementation.
- Requirement – whether or not the action is a mandatory action for Council, or could be actioned on a discretionary basis.
- Funding source – potential funding source to implement action.

Action	Precinct	Tool	Responsibility	Requirement	Funding Source
Short Term					
Following public consultation, finalise the Masterplan for formal endorsement and adoption by Council in accordance with the UGZ.	All	Council meeting	Council Planning Department	Mandatory	N/A – facilitated as part of normal Council functions
Develop an internal monitoring and review process, and embed within Council processes to ensure outcomes of masterplan are achieved and workable.	All	Internal Council processes	Council Planning Department (in consultation with relevant departments)	Mandatory	N/A – facilitated as part of normal Council functions
Liaise within servicing authorities (water, sewerage, power, gas, telecommunications), to establish if there are any technical servicing issues which would inform or influence staging of development within the Masterplan area.	All	Advocacy (with all relevant servicing agencies)	Council Planning Department (or otherwise as delegated to other Council departments),	Discretionary	N/A – facilitated as part of normal Council functions
Work closely with developers/ permit applicant to ensure surrounding residential subdivision approvals acknowledge the peripheral road network established under the Development Plan, Precinct Structure Plan and reinforced in Masterplan.	All	Advocacy (with developers / permit applicants)	Council Planning Department	Discretionary	N/A – facilitated as part of normal Council functions
Planning Department to proactively work with developers / permit applicants to ensure guidelines and strategies outlined in the masterplan are actively worked into schematic design/s.	Precinct 1 and 2	Advocacy (with developers / permit applicants)	Council Planning Department	Discretionary	N/A – facilitated as part of normal Council functions
Undertake community infrastructure analysis to establish the current and future needs and demand for community facilities, and to determine the type and timing of delivery of required facilities.	Precinct 3	Strategy	Council Community Infrastructure & Services Department	Mandatory	Council funds may need to be allocated, otherwise facilitated as part of normal Council functions
Investigate Council's ability to acquire land for Precinct 3 early and to potentially facilitate the development of the Integrated Community Hub.	Precinct 3	Internal Council processes	Council Assets, Community Infrastructure & Services Departments	Discretionary	Council funds may need to be allocated, otherwise facilitated as part of normal Council functions
Investigate the potential for Council to lease/sell community hub land to accommodate privately operated facilities.	Precinct 3	Internal Council processes & commercial negotiations	Council Assets, Community Infrastructure & Services Departments	Discretionary	Council funds may need to be allocated, otherwise facilitated as part of normal Council functions
Seek the early purchase/ acquisition of land bounded by Sixteenth Street, Main Street, Eley Parkway and Precinct 3 to facilitate the early development of the active elements of the Village Green, including the nature playspace, picnic facilities, and outdoor gym.	Precinct 4	Advocacy and negotiation with landowners	Council Assets, Community Infrastructure & Services Departments	Discretionary	Council funds, or other sources of grant funding
Develop parking demand and management strategy for the centre to inform car parking requirements.	All	Strategies	Council Planning Department	Discretionary	Council funds may need to be allocated, otherwise facilitated as part of normal Council functions
Investigate undertaking a formal amendment to the existing DCPO to capture additional funds required to development community infrastructure elements to be delivered in line with the Masterplan.	Precincts	Planning Scheme Amendment	Council Planning Department	Mandatory	N/A – facilitated as part of normal Council functions

Medium Term					
Undertake ongoing monitoring and review of the Masterplan implementation in line with the process developed and established in the short term.	All	Council internal processes	Council Planning Department (in consultation with relevant departments)	Mandatory	N/A – facilitated as part of normal Council functions
Ensure subdivision and development applications are generally in accordance with guidelines and strategies of masterplan.	Precinct 1 and 2	Development applications	Council Planning Department	Mandatory	N/A – facilitated as part of normal Council functions
Tender Expression of Interest for private operator and developer for community hub and potential for Public Private Partnership with Council.	Precinct 3	Tender	Council Community Buildings Department	Discretionary	N/A – facilitated as part of normal Council functions
Develop masterplan for village green and tender for construction.	Precinct 4	Public space	Council Parks Department	Mandatory	Council funds, grants or other sources of grant funding
Determine potential for Council development of public car parking site as incentive for commercial development based on current market demand for supermarket development.	Precinct 1	Capital Works	Capital Works	Discretionary	N/A – facilitated as part of normal Council functions
Investigate opportunities for Council to be able to provide economic incentives such as rates reductions to secure an anchor tenant and early development the supermarket site.	Precinct 1	Advocacy with developers / permit applicants	Council Economics Department & land owner	Discretionary	N/A – facilitated as part of normal Council functions
Work with PTV and bus operators to explore location of bus stops and interchanges and design and deliver infrastructure.	Precinct 1 and 3	Advocacy	Council, PTV, Bus operator	Mandatory	N/A – facilitated as part of normal Council functions
Planning permit for subdivision and development to condition the construction of local streets, public realm, and infrastructure, as determined by public works list, generally in accordance with Master Plan and Council Engineering Department requirements.	Precinct 1 and 2	Development applications	Council Planning Department, Council Infrastructure Department, developer	Mandatory	Developer works
Facilitate the acquisition of the balance of Precinct 4, bounded by Main Street, Helen Road and Precinct 4, and undertake completion of passive recreational areas.	Precinct 4	Advocacy and negotiation with landowners	Council Assets, Parks and Recreation	Mandatory	Council funds, or other source of grant funding
If the early acquisition and development of the northern active area of Precinct 4 is not possible, facilitate the acquisition of the entirety of Precinct 4, and undertake the full development of Precinct 4.	Precinct 4	Advocacy and negotiation with landowners	Council Assets, Parks and Recreation	Mandatory	Council funds, or other source of grant funding
Long Term					
Undertake ongoing monitoring and review of the Masterplan implementation in line with the process developed and established in the short term.	All	Council internal processes	Council Planning Department (in consultation with relevant departments)	Mandatory	N/A – facilitated as part of normal Council functions
Rezone land within activity centre to ensure consistency with completed activity centre development (C1Z, RGZ, PPRZ, PUZ).	All	Planning Scheme Amendment	Council Planning Department	Mandatory	N/A – facilitated as part of normal Council functions

Monitor and Review

The Masterplan has been developed based on the latest and most up-to-date information available and in line with Council aspirations. Due to the nature of a masterplan, it will likely be subject to change as new information becomes available; as various stages of development are negotiated with private developers; and with changing Council directions.

Key influences that may result in changes to the masterplan are:

- Future changes in retail and commercial demand.
- The provision of community facilities in line with need & demand analysis.
- A lack of development occurring on the ground within a given timeframe.

It is important then that the Master Plan is subject to review at various intervals and as different stages are implemented so as the document is workable and flexible enough to adapt to change.

APPENDIX 1

BACKGROUND REVIEW
URBAN DESIGN & TRAFFIC ENGINEERING



Memo

To:	Peter Douglas	Date:	March 2019
Company:	Mildura Rural City Council	From:	Hansen Partnership
Cc:			
Re:	Mildura South NAC Stage 1: Background Review		

The following memo provides a concise outline of relevant background information relating specifically to the proposed Mildura South Neighbourhood Activity Centre (NAC). This review seeks to highlight the key parameters found in relevant background documents and identify potential gaps for the Urban Design Framework to investigate. It is understood that considerable technical work has been prepared relating to the designated NAC site, over the last five years.

The NAC The following documents were reviewed as part of this background review:

- Mildura South Neighbourhood Activity Centre Economic Assessment (August 2018)
- Sixteenth Street Greenway Interface: Amendment C100 Part 2 (June 2018)
- Mildura South (Sixteenth & Deakin West) Development Plan (October 2014)
- Mildura South Urban Design Plan: Precinct Structure Plan (October 2014)
- Mildura Housing and Settlement Strategy (December 2013)

To aid in the communication of Urban Design Recommendations, an Issues and Opportunities diagram is attached to this memo which will assist with ongoing discussions with relevant stakeholders and Council during the subsequent phases of this project.

Project Background

The NAC forms part of the Mildura South Precinct Structure Plan adopted through Amendment C75 in 2015.

The Amendment sought to implement the strategic intent of the *Mildura South Urban Design Plan Precinct Structure Plan* (MSPSP) and the *Mildura South (Sixteenth and Deakin West) Development Plan* (MSDP) which were adopted by Council in 2014. These documents set out Council's plan for managing residential development and in particular supports the development of a Neighbourhood Activity Centre at Sixteenth Street and Ontario Avenue.

The Amendment applied the **Urban Growth Zone** (Schedule 1) to the land identified for the NAC. As outlined in the Precinct Structure Plan map, the NAC illustrates indicative areas for commercial, public open space, community and medium density residential uses in association with a proposed street network. The precise boundary of the Commercial 1 Zone, Public Use Zone and Residential Growth Zone will be determined by an Urban Design Framework.



Extract from the MSPSP of the proposed NAC

The Precinct Structure Plan (2014) outlines the following indicative land use mix for the 8ha NAC study area:

- **2ha** to be allocated for retail uses which should include a 3,500-4,000 sqm full line supermarket and associated retail suitable for a neighbourhood centre;
- **2ha** to be allocated for community use;
- **2ha** to be allocated for public open space, and
- the remaining land – approximately 2ha - to be used for residential with higher density around the retail area.

Assessment & Recommendations Table

The following table of recommendations outlines key considerations found within the earlier Development Plan (2014), Economic Assessment Report (2018) and the Sixteenth Street Masterplan (2016) and how they may influence the curation of the masterplan in following Stages. The table is broken into 3 themes including access and movement, public open space and land use mix.

Reference Document	Key Consideration	Relevance	Hansen Recommendation
Access & Movement			
Mildura South Development Plan (2014)	<p><i>Identify existing roads (Ontario Avenue) as key vehicular movement corridor and prioritise vehicular movement, use these roads for bus routes where possible.</i></p> <ul style="list-style-type: none"> ▪ 30m road reserve ▪ 60km/h speed limit ▪ 12m carriageway including 2 lanes of traffic in both directions ▪ 1.5m footpath ▪ 6.9m landscaped verge to both sides of road. 	High	<p>Explore opportunities for the proposed NAC bus interchange to be positioned along Ontario, adjacent to the proposed supermarket, away from the internal edge road. Further testing is required to determine suitable pedestrian links from Ontario Avenue, through the commercial precinct to the village green.</p> <p>The management of safe pedestrian crossings will need to be considered along this road.</p>
	<p><i>The Sixteenth Street and Ontario Avenue intersection (north) should be considered for signalisation.</i></p>	High	<p>This is considered appropriate, given the preference for bus routes, delivery vehicles and trucks to access the NAC.</p>
	<p><i>Car parking, freight and loading for retail premises should be primarily accessed from Ontario Avenue.</i></p>	High	<p>Management of cross-overs and the direction of entering/exiting vehicles is an important consideration. This will influence the positioning of retail frontages to Ontario Avenue subject to loading and servicing requirements.</p> <p>The positioning of the proposed loading crossover requires further testing from</p>

		<p>Traffic Engineers, given proximity to proposed signalised intersection.</p> <p>It is acknowledged that the current Development Plan includes car parking access from the internal edge road. Further testing is required to potentially avoid crossovers from this lower order street (opposite public open space).</p>
<p>Elsey Parkway (south-east) will form a key part of the pedestrian and cycle network and play a key role in the amenity of the neighbourhood. Recognise that there will be two stages in their development on the basis of subdivision patterns.</p> <p>Parkways will be the key pedestrian and cycle connections to Sixteenth Street.</p> <ul style="list-style-type: none"> ▪ Road reserve 30.6m ▪ Single carriageway in both directions. ▪ 1.8m bike path including 2.5m verge in both directions. 	Medium	<p>It is acknowledged a Parkway is positioned along the south-east boundary of the NAC. The interim Parkway road reserve will be 17.5m wide and the long-term road reserve will be 35m. Further testing is required for the functional attributes of the intersection with the Edge Road adjacent to the Village Green/Community Uses. A left-in/ left-out function may be suited to the interim road configuration.</p>
<p>Sixteenth Street (north-east) was identified within the Mildura South Framework Plan as forming a key 'green spine'. Create a significant landscaped verge with generous canopy plantings and incorporate separated pedestrian and cycle routes, as well as generous understorey planting and other landscape features. (30m wide road reserve).</p>	High	<p>A masterplan has been prepared since the Development Plan (refer to Sixteenth Street Masterplan Report). The role of Sixteenth Street as a green spine has been maintained. The UDF should clearly delineate pedestrian, cycle and vehicle access from this main road into the NAC.</p> <p>The intersection with the central Edge Road is an important consideration for the positioning of active commercial uses and maintaining pedestrian priority to the south.</p>
<p>Helen Road (south-west) is classified as a Secondary Road, aligned to the south west boundary of the NAC. The role of Secondary Roads is to provide connections between Access Avenues.</p> <ul style="list-style-type: none"> ▪ 28m road reserve 	Medium	<p>This road facilitates direct frontages with medium density housing (apartments) and community uses. Further testing is required to determine extent of required crossovers from NAC uses (in association with medium density housing designation)</p>

	<ul style="list-style-type: none"> ▪ 12m carriageway + parallel parking ▪ 2m cycle paths ▪ 1.5m pedestrian paths 		<p>while maintaining safe pedestrian and cycle infrastructure.</p> <p>Where dwellings front Helen Road, a rear laneway may be preferred providing for front to back arrangements and minimise crossover frequency.</p>
	<p>Provide an 'edge' road around the village green with a very low speed limit and some on-street car parking, including a generous bus stop.</p> <ul style="list-style-type: none"> ▪ 18m road reserve ▪ 9.5m carriageway including parallel parking on 1 side. ▪ 1.5m pedestrian path +5m verge. 	High	<p>Explore opportunities for the public open space to directly abut community and/or medium density residential uses to provide direct (and safe) pedestrian connections to the park. The current configuration of the development plan positions the POS in an 'island' formation, surrounded by roads on all sides. The public open space may benefit from passive surveillance and activation through direct abutments to complementary 'community' uses.</p> <p>Alternatively, the east-west oriented 'Edge Road' could benefit from a 1-way condition (southbound). Buses should also avoid using this lower order road.</p> <p>The edge road could be prioritised for pedestrian and cycle movement in combination with slow vehicle speeds to access the NAC services. Ensuring the edge road does not operate as a 'rat-run' through the centre is highly critical.</p>
	<ul style="list-style-type: none"> ▪ Local roads will accommodate footpaths on both sides of the reserve of a minimum width of 1.2m. ▪ Non-local roads will accommodate a minimum path width of 1.5m. ▪ Sixteenth Street will accommodate a minimum path width of 2m. 	Medium	<p>It is understood, local roads are not fixed and are able to be reconfigured.</p> <p>Further testing is required surrounding the minimum path width for streets in the NAC context. Given the higher volumes of pedestrian movement, all streets should accommodate a minimum 2m path width, subject to traffic engineering analysis.</p>
	<p>The NAC is proposed to accommodate a small bus 'interchange' where there may be opportunities to catch buses to a greater variety of locations.</p>	High	<p>Further testing is required to determine the appropriate location and configuration of bus stops and/or interchange within the NAC. Subject to Traffic Engineering advice, any bus interchange will need to consider pedestrian safety and</p>

			minimisation of vehicle conflict. The current location of the interchange between the park and supermarket may need to be reconsidered.
Mildura South Development Plan (2014) <i>Relevant Guidelines</i>	<ul style="list-style-type: none"> ▪ <i>Car parking should have a skin of residential or commercial uses and landscape buffers to screen views of car parking from the public realm.</i> ▪ <i>Discourage establishment of any drive-thru takeaway outlets within the centre.</i> ▪ <i>Ensure clear and amenable pedestrian access is provided to and between different land uses within the centres.</i> 	Medium	<p>These guidelines are considered relevant for the development of the UDF.</p> <p>Further consideration is required regarding the preference for consolidated car parking as opposed to scattered parking throughout the precinct.</p>
Sixteenth Street Greenway Interface: Amendment C100 Part 2 (June 2018)	<p><i>The masterplan proposes the following road configuration to the NAC interface:</i></p> <ul style="list-style-type: none"> ▪ <i>3m wide traffic lane in both directions.</i> ▪ <i>60 degree angled parking bays to the south (NAC).</i> ▪ <i>2m wide footpaths to both side of the road.</i> ▪ <i>3m wide dedicated bike path to the south (NAC)</i> ▪ <i>2.1m wide parallel parking to the north.</i> ▪ <i>A pedestrian crossing to the south of the internal edge road.</i> 	High	<p>The masterplan builds on the objectives outlined in the earlier development plan supporting the implementation of a high amenity movement corridor supporting protected (and generous) pedestrian and cycle infrastructure. The UDF should maintain the proposed alignment of paths and landscape, acknowledging the removal or avoidance of crossovers from Sixteenth Street and instead advocating for vehicle access via the Avenues or Parkways.</p>
	<p><i>At the Edge road and Sixteenth Street junction a 6.3m wide landscape verge (or outstand) is proposed to frame the entry into the NAC.</i></p>	Medium	<p>The UDF should integrate the proposed masterplan concept which applies to the north-east boundary of the study area.</p>

Reference Document	Key Consideration	Relevance	Hansen Recommendation
Public Open Space			
Mildura South Development Plan (2014)	<p><i>The Sixteenth Street North Village Green will be the central gathering space for the Mildura South community.</i></p> <p><i>The location of the village green adjoining the main (retail) activity centre and community hub of the Mildura South growth area is important. Medium density housing and community infrastructure should also be provided in this area.</i></p>	High	<p>The siting of the public open space at the junction with Sixteenth Street and the Parkway is a positive outcome to ensure high amenity pedestrian and cycle links from surrounding residential areas are achievable.</p> <p>The UDF can provide further guidance for the configuration of open space functions and activities as well as the alignment of pedestrian links/crossings into the reserve from surrounding commercial, community and residential uses.</p>
	<p><i>Include an Edge Road separating the park from adjoining retail, cafes, higher density housing or community uses. This road should not be dominated by car parking and should include a dedicated bus stop area.</i></p>	High	<p>As previously discussed, the Edge Road is an acceptable lower-order access link between commercial activities and open space. It is recommended however, that any bus interchange is relocated away from this road given buses tend to sit idle at these interchanges and disrupt pedestrian connections between destinations.</p>
	<p><i>The indicative concept for the parkland includes the following activities:</i></p> <ul style="list-style-type: none"> ▪ <i>Grassed areas</i> ▪ <i>BBQ and seating area</i> ▪ <i>Tennis and basketball courts</i> ▪ <i>Outdoor gym equipment</i> ▪ <i>Skate park and playground</i> ▪ <i>Community meeting rooms</i> 	Medium	<p>The UDF can provide further clarity for the siting, size and alignment of activities within the reserve and whether all activities are feasible in this 2ha location.</p> <p>Further, Council may seek to provide indicative budget allocation for the public open space, where an interim design concept may be required during the initial phases of residential and commercial development.</p>
Mildura South Neighbourhood Activity Centre Economic Assessment (August 2018)	<p><i>A larger portion of public open space may be implemented during the early stages of the NAC development. This area would allow for the future expansion of commercial and retail uses when the Mildura South population increases.</i></p>	Medium	<p>Further testing and investigation areas are required to determine the suitable location and configuration of any additional 'interim' public open space within the NAC. This use should offer different functions from the Village Green and be programmed to easily transition into commercial development (i.e. paved</p>

			'urban' plaza accommodating temporary pop-ups or events).
<p>Mildura South Development Plan (2014)</p> <p><i>Relevant Guidelines</i></p>	<ul style="list-style-type: none"> ▪ Provide useable open spaces that are generous in dimension to allow for recreational and sport activities. ▪ Include planting of grasses, shrubs and trees that are of indigenous origin, drought tolerant, low maintenance and suitable to the climatic conditions of the area. ▪ Offer direct interfaces with dwellings. ▪ Provide a suitable range of park infrastructure. ▪ Design open spaces having regard to the Safer Design Guidelines of Victoria. ▪ Ensure open space has a road frontage to all edges. 	Medium	As outlined above, the Village Green provides substantial opportunities for direct abutments with community uses and lower order roads which promote pedestrian and cycle movement. The public open space should offer activities which cater to the local residential catchment as well as offer flexible spaces for community events and functions associated with the NAC designation.
Land Use & Built Form			
<u>Medium Density Housing</u>			
<p><i>Mildura South Neighbourhood Activity Centre Economic Assessment (August 2018)</i></p>	<p><i>The allocation of 2 hectares of land for medium density housing in the NAC remains a sound long term provision to provide for a range of housing options and a 'complete community in itself'.</i></p> <p><i>The area would accommodate approximately 56 medium density dwellings with an average lot size of 250m². This would comprise 22% of the total medium density dwelling stock expected in the DP area.</i></p>	High	<p>Further testing is required to determine the appropriate 'typology' and location of medium density housing in the NAC, having regard to the preferred street network and public open space.</p> <p>The 'type' of medium-density housing will be substantially guided by appropriate vehicle access in accordance with the proposed street network.</p> <p>Rear loaded products may be suited toward the public open space or Parkways, where semi-detached dwellings could be positioned to secondary roads.</p>
	<p><i>Key informants have identified that the cost of construction for medium density housing is not necessarily cheaper than standard dwelling</i></p>	High	<p>It is worthwhile exploring medium-density dwelling typologies that are desirable from a 'life-style' point of view given proximity to future public open space and commercial offerings.</p>

	<i>densities, there for making the product less desirable.</i>		Medium density housing may support aged care or retirement living products.
	<p><i>The medium density housing should also be suitably diverse. The built form could include:</i></p> <ul style="list-style-type: none"> ▪ <i>Single storey units on small lots</i> ▪ <i>Double storey terraced town houses (not yet a favoured form of development in Mildura but which has been popular elsewhere)</i> ▪ <i>Shop-top apartments</i> ▪ <i>Retirement villages</i> 	Medium	<p>High density typologies may be suited toward to retail/supermarket node with consolidated or 'skinned' car parking.</p> <p>Attached and semi-attached townhouses or units should be located in close proximity to public open space and higher order streets, such as Helen Road to the south east/west of the study area.</p> <p>Retirement living may be suited to abuttals with community functions and access to public transport.</p>
	<i>The Masterplan for the NAC will need to identify how the housing relates to the other uses in the NAC.</i>	High	Consideration toward the 'hierarchy' of medium density housing in relation to standard residential subdivision as well as proposed commercial/retail/community uses will be required.
Mildura South Development Plan (2014)	<i>Areas identified for the provision of 'medium density' housing can be utilised to provide other 'accommodation' related uses which provide for permanent accommodation such as aged care facilities or retirement village, co-housing or villa unit developments.</i>	Medium	<p>Further investigation with Council and landowners are required to determine the capacity to deliver alternative medium density housing products.</p> <p>Social and/or affordable housing models within the NAC study area may be appropriate given proximity to services and facilities.</p> <p>Aged Care and Retirement Living facilities could also be appropriate in a portion of the designated community use parcel.</p>
	<p><i>Parcels of land over 3ha within the Mildura South growth area must include:</i></p> <p><i>A minimum area of 5% of net residential development area demonstrating a density of 40 dwellings per hectare. These medium density areas must be provided in suitable locations such as along main roads and adjoining areas of non residential land uses, such as parks or retail / community</i></p>		

	<i>uses. Additional parameters around the provision of medium density lots are outlined below.</i>		
Mildura South Development Plan (2014) <i>Built form guidelines</i>	<ul style="list-style-type: none"> ▪ <i>Medium density housing should not exceed 3 storeys.</i> ▪ <i>Side setbacks between properties should be minimal to allow for maximum use of the land.</i> ▪ <i>Dwellings on corner sites require special treatment to address both street frontages.</i> ▪ <i>Dwellings with frontages to public opens space should maximise passive surveillance and outlook.</i> 	High	<p>High level feasibility testing for housing types (townhouse, apartment, unit etc.) is required to determine an indicative appropriate building envelope that facilitates adequate daylight and amenity for new dwellings, while maximising the capacity of the land to deliver alternative housing types.</p> <p>The type of medium density housing will be determined by location and interface conditions as well as vehicle and parking requirements subject to Traffic engineering advice.</p>
<u>Commercial</u>			
<i>Mildura South Neighbourhood Activity Centre Economic Assessment (August 2018)</i>	<p><i>At full development, the NAC can support a medium-sized supermarket (1500m²) and speciality shops with a total retail floorspace of 3000m² plus 750m² of non-retail space.</i></p> <p><i>The total land requirement including open space, circulation and parking would be approximately 1.2ha.</i></p>	High	<p>Further testing is required to determine the suitable size and configuration of commercial and retail forms within the NAC having regard to the anticipated future population. An interim development option may be necessary to ensure a full-line supermarket can be delivered in the long term while preserving land for future expansion.</p> <p>It is also necessary to explore the suitability of the location of the proposed supermarket to the north-west corner of the NAC. Consideration is required toward pedestrian footfall and ease of access to car parking.</p>
	<p><i>A full-line supermarket may be difficult to sustain given the expected population growth. Should the population at full development be more than expected (above 9000 people) the NAC should accommodate for a full-line supermarket and larger range of speciality shops, therefore requiring 2ha.</i></p>	Medium	As above.

	<p><i>Additional public open space could be positioned adjacent to the commercial offering to allow for future expansion of the supermarket and retail provisions.</i></p>	Medium	<p>The location and function of any interim public open space should be carefully considered to ensure it is distinct from the Village Green, potentially offering temporary retail or community uses.</p>
	<p><i>Non-retail elements of a NAC has different demand indicators and so the usual approach in planning new centres is to allow a proportion of the total floorspace to be non-retail. In this case, 20% of total space has been allocated to non-retail purposes.</i></p>	Medium	<p>Given the breadth of the Sixteenth Street verge, it is recommended that non-retail uses are positioned this frontage where they can benefit from green outlook rather than an active pedestrian thoroughfare.</p>
<p><i>Mildura South Development Plan (2014)</i></p>	<p><i>2ha of the identified area will be allocated to retail /commercial space by private developers. The masterplan will need to provide key parameters for the development of this centre in both an interim and a final preferred format.</i></p> <p><i>This includes a full line supermarket (3000m2), specialty retail, personal services and hospitality uses.</i></p>	High	<p>The NAC economic assessment is the guiding document to facilitate commercial development in the study area. The siting and interface arrangement of proposed commercial and retail uses should have regard to the preferred street hierarchy and pedestrian amenity. There is an emerging preference to position retail to the north-south edge road, capturing the activity and vibrance of the adjacent open space and pedestrian oriented street.</p> <p>The back-of-house for the supermarket and higher order retail uses should be positioned to Ontario Avenue with more active uses positioned to Sixteenth Street and the Edge Road.</p>
<p><u>Community Uses</u></p>			
<p><i>Mildura South Development Plan (2014)</i></p>	<p><i>Land identified for community facilities is likely to be partially acquired by Council for community uses but other facilities such as the medical centre are likely to be acquired by private developers.</i></p> <p><i>The masterplan will need to include input from community planners to identify specific facilities and floor areas necessary to support the anticipated population.</i></p> <p><i>Some of the land currently identified for 'community' uses may</i></p>	Medium	<p>Since the adopting of the Development Plan, there is limited guidance from Council regarding the demand or allocation of land for community uses.</p> <p>Further testing and investigations are required by Council, to determine suitable community uses for the NAC, including but not limited to:</p> <ul style="list-style-type: none"> - Childcare centres. - Aged Care. - Meeting or function facilities. - Health services.

	<i>be available for additional private residential development.</i>		
--	---	--	--

Yours faithfully
Hansen Partnership Pty Ltd
Urban Design Team

DRAFT

Project No. 180378

20 March 2019

Gerhana Waty
 Hanson Partnership Pty Ltd
 Level 4 126 Exhibition Street
 Melbourne VIC 3000

Via email: gwaty@hansenpartnership.com.au

Dear Gerhana,

**RE: Mildura South Neighbourhood Activity Centre
 Traffic Engineering Advice and Design Parameters**

Trafficworks has been engaged to provide traffic engineering advice and design parameters to be considered in the development of the Mildura South Neighbourhood Activity Centre (NAC). Key considerations and design parameters to be incorporated in the design are detailed as follows.

Road Hierarchy

The proposed road hierarchy should be implemented in line with the Mildura Shire Council Planning Scheme *Clause 56.06 – Access and Mobility Management*. The road hierarchy is summarised in Table 1 below.

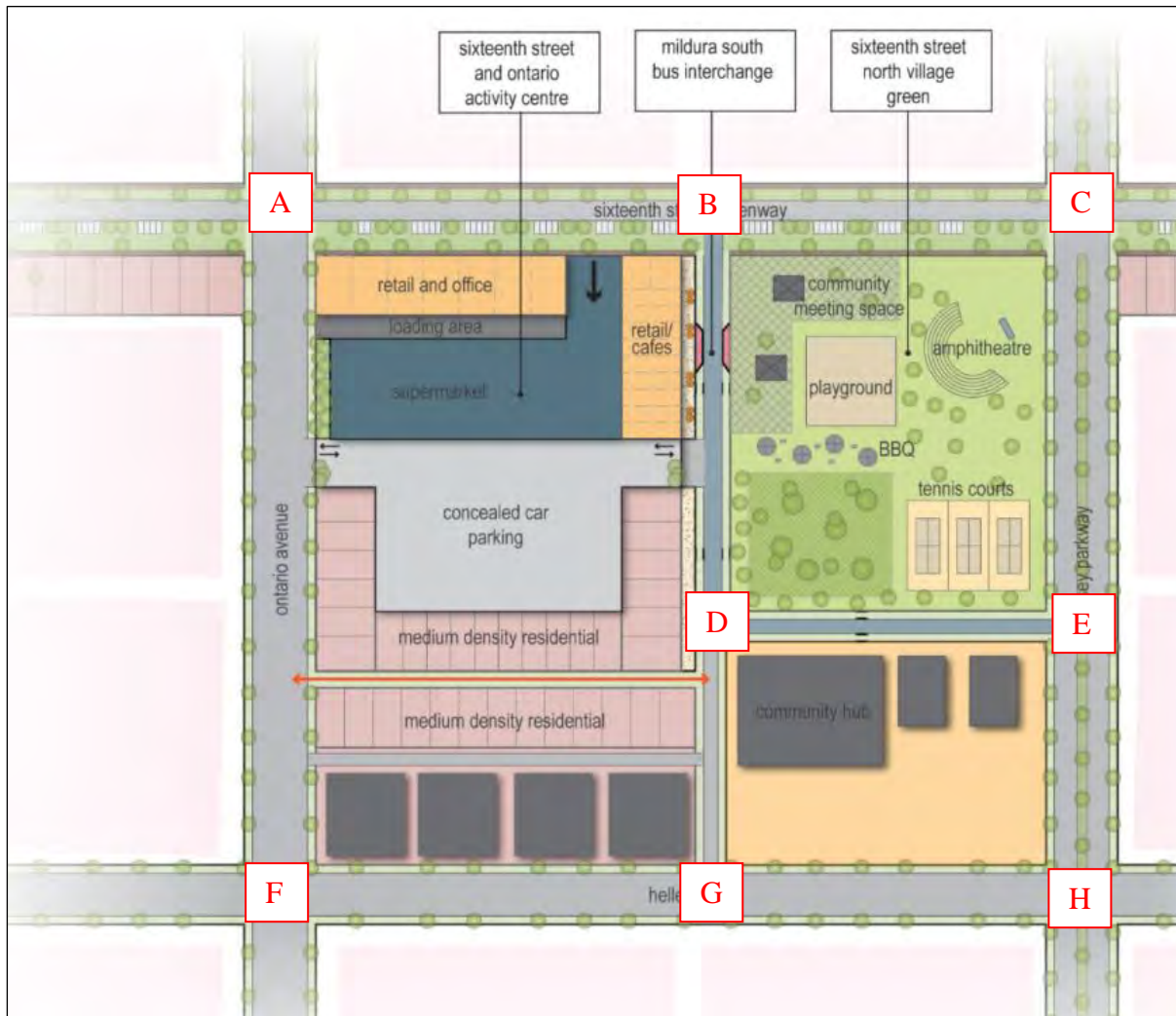
Table 1: Road Hierarchy

Road Type	Traffic Volume	Target Speed	Cross Section
Access Lane	300 vpd	10 km/h (shared zone)	5.5 m width No verge, car parking or footpaths
Access Place	300 - 1,000 vpd	15 km/h	5.5 m carriageway 7.5 m combined verge (with 2.5 m and 3.5 m min each side) Kerbside car parking on one side OR Hardstand car parking within verge 1.5 m wide footpaths (unless signed as a shared zone)

Road Type	Traffic Volume	Target Speed	Cross Section
Access Street Level 1	1,000 - 2,000 vpd	30 km/h	5.5 m carriageway 4.0 m verge on both sides Hardstand car parking within verge 1.5 m wide footpath both sides (widened to 2.0 m in activity centres)
Access Street Level 2	2,000 - 3,000 vpd	40 km/h	7.0 - 7.5 m carriageway 4.5 m verge on both sides Kerbside car parking on both sides 1.5 m wide footpath both sides (widened to 2.0 m in activity centres)
Connector Street Level 1	3,000 vpd	50 km/h	3.5 m wide lanes / 7.0 m carriageway 4.5 m verge on both side 2.3 m wide intended car parking bays 1.5 m wide footpath both sides (widened to 2.0 m in activity centres) On-street cycle facilities (optional)
Connector Street Level 2	3,000 - 7,000 vpd	50 - 60 km/h	3.5 m wide lanes / 7.0 m carriageway 6.0 m verge on both sides, plus central median 2.3 m wide intended parking bays 1.5 m wide footpath on both sides OR 2.5 m shared path on both sides On-street cycle facilities (optional)

Proposed Internal Road Network

Figure 1: Mildura NAC



The following provides comments related to the configuration and operation of the proposed internal road network within the Mildura South NAC:

- Ontario Avenue (A to F)
 - Designated as an “Access Avenue” in the Mildura South PSP, which aligns with a Connector Street cross section (undivided road), including parallel car parking and bus stops.
 - As per the Mildura Planning Scheme, bus stops should be provided kerbside (rather than indented).
 - Primary access to the off-street car parking area should be via Ontario Avenue, rather than the NAC Access Road.
 - On-street loading opportunities for the retail stores and offices fronting Sixteenth Street Greenway could be provided via Ontario Avenue.
 - Access to the supermarket loading bay will be via Ontario Avenue. This access should be designed to ensure vehicles can both enter and exit the loading bay in a forward direction (i.e. not required to reverse from Ontario Avenue).

- Direct access onto Ontario Avenue from medium density residential development (townhouses or apartment complexes) would be appropriate, however, the number of crossovers should be minimised.
- Hellen Road (F to H)
 - Designated as a “Secondary Road” in the Mildura South PSP, which aligns with a Connector Street cross section (undivided road), including on-road bicycle lanes and parallel car parking on both sides.
 - Direct access onto Hellen Road from medium density residential development (townhouses or apartment complexes) would be appropriate, however, the number of crossovers should be minimised.
- Elsey Parkway (C to H)
 - Designated as a “Parkway” in the Mildura South PSP, which aligns with a Connector Street cross section (divided road), including separated on-road bicycle lanes and parallel car parking on both sides.
- Sixteenth Street Greenway (A to C)
 - Designated with a unique “Sixteenth Street Greenway” cross section in the Mildura South PSP, which aligns with a Connector Street cross section (undivided road), including a two-way off-road bicycle path, indented parallel car parking on one side and angled car parking on the other side.
 - All bicycle and pedestrian crossing points need to be designed to ensure the priority is clear (pedestrian and cyclists or vehicles to give way) e.g. at the intersections with Ontario Avenue, the NAC Access Road and Elsey Parkway.
 - Intersections between the footpath and bicycle path should ensure clear priority is provided to path users on both facilities. This could include:
 - continuous centre line along the bicycle path through the intersection
 - bicycle symbols on bicycle path either side of the intersection
 - give way line marking, LOOK BIKE line marking and TGSIs installed on the footpath
 - The number of property crossovers onto Sixteenth Street Greenway should be minimised.
- NAC Access Road (B to E)
 - Designated as an “Edge Road” in the Mildura South PSP, which generally aligns with an “Access Street Level 2” cross section, but modified to include indented parallel car parking on one side (adjacent to the open space).
 - This is the main roadway through the centre of the NAC. The development plans indicate a major bus terminus at its northern end.
 - On-street loading opportunities will need to be provided for the abutting retail stores.
 - Consideration to be given on providing a 40 km/h speed limit. Bus friendly traffic calming devices can be considered to assist in managing speeds.
 - The PSP indicates that on-street car parking will be provided along one side only, adjacent to the park. Convenient on-street car parking should be maximised adjacent to the retail stores and community facilities. This is particularly important

for the community uses, which does not propose any nearby off-street car parking. This could be achieved by:

- reducing the verge width / providing indented car parking within the verge
- increasing the road reserve width
- converting the roadway to one-way operation
- Secondary access to the off-street car parking area should be via the NAC Access Road.
- It is unclear if an off-road bicycle path will be included within the open space, however if not, cyclists will be required to share the carriageway with vehicular traffic.
 - Consideration should be given to accommodating cyclist movements within the NAC, with bicycle facilities providing connections to key destinations and end-of-trip facilities (i.e. bicycle racks).
 - An off-road bicycle facility should be considered within the open space on the east side of the NAC Access Road.
 - This is particularly important should a shared area connection (or pedestrian / cycle only area) be implemented to connect with Hellen Road.
- NAC internal north - south road (D to G)
 - This roadway is not specifically mentioned in the Mildura South PSP, but it is expected to be similar to the “local road” layout, which generally aligns with an “Access Street Level 2” type cross section and modified to include a wider carriageway width.
 - This roadway is not considered integral in providing vehicle access through the NAC, and therefore consideration could be given to designating this section of road as a shared area, with priority given to pedestrians and cyclists rather than vehicular traffic and a speed limit of 10 – 15 km/h applied. Implementation of a shared zone will need to be complimented with landscaping and contrasting pavement material in order to create a slow speed environment.
 - To further increase pedestrian and cyclist separation, this road segment could be fully closed to vehicular traffic during peak hours of operation for the community hub and associated community facilities.
 - If the facilities are implemented, a bicycle connection should be provided between the shared area and the off-road bicycle path along the NAC Access Road within the open space.
- East-West Laneway
 - This roadway is designated as a “Rear Access Lane” in the Mildura South PSP, which align with an “Access Lane” type cross section, with no parking or footpath provision.
 - This laneway will provide access to the medium density residential development, for residential access only, and through traffic should be discouraged.
 - Some medium density lots will have no access to the laneway and access will be via “concealed car parking” area. Access to residential lots from a public car parking area is not acceptable and the proposed medium density development should be redesigned to avoid this.

Bus Routes and Bus Stops

Bus routes should provide access to key destinations but should be planned to ensure that the interaction between pedestrians, cyclists and buses is limited. The *Public Transport Guidelines* indicates a target of locating bus routes so that 95 % of residences are within 400 m safe walking distance of the bus route, and for aged care, facilities, educational, medical and community facilities to be located within 200 m of a planned bus stop.

The development plan indicates that bus routes are planned along the NAC Access Road, Eley Parkway and Sixteenth Street Greenway. The following should be considered:

- Bus stops to be located every 300 m and reflect the location of key attractors
- For two-lane two-way roads, a clear trafficable road width of 7 m is required, with separate designated space for cyclists and / or parking (in addition to the 7 m trafficable road width required for bus operations). With the NAC access road, this can be achieved by providing indented parallel parking
- On connector streets with a median, buses should have a clear trafficable width of 3.5 m, clear of bicycle lanes or parking. Along Eley Parkway, a carriageway width of 5.5 m is provided in each direction. With a parking lane width of 2.3 m, this leaves 3.2 m for buses, which is less than desirable
- The location of bus stops should be defined with a bus stop flag, which restricts parking 20 m on the approach and 10 m on the departure of the bus flag
 - If the bus stop requires a longer length of restricted parking, bus stop signage should be installed.
- Indented bus bays may be implemented to improve traffic flow on low speed roads, particularly at locations where buses may need to wait for several minutes at a time (i.e. at timing points, driver changeover points and heavily patronised stops). However, where possible, there is a preference to provide kerbside bus stops within the traffic lane to avoid the delay associated with buses waiting to re-enter the traffic stream. *VicRoads Supplement to AS 1742.12* provides the following guidance:
 - “Bus bays should not be constructed in 60 km/h zones unless there is physically no way another vehicle could overtake the stopped bus, or the stop is very close to the departure side of a signalised intersection in a way that would severely impact intersection operation”
- Indented bus stops should be designed:
 - with a 3.0 m width, to ensure that a bus will not overhang the traffic lane
 - to allow the bus to enter and exit the stop without requiring the vehicle to reverse (i.e. requiring adequate length)
- Raised pedestrian crossings along Sixteenth Street Greenway should be designed with bus friendly gradients and longer flat top humps to cater for bus traffic (75 mm height and 9.0 m length)

Intersection Treatments

The Precinct Structure Plan does not provide detail on the types of intersections to adopt surrounding the NAC. However, the preliminary masterplan appears to show give-way controlled cross intersections. This type of treatment creates multiple conflict points at the intersection and

is likely to cause confusion for drivers and result in cross traffic type collisions, particularly with right turning vehicles. This type of treatment also introduces risk for pedestrians crossing at the intersection.

Give-way controlled T-intersections are considered to be an acceptable treatment, however at cross intersections, consideration should be given on providing other higher forms of intersection control such as roundabouts, signals or a staggered T-intersection.

Table 2 below provides suggestions on appropriate intersection options for each of the intersections within and surrounding the NAC.

Table 2: Intersection controls within the Mildura NAC

Intersection	Appropriate treatments to consider	Benefits and considerations
Ontario Avenue / Sixteenth Street	Signals	<ul style="list-style-type: none"> • This form of intersection will provide a controlled crossing for pedestrians from the existing Mildura South community who may utilise these facilities to access the NAC • Motorists approaching from Ontario Avenue who are unfamiliar with the area and have been driving long distances may not be expecting to stop at a signalised intersection. Therefore, this should be complimented with other 'gateway' treatments to slow drivers down prior to the signals
	Roundabout	<ul style="list-style-type: none"> • Should only be considered if traffic flows on all four legs are balanced • Pedestrian crossings will be required. If provided as raised zebra crossings, these should be set back from the roundabout a minimum 6 m to allow for storage of one vehicle between the crossing and the roundabout • Threshold treatments on the Sixteenth Street legs can be considered
Ontario Avenue / Hellen Road	Roundabout	<ul style="list-style-type: none"> • This intersection should be provided as a roundabout to safely manage vehicular conflicts • Pedestrian crossings can be managed by refuge crossings on each approach of the roundabout
Eley Parkway / Sixteenth Street	Staggered T-intersection	<ul style="list-style-type: none"> • As per the preliminary masterplan • A raised pedestrian / cyclist crossing across the side road can be included. If priority was given to pedestrians / cyclists, then the crossing should be set back a minimum 6 m from the give way line

Intersection	Appropriate treatments to consider	Benefits and considerations
	Roundabout	<ul style="list-style-type: none"> If the intersection cannot be staggered, then this intersection should be provided as a roundabout to safely manage conflicts
Hellen Road / Elsey Parkway	Roundabout	<ul style="list-style-type: none"> This intersection should be provided as a roundabout to safely manage vehicular conflicts Consideration can be given for a zebra crossing with kerb extensions north of the roundabout
Sixteenth Street / NAC Access Road	Give-way controlled	<ul style="list-style-type: none"> Intersection design will need to allow for the turning movements of a bus, which is likely to result in large corner splays. This can be minimised if the NAC access road is a one-way road A raised pedestrian and cyclist crossing has been shown on the preliminary masterplans. If priority was given to pedestrians / cyclists, then the crossing should be set back a minimum 6 m from the give way line
Elsey Parkway / NAC Access Road	Give-way controlled (left-in left-out)	<ul style="list-style-type: none"> Intersection design will need to allow for the turning movements of a bus, which is likely to result in large corner splays. This can be minimised if the NAC access road is a one-way road

Pedestrian / Cyclist Crossing Facilities

Table 3 below outlines pedestrian crossing facilities that can be considered within the Mildura NAC:

Table 3: potential pedestrian crossing facilities to adopt

Pedestrian Facility Type	Considerations	Appropriate locations
Pedestrian refuge / median	<ul style="list-style-type: none"> • Only appropriate where there is sufficient road width to accommodate a refuge island and maintain adequate through lanes • The minimum width of the refuge is 2 m. Where there is a high pedestrian volume, the desirable width is 3 m • A cut-through section is preferred through the refuge • Suitable for shopping streets, where pedestrian movements across a road is spread over a length of heavily trafficked road • Many people feel unsafe standing in a refuge in the middle of the road, particularly where the road carries high speed traffic or high volumes of heavy traffic • Can be used in conjunction with kerb extensions 	<ul style="list-style-type: none"> • Ontario Avenue • Elsey Parkway
Kerb extension	<ul style="list-style-type: none"> • Consist of local widening of the footpath into the carriageway, to reduce the crossing width • The extension will often improve sight distance to pedestrians, where there is parallel parking on the side of the road • Considered appropriate on low speed / low volume roads where it is safe for pedestrians to cross without staging • Can be used on the approach to the NAC on Ontario Avenue as a form of 'gateway' treatment to encourage drivers to reduce speed. Appropriate set back from the traffic lane will need to be provided • Not appropriate on roads with kerbside bicycle lanes 	<ul style="list-style-type: none"> • Sixteenth Street • NAC Access Street • Ontario Avenue (as a gateway treatment)
Pedestrian traffic signals	<ul style="list-style-type: none"> • Not appropriate on local roads • Appropriate on collector roads and at locations where there is a high pedestrian demand • Can be a shared pedestrian / cyclist crossing. In this scenario, consideration for cyclist lanterns, holding rails and bicycle detection can be given 	<ul style="list-style-type: none"> • Ontario Avenue • Elsey Parkway • Sixteenth Street • Hellen Road

Pedestrian Facility Type	Considerations	Appropriate locations
Pedestrian (zebra) crossing	<ul style="list-style-type: none"> • Not appropriate on multilane or high speed / high volume collector and arterial roads • Appropriate on roads with a speed limit of 50 km/h or less • Can be used in conjunction with kerb extensions • Less suitable when crossing numbers are low • Good sight distance and conspicuity are required • Suits all users 	<ul style="list-style-type: none"> • Sixteenth Street • NAC Access Street • North-South Road
Raised zebra crossing (Wombat Crossing)	<ul style="list-style-type: none"> • Similar considerations to a zebra crossing • Can form part of a traffic calming scheme, as it provides positive speed control • Careful consideration to be made in its design on bus routes 	<ul style="list-style-type: none"> • Sixteenth Street • NAC Access Street • North-South Road
Shared zone	<ul style="list-style-type: none"> • Environment is adapted for low-speed • Streetscape / landscaping will need to be implemented to increase awareness of the different conditions • Only appropriate on local roads, where vehicular movements can be restricted, and there is high pedestrian movement 	<ul style="list-style-type: none"> • North South Road (subject to location of car park access points)

Car Parking

Car parking should be provided in line with the Mildura Shire Council Planning Scheme *Clause 52.06 – Car Parking*. This includes:

- the provision of an adequate number of car parking spaces to accommodate the car parking demand generated by each proposed use
- compliant car parking access aisle and car parking space dimensions

Car Parking Provision

Statutory car parking requirements for a variety of commercial, community and residential uses which may be applicable for the Mildura South NAC are summarised in Table 4 below.

Table 4: Statutory Car Parking Requirements for various uses

Land Use	Statutory Requirement	Car Parking Measure
Commercial Uses		
Convenience Restaurant	0.3	to each patron permitted
Food and Drink premises	4	to each 100m ² leasable floor area
Medical Centre	5	to the first person providing health services
	3	to each additional person providing health services
Office	3.5	to each 100m ² net floor area
Postal Agency	4	to each 100m ² leasable floor area
Restaurant	0.4	to each patron permitted
Shop	4	to each 100m ² leasable floor area
Supermarket	5	to each 100m ² leasable floor area
Community Uses		
Bowling Green	6	to each rink, plus 50% of the relevant requirement of any ancillary use
Child care centre	0.22	spaces per child
Place of Assembly (e.g. community centre / place of worship / function centre)	0.3	to each patron permitted
Squash Court	3	to each court, plus 50% of the relevant requirement of any ancillary use
Swimming Pool	5.6	to each 100m ² of the site
Tennis Court	4	to each court, plus 50% of the requirement of any ancillary use
Residential Uses		
Residential Dwelling	1	to each one or two bedroom dwelling
	2	to each three or more bedroom dwelling
	1	For visitors to every 5 dwellings, for developments of 5 or more dwellings

Should an intended land use within the Mildura South NAC not have a specific rate included within the Mildura Shire Council Planning Scheme, a separate car parking demand assessment will be required to ensure there will be an adequate provision of car parking.

The provision of car parking should meet or exceed the calculated car parking demand for the NAC, with all parking for residents to be provided off street, with parking for visitors (to residential properties), staff and patrons / shoppers able to be provided both on and off-street.

Car parking dimensions and requirements

The Mildura Shire Council Planning Scheme *Clause 52.06 – Car Parking* indicates the following requirements for car parking spaces (refer to Table 5).

Table 5: Car Parking Space Dimensions

Type	Accessway width	Car space width	Car space length
Parallel	3.6 m	2.3 m	6.7 m
45°	3.5 m	2.6 m	4.9 m
60°	4.9 m	2.6 m	4.9 m
90°	6.4 m	2.6 m	4.9 m
	5.8 m	2.8 m	
	5.2 m	3.0 m	
	4.8 m	3.2 m	

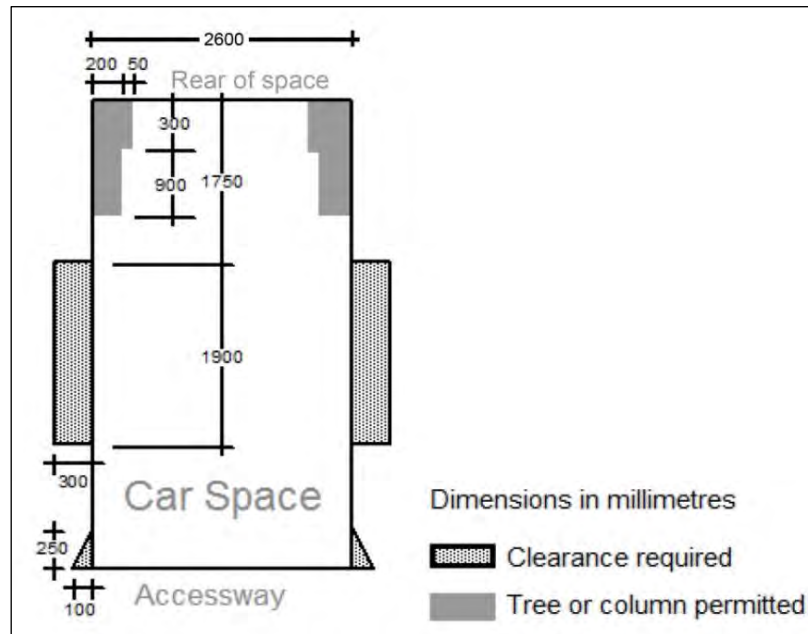
Additional requirements for car parking spaces (as per the Mildura Planning Scheme and the Australian Standards for car parking):

- Disabled car parking spaces:
 - To be provided in accordance with *AS 2890.6 – Parking Facilities – Off-Street peaking for people with disabilities (2009)*, car parking spaces need to be:
 - 2.4 m wide x 5.4 m long
 - an adjacent 2.4 m wide shared area with central bollard
 - Disabled car parking spaces may encroach into an accessway width by 500 mm (i.e. the space can be 4.9 m in length)
 - Disabled car parking spaces should be provided as 90° spaces, rather than parallel spaces, due to the requirement for a shared area.
 - Disabled car parking spaces shown along Sixteenth Street Greenway should be modified to reflect this requirement¹. Note that two disabled spaces may share a shared area.
- An additional 300 mm width is required for car parking spaces located adjacent to a high wall or fence.
- Car parking areas open to the public should be designed to allow vehicles to enter and exit in a forward direction, including blind aisle extensions where the parking aisle is closed at one end:
 - a 1.0 m aisle extension, if the aisle is up to 6 spaces in length

¹ It is acknowledged that the disabled car parking spaces are provided as per *AS 2890.5 Parking Facilities – On-Street Parking (1993)*, however, due to the age of the standard and more recent update for off-street parking, it is considered more appropriate to apply dimensions as per the off-street standard.

- a 1.0 m extension plus provision for vehicles to turn around, if the aisle is greater than 6 spaces in length
- A wall, fence, column, tree or any other fixed structure may not encroach into the required clearance surrounding each car parking space (refer to Figure 2).

Figure 2: Required Clearance to Car Parking Spaces



- Accessways should:
 - be a minimum of 3.0 m width (ideally 5.5 m – 6.5 m wide for two-way access)
 - provide a passing area of 6.1 m wide x 7.0 m long at the entrance (if greater than 50 m long and providing access to 10 or more car parking spaces)
- ramp gradients for multi-level car parks:
 - $\leq 10\%$ grade within 5.0 m of the frontage road
 - For public car parks, maximum 20% grade (≤ 20 m distance) or 16.7% grade (for > 20 m distance)
 - For private / residential car parks, maximum 25% grade (≤ 20 m distance) or 20% (for > 20 m distance)
 - Changes in grade require ramp transition to avoid vehicle scraping or bottoming out
 - summit grade change $>12.5\%$
 - sag grade change $>17.5\%$
- a minimum 2.1 m clear headroom is required beneath obstructions.

Design Vehicles

The following design vehicles should be adopted for each of the different scenarios within the NAC:

Table 6: Design vehicles to adopt within the NAC

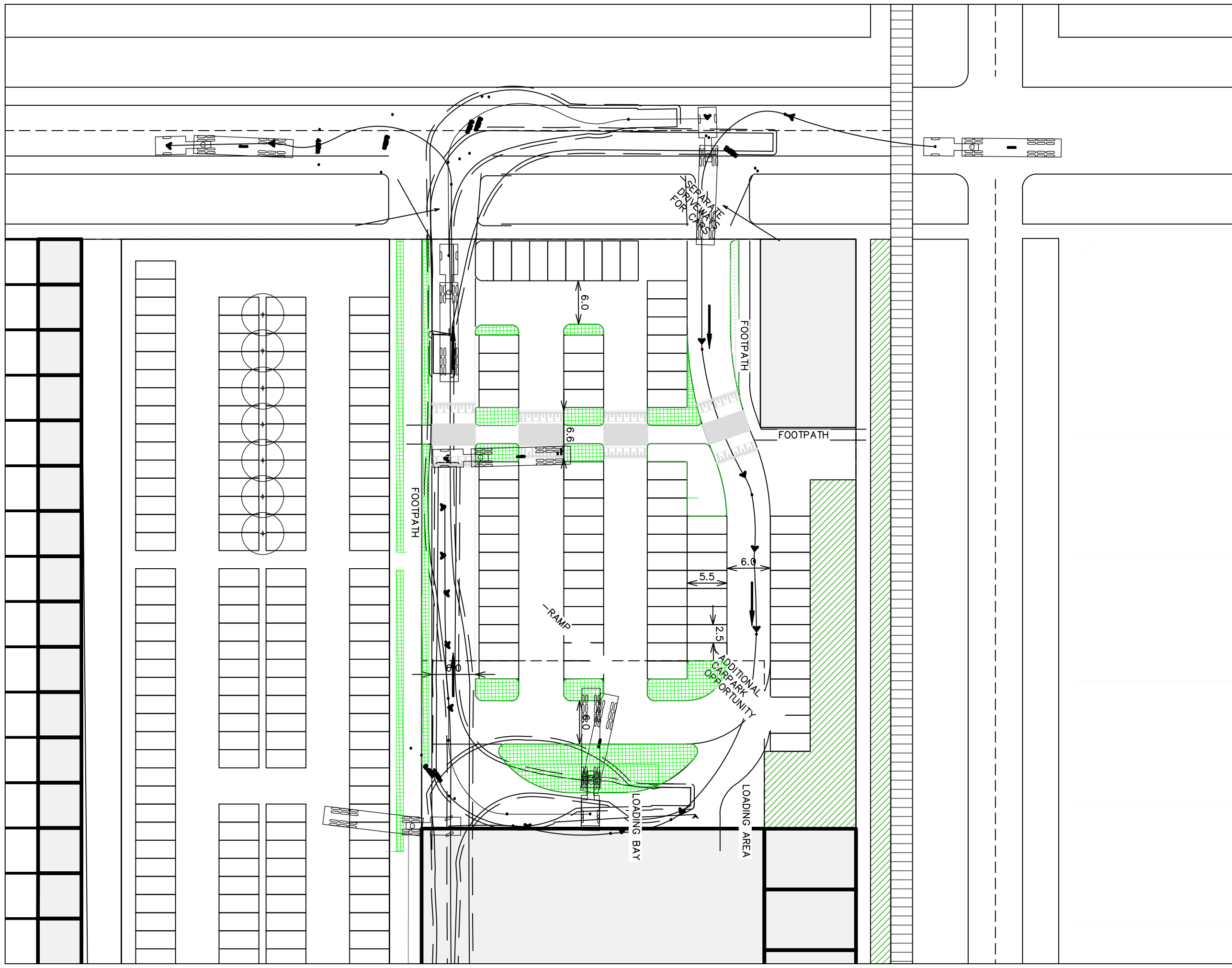
Scenario	Design vehicle
Supermarket (full line)	19 m semi-trailer
Small supermarket (e.g. IGA)	12.5 m long rigid vehicle
Retail stores / cafe	8.8 m long rigid vehicle
NAC access road (i.e. bus routes)	12.5 m rigid bus
Residential streets / intersections	10.5 m waste collection vehicle 8.8 m service vehicle (fire trucks and ambulance vehicles)
Car parking access aisles and ramps	B99 vehicle (5.2 m) and B85 vehicle (4.9 m)
Car parking spaces	B85 vehicle (4.9 m)

Please contact me on (03) 9490 5903 if you would like to discuss this further.

Yours sincerely,



Bernard Chan
Associate



CLIENT
MILDURA RURAL CITY COUNCIL

PROJECT
MILDURA SOUTH NEIGHBOURHOOD
ACTIVITY CENTRE MASTERPLAN

DRAWING TITLE
**INDICATIVE LOADING ACCESS
PLAN**



PLOT DATE 09.08.2019	JOB NUMBER 2018.669	SCALE A3 1:500
-------------------------	------------------------	----------------------