





WARRAGAMBA CENTRE DETAILED REPORT

DECEMBER 2020



Contents

1	Warragamba					
	1.1	Warragamba Village, Activity Core and Edges	3			
	1.2	Warragamba in the LSPS	4			
2	Cen	Centre Appraisal and Opportunities				
	2.1	1 History				
	2.1.1	Heritage Items and Heritage Conservation Areas	6			
	2.2	Natural, Cultural, Community and Scenic Assets	7			
	2.3	Infrastructure and Utilities	8			
	2.4	Special and Regular Community Events and Activities	8			
	2.5	Community				
	2.5.	,				
	2.5.2	PlaceScore Engagement Survey	8			
	2.6	Land Uses, Open Spaces and Community Services and Facilities				
	2.7	Urban Structure and Built Form	9			
	2.8	Commercial Floor Space and Capacity for Growth				
	2.9	Housing Within and at the Edges of the Centre				
	2.10	Access and Movement				
	2.11	Street Appeal – Public Realm and Pedestrian Experience				
3	Curi	rent Commitments to Works, Adopted Plans and Strategies 1	3 4 6 6 6 7 8 8 8 8 8 8 9 11 11 2 14 15 16 16			
	3.1	Previous Centres Study1				
	3.2	WLEP 2011 Provisions				
	3.3	WDCP 2016 Provisions				
	3.4	Council's Current Commitments				
4	Sun	ımary of Recommendations1	7			

1 Warragamba

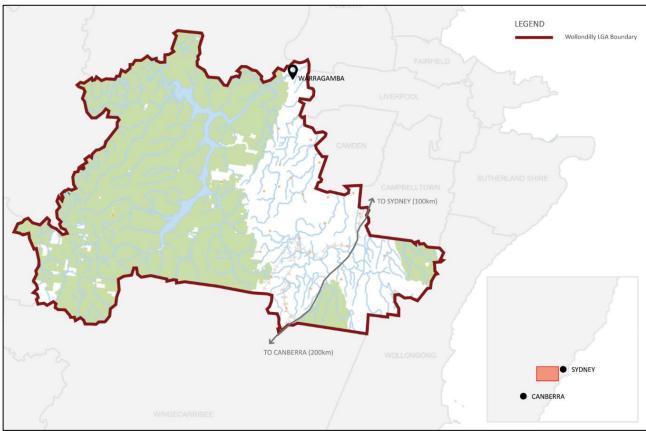


Figure 1-1 Warragamba Locality Map.

1.1 Warragamba Village, Activity Core and Edges

The key characteristics of Warragamba are listed in the table below:

Population	2016 Census	1,241	Increase 159 persons (12.8% increase from 2016)	
	2041 Projection	1,400		
Centre Typology	LSPS: Larger Centre		Centres Study: Village	
Centre Functions	Retail – local convenience, limited specialty services Education – Primary school Recreation – Sportsfields, natural areas, parks and playgrounds Civic and community – Community hall, Neighbourhood centre Employment – local scale, small scale in centre, industrial estate nearby Capacity – 2,500m²+ of gross floor space potential under current LEP			
Centre Special Features	Centre operates as a series of disconnected nodes Diverse range of publicly accessible open spaces and recreation facilities Heritage character and catchment setting makes Warragamba unique Village is compact and walkable			
Edges	Centre edges are urban, of variable quality and maintenance			
Future focus	Urban design analysis to promote infill along Fourteenth Street, enhance the connectivity and continuity of the Activity Core Adaptable building typologies on key sites			

Warragamba is a village used for the daily convenience needs of the local residents and occasionally by visitors to the dam. The town was purpose-built to be self-supporting for local workers with the expectation that the workers and their families would reside in a remote location for a 10 to 15-year timeframe during construction of Warragamba Dam. Over time Warragamba residents have become more mobile and less isolated than the original dam workers and their families.

The Commercial Centres Study 2006 and the Centres Study of 2008 noted the commercial activity in the centre was declining and attributed the reduced activity to the temporary closure of the dam facilities. It was anticipated that new residential development in Marsh Road south of the village centre plus the re-opening of the renovated and improved visitor facilities at the dam would boost commercial activity and development. The commercial vitality of the centre is still not consistently vibrant and several vacant premises and vacant commercial lots remain in the centre.

Growth and intensification of development in Penrith (20 km north), Liverpool (28 km east) and the Aerotropolis and Western Sydney Airport (WSA) (approx. 10km east) is likely to result in Warragamba remaining as a village serving the local resident population, with limited growth. Incremental growth in and around Warragamba and Silverdale will have little effect on the Warragamba centre as the centre is located in the opposite direction of typical movement patterns in the locality for people accessing goods and services. Future growth will be limited to infill and continued construction of the new subdivision in Marsh Road as Warragamba is bordered to the south, west and north by protected catchment lands and to the east by employment lands. Imminent upgrades to Silverdale Road will provide local residents with a less than 30 min car-based trip for employment and the various health, recreation, education and entertainment experiences at the Aerotropolis.

1.2 Warragamba in the LSPS

The Local Strategic Planning Statement (LSPS) identifies the following community needs and values for Warragamba:

- there are strong social and historical connections between Silverdale and Warragamba
- residents value the heritage significance of their town
- Western Sydney International (Nancy-Bird Walton) Airport and the increased access to investment and jobs in the local area that will follow
- tourism that supports local businesses and showcase Warragamba's heritage
- protecting the natural setting will maintain connections to the local environment
- the new master-planned park and improvements to open space will help to make people feel happier and healthier
- public transport, walking and cycling will create stronger connections for residents
- local businesses are important and help to make Warragamba self-sufficient.

The LSPS includes the following Actions specific to Warragamba:

Action	Timeframe	Centres Study Recommendation
1.10 Prepare a precinct transport study and master plan that considers the movement and place framework outlined in Future Transport 2056 for Tahmoor and Warragamba and Silverdale	Long term	This Centres Study recommends improvements in continuity of the footpath network linking Fourteenth Street and Eighteenth Street and Warradale Road sportsfields. This Centres Study also recommends the upcoming Transport study and master plan consider ways in which traffic visiting Warragamba Dam can be encouraged to drive into and through the centre to visit local businesses.
7.10 Investigate options to protect and preserve the heritage values of Warragamba buildings associated with the construction of Warragamba Dam	Medium term	This Centres Study recommends a detailed urban design analysis with heritage input to develop building form options that encourage infill and improvements to the built form and public realm of the activity core and enhance continuity of the commercial strip along Fourteenth Street.



Figure 1-2 LSPS representation of Warragamba boundary, with activity core in red.

2 Centre Appraisal and Opportunities

2.1 History

The Burragorang valley and Warragamba river system was a place of long term occupation for the Gundungurra Aboriginal people, with a reliable water supply and mild climate.

The Burragorang Valley was first identified as a site for flooding to create a water supply for Sydney in 1845. The settlement of Warragamba was originally constructed by the NSW Water Board to house the 1,800 workers during the 12 year construction period of the dam from 1948. The settlement pattern was set out and constructed in one project and includes shops, central open space, community hall, school and dwellings. Although intended as a temporary township, many workers purchased their dwellings from the Water Board and the township remained after dam construction was completed.

The street pattern was intended to create a walkable village centre surrounding the central park and community hall with streets surrounding the crest of the hill.

The African Lion Safari Park operated in Marsh Road during the 1960s and 1970s and attracted a reported 200,000 visitors per annum from Sydney and the Illawarra. The park closed in 1991 and the site is currently undergoing construction for new housing.

2.1.1 Heritage Items and Heritage Conservation Areas

The dam wall, water supply scheme and water infrastructure has State heritage significance.

Properties fronting Fourteenth Street and Weir Road in the Warragamba village centre are within the Warragamba Conservation Area and have local significance (refer **Figure 2-2**). The land uses within the conservation area include commercial premises, community hall, memorial park and civic park, the primary school and fire station. Most of the buildings in the Heritage Conservation area are largely in their original form. The architecture is simple, post WWII and conservative in design. Original building materials are not substantial or durable as the town was built quickly and economically and was intended to be temporary during the construction of the dam. Many original buildings are in poor condition and renovation and restoration is challenging because of the simplistic construction and materials.

The history of the dam construction and its importance to the Sydney Metro area is a culturally significant theme which is worthy of sustaining and enhancing during future redevelopment of the village centre. The heritage conservation area adequately encompasses the village centre.

2.2 Natural, Cultural, Community and Scenic Assets

Warragamba Dam

Warragamba Dam is Australia's largest urban water supply dam. It has picnic and playground areas, a visitor information and conference centre with exhibition space and interactive displays for school excursions and group tours, viewing platforms and short walks, as shown in **Figure 2-1**. Visitors travelling to the dam by car do not need to pass through Warragamba centre.



Figure 2-1 Warragamba Dam Photomontage (Source: https://www.waternsw.com.au/supply/visit/warragamba-dam)

Dam Lookout - Eighteenth Street

The Eighteenth Street lookout and viewing platform, which provides an excellent view of the spillway and dam wall, is within approximately 900m walking distance of the village centre. The lookout has bus and car parking and an on-road shared pathway.

Accessible Playground

Opened in 2019, Livvi's Place playground is an all-inclusive play space in Civic Park in Warragamba centre. The park incorporates design features that reflect Indigenous and European heritage of the locality.

Warragamba Town Hall

The hall is a multi-functional space with capacity for 273 people, which includes a main hall, an annexed hall with meeting room, commercial kitchen and performance stage. The building is prominent in both main streets of Weir Road and Fourteenth Street.

Warragamba Silverdale Neighbourhood Centre

The neighbourhood centre is located at the corner of Weir Road and Fourteenth Street at the northern end of the centre. A government funded community service operates from the centre to provide child and family health services, personal support services, community events, youth programs, seniors programs, school holiday activities, art, exercise classes and craft groups.

Warragamba Workers and Sporting Club

The club is a licensed venue which provides a bistro, evening entertainment and a children's playground. It is only a short walk from the commercial strip of shops in Fourteenth Street and is a further 600m walk to the dam viewing platform at the end of Eighteenth Street.

Warragamba Sportsground

The sportsground is adjacent to the south east edge of the village centre and is accessible via Warradale Road. The sportsgrounds include rugby league fields, athletics, two netball courts, a multi-purpose half court and a skate park. The swimming pool is north of the sportsfields and privately operated.

2.3 Infrastructure and Utilities

Warragamba settlement is connected to all essential services. The wastewater treatment service has a fixed capacity based on the current LEP provisions.

2.4 Special and Regular Community Events and Activities

Damfest is an annual event organised by the not-for-profit Warragamba Silverdale Neighbourhood Centre. It is an event with stall holders and displays by local businesses, services, community and sports groups and emergency services. It includes the use of land throughout the village centre and the picnic and recreation facilities owned by Sydney Water in Farnsworth Avenue.

The dam conference centre includes exhibition space for both permanent displays by Sydney Water featuring water technologies and engineering, as well as Dreaming stories of the Indigenous connections to the locality. There are also temporary displays for a variety of purposes and lecture/educational activities for the public. There are self-guided and guided walks to viewing platforms and the dam wall.

2.5 Community

2.5.1 Who uses the Centre and why?

Warragamba is used by local residents for daily convenience and some visitors attracted to the facilities at Warragamba dam. The town centre is not part of the broader district and regional road network and does not experience through traffic. The majority of residents travel by car to the larger centres of Penrith and Liverpool for employment, entertainment, tertiary education and weekly household shopping.

2.5.2 PlaceScore Engagement Survey

The following is a collection of the responses to Council's PlaceScore Engagement Survey from residents of Warragamba, Silverdale, Werombi, Theresa Park, Orangeville and Brownlow Hill and therefore are not entirely specific to Warragamba centre.

- Local residents value the cohesive spirit in the community.
- The natural setting of the village is also highly valued by residents.
- Residents note there is a lack of evening entertainment opportunities and options for education.
- The community has requested more support for local businesses, retail and leisure options and occupancy of commercial buildings.

Opportunities:

> It is recommended that Council work with business owners and operators to develop design solutions for the public realm and new building styles for mixed use infill opportunities. This work has the potential to generate activity and diversify local businesses and employment and will assist in retaining and enhancing the heritage character of the centre. This engagement is recommended to form part of the detailed urban design analysis recommended in **Section 2.7**.

2.6 Land Uses, Open Spaces and Community Services and Facilities

Warragamba centre has a variety of land uses within walking distance along the two main roads of the centre being Weir Road and Fourteenth Street. There are high quality parks, community halls, a primary school and child care centre and a neighbourhood centre clustered in the village centre with frontages to the main streets.

Opportunities:

> Footpath continuity from Fourteenth Street to the shared pathway in Eighteenth Street is recommended to improve connection between the commercial strip, the Workers Club and the viewing platform.

2.7 Urban Structure and Built Form

The building form in Warragamba village centre is unique due to its original purpose-built construction as a self-contained temporary community with a walkable layout.

The street pattern in the centre formed by Weir Road and Fourteenth Streets, which includes roundabouts, one-way thresholds, cross links and kerbside parking is effective in slowing vehicles through the centre and favouring pedestrian movement.

The laneway between Twentieth Street, Fifteenth Street and Eighteenth Street is not well used for 'back of house' services for commercial buildings fronting Fourteenth Street. There are some dwellings fronting the laneway.

The steep slope of some commercial zoned lots fronting Fourteenth Street and the restriction on building heights and roof designs to maintain distant views to the west and north towards the Blue Mountains add further challenges to the redevelopment potential of some commercial zoned land.

The discontinuity of shop fronts created by long term vacant land at No.19 to No.23 Fourteenth Street is not conducive to pedestrian movement along the full length of the commercial strip (refer to **Figure 2-2**). The discontinuity splits the town centre into two activity sections north and south of Twentieth Street. Activity south of Twentieth Street is anchored by the compact and diverse cluster of specialty shops close to the primary school. Activity in the northern part of the centre has recently been boosted by the opening of the accessible playground at the end of 2019.

Opportunities:

- > Encourage a greater range of building forms incorporating a mix of residential and commercial uses in the strip of commercial buildings along Fourteenth Street to enliven this area.
- > Investigate the potential for activation of the laneway between Twentieth and Eighteenth Streets. The laneway has potential to assist in 'back of house' operations for commercial premises fronting Fourteenth Street to further enhance continuity of buildings and pedestrian movement along the main street. The laneway also has potential to encourage mixed use development of commercial zoned land to improve vitality and activity in the village centre.
- A detailed urban design analysis of the commercial properties fronting Fourteenth Street between Twentieth Street and Eighteenth Street is recommended. The analysis requires input from a heritage architect and engagement with property owners adjoining the laneway. One of the objectives of the analysis is to investigate ways in which the laneway and adjoining buildings may be designed for multiple safe, functional and attractive uses of the laneway that also improve efficient and mixed use of adjoining commercial zoned land. Implement any recommended changes to WLEP 2011 and WDCP 2006 after completion of this analysis.

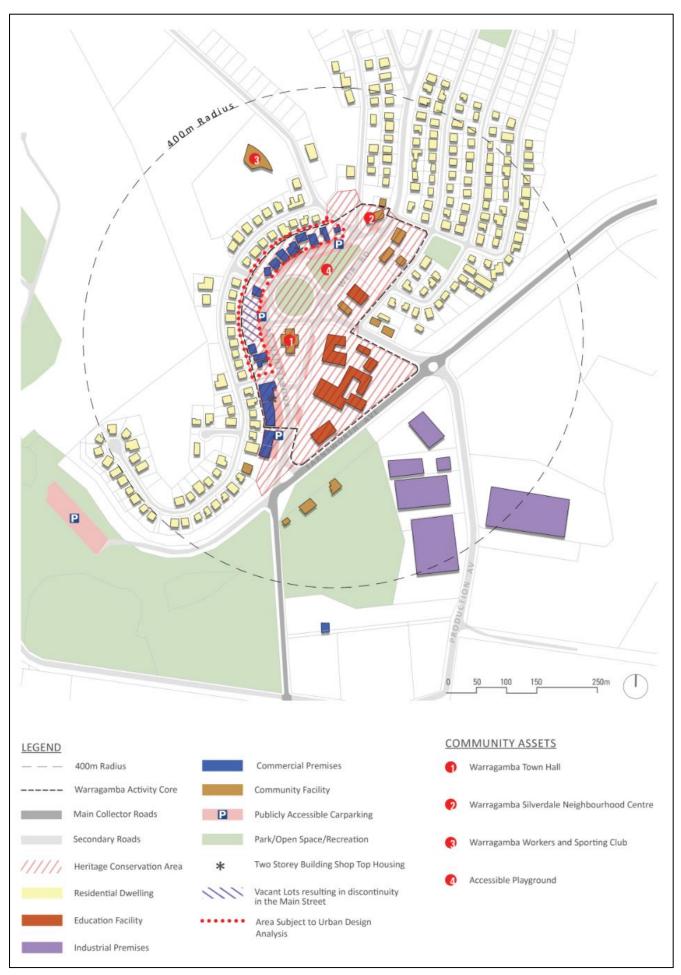


Figure 2-2 Warragamba urban structure and built form analysis.

2.8 Commercial Floor Space and Capacity for Growth

The Commercial Centres Study 2006 and Draft Centres Study 2008 identified the following for Warragamba commercial land:

Declining trade activity linked to temporary closure of the dam to visitors and no through traffic

Potential for increased demand for local services and facilities resulting from residential subdivision of land in Marsh Road south of the centre

1 supermarket, nine (9) food shops, 1 discount variety store and 17 other specialty shops (of which 11 were vacant)

Total commercial floor space of 2,950m² equivalent to 5.4% of the total commercial floor space in the LGA (of which 950m² was vacant)

There has been no change in the floor space within the commercial-zoned land in Warragamba centre since the 2006 and 2008 studies. There is minimal or no opportunity for additional development of the centre within the constraints of the B2 Local Centre zone.

Additional commercial floor space within the current LEP and DCP provisions is estimated at 2,500m², of which approximately 1,000m² could be achieved from the development of vacant land, however the feasibility of this is considered to be limited.

The primary school and town hall, Baptist Church, Anglican Church and Catholic Church and NSW Fire Brigades station are within the B2 Local Centre zone but are not expected to contribute to new commercial floor space to 2041.

Opportunities:

> The recommended detailed urban design analysis should focus on infill and intensification of the use of land currently in the B2 Local Centre zone. This analysis should also investigate a potential change to the land use zone and/or additional permitted uses specific to the properties along Fourteenth Street to achieve a greater diversity of activity, continuity of built form and interesting facades, improved interface of street frontages and the public realm and mixed use and residential built forms unique to the heritage character and limited scale built form in Warragamba centre.

2.9 Housing Within and at the Edges of the Centre

Housing in the Warragamba settlement is predominantly detached dwellings. Shop top housing is included in the more recent buildings at the southern end of the activity core.

> The recommended urban design analysis should inform the design details and opportunities for introducing mixed use development, which is currently confined to the limiting definition of 'shop-top housing'. Urban Design investigations may determine a land use zone change is appropriate, or an additional permitted uses clause, or a Local Character Statement that enhances opportunities for a wider variety of uses that are consistent with a Place Plan and result in greater diversity of activity and continuity of street facades along Fourteenth Street

2.10 Access and Movement

The settlement was designed as a self-contained village with the majority of residential lots within 800m walking distance of the commercial centre. Most roads are aligned with the local topography for easy walking.

Transport options linking Warragamba to other centres are limited to private car and the bus route. Bus route 795 links Warragamba to Penrith with stops in Weir Road, with 1-2 hourly services during weekdays and less frequent services on weekends and public holidays.

The majority of movement is by private car. Onstreet parking is well distributed throughout the Warragamba centre and the paved footpath through the centre is continuous and mostly broad. Parking on-street is spatially distributed around the centre and the road pattern is suitable for slowing traffic through the centre, compatible with promoting a pedestrian-friendly environment.

The footpath is suitable for street tree planting and for awnings and outdoor seating and display of goods and seating which would improve the pedestrian experience. Currently the condition of the footpath pavement is variable.

Council is currently undertaking an Active Transport Study for the LGA and a Transport Management Study for Warragamba and Silverdale.

Opportunities:

- > Council to consider provision of a continuous footpath and improved directional signage from Fourteenth Street to Eighteenth Street to improve walkability between the commercial strip, the Workers Club and the Eighteenth Street viewing platform.
- > Council to consider footpath connectivity to the entry to Warragamba Sportsfields from the activity core.
- > The Transport Management Study for Warragamba should investigate ways to direct dam visitor traffic to Warragamba commercial centre and the accessible playground, to encourage and promote visitor activity in the centre. This may include controlled traffic routes and signage, landscaping and public art to focus driver and pedestrian attention and movement towards the centre from the dam.

2.11 Street Appeal – Public Realm and Pedestrian Experience

The provision and layout of space and land uses for the public realm of Warragamba centre is an excellent base for a walkable centre and an interesting and inviting pedestrian experience. The footpaths are of generous proportions, suitable for street trees and effective at providing space for commercial uses to 'spill out' into the adjoining public space. There are a variety of publicly accessible buildings and spaces within the centre that enable multi-purpose visits.

The public realm has been enhanced with the completion of the accessible playground.

The distribution of kerbside parking throughout the centre is convenient for drivers to walk to multiple venues.

Opportunities:

- > The urban design analysis for Warragamba should include a review of the ways in which the footpath adjacent to the commercial frontages in Fourteenth Street can support activities that 'spill out' into the public realm to engage with shopfronts and improve the pedestrian experience.
- > Council to consider improvements to the quality and continuity of the footpath pavement within the centre.

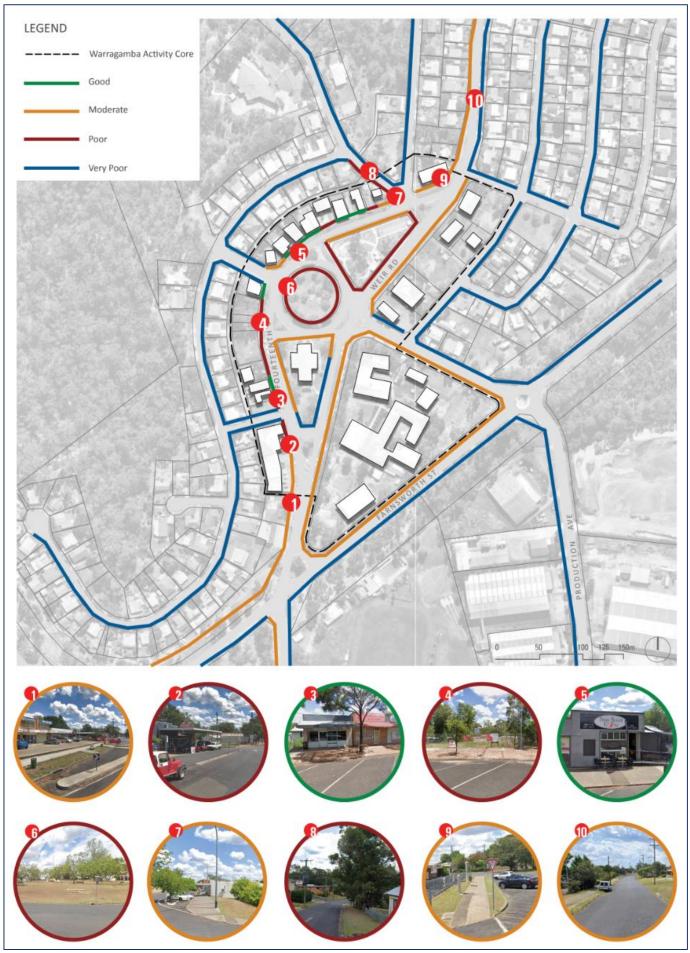


Figure 2-3 Evaluation of Street Appeal Factors Within Warragamba Village Centre.

3 Current Commitments to Works, Adopted Plans and Strategies

3.1 Previous Centres Study

The previous Commercial Centres Study 2006 and Towns and Villages Centres Study (2008) identified the following objectives for Warragamba centre:

- · To improve performance and reduce vacancies in Warragamba
- To integrate and link residential, retail, commercial and tourism and community uses within Warragamba
- To maintain key elements of the existing built form character within the Village Centre
- To protect and maintain Warragamba's natural and built heritage
- To promote accessibility to, from and within Warragamba, while maintaining the character of the village.

The previous Commercial Centres Study 2006 and Towns and Villages Centres Study (2008) made the following recommendations for the Warragamba centre:

- Future development within the Warragamba centre should focus on highway retail and connecting to Silverdale with development stretching south to the intersection of Farnsworth Avenue and Warradale Road
- Future development within Warragamba must ensure that the design of buildings and the improved amenities of the centre and its streetscape are to effectively contribute to the life of the public domain through:
 - Provision of continuous setbacks and street walls;
 - Consistent building siting;
 - Introduction of improved street tree planting and street furniture opportunities:
 - Preservation of iconic views and vistas within the centre;
 - Provision that any future development is sensitive and sympathetic to the heritage character of the neighbourhood centre.
- There is opportunity to emphasise the role of the neighbourhood park as a focal point for communal interaction, through the concentration of the town's future growth and intensification around this area
- Integrate the iconic attributes of the centre i.e. theme of the dam, as well as the iconic views, into a future public domain strategy for the Warragamba-Silverdale Neighbourhood Centre
- Improve the gateway "image" to the town through the provision of a clearly defined entrance to the centre

Opportunities:

- > Warragamba centre is distinctly different to Silverdale in terms of physical location, the nature of land uses and activities, building design and character, the setout, diversity, the intention of visitors and users and the quality of the experience of place and community. Connectivity between Warragamba and Silverdale will enhance the opportunities for locals to visit both centres for different reasons.
- > The accessible playground has greatly enhanced the visitor experience to Warragamba centre. The activity generated by use of the playground and the design themes in landscaping elements in the park should be adapted for public realm upgrades along Fourteenth Street.

3.2 WLEP 2011 Provisions



Figure 3-1 Current Land Use Zoning for Warragamba under WLEP 2011, with Recommended Investigation Areas for Adaptable Building Typologies

There is adequate land within the B2 Local Centre zone for the Warragamba village centre. The heritage conservation area encompasses the appropriate land to protect the future character of the centre.

This study recommends shop top housing is not the most suitable form of residential development to integrate with the Warragamba town centre particularly between Twentieth and Fifteenth Streets. However, the only form of housing currently permitted on land in the B2 Local Centre in the village centre is 'shop top housing'. It is considered that this is too limiting for mixed development in Warragamba village centre given the heritage restrictions to maintain views, combined with the slope of the land between Fourteenth Street and the rear lane.

Opportunities:

Investigate options for future infill and mixed use building forms best suited to the specific attributes of the commercial zoned land along Fourteenth Street, following completion of the urban design analysis. This should include consideration of options to increase diversity of land uses such as inclusion of a new clause to Part 7 'Additional Local Provisions' in WLEP 2011; and/or introduction of Local Character Statements linked to incentives for new development consistent with a Place Plan

3.3 WDCP 2016 Provisions

The objectives of the DCP are adequate for protection of the character and consideration of future building form. Further, the controls contained in Wollondilly Development Control Plan (WDCP) 2016 are appropriate to capture the character and protect the distant view lines to the Blue Mountains from the central public open space areas. However, the DCP would benefit from the inclusion of additional graphics which demonstrate the manner in which development can address heritage character, local topography and maintenance of view lines.

Opportunities:

Amend Volume 9, Part 4, Section 4.9 'Warragamba and Silverdale' of WDCP 2016 to incorporate graphics, photos and style examples of street frontages for commercial premises and examples of ways to incorporate residential uses in combination with commercial premises. This should be prepared with input from a suitably qualified and experienced heritage architect.

3.4 Council's Current Commitments

Council has committed to the following works that are relevant to Warragamba village centre:

- Augmentation of the existing community hall space
- New cycle and pedestrian pathways

Opportunities:

> Public realm works (as recommended from the urban design analysis) and future footpath connections (as recommended in this Centres Study) should be considered for future adopted works programs.

4 Summary of Recommendations

The following opportunities have been identified for Warragamba, as shown in the Structure Plan in **Figure 4-1**.

- > Undertake a detailed urban design analysis and Place Plan with input from a heritage architect to:
 - Develop concepts for building forms to promote mixed use residential and commercial buildings on land in the B2 Local Centre zone which is more appropriate to:
 - Heritage;
 - Views:
 - Streetscape;
 - Topography
 - A mix of residential and commercial uses which form continuous facades and a diversity of street-fronting activities along Fourteenth Street; and
 - Use of the rear laneway between Twentieth and Fifteenth Streets.
- > Based on the outcomes of the urban design analysis and Place Plan consider amendment to WLEP 2011 to achieve a greater diversity of land uses and activities along Fourteenth Street and/or additional permitted uses unique to the heritage character, topography and limited scale built form in Warragamba centre.
 - > Consider introducing Local Character Statements that capture the uniqueness of Warragamba and provide incentives for redevelopment consistent with a future Place Plan (in a similar way to the provisions of Clause 5.10 to WLEP 2011 for use of heritage assets
 - Recommend the implementation of new controls and objectives for inclusion in WDCP 2016, including graphics, photos and style examples of street frontages for commercial premises.
 - Recommend treatments to the public realm in Fourteenth Street that supports activities which create interest and appeal for pedestrians.
- > The Shire Wide Active Transport Plan and the Traffic Management Plan to be prepared by Council for Warragamba should consider:
 - A paved footpath between Fourteenth Street and along Eighteenth Street past Warragamba Workers
 Club to connect with the existing on-road shared path to the viewing platform at the northern end of
 Eighteenth Street.
 - A connecting paved footpath between Fourteenth Street and the entry to Warragamba Sportsground in Warradale Road.
 - Options for directing visitor traffic, including cycling and foot traffic generated by the dam visitor centre
 to the Warragamba village centre by means of options such as road geometry, signage, landscaping
 and public art. Non-vehicle movement throughout the centre in particular should be encouraged
 through these means.

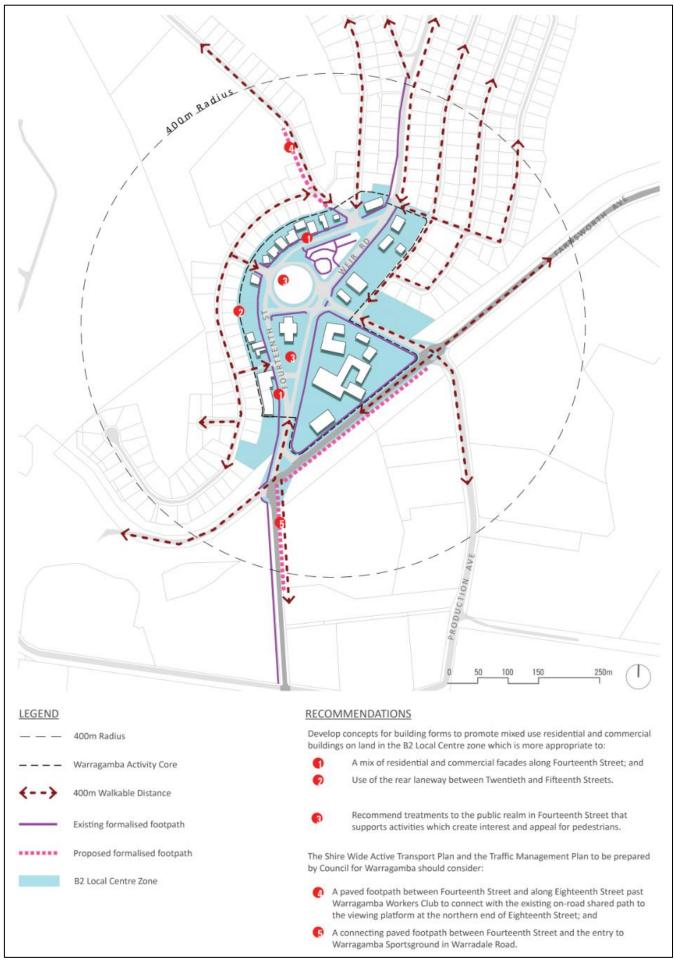


Figure 4-1 Warragamba Structure Plan.