

NARACOORTE LUCINDALE COUNCIL



**NEXT
10 km**

**NARACOORTE & LUCINDALE
BIKE/WALKING MASTER
PLAN REVIEW**

FINAL REPORT

Frank Siow & Associates
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1.0 INTRODUCTION

The previous Naracoorte township bike and walking master plan was prepared in 2007. This 2007 master plan provided Council with a range of engineering and behavioural programs to consider, to facilitate and to encourage cycling as a mode of transport for the community. It considered bicycle routes within the township and also "external" bicycle routes that could be used for longer rides for recreational cyclists. Since the adoption of the 2007 master plan, Council have progressively implemented the recommendations in the report.

Council have recently received funding to undertake a review of this Master Plan. The primary aims of the project are to review and update the previous Master Plan for Naracoorte and to develop a new Master Plan for Lucindale.

The following report summarises the investigations undertaken and the recommendations proposed for future implementation of the plan.

2.0 THE COUNCIL AREA

The Naracoorte Lucindale Council is located in the centre of the Limestone Coast region (South East of South Australia). The Council is approximately 300 kilometres from Adelaide and 450 kilometres from Melbourne. The Council encompasses an area of 4,520.1 square kilometres.

Naracoorte, the main service centre, is a regional hub, offering a broad range of retail, commercial, community and health services and education facilities.

The Council district also contains the smaller communities of Lucindale, Hynam, Kybybolite and Frances.

The district is home to a thriving and vibrant rural economy; featuring beef and dairy cattle, sheep for both wool and meat, and cereal growing.

Naracoorte Lucindale Council is central to some of Australia's best wine producing areas with parts of both the Wrattobully and Padthaway wine regions within the district.

There is a strong tourism industry in the Council area supported by the Visitor Information Centre in Naracoorte. Natural features of international significance in the Naracoorte Lucindale Council are the Naracoorte Caves and the Bool Lagoon Game Reserve and Hacks Lagoon Conservation Park.

A picturesque town, Naracoorte, is the perfect place to base your holiday and explore our wonderful region.

Approximately 41kms to the West is Lucindale. One of Australia's Tidiest Towns. Lucindale is the perfect place to kick back and relax and enjoy the peace and quiet.

Source: Naracoorte Lucindale Council website and Naracoorte Visitor Information website

3.0 THE STUDY OBJECTIVES

The Council's project brief requires the consultant to provide an updated Bike and Walking Master Plan for Naracoorte and Lucindale areas. More particularly, the consultant is required to undertake the following:

- Review Naracoorte Bike/Walking Path Master Plan Report May 2007.
- Assess Naracoorte Township and update 2007 report including removal of completed recommendations where appropriate.
- Assess the greater Naracoorte area to create safe network loops for long distance road cycling incorporating the following roads:
 - a. Cadgee Road
 - b. Langkoop Road
 - c. Caves Road
 - d. Old Caves Road
 - e. Hynam Caves Road
 - f. Boddingtons West Road
 - g. Elderslie Road
- Assess the Lucindale Township
- Assess the greater Lucindale area to create safe network loops for long distance road cycling incorporating the following roads:
 - a. Crower Road
 - b. Fairview Road
- Final report is to provide assessment of current networks, recommendations for future improvements with associated costings and priorities.

The project brief did not require community consultation to be undertaken. A briefing with Council's Project Manager and Director of Operations and Technical Services was provided at the commencement of the project on the issues and suggestions raised by the community regarding cycling in the townships and outside the townships.

4.0 RELEVANT REPORTS AND PROJECTS

4.1 Limestone Coast Regional Trails Master Plan March 2015

The relevant extracts from the report relating to the Naracoorte Lucindale Council area are as follows:

The walk trail at Naracoorte Caves World Heritage Site (WHS) is considered to be a National walk trail given its strong association with the WHS, established identity and ability to attract international and interstate visitors.

Action 5.7 Naracoorte Lucindale DC – Continue to progress with Trailhead and Local Heritage Trail project – potential to develop into a Regional trail (in association with other local trail projects)

Action 5.8 Naracoorte Lucindale DC – Progress plans for shared use path connecting Naracoorte with WHS – potential to develop into a Regional trail (in association with other local trail projects)

Action 8.1 Develop a coordinated approach to marketing the trails network through development of a Trails Marketing Strategy

Action 8.5 Each constituent Council to develop/upgrade their own trails webpage, and include downloadable copies of trail brochures/information sheets for all trail based opportunities in their area and/or links to webpages containing trail related information in the region

The Creek Walk and Nature Park Walk in Naracoorte will soon be supplemented by a revamped in-town heritage walk. There are also currently plans to develop a cycle path/link from the town to Naracoorte Caves (World Heritage Site).

The Naracoorte Caves World Heritage Trail is a National Trail.

It is also known that there a couple of local cycling groups operating out of Naracoorte, although no formal loop trails are identified.

7.4 Workshops with Constituent Councils/Elected Members

Workshop: Naracoorte & Lucindale Council & Tatiara District Council

Key discussion points included:

Improving connectivity between Naracoorte and the Caves is a high priority

The old railway line from Naracoorte to Lucindale – there is wide community support for it to be developed into a multi-purpose trail

Table 12 Strategy 3: Existing Trail Provision

3.7. Naracoorte Lucindale DC – undertake a review of the local road network around Naracoorte to establish safe on road cycle loops around the area and consider required additional infrastructure, such as road widening, surface upgrades and signage

Table 13 Strategy 4: Future Trail Provision

4.1. Undertake a study to establish the feasibility of developing a rail trail, utilising the existing railway corridors of the region – Mount Gambier to Naracoorte (priority section)

Establishing the feasibility of developing a rail trail on the following sections of the existing railway corridor network might, in time, also be considered, subject to the future availability of resources:

- *Naracoorte to Bordertown*
- *Naracoorte to Kingston*

Note: the development of a trail utilising the rail corridors of the region is entirely dependent on future decisions of DPTI in terms of the approach taken to the retention or sale of this land.

Table 14 Strategy 5: Future Trail Provision – Other Trails Projects

5.5. Naracoorte Lucindale DC – explore opportunities to develop a rail trail link with Lucindale

Note: the development of a trail utilising the rail corridors of the region is entirely dependent on future decisions of DPTI in terms of the approach taken to the retention or sale of this land

5.6. Naracoorte Lucindale DC – explore opportunities to develop a loop trail around Lucindale

5.7. Naracoorte Lucindale DC – continue to progress with Trailhead and Local Heritage Trail project – potential to develop as a Regional trail (in association with other local trail projects)

5.8. Naracoorte Lucindale DC – progress plans for shared use path connecting Naracoorte with WHS – potential to develop as a Regional trail (in association with other local trail projects)

5.9. Naracoorte Lucindale DC – upgrade trailhead and interpretation signage associated with Naracoorte Creek and Nature Park Walks

4.2 Naracoorte Lucindale Strategic Plan (2013-2023)

Theme 3 - Harmony and Culture

Healthy and resilient community;

- Progressively implement outcomes from Cycling and Walking Plan

Theme 4 - Liveable Neighbourhoods:

Preserve the built heritage and character of the district;

- Develop a Heritage Trail in the Naracoorte township by 2014

4.3 Naracoorte Lucindale Open Space Strategy (2011)

GS4 Network / Trail System: The development of an integrated walkway and cycle way system is recommended as a top priority. This will require the review of the Naracoorte Township Bike Walking Path Master Plan and then the development of a master plan for

the walkway / cycleway network for the entire Council. This work would focus on the following key elements;

- Filling the gaps in the existing network
- Connecting open space with neighbourhoods and key community locations, for example shops.
- Extending the trail network via the utilisation of the disused rail corridors and road reserves.
- Where possible, provide walkways and cycle ways in the “green corridors”.
- Continue to enhance and maintain the Creek Walk as one of the Councils premier trails.

Key Strategies:

KS5 Network Open Space: Develop a whole of Council Trail Network Master Plan that addresses the key elements identified in GS4. Opportunities that should be expanded on as part of this plan include;

- Extending the trail network via the utilisation of the disused railway corridors. This can create a rail trail which could extent all the way to Kingston via Lucindale and provide regional tourism opportunities.
- Develop a trail connecting the world heritage Naracoorte Caves with a cycleway along Old Caves Rd.
- Link the gaps in the current network, but also review opportunities to link points of interest, including workplace’s and schools in Naracoorte and Lucindale.
- Continue to manage and enhance the Creek Walk.
- Develop a looped trail network plan for Lucindale. The trail network would utilise the parklands that ring the township and the decommissioned rail corridor.

4.4 Trailhead and Heritage Trail Project

The project proposes the establishment of a trailhead to which all Naracoorte trails will be linked and bringing together three trails, the Creek Walk, a Heritage Walk and a bike/walking path to the Naracoorte Caves - the World Heritage Bike Trail.

The Creek Walk was initially conceived as a walking trail but has been increasingly used by the public as a recreational cycling path despite its shortcomings in design for cycling. The path was subsequently widened to cater for the increasing use by recreational cyclists especially family groups. The trail passes the Visitor Information Centre, CBD, the caravan park and the swimming lake, a feature of the town.

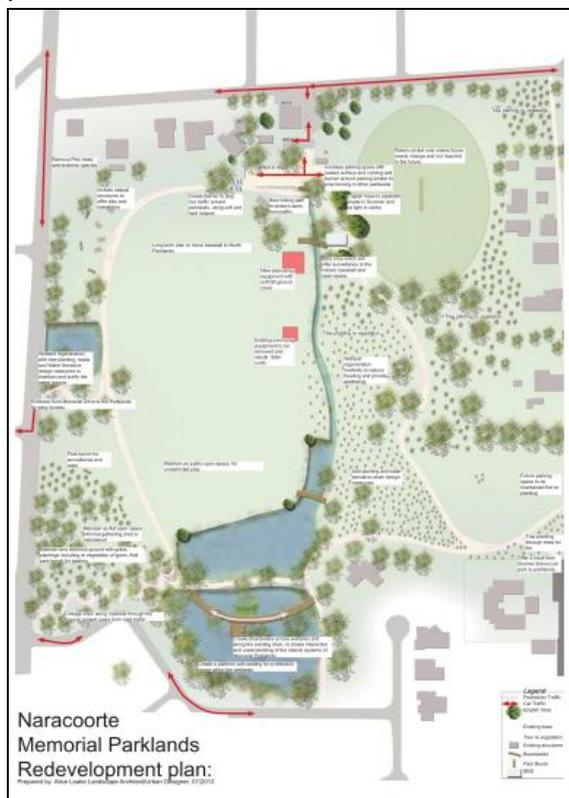
Naracoorte is home to the World Heritage-listed Naracoorte Caves National Park, which attract over 40,000 visitors each year. Many locals enjoy the 11km ride to “The Caves” along the Old Caves Road which is a single lane carriageway for most of its length, or the Riddoch Highway. Rider safety is a key concern along either route. A private operator has commenced cycle hire for visitors near the caves, providing visitors with ready access to cycles if they are travelling without. A bike path from Naracoorte to the Naracoorte Caves was identified as a high priority.

4.5 Market Square and Memorial Park Redevelopment

The Market Square project would transform the park into one of Naracoorte’s premier recreation areas. On completion, Globe Street will be one way from Flinders Lane to MacDonnell Street, and two way between Flinders Lane and Freeling Street. The project would provide parking for coaches, caravans as well as plenty of car parking spaces for people using Market Square and the Visitor Information Centre.



A works program for Memorial Parklands was previously identified by Council in accordance with the concept plan below.



4.6 Butler Terrace Reconstruction

Council is currently reconstructing Butler Terrace from Smith Street to Gordon Street. As part of these works, the existing part-time bicycle lanes would be removed and replaced with a new shared use path on the eastern side verge.

This section of Butler Terrace is a gazetted B Double route. The provision of a new shared use path would allow safer separation of cyclists from large vehicles, particularly given that Butler Terrace is also a route used by school cyclists.

4.7 DPTI Way2Go

Way2Go is a statewide holistic program geared to promoting safer, greener and more active travel for primary school students and their communities, through a partnership between local councils, school communities and DPTI. Four (4) schools have benefited from this program:

- Michelle DeGaris Memorial Kindergarten
- Naracoorte Primary School
- Naracoorte South Primary School
- Sunrise Christian School

Way2Go promotes the development of safe, people friendly local streets near schools to support independent student travel, encourages children and the community to safely walk, ride bikes or scooters, and use public transport for school travel, supports students to be safe walkers, bike riders and passengers and relies on sound evidence and models of leading practice for decision making, planning and classroom teaching.

The DPTI assessment of the bicycle catchment from the town centre (5-minute cycling radius) shows that most of the township is located within a 10-minute bicycle ride. Cycling is therefore a very convenient option as a transport mode in Naracoorte.



DPTI Bicycle Catchment Analysis

5.0 STUDY METHODOLOGY

1. **Background work** - review previous reports, gather relevant data for the project.
2. **Site visit** - site work, site analysis and meet with Council.
3. **Audit of work completed** - check the previously implemented infrastructure against the original recommendations.
4. **Review of the existing network in Naracoorte** - a very important aspect of the project is to determine if the previous Naracoorte network is still relevant in the present day, having regard to new projects and new strategies adopted by Council since 2007.
5. **Propose a new network for Lucindale** - Master Plan for this township.
6. **Review of the external routes identified in the Council's Brief** - detailed assessment of these external routes and recommend appropriate measures to identify and improve the conditions for cyclists.
7. **Mapping of the networks** - prepare maps showing the recommendations of the routes and networks.
8. **Prepare sketch plans of typical works or works required for specific locations** - where necessary, provide sketches of how some of the routes or intersections could be improved for cyclist access.
9. **Recommendations** - identify Engineering and Behavioural programs for the Master Plan.
10. **Costings and priority of works** - prepare a listing of works, the estimated costs and a priority of the works. Funding opportunities would also be identified to assist Council in the implementation.

6.0 ASSESSMENT OF THE NARACOORTE NETWORK

6.1 AUDIT OF 2007 IMPLEMENTATION PROGRAM

Street	2007 Recommendation	Proposed Action	Priority	STATUS	COMMENTS
Riddoch Hwy (McMilan Rd to Golf Course Rd)	Use the service road	Maintenance	Medium	Done	
	Adjust speed limit sign	Maintenance	High	×	
Riddoch Hwy (Golf Course Rd to Playford Dr)	Shared use path and signage		High	Done	
Park Terrace (Stewart Tce to Naracoorte Creek)	1. Shared use path and signage		Medium	Done	
	2. Upgrade lanes and signs		High	Done	Bicycle lanes upgraded
Gum Ave	Widen extg path and signage		Low	×	Extg path 1.8m wide. Need ramp
Moore St	On-road signage		High	×	New shared use path also present
Pearson St	1. On-road signage		High	×	Route proposed to be deleted
	2. EMU crossing		Medium	×	(Refer to school)
Stewart Tce (Park Tce to Smith St)	Extg path	Maintenance	High	×	
MacDonnell St	1. Investigate bridge crossing 2. Timber decking hazard 3. Refuge island outside kindy	Design study	High	×	Bridge closed for safety
			Medium	Done	
Federation Dr				Done	New bridge
Butler Tce (Magarey Cr to Jenkins Tce)	Extend part-time bicycle lanes		High	×	Note: extg on-road bicycle lanes being replaced with off-road path
	Fix gravel spill	Maintenance/private	High	×	New off-road path
Cedar Ave	Part time bicycle lanes		High	Done	
McCoy St	New path - railway precinct	Part of Railway development	Low	×	Route proposed to be deleted (see revised plan)
Magarey Cr	Signage		High	×	Route proposed to be upgraded (see revised plan)
Robertson St	Bicycle parking lanes		Medium	×	Note: eastern side being reconstructed to 13.1m insufficient for bicycle parking lanes
Smith St	Extension of bicycle lanes	Part of future upgrade		×	
Memorial Dr	Signage		High	Done	Bicycle symbol on road
Rolland St	Signage		High	Done	Part time bicycle lanes present
Caves Rd	Signage		High	×	Route proposed to be modified (see revised plan)
Arthur St	Signage		High	×	
Attwill St	Signage		High	×	
Schinkel Rd	Signage		High	×	
Naracoorte Creek Walk	New bridge Federation Dr		Low	Done	
	Widen path to 2.5m		Low	×	Creek upgrade (see report)
Showground	Recreation trail within oval	Investigate feasibility		×	
Routes outside township	Signage		High	Partly done	
	Caves Rd options	Investigate feasibility	Medium	Partly done	Road reconstruction program adopted
Rail corridor (long-term proposal)	Shared use path	Liaise rail owner and DPTI	Low		See LCRT Master Plan

A significant number of recommendations from the 2007 plan have been implemented, including major works for the shared use path alongside Riddoch Highway. A new bridge has also been constructed from Federation Drive (new residential sub-division area) to the Creek Walk path, thereby providing an off-road linkage to the Naracoorte Primary School and town centre.

6.2 PROPOSED REVISION OF THE NARACOORTE ROUTES

6.2.1 McCoy Street

Council advised that the future redevelopment of the train station area would include provision for a pedestrian/bicycle link opposite Magarey Crescent over the disused train line and creek to the north. Previously it was envisaged that the redeveloped train station area would provide a link to McCoy Street. These route changes have been included in the revised township plan.

Action: Delete McCoy Street from the network.

Action: As part of the train station redevelopment, ensure that a pedestrian/bicycle connection is provided from Smith Street to the Creek Walk path.

6.2.2 Caves Road, south of Sunrise Christian School

South of the School entrance, the speed limit of Caves Road becomes 80 km/hr. The adjacent Memorial Park provides paths that connect to the residential areas to the west and south via Memorial Drive. As a consequence, it is considered that the previous bicycle route south of the school should be deleted, given that more appropriate alternative routes are available. The Memorial Park paths have been included in the revised township plan.

Action: Delete Caves Road, south of Sunrise Christian School, from the network.

6.2.3 Attiwill Terrace, east of Memorial Drive

East of Friesian Street, Attiwill Terrace changes its speed limit to 80 km/hr. For similar reasons to Caves Road, it is considered that the previous bicycle route, between Memorial Drive and Caves Road, should be deleted and replaced with the alternative route via Memorial Drive and Memorial Park.

Action: Delete Attiwill Terrace, east of Memorial Drive, from the network.

6.2.4 Sandstone Avenue, Smith Street to Playford Drive

Playford Drive leads into the new residential sub-division area in the north-east part of the township. The inclusion of Sandstone Avenue to the network would provide a logical on-road link towards the town centre. The speed limit is 50 km/hr speed on this road.. Residents of this area would then have a choice of using Sandstone Avenue or using the Creek Walk path to reach other destinations within the township.

Action: Add Sandstone Avenue, between Smith Street and Playford Drive, to the network.

6.2.5 Pearson Street

This route is proposed to be deleted and replaced with Cameron Street. See discussion about Cameron Street.

Action: Delete Pearson Street from the network.

6.2.6 Cameron Street

This route is proposed to replace the previous Pearson Street route. Cameron Street provides a direct connection to the Visitor Centre and Creek Walk path to the south. A refuge island is present at the intersection of MacDonnell Street to assist in crossing the street. To the north, it connects to the bicycle lanes and shared use path adjacent to the primary school and child care centre. It therefore forms part of the school route. The pavement condition of the road are also better suited to cycling, compared to Pearson Street. Importantly, Cameron Street is in close proximity to the Market Square, the premier recreation area of the town.

Action: Add Cameron Street to the network.

6.2.7 Oliver Street

The Market Square redevelopment also proposes to link the recreation area to the north via Oliver Street.

Action: Add Oliver Street to the network.

6.2.8 Riddoch Highway path connection to the Stewart Tce service road

A short length of unsealed path on both sides is proposed to complete the linkage to the service road.

Action: Add this path link to the network.



Missing link: service road side



Missing link: opposite side of service road

6.2.9 Butler Terrace, between Smith St and Gordon St

As part of Council's major reconstruction works, the existing on-road bicycle lanes would be replaced by an off-road path. Butler Terrace, between Smith Street and Magarey Crescent forms part of the RAVNET B-double route. The provision of an off-road path would provide separation of cyclists, including school cyclists, from vehicular traffic, including large B Doubles.

Action: Delete the Butler Tce on-road bicycle lanes and replace with an off-road path.

6.2.10 Creek Walk future extension north to McMillan Road

Council made a suggestion about extending the Creek Walk path north to McMillan Road. If implemented, it would provide a much longer path network along the watercourse to McMillan Road (a local street), which could then connect via the Stewart Terrace service road and Riddoch Highway path back to the town centre. Such a proposal would provide further opportunity for recreational cycling for the township in an off-road and local street environment. While not part of this study, the proposed path extension has been included in the revised township plan, as a desirable outcome, subject to detailed investigation by Council in the future.

Action: Add the potential Creek Walk extension north to McMillan Road to the network.

6.2.11 Park Terrace shared use path outside Naracoorte Primary School

The path outside of the school is used as a waiting/queuing area for children boarding buses. In the 2007 plan, it was recommended that the shared use path be diverted into the school land to the north of this waiting/queuing area.

Council have advised that the boundary of the school is further north than indicated by the boundary fence. Therefore, any diversion of the shared use path to the north would not require "land acquisition", given that the affected land would be on road reserve. It is recommended that Council continue discussions with the Department for Education and Child Development to address this shared use path issue.

Action: Continue discussions with DECD to address the shared use path realignment.

6.2.12 General path maintenance

See examples of path maintenance issues below:



Sharp drop off on right should be regraded



Gravel spill on the down slop of path



Poor path condition to High school

6.3 ENCOURAGEMENT PROGRAMS

In the 2007 plan, it was recommended that a program of bicycle parking rail installation be implemented by Council. Council have advised that the parking rail installation has not progressed as extensively, given the lack of request from users.

It is noted that there are some bicycle parking rails present within the township, for example at the main shopping centre, at the rear of Council's office building, at the fast food outlet in Rolland Street and at schools.



The provision of bicycle parking facilities is an important encouragement measure for cycling. Lack of convenient bicycle parking means that bicycles are parked informally and in some instances at inappropriate locations which may obstruct pedestrian access.

It is recommended that there be a regular program for the installation of bicycle rails. The areas where bicycle parking rails are commonly installed for users include:

- Council office
- Swimming facilities (eg Swimming Lake)
- Visitor information centre
- Major parks and recreation areas.
- Within the town centre area.

Examples of where bicycle parking would be beneficial:



outside the Council office



Unused paved area in the main street



Wide footpath area adjacent to the bank



Reserve adjacent Bank Pl



Outside the Visitor Centre

6.4 CREEK WALK AND RAIL CORRIDOR

6.4.1 Creek Walk

From the Limestone Coast Regional Trails report, it is understood that Creek Walk is a very important trail and a valuable asset for the Council.

South of the creek

The Creek Walk path has a number of significant constraints for use by cyclists. There are width and head height issues along the path, between Park Terrace and the railway

bridge. At the narrow point where the bridge is located, the width of the path reduces to approximately 1.6m with restricted sight lines around the bend.

Based on the current alignment, these issues would be very difficult to overcome. Council should progress further detailed investigations into an alternative path alignment for this section of the Creek Walk, for example by deviating the path away from the creek and bridge abutment.

At the MacDonnell Street end, the path is deviated to the street, eventually joining back to the creek where the Visitor Centre is located. The path west of MacDonnell Street was closed due to safety concerns. Long-term it is considered that the missing "gap" in the Creek Walk path, at MacDonnell Street, should be completed to provide the continuous alignment.

West of the Visitor Centre, the path is narrow and steep along some sections. At Stewart Terrace, the Creek Walk continues along the eastern side footpath (approximate width of 2.3m at the main road bridge) where it then crosses the road to the newly upgraded Creek Walk path towards Gum Avenue.

A number of maintenance related issues require attention along the path.



Relocate table to the other side to provide continuous path alignment



Extend seal further in to minimise gravel spill issue (slippery)

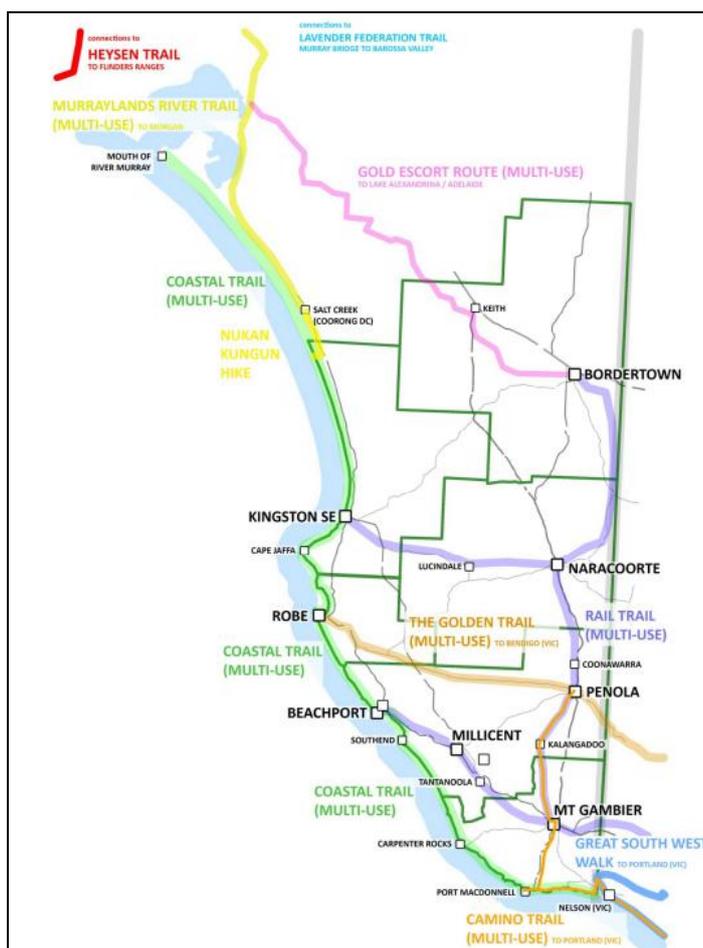
The ability to further upgrade the path is limited by the width constraints (rail embankment in part and the creek itself). While a 2m path width is generally available, this width should be increased further should the path become more well used in the future, desirably to 3m.

North of the creek

The path on this side of the creek is in more "open" land and not constrained by alignment or width. Extension of the current path north to MacMillan Road would potentially add to the recreational value of the path to the township.

6.4.2 Use of the rail corridor

There are discussions about the use of the rail corridor as a multi-purpose trail in the Limestone Coast Regional Trails report.



Source: LCRT Master Plan March 2015

If the disused rail corridors could be secured for future multi-purpose trails, it would open up opportunities for long-distance trails be created between Naracoorte, Bordertown, Penola and Kingston. Part of the rail corridor to Bordertown could also provide an alternative for workers who cycle for work to the Teys Australia site (on the outskirts of the township) instead of using Wimmera Highway.

While not part of this study, the development of the rail trails is strongly supported as it would enhance cycling opportunities in the region. The Riesling Trail is one example of where the disused corridor has been developed as a rail trail to maximise the tourism potential for the Clare region.

6.5 GREATER NARACOORTE AREA

Council wishes to assess 7 roads in the greater Naracoorte area to create safe network loops for long distance road cycling: Cadgee Road, Langkoop Road, Caves Road, Old Caves Road, Hynam Caves Road, Boddingtons West Road and Elderslie Road.

6.5.1 Route assessment

These roads comprise of the following long distance loops (see FIGURE 2):

Route 1: Cadgee Road-Boddingtons West Road and return

Approximate distance: 54 km

General width: Cadgee Rd 6.5m, Boddington Rd 5.5m

B Double route: Cadgee Road

Traffic volumes: No data available for Cadgee Rd but low volumes observed on-site. Boddington West Rd even less traffic than Cadgee Rd.

Comparison volumes DPTI 5/2015: Riddoch Hwy 1,900 vpd, Wimmera Hwy 600 vpd

Route 2: Elderslie Road-Langkoop Road-Hynam Caves Road and return

Approximate distance: 35 km

General width: Elderslie Rd & Langkoop Rd 7.0m, Hynam Caves Rd 6.6m

Traffic volumes: No data available but low volumes observed on-site

Comparison volumes DPTI 5/2015: Riddoch Hwy 1,900 vpd, Wimmera Hwy 600 vpd

Route 3: Old Caves Road-Caves Road-Naracoorte Caves and return

Approximate distance: 20 km

General width: Old Caves Rd varying narrow width, new seal 6.4m, Caves Rd 6.3m

B Double route: Old Caves Rd (Caves Rd to Pitts Lane), Caves Rd (to Wonambi Rd)

Traffic volumes: No data available but low volumes observed on-site

Comparison volumes DPTI 5/2015: Riddoch Hwy 1,900 vpd, Wimmera Hwy 600 vpd

Council have advised that the Forestry SA are considering a multi-purpose trail from Pitts Lane through the forestry land and terminating at the entrance road to the Naracoorte Caves (Caves Road). If implemented, this "diversion" route on Old Caves Road to Naracoorte Caves would provide cyclists with the alternative of using the portion of Old Caves Road away from the designated B Double route.

The development of a new trail through forestry land is therefore supported.

6.5.2 Shoulder sealing assessment

DPTI Operational Instruction 19.12 *Shoulder Sealing on High Speed Rural Roads* provide guidance on sealing requirements for road shoulders. The major benefit associated with shoulder sealing is the potential to reduce by up to 40% of head-on crashes and run-off road crashes.

The provision for cyclists is also dealt with under Clause 4.3.

4.3 Provision for Cyclists

Sealed shoulders provide a significant safety benefit by enabling cyclists to ride outside the traffic lane.

A shoulder surfacing treatment must be selected which ensures an acceptable

riding surface for cyclists on roads which attract appreciable bicycle usage. This applies to urbanised areas, tourist areas (including Barossa Valley, Adelaide Hills, Fleurieu Peninsula & Clare Valley) and within rideable proximity (say 20 km) of townships with a moderate or large population.

An acceptable riding surface may be achieved by using a 10/5 double spray seal, asphalt, slurry or similar treatment. However, if a segment of spray sealed shoulder is subject to regular heavy commercial vehicle loading, a larger aggregate size may need to be used to provide an adequate surfacing life. Consult Pavements and Structures Section for further advice regarding appropriate shoulder surface treatments.

From the above Clause, there appears to be 3 criteria in determining when shoulder sealing may be required for cyclists on a particular rural road:

	Route 1	Route 2	Route 3
Appreciable bicycle usage	×	×	×
Rideable proximity to townships	×	×	√
Moderate or large population	√	√	√

When assessed against the criteria, the following are noted:

- While routes used by local cyclists for training, recreation and exercise purposes appear unlikely to fall into the definition of "appreciable usage" category, it is noted that the LCRT report, in extensive consultation with the communities, have identified that there is a "*strong cycling contingent in the Naracoorte area*". Route 1 is a cycle loop that is regularly used by many of these local cyclists.
- Route 3 has been identified by Council and in the LCRT report as a route with significant tourism potential to the Naracoorte Caves and the usage by cyclists is likely to increase significantly in the future, particularly when upgrade works are completed for the benefit of cyclists.
- Only Route 3 falls within the rideable proximity of the township, while Routes 1 and 2 are well above that limit.
- It is assumed that the population of Naracoorte would fall in the "moderate" population category (approximately 5,000 people).

Because of the regular use of Route 1 by the many local cyclists in Naracoorte and the designation of Cadgee Road as a B Double route, this route should be accorded a high priority for upgrade works. One of the recommendations of the LCRT report is the establishment of safe on road cycle loops around the area and to consider additional infrastructure such as road widening, surface upgrades and signs. Cadgee Road would be one such route where shoulder sealing would greatly benefit cyclists and improve safety for all road users.

Route 3 should also be accorded high priority as it is a route that has been identified with significant tourism potential to and from the Naracoorte Caves, a world heritage listed

site. Given that it is also a route used by B Doubles, road reconstruction and widening would improve useability and safety for all users.

In summary, the justification for road reconstruction/shoulder sealing to accommodate cyclists is therefore most evident for Routes 1 and 3 and, as a consequence, these routes should be accorded the highest priority for Naracoorte.

Action: Continue the road reconstruction/shoulder sealing program for cyclists on Old Caves Road and on Cadgee Road as a high priority.

6.5.3 General route recommendations

Install Bicycle warning signs (W6-7) signs with supplementary distance sign (W8-17-1) - to alert drivers of the presence of cyclists along the road.



Example of sign: Caves Rd

Given that the 3 routes are quite long in distance, repeater signs (say at 5 km intervals) would be beneficial.

Install guide signs at the start of route and at change of direction of route (see example below). Naming of each route (eg Naracoorte Caves Route) and including distances (eg Caves 10 km) in the sign would provide information to potential cyclists of the destination and distance of the ride.



Example of guide signs

Maintenance identification and rectification - regular monitoring of the 3 routes would ensure that maintenance related issues that impact on cyclist safety would be picked up and action taken to address the issues, eg broken/frayed edge of bitumen, areas with significant gravel spillage etc.

Action: Install the above signs for all routes.

Action: Regularly monitor the road conditions for all 3 routes and undertake maintenance rectification when appropriate.

6.5.4 Shoulder sealing design

DPTI Operational Instruction 19.12 *Shoulder Sealing on High Speed Rural Roads* identified that an acceptable riding surface for road shoulders may be achieved by using a 10/5 double spray seal, asphalt, slurry or similar treatment. However, if a segment of spray sealed shoulder is subject to regular heavy commercial vehicle loading, a larger aggregate size may need to be used to provide an adequate surfacing life. Consult Pavements and Structures Section for further advice regarding appropriate shoulder surface treatments.

Some comments were made by cyclists about the riding quality of the recently completed shoulder seals in Cadgee Road and Old Caves Road.

Council advised that the new work on Cadgee Road was sealed with a 2 coat C170 bitumen with 14/7 mm stone mix, as per the rest of the road and, being new and without much traffic yet, it has a rough surface.

Old Caves Road had a primer seal to protect it over winter and then a 2 Coat Crumb Rubber Seal with 14/7 mm stone was used. The Crumb Rubber Seal does not have the rideability of asphalt or smaller stone, hence the comments regarding the smoothness of the seal.

In both of the above instances, it is noted that the stone sizes used were larger than recommended by DPTI. However, given local conditions and local requirements would influence the type of pavement used, Council may wish to seek further discussions with DPTI, given DPTI's more extensive experience with shoulder sealing for cyclists, to assess other alternatives.

6.5.5 Old Caves Road speed limit

As Old Caves Road is upgraded, and it is expected that this bicycle route to the Naracoorte Caves will become of greater significance to the township from a local and tourism perspective, the road space would be shared between vehicular traffic and cyclists. It is an established fact that lowering the speed would significantly reduce the injury risk to cyclists in the event of a collision. An assessment of the speed limit should be undertaken. A lower speed limit would be safer for cyclists using the road and further reinforce its potential as a cycle tourism route..

Action: Undertake an assessment of the speed limit of Old Caves Road.

7.0 ASSESSMENT OF THE LUCINDALE NETWORK

7.1 LUCINDALE TOWNSHIP ROUTES

Lucindale is a very small town with limited number of streets within the town. The main street is Avenue Range Road, which has a carriageway width of 23.8m. It has footpaths on both sides of the street.

To the north of the township is the Lucindale District School. The residential areas are located primarily to the south of the school.

There is an existing shared use path on the eastern side of Gum Avenue, between the school and Sheoak Grove. This shared use path traverses most of the residential areas from north to south. On the western side of Gum Avenue, there is a footpath present as well.

A check of the existing shared use path indicates regular maintenance would be necessary to ensure that the path is kept in a reasonable condition for users. The more apparent works include:

- Resurfacing the path surface at the school end
- Reconstruct sections where tree roots have uplifted the pavement
- Repair the poor pavement surface at driveway crossovers
- Keeping vegetation from encroaching into the path
- Patch potholes and frayed edges

See examples below.





Overall, the path looks to be in reasonable condition. A major reconstruction of the path in the foreseeable future is not considered to be warranted. Sections of the path may require reconstruction or resealing to address some of the poor pavement condition shown in the photos above.

The need for dedicated bicycle facilities, such as bicycle lanes, is not evident for small townships where there is generally very low traffic volumes present. In the case of Lucindale, there is an existing off-road shared use path that links most of the residential areas of the township with the main school to the north.

For these reasons, the installation of further bicycle facilities does not appear to be warranted within the township.

Installation of bicycle parking rails in the main street would be beneficial and would help regulate bicycle parking for those who cycle to the main street. There are existing bicycle parking rails outside the cafe and post office in the main street. An additional bicycle parking rail is recommended outside the Council office.



Existing bicycle rail adjacent to cafe



Existing bicycle rail outside the post office



Install bicycle rail outside the Council office

7.2 GREATER LUCINDALE AREA

7.2.1 Route assessment

These roads comprise of the following long distance loops (see FIGURE 4):

Route 4: Fairview Road-Fairview Conservation Park and return

Approximate distance: 30 km

General width: Fairview Rd 6.2m

Traffic volumes: No data available for Fairview Rd but low volumes observed on-site.

Comparison volumes DPTI 5/2015: Four Mile Rd 500 vpd, Konetta Rd 230vpd

Route 5: Avenue Range Rd-Crower Rd-Konetta Rd- Four Mile Rd

Approximate distance: 42 km

General width: Crower Rd 6.3m; Konetta Rd 6.4m

B Double route: Avenue Range Rd, Konetta Rd and Four Mile Rd

Traffic volumes: No data available for Avenue Range Rd and Crower Rd but low volumes observed on-site.

Comparison volumes DPTI 5/2015: Four Mile Rd 500 vpd, Konetta Rd 230vpd

7.4.2 Shoulder sealing assessment

DPTI Operational Instruction 19.12 *Shoulder Sealing on High Speed Rural Roads* provide guidance on sealing requirements for road shoulders. The assessment of the two routes for Lucindale is summarised below.

	Route 4	Route 5
Appreciable bicycle usage	×	×
Rideable proximity to townships	×	×
Moderate or large population	×	×

The justification for shoulder sealing of the two routes to cater for cyclists is therefore not evident.

7.4.3 General route recommendations

Install Bicycle warning signs (W6-7) signs with supplementary distance sign (W8-17-1) - to alert drivers of the presence of cyclists along the road.



Example of sign: Caves Rd

Given that the 2 routes are quite long in distance, repeater signs (say at 5 km intervals) would be beneficial.

Install guide signs at the start of route and at change of direction of route (see example below). Naming of each route (eg Naracoorte Caves Route) and including distances (eg Caves 10 km) in the sign would provide information to potential cyclists of the destination and distance of the ride.



Example of guide signs

Maintenance identification and rectification - regular monitoring of the 2 routes would ensure that maintenance related issues that impact on cyclist safety would be picked up and action taken to address the issues, eg broken/frayed edge of bitumen, areas with significant gravel spillage etc. Note: Konetta Road is a DPTI road.

Action: Install the above signs for all routes.

Action: Regularly monitor the road conditions for the two routes and undertake maintenance rectification when appropriate.

8.0 SUMMARY OF RECOMMENDATIONS

8.1 NARACOORTE

Township area

1. Adopt the revised network as shown in Figure 1.
2. Continue discussions with DECD to address the shared use path realignment in Park Terrace outside the Naracoorte Primary School.
3. Implement a program of bicycle parking installation in the township.
4. Undertake a detailed investigation to identify options for diverting the Creek Walk path alignment, between Park Terrace and the railway bridge, and continuing the Creek Walk path through the current closed bridge at MacDonnell Street.
5. Undertake regular monitoring of the network to ensure that the paths and roads are maintained to reasonable conditions for cyclists.

Greater Naracoorte area

1. Adopt the priority for **road reconstruction/shoulder sealing** as follows: **Routes 1 and 3 high**, Route 2 low.
2. Install general route signage to support these long distance routes.
3. Undertake regular monitoring of these long distance routes to ensure that the roads are maintained to reasonable conditions for cyclists.
4. Support the development of the disused rail corridor as part of a wider area rail trail network.
5. Support the establishment of an off-road trail through ForestrySA land.
6. Consult with DPTI on the appropriate shoulder sealing pavement methodology, where shoulder sealing is targeted at cyclists.
7. Undertake an assessment of the speed limit for Old Caves Road (part of Route 3).

8.2 LUCINDALE

Township area

1. Adopt the network as shown in Figure 3.
2. Undertake regular monitoring of the network to ensure that the path is maintained to reasonable conditions for cyclists.
3. Install additional bicycle parking rails in the township (eg town centre, parks).

Greater Lucindale area

1. Install general route signage to support these long distance routes.
2. Undertake regular monitoring of these long distance routes to ensure that the roads are maintained to reasonable conditions for cyclists.
3. Consult with DPTI on the appropriate shoulder sealing pavement methodology, where shoulder sealing is targeted at cyclists.

9.0 COSTINGS AND PRIORITY

APPENDIX 1 summarises the costings and priority for the master plan for Naracoorte.

The estimated total cost for the works recommended is approximately \$54,000.

APPENDIX 2 summarises the costings and priority for the master plan for Lucindale.

The estimated total cost for the works recommended is approximately \$6,000.

Sources of funding that could be considered would include the following:

- State Bicycle Fund (State)
- Black Spot Program (State/Federal)
- Special Local Roads Program (State)
- Roads to Recovery Program (Federal)
- National Stronger Regions Fund (Federal)
- Stronger Communities Program (Federal - for community groups)
- Community Road Safety Grants (State)

10.0 CONCLUSIONS

The review of the Master Plan for Naracoorte has highlighted a number of changes to the previous bicycle networks. The revised network would provide convenient, direct and safe access for pedestrians and cyclists within the township.

For the greater Naracoorte area, 3 long distance cycling routes have been assessed. **The route to Naracoorte Caves has the potential to be a significant tourism type route and should therefore have a high priority in terms of road upgrades. Route 1 should also be accorded a high priority for road upgrades, having regard to its use by many local cyclists and the sharing of the road with large B Doubles in Cadgee Road.**

The preliminary costs for implementing the works associated with Naracoorte are summarised in APPENDIX 1.

The review of the Lucindale township indicates that the provision of further bicycle facilities would not be warranted. The existing shared use path along Gum Avenue provides a very convenient, direct and safe route for all users, linking most of the residential areas with the town centre and school. Additional bicycle parking rails would be beneficial to encourage cycling and to regulate the parking of bicycles.

For the greater Lucindale area, 2 long distance cycling routes have been assessed. Shoulder sealing works would not be warranted for these routes, however the installation of signage for these routes would be beneficial.

The preliminary costs for implementing the works associated with Lucindale are summarised in APPENDIX 2.

APPENDIX 1

COST ESTIMATE: NARACOORTE

Street	Proposal	Action	Est cost \$	Priority
6.2.1 McCoy St/Train station	Future redevelopment	New link to Creek Walk	NA	High
6.2.8 Riddoch Hwy	Shared use path (30m)	Connect service rd to extg	5000	High
6.2.9 Butler Terrace	Shared use path	Part of Butler St upgrade	NA	High
6.2.10 Creek Walk extension north	Shared use path	Feasibility study	10000	Medium
6.2.11 Park Tce path	Shared use path (100m)	Resolve with DECD	15000	Medium
6.2.12 General	Paths and roads in network	Maintenance	NA	High
6.2 General	Identify all network routes	Install guide signs	5000	High
6.3 General	Bike parking program	Assume Year 1	3000	High
		Assume Year 2	3000	Medium
		Assume Year 3	3000	Low
6.4.1 Creek Walk	Realign path railway bridge	Feasibility study	5000	High
6.4.2 Rail corridors	Develop rail trails	By others	NA	Medium
6.5.1 Greater Naracoorte area	Pitts Ln/Forestry SA trail	By others	NA	High
6.5.2 Greater Naracoorte area	Road reconstruction Route 3	Old Caves Rd	*	*
	Shoulder sealing Route 1	Cadgee Rd	**	**
6.5.3 Greater Naracoorte area	Identify routes (all 3 routes)	Install signs	5000	High
6.5.5 Greater Naracoorte area	Old Caves Rd	Assess speed limit	NA	High
		TOTAL	\$54,000	

Notes:

* Council have advised that the **road reconstruction** is potentially a 3-4 year project. Given the considerable costs involved, it would be difficult to estimate the costing and budgetary requirement for this cycling-related upgrade.

** **The shoulder sealing of Cadgee Rd should have a high priority, given the regular and high usage by local cyclists. Given the considerable costs involved, it would be difficult to estimate the costing and budgetary requirement for this upgrade which would benefit all road users.**

APPENDIX 2

COST ESTIMATE: LUCINDALE

Street	Proposal	Action	Est cost \$	Priority
7.1 General	Path in network	Maintenance	NA	High
	Bike parking program	Install bicycle rails	3000	High
7.4.3 Greater Lucindale area	Identify routes (all 2 routes)	Install signs	3000	High
		TOTAL	\$6,000	

FIGURE 1: NARACOORTE TOWNSHIP

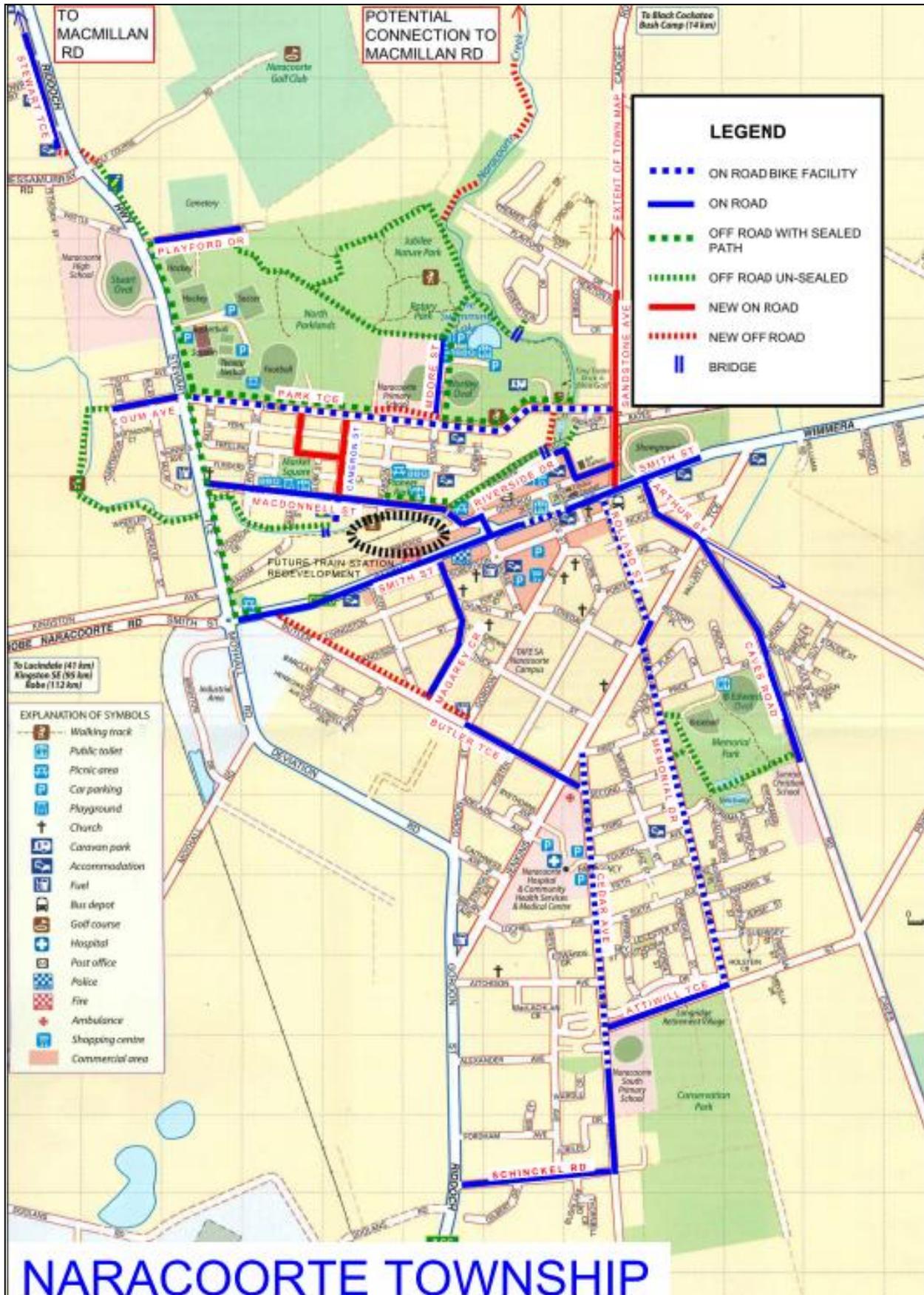


FIGURE 2: GREATER NARACOORTE AREA

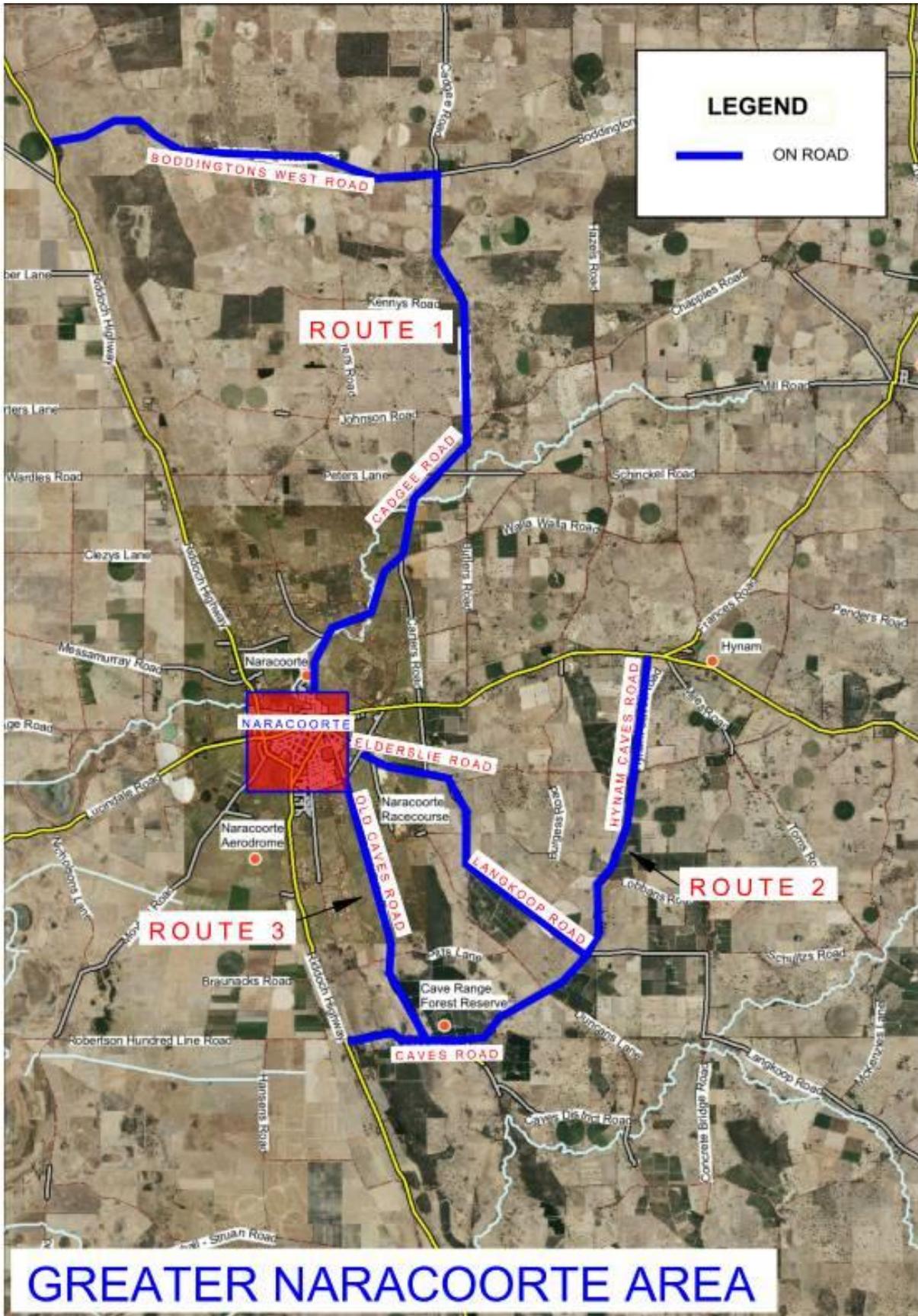


FIGURE 3: LUCINDALE TOWNSHIP



FIGURE 4: GREATER LUCINDALE AREA

