Red Cliffs Walking & Cycling Plan

Technical Report

Mildura Rural City Council

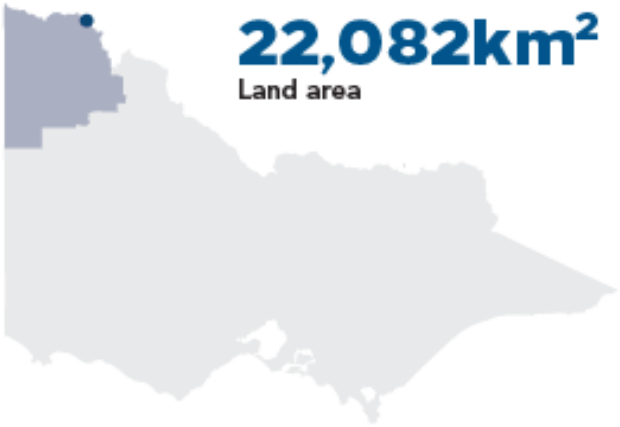
Our region

Located in north west Victoria, the Mildura Rural City Council area covers almost 10 percent of the State.

The region's landscape includes unique Mallee vegetation, broad acre grain properties, extensive horticultural farms and vibrant towns.

Mildura Rural City shares borders with New South Wales and South Australia, which makes it a strategically important regional service centre for three states.

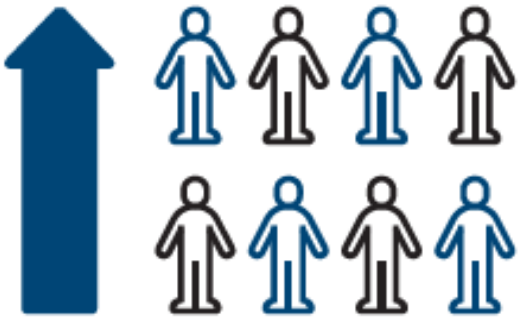
The beautiful Murray River winds its way through much of the municipality and is a focal point for visitors and those who call the region home.



22,082km²
Land area

56,972
2024 estimated resident population

59,439
2031 projected resident population



Key industries

Dryland farming, irrigated horticulture (table grapes, wine grapes, dried grapes, citrus, vegetables and nuts), tourism, food and beverage manufacturing, transport and logistics, retail, health and community services.

Our towns

Cabarita
Cardross
Colignan
Cowangie
Cullulleraine
Irymple
Merbein
Meringur
Mildura
Murrayville
Nangiloc
Nichols Point
Ouyen
Red Cliffs
Underbool
Walpeup
Werrimull

Emerging industries

Renewable energy generation, aquaculture, mineral sands mining and recycling

Contents

1. INTRODUCTION

1.1 Project Objectives and Approach

Mildura Rural City Council is seeking to improve safety for pedestrians and cyclists through development of this walking and cycling plan. This Analysis Project investigated pedestrian and cyclist safety in and around the township of Red Cliffs and identified potential improvements to address and support active transport participation, pedestrian and cyclist safety, and road safety more generally. The Plan sets out a blueprint for a safe pedestrian and cyclist network linking key community destinations within the Red Cliffs township. It also considered area-wide local area traffic management.

This project builds on outcomes from the Merbein Pedestrian and Cycling Plan (2023), and the Mildura Tracks and Trails Strategy (2012). Development of the Red Cliffs Walking and Cycling Plan involved:

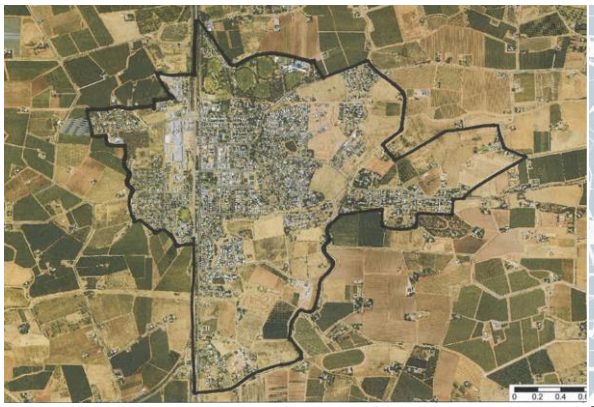
- Data collection and analysis
  - Review of background materials
  - Analysis of traffic, pedestrian and cyclist data
  - Analysis of casualty crash data
  - Consideration of key origins and destinations and the surrounding road and transport network
  - Review of existing walking and cycling infrastructure
  - Observations of the study area including pedestrian and cyclist activity at key locations and times
  - Consideration of community attitudes and perceptions (including review of historical community concerns and current views)
- Identification of key issues and potential treatments
- Development of Walking and Cycling Plan
  - Development of draft plan presenting preliminary treatment concepts to address support walking and cycling, as well as improve road safety throughout the area
  - Indicative costing and prioritisation of treatments in the plan
  - Feedback from on the draft Plan sought from the community
  - Finalisation of the Plan.

This technical report presents additional detail in relation to the analysis underpinning the Walking and Cycling Plan, including:

- background material review
- traffic and casualty crash data
- historical community feedback
- community and Council consultation as well as observations

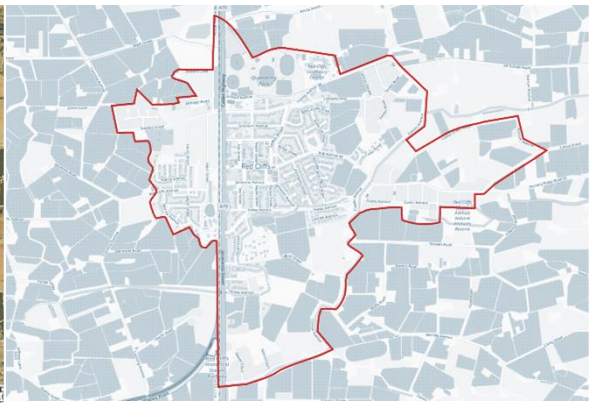
1.2 Study Area

The township of Red Cliffs is located 13 km south of Mildura. The boundaries of the project study area include Nardoo St, Cocklin Ave, Nerrum Ave and Azolia St. The study area is shown in Figure 1**.**



SOURCE: RED CLIFFS WALKING AND CYCLING PLAN, COMMUNITY ENGAGEMENT PLAN (JUNE 2024)

Figure 1A: Aerial photo of Study Area



BASE MAP SOURCE: OPEN STREET MAP

Figure 1B: Study Area street map overview

Figure 1: Study Area

Red Cliffs, and the wider Mildura Rural City Council region, is a rural residential, farming and tourist area. Red Cliffs' population in 2021 was 5,294 people. Red Cliffs experienced population growth of approximately 5% following the 2016 census. In 2021, the top five industries of employment included agriculture, forestry & fishing, health care & social assistance, retail, construction and manufacturing[1].

1.3 Context

1.3.1 National and Victorian Road Safety Strategies

Australia's *National Road Safety Strategy 2021–2030* and the *Victorian Road Safety Strategy 2021–2030* both reflect Safe System principles and seek to achieve zero deaths by 2050.

Australia's *National Road Safety Strategy 2021–2030 (NRSS)*[2] represents Australian governments at all levels 'commitment to deliver significant reductions in road trauma, putting Australia on a path to achieve 'Vision Zero' or zero deaths and serious injuries on our roads by 2050'.

The *Victorian Road Safety Strategy 2021–2030*[3] 'commits to the ambitious target of eliminating death from our roads by 2050, with the first step of halving road deaths by 2030'. The Strategy 'also seeks to reduce the incidence of serious injury resulting from road crashes'.

[1] ABS, *Red Cliffs 2021 Census All persons QuickStats*, https://abs.gov.au/census/find-census-data/quickstats/2021/SAL22147

[2] Commonwealth of Australia 2021, *National road safety strategy 2021-2030*, Department of Infrastructure, Transport, Regional Development and Communications, Canberra, ACT

[3] State of Victoria Department of Transport, *Victorian Road Safety Strategy 2021−2030*

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1.3.2 Safe System Principles for Pedestrians and Cyclists

A safe road network is critical for all road users. The Safe System approach to road safety management recognises that humans make errors, that crashes will continue to occur and that humans have a limited tolerance to impact forces. Safe System principles have been acknowledged in successive national road safety strategies and action plans since 2003 as the guiding principles for road safety programs in Australia.

A Safe System approach seeks to eliminate the potential for fatal and serious injury (FSI) crashes, and where this is not possible treatments that seek to minimise the incidence and/or severity of crashes are considered. The Safe System Assessment Framework outlines a Safe System-based hierarchy of solutions for run-off-road, head-on, intersection and 'other' vehicle type crashes, as well as treatments for pedestrian and cyclist crashes.

Very low speed limits/speed environments are required to protect vulnerable road users in accordance with Safe System principles. An impact speed of 30 km/h is recognised as the Safe System speed for vulnerable or unprotected road users (pedestrians, cyclists, motorcyclists). 'A Safe System speed is defined as the maximum survivable speed upon impact where the chance of death is less than 10%'[4].

Implementation of Safe System involves, firstly, consideration of solutions which eliminate occurrence of fatal and serious injuries (primary solutions). In some situations, such options will not be feasible due to project constraints dictated by budget, site, conflicting road user needs, or the environment. If so, the next safest project-feasible solution needs to be identified (supporting solutions). This process requires a clear Safe System-based hierarchy of solutions.

The Safe System Assessment Framework outlines a Safe System-based hierarchy of solutions, including treatments for pedestrian and cyclist crashes (Table 1). In the table, each treatment is annotated to indicate whether it addresses the exposure, likelihood and/or severity of the crash type.

[4] Austroads 2016, *Safe System Assessment Framework*, AP-R509-16, Austroads, Sydney, NSW

HIERARCHY	TYPE	TREATMENT	INFLUENCE E = EXPOSURE L = LIKELIHOOD S = SEVERITY
Safe System options ('primary' or 'transformational' treatments)		• Separation (footpath) • Separation (crossing point) • Very low speed environment, especially at intersections or crossing points.	E L L, S
		• Separation (separate cyclist path) • Very low speed environment, especially at intersections.	E L, S
Supporting treatments (compatible with future implementation of Safe System options)		• Reduce speed environment/speed limit • Pedestrian refuge • Reduce traffic volume.	L, S L E, L
		• Shared pedestrian/cyclist path • Cyclist lane • Reduce traffic volumes.	E L E, L
Supporting treatments (does not affect future implementation of Safe System options)		• Pedestrian signals • Skid resistance improvement • Improved sight distance to pedestrians • Improved lighting • Rest-on-red signals.	L L L L L, S
		• Separate cyclist signals at intersections • Cyclist box at intersections • Skid resistance improvement.	L L L
Other considerations		• Speed enforcement.	L, S
		• Speed enforcement • Enforcement of other regulations	L, S L

SOURCE: AUSTROADS 2016, *SAFE SYSTEM ASSESSMENT FRAMEWORK*, AP-R509-16.

TABLE 1: SAFE SYSTEM TREATMENT HIERARCHY: PEDESTRIAN AND CYCLIST TREATMENTS

The Austroads *Guide to Road Safety Part 2: Safe Roads* (2021) identifies the following contributing factors for pedestrian crashes:

- Too much traffic for adequate gaps
- High-speed, multi-lane and two-way traffic
- Complex or unexpected traffic movements
- Traffic hidden by parked cars, other objects or excessive landscaping
- A marked crossing which is not evident to drivers
- Long signal cycles which encourage pedestrians to disobey signals
- Inappropriate device or lack of devices for mix of pedestrians (e.g. disabled)
- Inadequate lighting.

When considering needs and safety solutions for vulnerable road users, the following should be taken into consideration[5]:

- Pedestrian desire lines and accessibility needs to be taken into consideration, including the need for safe crossing points
- Footpaths should be well-maintained to maintain/improve levels of service and reduce the risk of slips, trips and falls, particularly for the elderly and people with disabilities
- Well maintained footpaths and cycle paths encourage greater active transport use
- Separation of bicycles and motor vehicles is preferred with increasing motor vehicle speeds and volumes
- Managing speeds down to survivable impact levels for vulnerable road users creates more walking and cycling-friendly environments
- High travel speeds do not align well in safe, equitable, liveable and accessible cities, where walking and cycling is safe and attractive.
- On urban roads, key crash risks typically occur at:
    - Intersections
    - High active mode activity, including children and elderly on roads with a 50km/h speed limit or higher.
    - High interaction with land use (link and place), e.g. CBDs, residential streets, mixed-use arterials.

The Austroads *Guide to Road Safety Part 2* notes the following Safe System features to help improve safety for pedestrians and cyclists at unsignalised intersections:

- Pedestrians – 30 km/h speeds where pedestrian/vehicle conflict exist; segregation for higher speeds
- Cyclists – Design features that support the vision of cyclists from vehicles and ensure 30 km/h vehicle speeds; segregation where speeds are high.
- It is also important to take into consideration needs for older active transport users. Victoria Walks *Safer Road Design for Older Pedestrians* recommendations include[6]:
- Reduced speed limits and area wide traffic calming.
- Mid-block pedestrian crossings (ideally with flashing lights and raised surfaces), particularly in activity centres, in the vicinity of housing and facilities for older people and on routes that have been identified as popular with older pedestrians.
- Raised pedestrian crossings at intersections and roundabouts to reduce vehicle speeds at the crossing point, enhance priority for pedestrians and make them more conspicuous to drivers.
- Raised thresholds, which effectively extend the footpath across an intersection (usually side streets), to emphasise that drivers are required to give way when turning.

[5] Ministry of Transport, 2018, *Overview of road safety in New Zealand*, Ministry of Transport, New Zealand
[6] Mantilla, J. and Burtt, D, 2016, *Safer Road Design for Older Pedestrians*, Victoria Walks, Melbourne, Version 1.1, August 2016

- Kerb extensions, median refuges and tighter turn radii at intersections and roundabouts to reduce vehicle speeds, distance of pedestrian exposure and complexity of crossings.
- Safer design standards for driveways to indicate priority for pedestrians and provide physical cues for drivers.
- Fully controlled right turn signal phases and right turn lag signal phases to protect older pedestrians from right-turning vehicles on the departure side of the intersection.
- Early-start signal phases and PUFFIN pedestrian detection signals to adjust phase times and allow older pedestrians to fully clear the intersection.

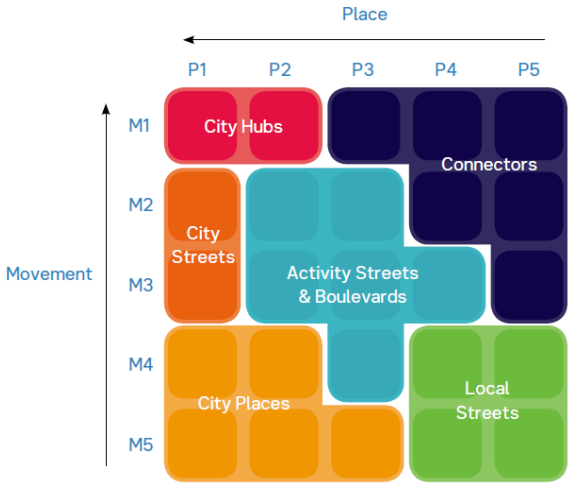
1.3.3 Movement and Place in Victoria

It is important to consider the function of the road within the surrounding road network and how it performs its function to meet the community's, as well as users' needs. Roads, and in particular local streets, both facilitate the **movement** of people and goods as well as acting as **places** for people.

The movement and place framework (Figure 2) helps to manage priorities relating to 'facilitating the movement of people and goods' and 'acting as places for people'[7]. *Movement and Place in Victoria*[8] provides guidance for assessing Movement and Place. Various movement and place strategies may be implemented to improve aspects such as road safety, vehicle travel time, connectivity for pedestrians and cyclists, etc.

DTP Movement and Place classifications (Figure 3) have been considered during the development of this Plan. These designate:

- Most streets in the town centre as *Activity streets and boulevards*
- Most streets surrounding the town centre as *Connectors*
- A number of *Local streets* throughout the precinct (including Whittaker Cr, South St, connections within Quandong Park and Red Cliffs Caravan Park).



Activity streets and Boulevards

Provide access to shops and services by all modes. There is high demand for movement as well as place with a need to balance different demands within the available road space.

Connectors

Provide safe, reliable and efficient movement of people and goods between regions and strategic centres.

Local Streets

Provide quiet, safe and desirable residential access for all ages and abilities.

- Movement and Place in Victoria

SOURCE: STATE OF VICTORIA DEPARTMENT OF TRANSPORT 2019, *MOVEMENT AND PLACE IN VICTORIA*, DEPARTMENT OF TRANSPORT

Figure 2: Movement and Place in Victoria roads and street types

[7] Austroads 2016, *Guide to Traffic Management Part 4: Network Management*, AGTM04-16, Austroads, Sydney, NSW.
[8] State of Victoria Department of Transport 2019, *Movement and Place in Victoria*, Department of Transport, VIC.

In the context of the Red Cliffs town centre, the focus is to balance the community's needs through:

- supporting active transport
- supporting the movement of motorised traffic
- supporting safety, health and well-being, and environmental sustainability.

SOURCE: DTP *MOVEMENT AND PLACE*
Figure 3: Movement and Place classifications in Red Cliffs

1.3.4 Mildura Rural City Council's Strategic Documents

Council Plan 2021 – 2025

The *Council Plan 2021 – 2025* sets out the strategic direction of Council and the organisation over a four year period in order to meet the community vision and aspirations. The Council Plan forms part of Council's integrated strategic planning and reporting framework, with links to other key strategic documents.

The Plan includes a community priority to reduce "the incidence of fatalities and serious injuries on our roads", and a place priority to "create and maintain welcoming open spaces that are accessible and connected", with a strategic indicator relating to "community satisfaction with the condition of local streets and footpaths in your area".

Mildura Road Safety Strategy 2023 – 2030

- Supports long term vision of achieving Towards Zero target of zero deaths and serious injury crashes
- Aligns with Safe System principles, including safe system speeds and infrastructure
- Identifies need to improve pedestrian and cycle access to key areas.

Long-term vision
To achieve the Towards Zero target of zero deaths and serious injury crashes on our roads and create the most liveable, people-friendly community in Australia.

Safety vision
To ensure safe travel within the Mildura Council Road network for our local community and our visitors.
- Mildura Road Safety Strategy

Community Vision 2021 - 2040

- Community priorities include walking paths, road maintenance and safety and making the river accessible
- Place priorities include:
  - *outdoor spaces, green spaces and public facilities where people of all ages and abilities can exercise and relax*
  - *accessible and connected transport options within and to our region.*

Red Cliffs Community Plan 2023 - 2028

- Safety actions include "Address the traffic concerns of the community while maintaining good levels of accessibility for local residents, local businesses and emergency services e.g., Traffic lights, roundabouts installation and pedestrian crossings"
- Advocacy actions include investigating and improving public transport (note that public transport generally involves walking)
- Recreation actions include continued implementation of walking and cycle trails (e.g. Centenary Walk and to the riverfront)

Vision
To create a vibrant, sustainable, and inclusive community where all residents can thrive.
- Red Cliffs Community Plan

Mildura Tracks and Trails Strategy 2012

- Recognises the need to connect outlying areas (including Red Cliffs) safely with the Mildura CBD area. Mildura to Red Cliffs is identified as one of the most important on-road bicycle routes for the community (with a potential alignment along the railway easement and riverfront).
- For larger towns including Red Cliffs, aims to incorporate "a minimum of one inner urban shared path within the town" and "one shared path (outer ring network) from the town to a nearby attraction"
- Priorities include development of:
  - Chaffey Trail between Red Cliffs and Yelta via Merbien. For the Kings Billabong to Red Cliffs section, the trail commences at Barclay Square and the alignment follows Indi Ave, Nursery Ridge Road and Casia St to the Red Cliffs Scenic Reserve.

- Off-road trail along Cocklin Ave between Fitzroy Ave and Nursery Ridge Rd (medium priority)
- Off-road trail along rail reserve between 15th St and Red Cliffs (long term priority, requiring feasibility study and negotiation with Victrack)
- A map of *Active transport routes* to show walking and/or cycling options to travel to schools and reserves, with planned off-road paths in Red Cliffs identified along Cocklin Ave (between Indi Ave and Fitzroy Ave), and Jacaranda St (north of Heytsbury Ave)

Red Cliffs Residential Development Plan 2009

- Includes an overarching design principle of developing a "clear, legible and safe network of streets with a high degree of vehicular, pedestrian and cycle permeability", with pedestrian/cycle paths and connections identified in the development precincts.

1.3.5 Potential Funding Support

Support may be available from a number of potential sources to help fund some projects, including:

- Federal Blackspot Program (FBP) – regional and rural criteria include[9]:
  - For intersections, mid-blocks and short sections: *Two casualty crashes over a five-year period*
  - For road lengths: *Average of 0.13 casualty crashes per km per annum over the length in question over a five-year period*
- TAC programs[10]:
  - Road Safety Grant Program (RSG) – *designed to support community groups and organisations to develop and implement effective community-based road safety projects. Will need a local community group to apply*.
  - Local Government Grant Program (LGG) – *provides opportunities for LGAs to improve road safety in their local communities. The program supports projects aligned with the Victorian Road Safety Strategy 2021-2030 that adopt Safe System principles to reduce cyclist and pedestrian crashes*.
  - Small Grants Program (SGP) – *innovative community-based projects that will make a positive change in the lives of TAC clients and Victorians with disability. Application can be by a local community group or local government authority*.

[9] https://investment.infrastructure.gov.au/resources-funding-recipients/nominating-black-spot/black-spot-site-eligibility

[10] https://www.tac.vic.gov.au/about-the-tac/community/grants

- Regional Level Crossing Upgrade Fund (RLCUF) – program "to make railway crossings safer in regional areas, with the Australian Government funding up to 50% of the cost of delivering upgrades". It is noted that "pedestrian-only upgrades are out of scope, however a pedestrian crossing associated with improvements to the Level Crossing may be considered. Projects should consider at risk sites on Regional freight networks" (Guidelines for Applicants, Regional Level Crossing Upgrade Fund (RLCUF))[11]

- Safer Local Roads and Infrastructure Program (SLRIP) – provides "funding for projects to address current and emerging priorities in road infrastructure needs"[12]. Projects must meet at least one focus area (see criteria below), be for construction on an existing or proposed road, be on a public road and be a whole and complete project (*Guidelines*, Safer Local Roads and Infrastructure Program, June 2024)
  - Road safety: *To improve road safety across Australia for all road users (including heavy vehicle users) through the improvement of road infrastructure*
  - Productivity: *To improve productivity and efficiency outcomes through connecting and improving road networks*
  - Bridge renewal: *To improve access for communities and facilitate higher productivity vehicle access through the upgrade and replacement of bridges, including culverts*
  - Road resilience: *To improve the resilience… of critical road corridors*
  - Road sustainability: *To contribute to decarbonisation goals by minimising or avoiding embodied, operational and/or enabled emissions*
  - Heavy vehicle rest area: *To have the primary purpose of facilitating rest for heavy vehicle drivers at locations of need, through the construction or upgrade of heavy vehicle rest areas and amenities*.

[11] www.infrastructure.gov.au/infrastructure-transport-vehicles/rail/regional-australia-level-crossing-safety-program#:~:text=The%20Australian%20Government%20has%20committed,the%20cost%20of%20delivering%20upgrades.
[12] https://investment.infrastructure.gov.au/about/local-initiatives/safer-local-roads-and-infrastructure-program

2. INVESTIGATION

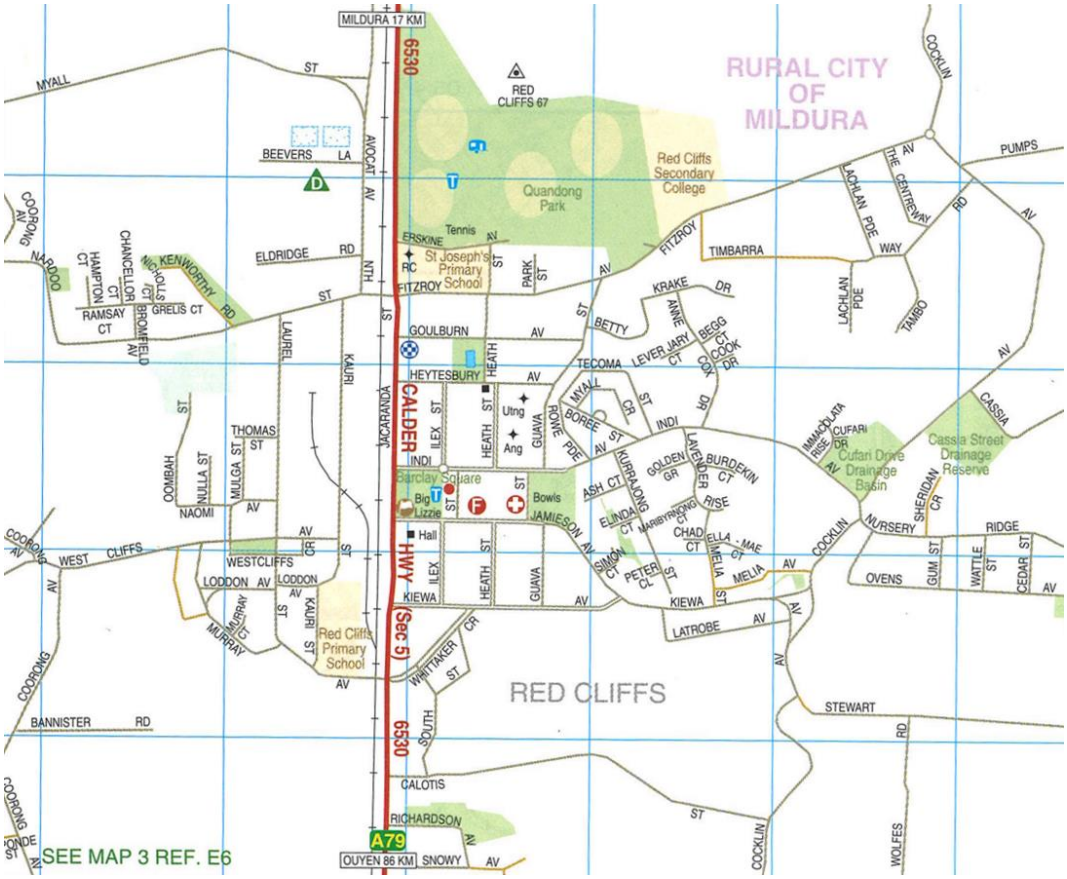
2.1 Existing Conditions

2.1.1 Road Network

Most of the streets in the study area are local roads under the care and management of Mildura Rural City Council (see Figure 4), with the exception of Jacaranda St (Calder Hwy, A79).

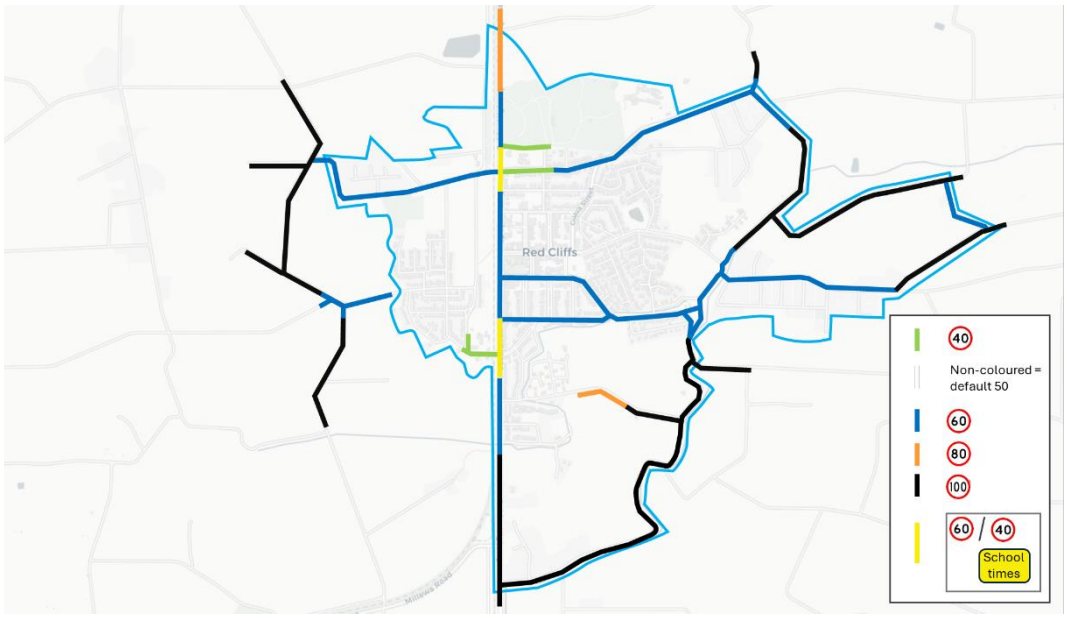
Jacaranda St is subject to a 60 km/h limit, with 40 km/h school zone limit applicable during school times in the vicinity of Red Cliffs Primary School and St Josephs Primary School. An 80 km/h limit applies north of the Quandong Park entrance. To the south of Red Cliffs (south of Snowy Ave), a 100 km/h limit applies (see Figure 5).

DTP Infrastructure Risk Rating (IRR) classifications were available for the sealed network outside of residential streets and streets in the town centre (Figure 6). Most streets were classified with a *Medium* or *Medium-high* risk. A number of streets were classified *Low risk* including Westcliffs Ave (between Murray Ave and Coorong Ave), Jacaranda St (between Erskine Ave to caravan park entrance), Nerrum Ave (north), and Cocklin Ave (north) and Pumps Rd on the approach to Cocklin Ave.



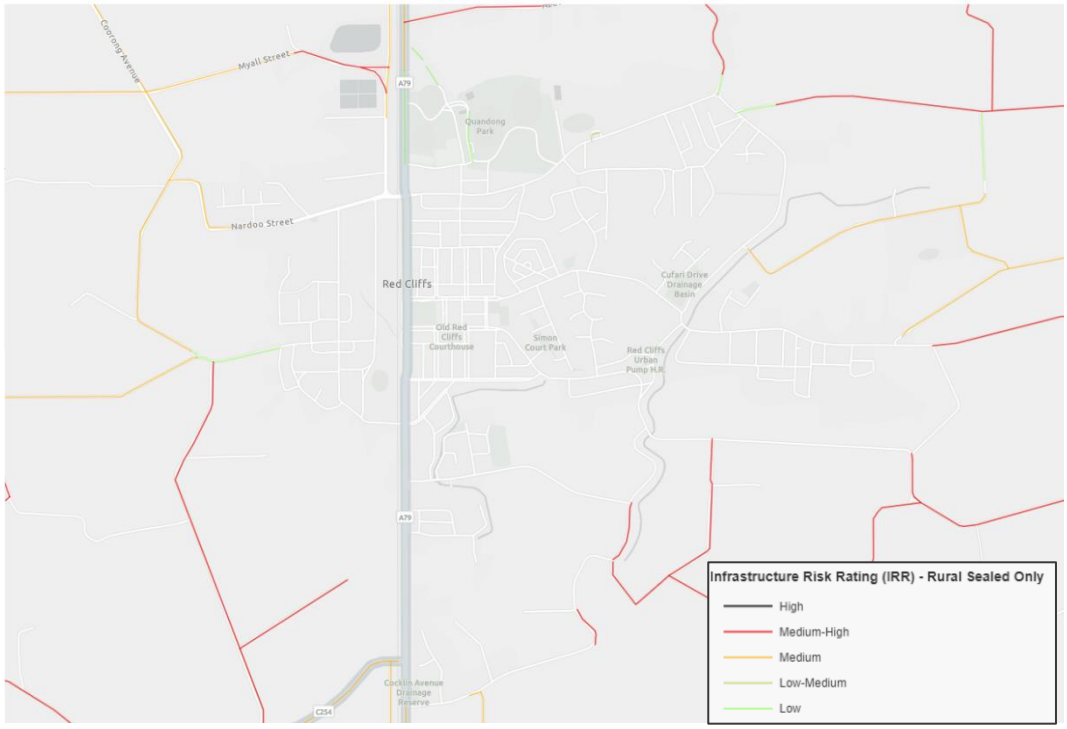
BASE IMAGE SOURCE: RACV VICROADS COUNTRY STREET DIRECTORY VICTORIA 9TH ED. (2013), TOWN MAP 538

Figure 4: Study area road hierarchy



BASE MAP SOURCE: © OPEN STREET MAP CONTRIBUTORS, TILES © CARTO; SPEED ZONE DATA: DEPARTMENT OF TRANSPORT AND PLANNING OPEN DATA, SPEED ZONES

Figure 5: Study area speed limits



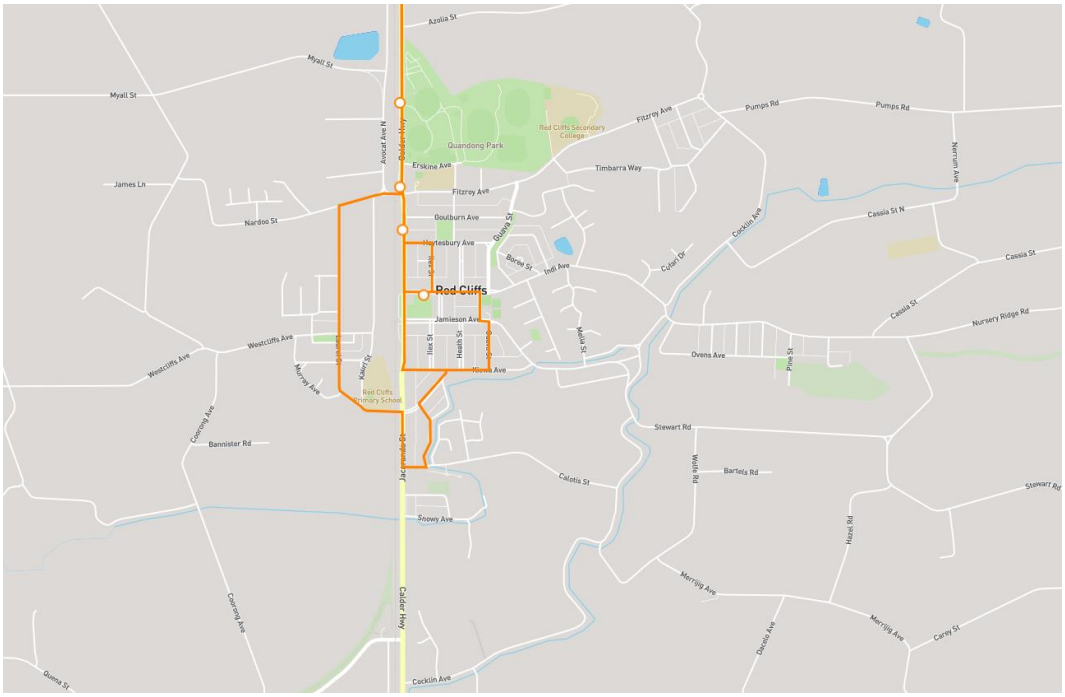
SOURCE: DTP *INFRASTRUCTURE RISK RATING*

Figure 6: Infrastructure Risk Rating in Red Cliffs

2.1.2 Public Transport

The public transport services in Red Cliffs are shown in Figure 7. Bus routes 100 and 200 both operate between Mildura and Red Cliffs (Barclay Square). Between them, they provide services approximately every half-hour on weekdays and Saturdays, and less frequently on Sundays. Route 100 includes a Red Cliffs town service at 9.20 am and 1.35 pm on weekdays (via Nardoo St, Laurel St, Murray Ave, Calder Hwy, Calotis St, South St, Whitaker Cr, Kiewa Ave, Guava St, Indi Ave to Barclay Square).

The schools are also serviced by school buses.



SOURCE: PUBLIC TRANSPORT VICTORIA (PTV) WEBSITE

Figure 7: Red Cliffs bus routes

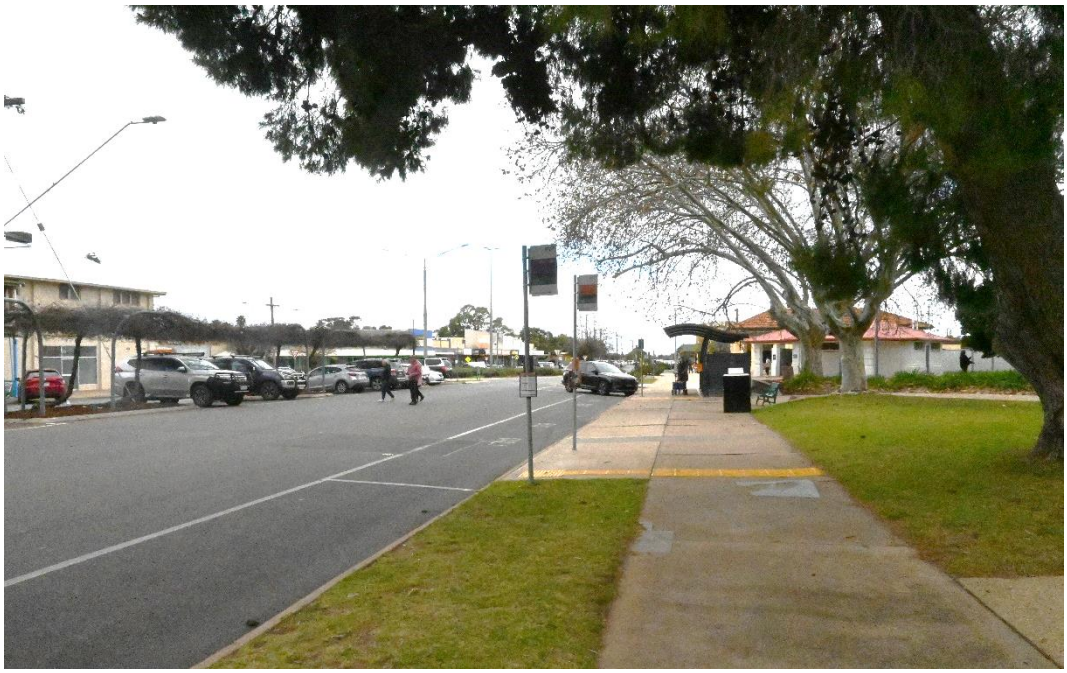
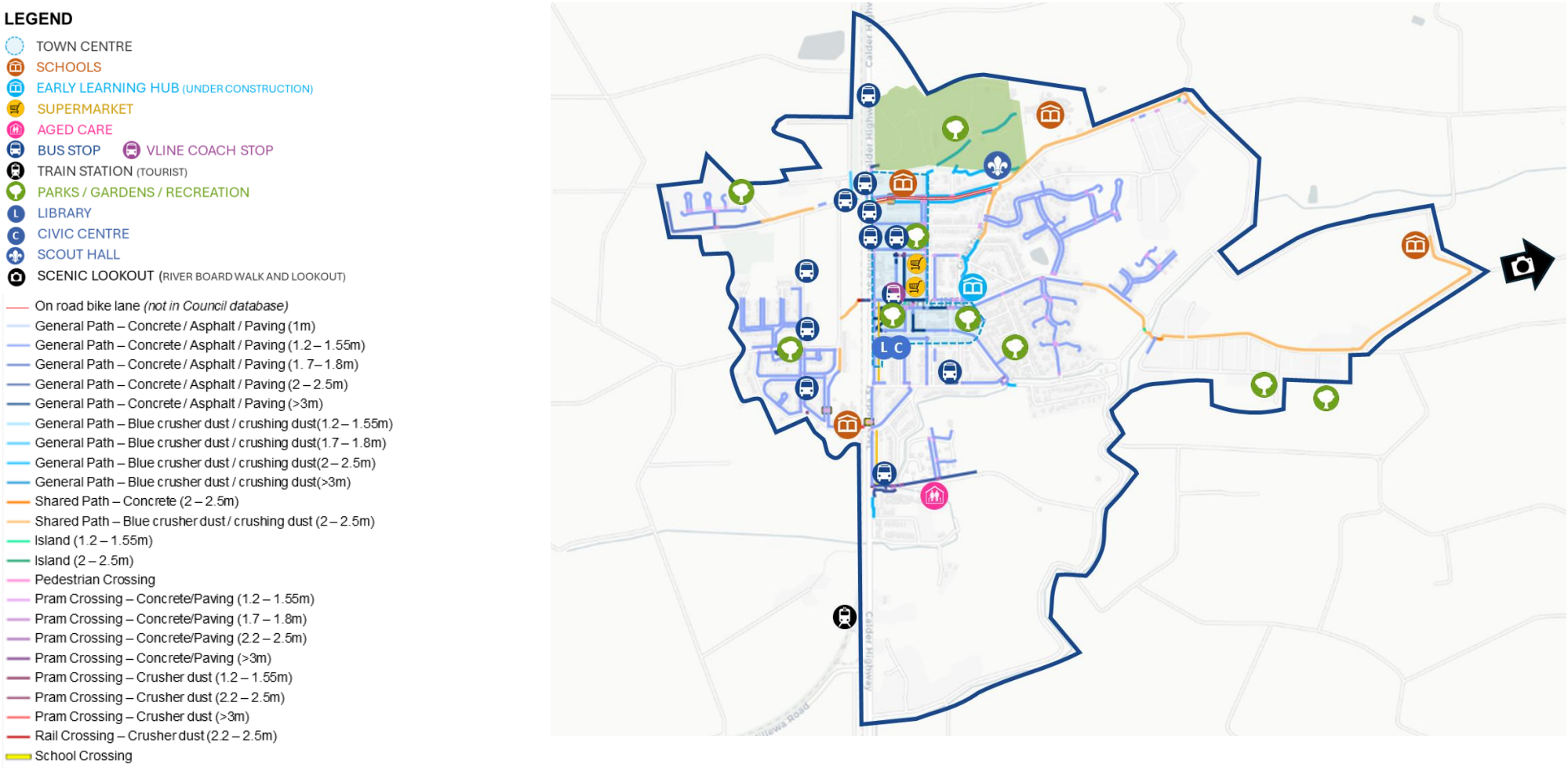


Figure 8: Indi Ave bus Interchange

2.1.3 Existing Path Network & Locations of Interest

Existing walking and cycling infrastructure within the Red Cliffs study area is shown in Figure 9. The map also shows locations of interest. Quandong Park features a range of activities including a skate park, playground, football, cricket, netball, lawn tennis and half-court basketball (under construction).

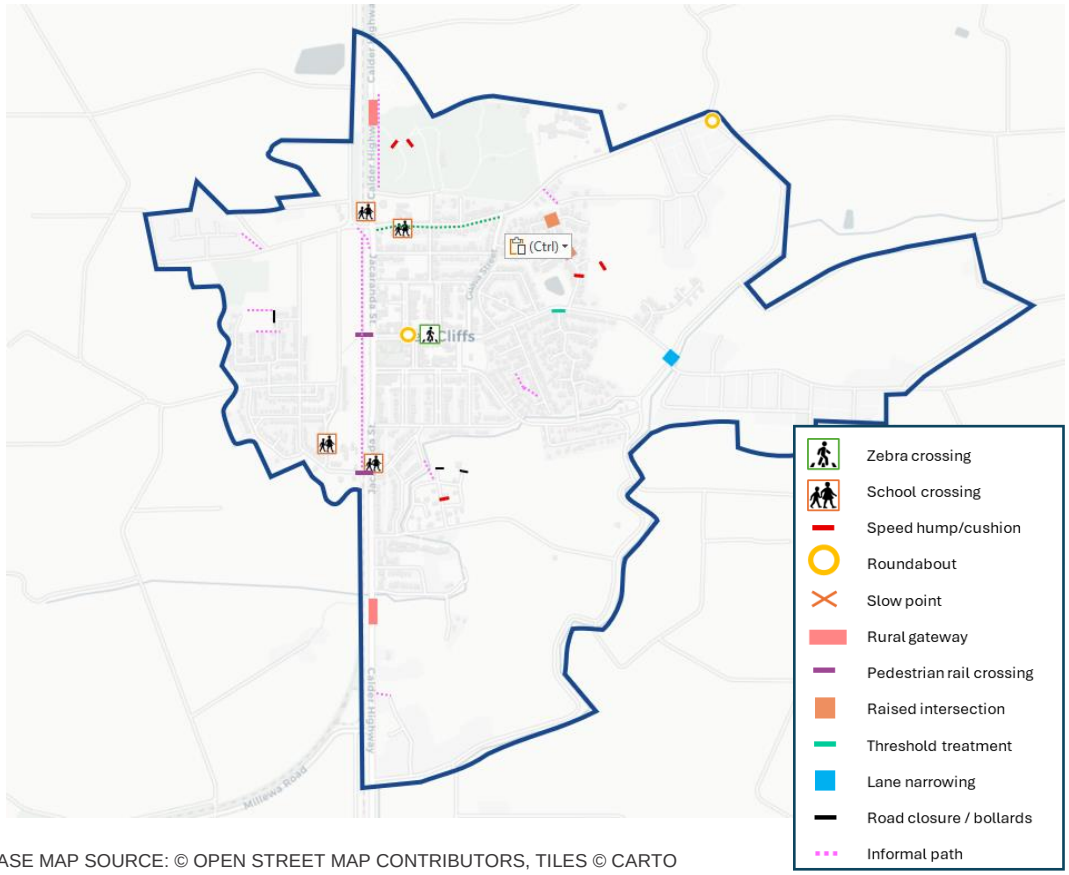


BASE MAP SOURCE: © OPEN STREET MAP CONTRIBUTORS, TILES © CARTO; PATH NETWORK: MILDURA RURAL CITY COUNCIL ASSET DATA
Note: Jacaranda St SUP + Fitzroy St On Road Bike Lane not in Council database

Figure 9: Existing Path network + locations of interest

2.1.4 Existing LATM Measures

Figure 10 outlines existing LATM measures throughout the study area. Informal paths observed during site visits have also been noted on this map. The existing measures within the study area have been taken into consideration during development of the proposed treatments and plan.



BASE MAP SOURCE: © OPEN STREET MAP CONTRIBUTORS, TILES © CARTO

Figure 10: Study area Existing LATM

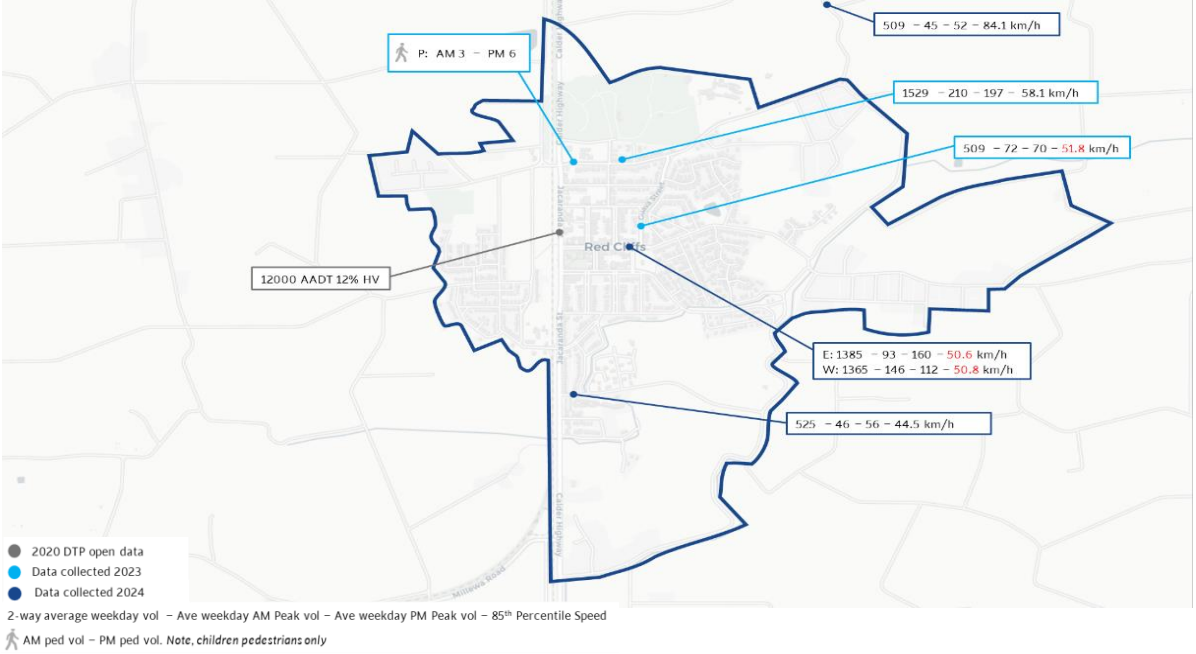
2.2 Data and Analysis

2.2.1 Traffic Volume, Speed and Pedestrian Data

Traffic volume and speed data collected in 2023 and 2024 as well as traffic and children pedestrian movement data at the Fitzroy St school crossing (2023) were provided by Council. A summary of the data is provided in Figure 11 and in Table 2 and

Table 3. The data indicates that traffic speeds (85th %ile) exceed limits on:

- Indi Ave (both directions)
- Guava St
- Fitzroy Ave – note, this data collection location was at the speed limit change, so drivers would be moving to/from the 60 km/h limit. However, the directional speed data indicates that westbound vehicles had not slowed sufficiently for the 40 km/h limit.



BASE MAP SOURCE: © OPEN STREET MAP CONTRIBUTORS, TILES © CARTO

Figure 11: Study Area Traffic Data

LOCATION	COLLECTION DATES	2-WAY AVE WEEKDAY VOL			SPEED LIMIT	85TH%ILE SPEED		
		TOTAL	AM PEAK▲	PM PEAK▲		TOTAL	WEEKDAY	WEEKEND
Jacaranda St (Calder Hwy) btw Erskine Ave & Snowy Ave	2020 (DPT open data hub)	12 000 12% HV	–	–	60 km/h + 40 km/h school zone sections	–	–	–
29 Fitzroy Ave	18 July to 24 July 2023*	1529	210	197	60 km/h / 40 km/h school zone	58.1■ [56.5 east 59.8 west]	57.6	59.2
30 Guava St	18 July to 24 July 2023*	509	72	70	50 km/h	51.8	51.5	53.1
Calotis Street btw Jacaranda St & South St	18 July to 24 July 2023*	525	46	56	50 km/h	44.5	44.3	45.2
Cocklin Ave Point 1, Cocklin Ave & Azolia St	25 January to 1 February 2024	509	45	52	100 km/h	84.1	83.7	84.8
Indi Ave btw Heath St & Guava St	16 March to 3 April 2024	E: 1385 W: 1365	E: 93 W: 146	E: 160 W: 112	50 km/h	E: 50.6 W: 50.8	E: 50.4 W: 50.4	E: 51.1 W: 51.1

* 6 days of data collection
▲ AM & PM peak vols estimated by averaging 2-way peak weekday volumes, except for Indi Ave where directional volumes were averaged
■ Data collection point on Fitzroy Ave very close to speed limit change location

Table 2: Study Area Traffic Data

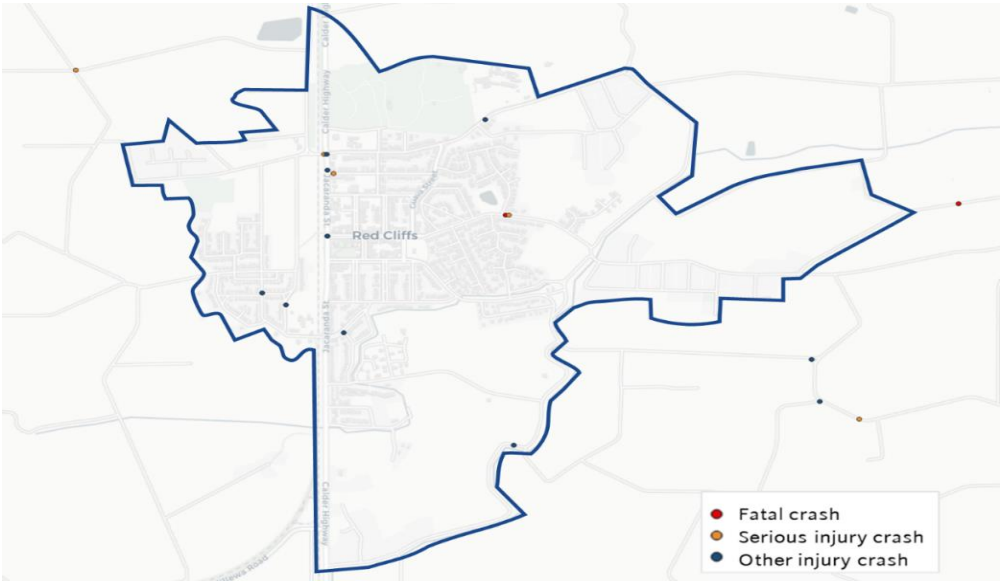
TIME	VEHICLES	CHILD PEDESTRIANS*	TRUCK / BUS
Morning 8.15 – 9.15 am	152	3	4
Afternoon 3 – 4 pm	185	6	14

Data collection: 9 March 2023
Pedestrian data includes child pedestrians (only) crossing at the school crossing

Table 3: Movement Data at Fitzroy Ave School Crossing

2.2.2 Casualty Crash History

Analysis of recent casualty crash data[13] showed no cashes involving pedestrians or cyclists. Run-off-road and intersection crashes were the most common casualty crash types within and near the study area, with run-off-road crashes most prevalent for FSI crash types (Figure 12 and Appendix A). A review of historical crashes showed three older casualty crashes involving pedestrians (Table 4).



NOTE: NO CRASHES IN STUDY AREA AFTER JUNE 2023 (DATA REPORTING PERIOD TO 31/10/2023)
BASE MAP SOURCE: © OPEN STREET MAP CONTRIBUTORS, TILES © CARTO; CRASH DATA: DTP, VICTORIA ROAD CRASH DATA

Figure 12: Casualty Crashes (1 July 2018 - 30 June 2023)

	STUDY AREA		SURROUNDING STUDY AREA	
1 JULY 2018 - 30 JUNE 2023				
Fatal crashes	1	1 x Run off road	1	1 x Run off road
Serious injury crashes	3	1 x Parked vehicle 1 x Loss of control on c'way 1 x Run off road	4	3 x Run off road 1 x Cross traffic
Other injury crashes	9	2 x Run off road 1 x Leaving parking 4 x Adj dir (right near) 1 x Rear end 1 x Parked vehicle	6	3 x Run off road 1 x Opposing dir. (right through) 1 x Loss of control on c'way 1 x On path (struck object)
CRASHES MORE THAN 5 YEARS OLD (FROM JAN 2013)				
Fatal crashes	0		0	
Serious injury crashes	4	2 x Run off road 2 x Pedestrian	9	3 x Run off road 1 x Adj dir (right near) 1 x Cross traffic 1 x Parked car run away 2 x Rear end (incl right rear) 1 x Unknown
Other injury crashes	9	1 x Rear end 5 x Run off road 1 x Pedestrian 1 x Manoeuvring 1 x Parked car run away	8	5 x Run off road 1 x Adj dir (right near) 1x Cross traffic 1 x Left turn side swipe

Table 4: Casualty crash summary

[13] Department of Transport and Planning, DataVic, *Victoria Road Crash Data* (reporting period to 31/10/2023)

2.2.3 Historical Community Enquiries /Complaints

Community enquiries/complaints received by Council regarding footpaths (since 2018) as well as road safety enquiries (since 2019) in and around Red Cliffs were reviewed. Issues related to pedestrian, cycling and general road safety are summarised in Table 5. Maps showing the locations of these historical enquiries and complaints are provided in Appendix B.

Issues relating to pedestrian and road safety identified during development of the Red Cliffs *Community Plan* were also taken into consideration:

- What people value about living in the Red Cliffs Area: small town, relaxed family-friendly community, services/shopping within walking distance, park(s)
- Community challenges that were identified
  - Road safety: Not enough footpaths/pedestrian safety, wheelchair transport from Mildura needed
  - Other: Community connection (following COVID), not enough retail, issues relating to housing, drugs, domestic violence, facilities for teenagers
- Priorities included: Improvements to parks & recreation areas, footpath improvements (incl wheelchair/mobility accessible).
- Identified projects included: Community garden, walking tracks, tree planting in parks and along paths and trails, basketball court, dog park.

Table 5: Community Enquries/Complaints Regarding Pedestrian and Road Safety Issues Within Study Area Over Previous 10 Years

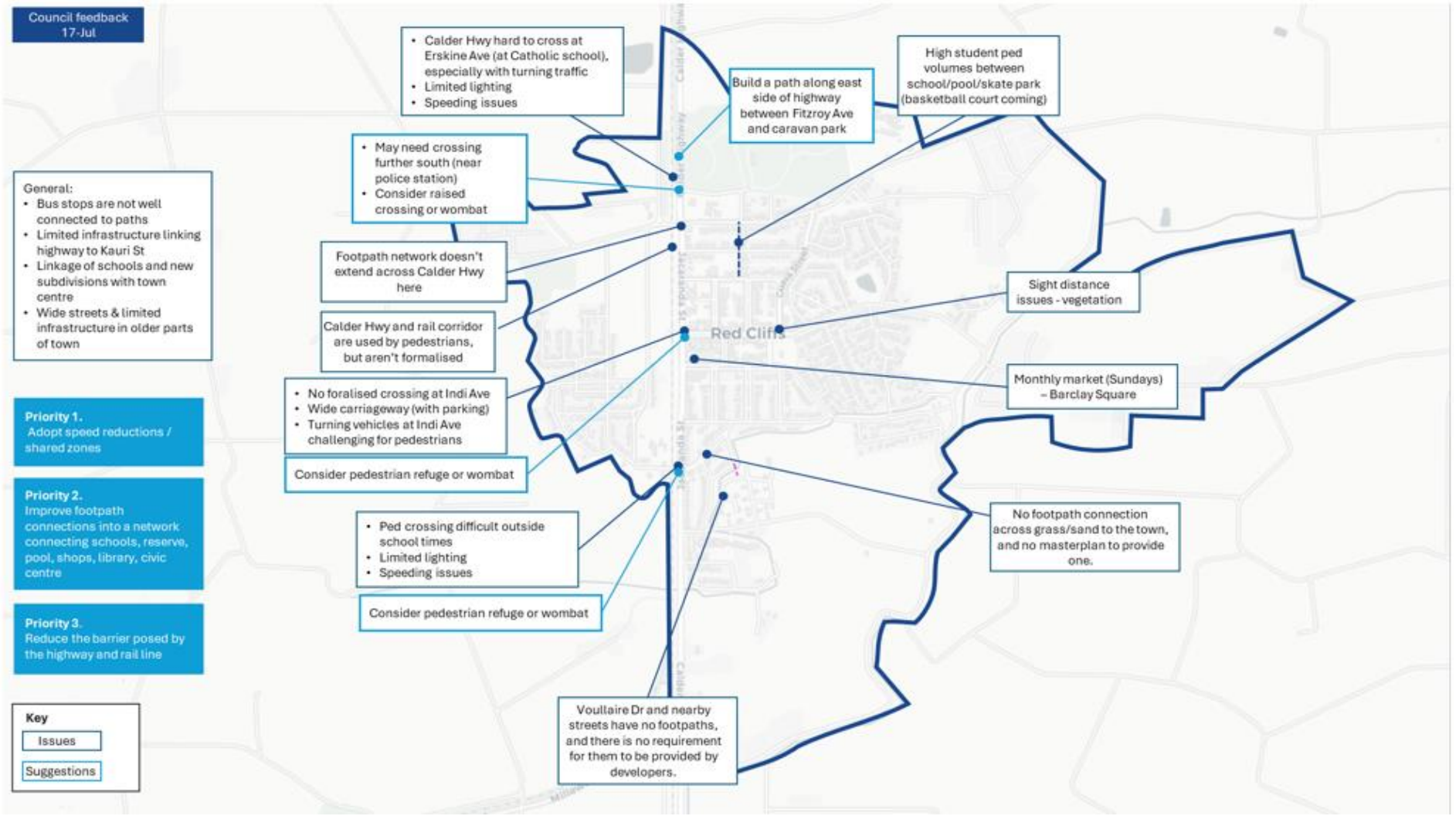
LOCATION	CONCERN
Anne Cox Dr	• Give way sign needed
Avocat Ave	• Sight distance obscured by vegetation
Barnett Rd	• Pedestrian & driver safety issue - Unsealed road (needs to be sealed) + unsafe driving (too fast)
Betty Krake Dr	• Speed limit / vehicle speeds too high • Footpath improvement requested
Browne La	• Unsafe intersection design
Calotis St	• Speed limit too high • Street too narrow for 2-way traffic • Speed limit / vehicle speeds too high • Pedestrian safety issue - Pram crossing under water during rain • New footpath requested
Cocklin Ave	• Speed limit too high • Unsafe corner
Coorong Ave	• Sight distance obscured when exiting driveway (tree)

LOCATION	CONCERN
Dacelo Ave	• Sight distance obscured by vegetation • Sight distance obscured when exiting driveway (vegetation)
Ella-Mae Ct	• Insufficient parking
Euston Ave	• Speed limit / vehicle speeds too high
Fitzroy Ave	• Request for concrete footpath • No differentiation between footpath, parking and nature strip (garden) • 3 x footpath upgrade requested
Guava St	• School crossing needed • People driving across roadside / bike path to shortcut to Tecoma St • No footpath on western side of street
Indi Ave	• Unsafe intersection design • Road widening needed
Jacaranda St (Calder Hwy)	• Sight distance obscured by vegetation • 3 x Sight distance obscured when exiting Indi Ave • New footpath requested • New/improved crossing requested
Jacaranda Village	• Pedestrian / cycling connection requested
Kauri St	• New footpath requested
Keiwa Ave	• New footpath requested
Kurrajong St	• People driving across roadside to shortcut to Kurrajong St
Lavender Rise	• 2 x Unsafe driving (too fast)
Lowan Ave	• Sight distance obscured by vegetation / dirt
Marks Rd	• Request for road to be sealed
Mason Ct	• Pedestrian / cycling connection requested (away from highway)
McGlashan St	• Pedestrian / cycling connection requested
Moonah St	• Sight distance obscured when exiting driveway (palm tree)
Nardoo St	• Pedestrian / cycling connection requested • New footpath requested • New footpath requested over railway crossing near bus stop
Norris Ave	• Pedestrian / cycling connection requested
Nursery Ridge Rd	• Speed limit too high • Unsafe driving (too fast)
Park St	• No footpath on Park St • Footpath improvement requested
Simon Court Park	• Footpath improvement requested around park
Snowy Ave	• Unsafe intersection design

LOCATION	CONCERN
South St	• Pedestrian safety issue - People driving through undeveloped land to shortcut to streets north of Voullaire Dr
Sutterby Pl	• Unsafe driving (hooning)
The Centreway	• Street lighting improvement request
Timbarra Way	• Footpath improvement requested
Voullaire Dve	• People driving through undeveloped land to shortcut to streets north of Voullaire Dr + unsafe driving (too fast)
Westcliffs Ave	• Sight distance obscured for pedestrians by vehicles parked near intersection • Unsafe driving (too fast) • New footpath requested
Woorlong Ave	• Unsafe driving (too fast)

2.2.4 Council Input

A workshop was held on 17 July with Council staff from community wellbeing, recreation development, engineering development to gather insights into key issues and priorities. A summary is provided in Figure 13.



BASE MAP SOURCE: © OPEN STREET MAP CONTRIBUTORS, TILES © CARTO

Figure 13: Council Feedback – Summary of issues & suggestions

2.2.5 Observations

Observations were undertaken across the study area on 17 and 18 July 2024, focusing on locations with high pedestrian activity to understand pedestrian patterns and behaviours. The project team also sought to identify potential safety, access and amenity issues for pedestrians and cyclists across the study area, as well as general road safety issues.

Specifically, observations were undertaken in the vicinity of:

- Jacaranda St (morning, lunchtime and night time)
- Fitzroy Ave, Ilex St, Indi Ave, Jamieson Ave (morning, afternoon and night time)
- St Josephs Primary School (school finish time)
- Red Cliffs East Primary School (school start time)
- Red Cliffs Primary School (school start time)
- Red Cliffs Secondary College (school start time)

Key issues identified during the observations are outlined below.

General

- Lack of wayfinding around town centre and nearby destinations
  - Through Quandong Park, including connection between town centre and caravan park
  - Navigation to the Red Cliffs Scenic Reserve and River Board Walk may be confusing (particularly for tourists). There are limited dedicated walking/cycling paths and those that are present are not connected to the destination (locals follow the old channel alignment)
  - Connection between Jacaranda St/town centre (near Indi Ave) and Kauri St (incl Red Cliffs Primary)
  - Path connection across service road south of Calotis St does not align with natural pedestrian desire line.
- High speed limits in pedestrianised areas, including Jamieson Ave (limits exceed Safe System thresholds for crashes that involve pedestrians)
- There are wide carriageways/traffic lanes throughout the study area (noting that wide road carriageways tend to encourage high traffic speeds). The following streets were noted to have wide carriageways in particular: Ilex St, Jamieson Ave, Kiewa Ave, Indi Ave, Whittaker Cres, Heath St, Guava St, Jacaranda St through main town centre, Kauri St, Heytesbury Ave
- There are many very large intersections throughout town (due to wide carriageways) for pedestrians to cross (large intersections increase complexity and risk for pedestrians). These include: Jacaranda St/Heytesbury Ave, Jacaranda St/ Jamieson Ave, Goulburn St/Heath St, Guava St/Heytesbury Ave, Guava St/Fitzroy St, Kiewa Ave/Whittaker Cres, Ilex St/ Jamieson Ave, Indi Ave/Heath St, Guava St/ Indi Ave, Guava St/ Jamieson Ave, Jamieson Ave /Kiewa Ave, Boree St/Indi Ave, Kauri St/Loddon Ave, Murray Ave/Laurel St.

- Intersection lighting review needed in residential areas. Street lighting improvements are needed at intersections where residential subdivisions have been implemented
- Bus stops are not well lit, including Calder Hwy (near caravan park & near Quandong Park entrance), Nardoo St/Calder Hwy (Figure 14), Avocat Ave Nth/Nardoo St, Heath St/Kiewa Ave, Calder Hwy/Calotis St, Westcliffs Ave/Laurel St

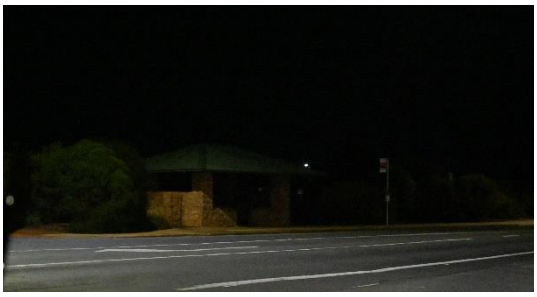


Figure 14: Nardoo St/Calder Hwy bus stop

- Walking demand along streets where no paths provided (or only on one side):
  - Ilex St: evidence of walking demand on western side of street (formal path only provided on eastern side)
  - Whittaker Cr to Voullaire Dr
  - Thomas St to Oombah St
- The path network is missing connections throughout the town centre and to nearby destinations
  - Jacaranda St/Nardoo St intersection and bus stop: no pram crossings at intersection and no connection to bus stop from intersection
  - No pedestrian crossing facility of rail line on Nardoo St (Figure 15)
  - From Nardoo St towards town centre. Locals have created a path across the railway track and along the western side of Jacaranda St (Figure 15)
  - There is walking demand along Jacaranda St along the eastern side from the town centre to connect housing developments in the south of Red Cliffs, and also to the caravan park to the north, however no formal path facilities are provided
  - Jacaranda St school crossing north of Fitzroy Ave accommodates school children, including children getting off the bus, but does not accommodate general demand at other times of the day. It is also not well aligned with desire to connect to town centre
  - Poor pedestrian crossing facility across Jacaranda St at Indi Ave, including connection to rail pedestrian crossing (Figure 16)

Figure 15: Pedestrian desire line: Nardoo St/ town centre

Figure 16: Jacaranda St / Indi Ave

- No pedestrian facilities to accommodate movements between rail crossing track and primary school (along Kauri St). Pedestrians observed walking on road
- Shared path on northern side of Nardoo St terminates near Laurel St, with no facility for pedestrians/cyclists between Laurel St and Jacaranda St (including crossing the rail line)
- There is a walking/cycling desire line along the west side of the rail corridor (Figure 17). Note, there are no signs to deter trespassing at pedestrian rail crossing opposite Indi Ave (signs do exist at Murray Av)
- There is a walking/cycling desire line along Timbarra Way (from the Betty Krake Dr path connection to Fitzroy Ave) to provide a safe and convenient walking facility for high school students (Figure 18)
- A number of desire lines noted from the end of courts where cut-throughs are provided

Figure 17: Desire line along west side of rail corridor

Figure 18: Students walk along Timbarra

Indi Ave

- Ilex St / Indi Ave roundabout - While the roundabout at Ilex St helps manage vehicle conflicts and speeds, the design does not reduce speeds to Safe System thresholds for crashes involving pedestrians. There are also no priority crossing facilities at this location, noting the high pedestrian crossing demand here (with even higher pedestrian crossing demand on market days).
- Median islands along Indi Ave east of Heath St are very small resulting in confusing road legibility. Cars parked in the centre of the road protrude past the islands and are not protected from impacts by approaching vehicles. Pedestrians are quite exposed. The traffic lanes here are wider than west of Heath St (leading to higher vehicle speeds), and the road design through this section provides less lateral guidance for vehicles, increasing the likelihood of a run-off-road crash. The intersection of Guava St (north) and Indi Ave has a power pole in its centre (Figure 19)

Figure 19: Guava St / Indi Ave power pole

- Zebra crossing on Indi Ave is not built to standard (AS 1742.10). The lines that form the zebra stripes must be at least 3.0m (at this crossing they are 2.4 m). This makes the crossing harder to see for drivers. Note also vegetation may obscure zebra crossing signs (Figure 20).

Figure 20: Indi Ave zebra crossing difficult to see on approach

- Indi Ave roundabout – this is a location of high pedestrian crossing demand
- Accessible parking space on northern side of Indi Ave (near Foodworks) is not built according to standard (AS 2890.6). The barrier kerb creates difficulty for people moving between their vehicle and footpath (Figure 21). This issue may be present at other accessible parking spots around town

Figure 21: Indi Ave accessible parking space

- It was observed that there was demand for accessible parking closer to the chemist (It was observed that people with mobility difficulty found it challenging to navigate from the car spaces in front of the chemist to the path)

Kiewa Ave

- Median islands along Kiewa Ave (Jacaranda St to Jamieson Ave) are very small. The road design through this section results in confusing road legibility (poor lateral guidance for vehicles, increasing the likelihood of a run-off-road crash) and the wide lanes encourage high vehicle speeds
- Complex intersection layout at intersection of Kiewa Ave / Cocklin Ave / LaTrobe Ave. The acute angles of the intersections create sight distance issues for drivers and means that some turning movements are difficult. Drivers have created informal connections across the undeveloped land in this area. This may lead to unexpected interactions exacerbating potential crash risk

Whittaker Cres

- Whittaker Cres on approach to Kiewa Ave - the absence of a median leads to a very wide carriageway resulting in confusing road legibility (lack of guidance on approach and through intersection)
- At the intersection of South St/Whittaker Cres, the combination of the upgrade (towards the intersection), the width of Whittaker Cres, and lack of intersection control line marking makes the conspicuity/legibility of the intersection challenging
- People driving across roadside areas, including Whittaker St to Voullaire Dr

Jacaranda St

- Crossing of major intersections along eastern side of Jacaranda St is difficult for pedestrians due to high volumes and/or long crossing distance
- Crossing Jacaranda Ave is difficult for pedestrians due to high traffic volumes and speeds and no crossing facilities (other than school crossings), particularly at Indi Ave, Whittaker Cres and Fitzroy Ave
- Jacaranda St north of Murray St there is a single bike lane sign followed immediately by a school crossing kerb extension, which cuts off the bike lane (Figure 22). There are also no painted bike lane symbols or repeater signs along the length.

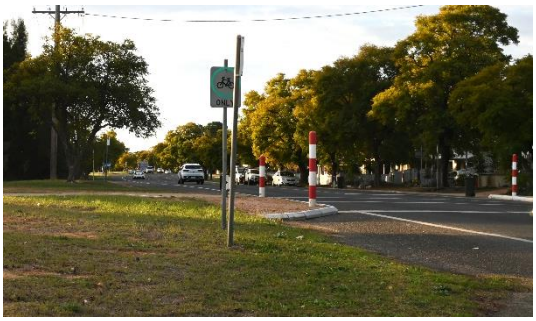


Figure 22: Jacaranda St bike lane / school crossing

- Shared use path (SUP) on Jacaranda St south of Indi Ave – Paths widths vary along length and signage is not very prominent (people may not realise there is a SUP). The sign at Indi Ave is positioned too close to the roadway, which implies the roadway is the SUP, rather than the concrete path (Figure 23). Note, the SUP along Jacaranda St is not shown on Council's existing path network map.

Figure 23: Jacaranda St bike lane / school crossing

Fitzroy Ave

- Fitzroy Ave on-road bike lane transitions to an off-road SUP (near Guava St), but existing transition may be confusing to some pedestrians and cyclists
- Fitzroy Ave east of Guava St has no physical separation between SUP and road (bollards provide good separation further east, Figure 24)
- Near fish and chip shop, there is pedestrian crossing demand, including at night. Conspicuity of pedestrians could be difficult at night in this location.

Figure 24: Bollards provide good separation between pedestrians & vehicles near school

Cassia St

- Red Cliffs East Primary school – It was noted that an existing SUP is located towards the south of the school. With new developments off Cassia St and Indi Ave there may be children walking along Cassia St to school. There are no paths at present along Cassia St and the section of Nerrum St north of the school.

Kauri St

- At Kauri St, the gravel vehicle path to the south has no signage at its entrance to advise pedestrians, cyclists or motorists that it leads only to the rail corridor/industrial yard.

General Maintenance / Other

- A range of general maintenance items were noted throughout the study area including:
  - Cracked footpaths
  - Edge drop
  - Vegetation encroaching on footpaths in some locations, including near bus stop at Jacaranda St/Nardoo St
  - Intersection sight distance at Guava St/Indi Ave obscured by grass
  - Gravel on roads: where an unsealed road intersects with a sealed road, it is recommended that a sealed apron be provided (approx. 10 m) into the unsealed road to reduce likelihood of gravel being tracked onto the sealed road (skid resistance risk, including for cyclists)
  - Missing pedestrian fence near end of platform
  - Pedestrian rail crossing opposite Indi Ave – look for train sign says "2 tracks", however only 1 track exists.

Cracked footpath

Footpath edge drop

Grass plant obscuring sight distance at Guava St/Indi Ave

Vegetation blocking footpath near bus stop

Missing ped fencing near rail line

Figure 25: examples of general maintenance issues

- Other issues for consideration include:
  - Rail/T-intersection warning sign on Murray Ave is missing its clearance distance (Figure 26). Consider similar warning signs at Nardoo St
  - Evidence of vehicles driving on undeveloped land between Thomas St and Oombah St
  - Poor curve delineation / legibility at some locations, particularly curves along Cocklin Ave which is exacerbated by the higher speed limit
  - Delineation along southern side of carriageway on Calotis St (no edge line on this side).

Figure 26: Murray Ave Rail/T-intersection warning sign

2.2.6 Community Attitudes and Perceptions

Consultation was undertaken to gather input from the community and key stakeholders about walking and cycling in Red Cliffs, and safety more generally. A number of options were provided for the community to join the conversation; online via survey and/or mapping tool, face-to-face at 'pop-up' sessions and a targeted stakeholder workshop. Across these engagement options, over 100 people contributed feedback on the project. The in-person consultation involved:

Figure 27: IGA Pop-up session

- Pop-up sessions were held in front of
  - IGA on 17 July, 3.30 – 4.15 pm
  - the post office on 18 July, 12 – 12.45 pm
- Community stakeholder workshop at the Community Resource Centre on 17 July.

Online survey submissions	67
Mapping tool submissions	18
Stakeholder workshop attendees	12
Pop-up sessions	IGA Post office

Table 5: Community consultation interaction summary

Figure 28: stakeholder workshop

Mildura Rural City Council hosted the community survey and online mapping tool on its online engagement platform ('Your Say') from 24 June to 21 July 2024. It was promoted through Council's social media, website and town notices. There were 67 contributions to the online survey, 18 contributions to the online mapping tool, 12 participants at the stakeholder workshop and a number of locals who contributed feedback at the two pop-up sessions. In addition, a number of written submissions from community members were received. An overview of the survey results as well as a summary of the community's concerns and suggestions is provided in the following sections.

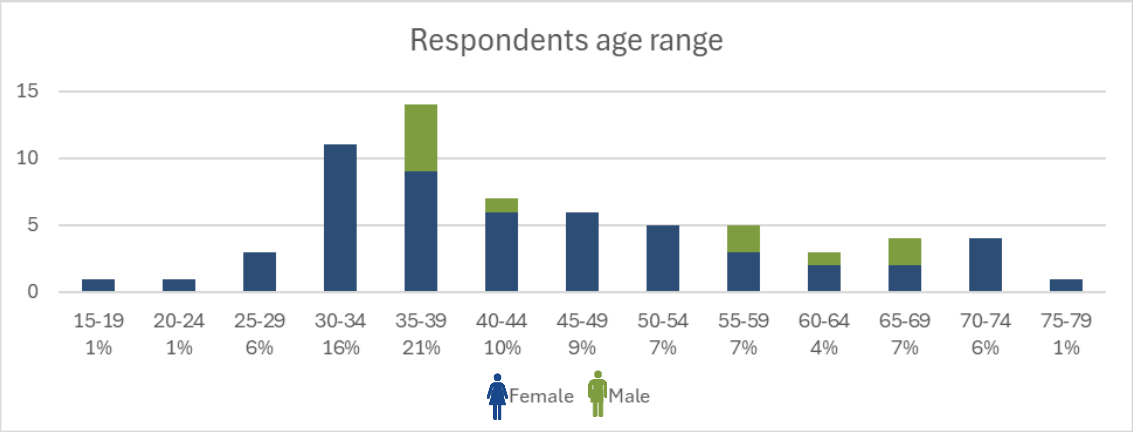
Key stakeholders were also invited to provide written feedback.

- VicTrack advised of a reluctance to introduce SUPs along a rail corridor due to potential risks, and where SUPs were provided along a rail corridor they must be fenced.
- The principal from Red Cliffs Primary School noted the following:
  - The majority of school children travel from the town centre.
  - Concerns for the safety of school children walking and riding to school, including walking/riding on paths next to and crossing Jacaranda St, lack of separate cycling facilities and safety concerns when riding on footpaths.
  - Suggestion for a pedestrian crossing near Indi Ave/Jameson Ave, with a bike path connection through to Murray Ave.

About Online Survey Participants

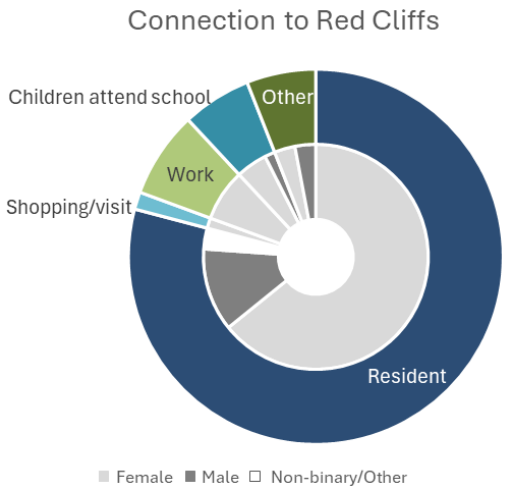
The survey included questions about the respondents (see below). The majority of respondents were female, and predominantly aged between 30 and 59 years (reflecting working age as per census service age groups[14]). Most respondents were residents, although a proportion worked or had children who attended school in Red Cliffs.

GENDER	
Female	81%
Male	16%
Non-binary/other	2%



Note, Non-binary / other removed from the age analysis

CONNECTION TO RED CLIFFS	
Resident	79%
Like to shop/visit Red Cliffs	1%
Work in Red Cliffs	7%
Children attend school in Red Cliffs	6%
Other: all of the above	1%
Other: I volunteer in Red Cliffs	1%
Other: MRCC's Engineering Design Team Leader	1%
Other: Regular visitor to area	1%



[14] ABS Census service age groups include Secondary schoolers (12 – 17), Tertiary education and independence (18 – 24), Young workforce (25 – 34), Parents and homebuilders (35 – 49), Older workers and pre-retirees (50 – 59), Empty nesters and retirees (60 – 69) and Seniors (70 – 84)

Online Survey Participant Responses

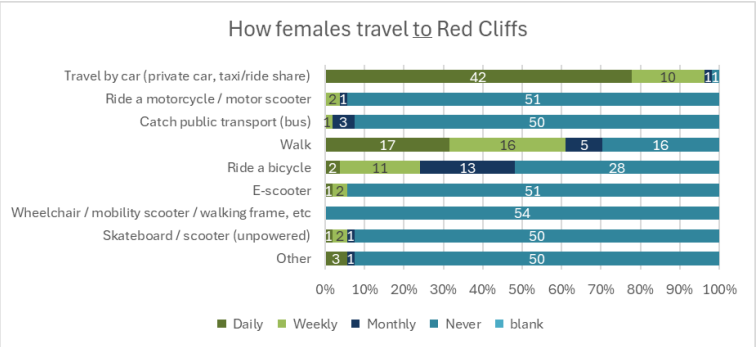
The online survey asked respondents about their travel choices and how safe they felt travelling around Red Cliffs. Results are provided below follow.

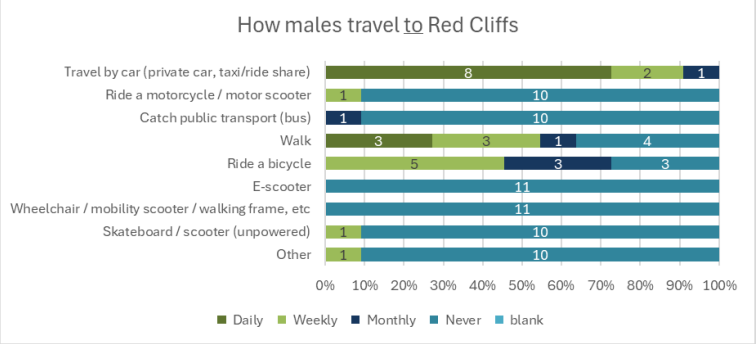
Travel Choices

Car travel was the most prevalent mode for respondents travelling to Red Cliffs for both males and females.

Walking was also a popular mode, with around 60% of respondents walking to the town centre weekly or more.

Riding a bike to the town centre was more popular with male respondents (over 70% of male respondents vs <50% of female respondents).

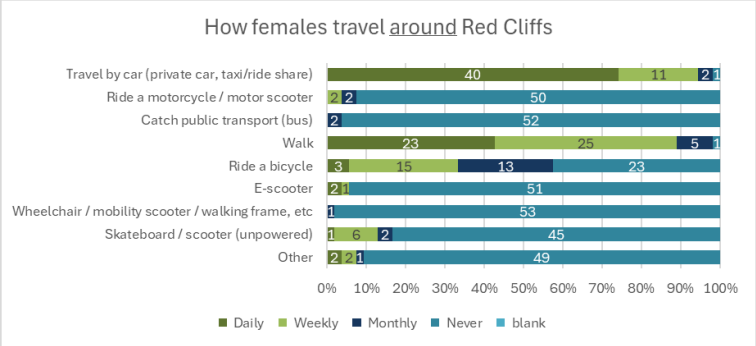


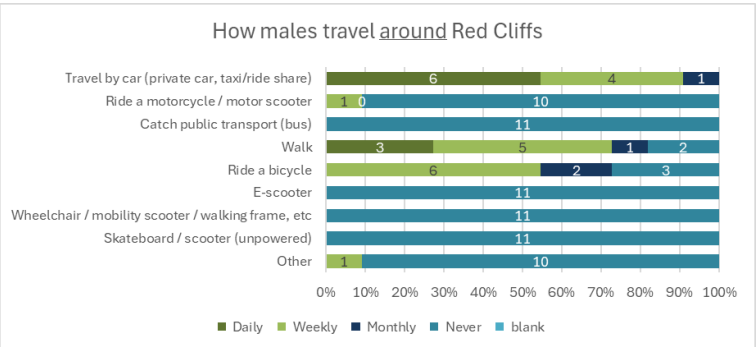


When travelling around the town centre, travel by car was again the most popular mode.

Walking was also very popular with over 90% of female and over 80% of male respondents choosing to regularly walk around Red Cliffs.

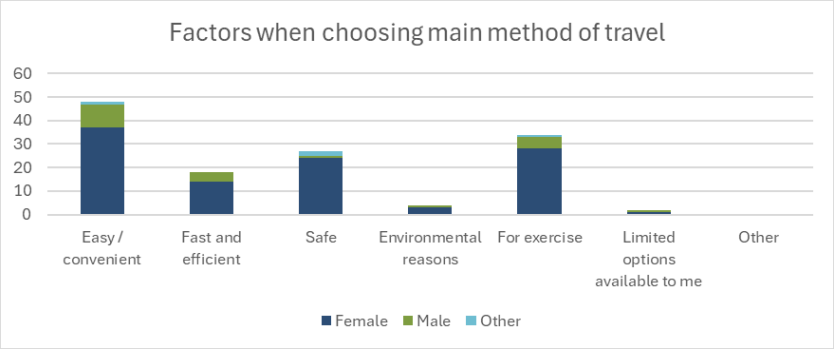
Results for bike riding around the town centre were similar to results for riding to Red Cliffs.





When choosing their method of travel, female respondents were most likely to select based on:

- ease/convenience,
- for exercise, and
- for safety.



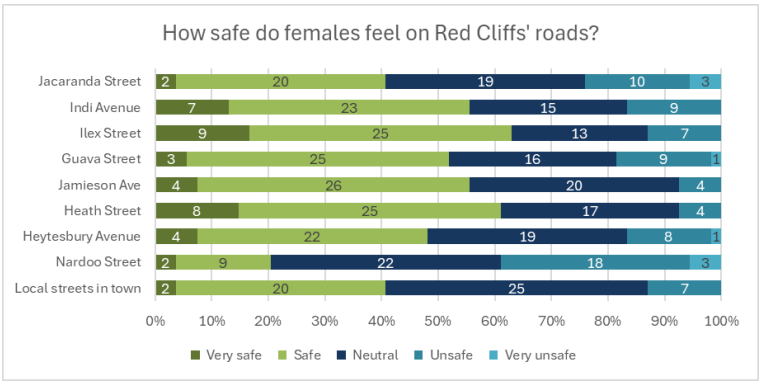
For male respondents, the main method of travel was most likely based on:

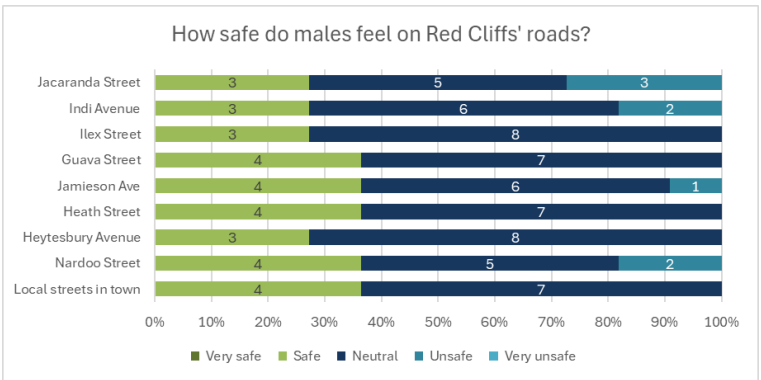
- ease/convenience,
- exercise, and
- fast/efficient.

Feeling Safe / Unsafe when Travelling

Overall, respondents indicated that they felt most unsafe on Jacaranda St and Nardoo St (females felt more unsafe than males on Nardoo St).

Females felt safer on Ilex St and Heath St than on other streets in town. Results for males indicated a similar level of safety for most streets in town.





People indicated that they felt unsafe:

- All
  - High traffic speeds and volumes (particularly on Jacaranda St)
  - Poor pedestrian facilities - poor path quality and lighting, lack of separated paths and crossings (particularly across rail line, across Jacaranda St, near Nardoo Ave, near caravan park, on western side of highway, etc), no paths on some local streets, obscured sight lines.

- Females
  - Personal security
  - Poor road condition
  - Narrow streets (some locations)
  - Lack of cycling facilities (bike lanes) and drivers not expecting cyclists

People indicated that they felt safe:

- All
  - Wide streets and good road quality (some locations)
- Females
  - Quiet community and low traffic volumes (at most times)
  - Familiarity with streets
  - Path facilities

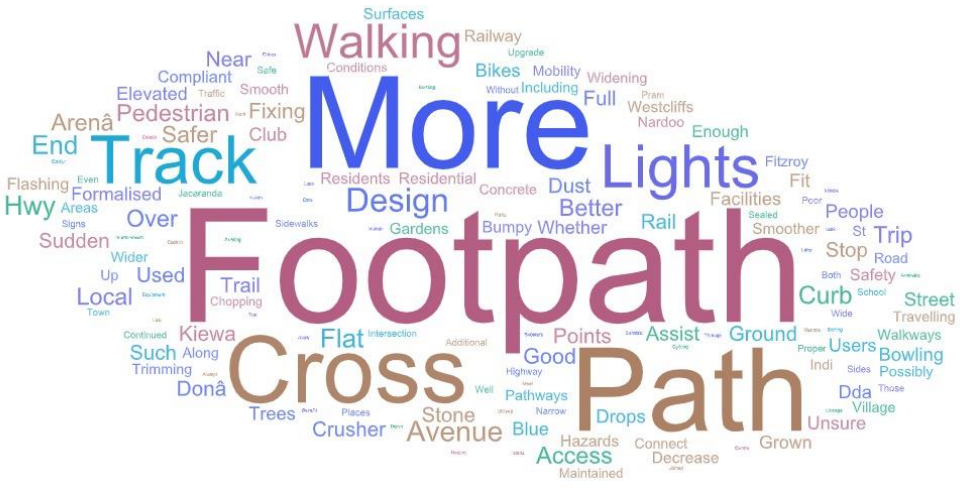
Concerns about safety / access for people with additional mobility needs (e.g. When using mobility aids, parents with prams)

Yes	79% Females 81% | Males 64%
No	21%

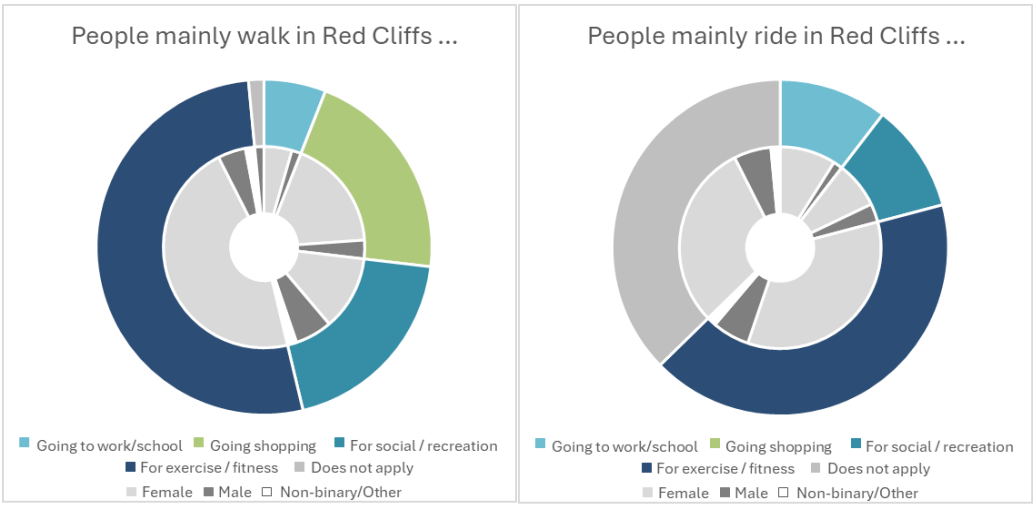
What would improve the safety and accessibility?

Respondents indicated that safety and accessibility would be improved by:

- improved lighting
- additional paths and pedestrian crossing facilities (including raised crossings and signals), including of railway and Jacaranda St
- improved walking facilities (including smoother/sealed footpaths), maintenance, and amenities (including seating).



When do people walk and ride?



	WHEN GOING TO WORK/SCHOOL	WHEN GOING SHOPPING	FOR SOCIAL / RECREATION (INCLUDING VISITING CAFES)	FOR EXERCISE / FITNESS	DOES NOT APPLY
People mainly walk in Red Cliffs	6%	21%	19%	52%	1%
- Females	6%	22%	15%	57%	0%
- Males	9%	18%	36%	27%	9%
People mainly ride in Red Cliffs	10%	0%	10%	42%	37%
- Females	11%	0%	9%	43%	37%
- Males	9%	0%	18%	36%	36%

Time spent walking and riding

	LESS THAN 15 MINS	AROUND 15 MINS	AROUND 30 MINS	AROUND AN HOUR	MORE THAN AN HOUR	DOES NOT APPLY
People mainly walk in Red Cliffs	7%	4%	34%	46%	6%	1%
- Females	6%	4%	33%	52%	6%	0%
- Males	9%	9%	45%	27%	0%	9%
People mainly ride in Red Cliffs	4%	0%	31%	24%	1%	37%
- Females	4%	0%	28%	28%	2%	39%
- Males	9%	0%	55%	9%	0%	27%

How safe do people currently feel when walking or riding in Red Cliffs

	VERY SAFE	SAFE	NEUTRAL	UNSAFE	VERY UNSAFE	DOES NOT APPLY
How safe people currently feel when walking in Red Cliffs	0%	48%	28%	16%	6%	1%
- Females	0%	48%	24%	20%	7%	0%
- Males	0%	55%	36%	0%	0%	9%
How safe people currently feel when riding in Red Cliffs	0%	25%	16%	21%	3%	34%
- Females	0%	28%	9%	24%	4%	35%
- Males	0%	18%	55%	0%	0%	27%

If infrastructure was improved, respondents would be more likely to walk/ride

	WALK	RIDE
Yes	96%	69%
- Females	96%	72%
- Males	91%	55%
No	4%	31%
- Females	4%	28%
- Males	9%	45%

Barriers to Walking and Riding

- Poor lighting
- Path condition
- Gaps in path network and limited separated cycling facilities
- Personal security concerns (including fear of dogs)
- Traffic speed and volumes
- Poor path facilities (shade, seating, etc)
- Lack of secure bike parking facilities

Community Feedback Map

The community were invited to use an online map to show where they like to walk, ride, problem areas, gaps in the network or areas for improvement (Figure 29). Feedback included:

- Request for off-road trails red cliffs east primary school, and additional cycling trails
- Gap in path networks, including for southern residential areas
- Dangerous / challenging pedestrian crossing locations including Jacaranda St near Indi Ave, Indi Ave near Guava St, Guava St near Heytesbury Ave, Fitzroy Ave near Timbarra Way.

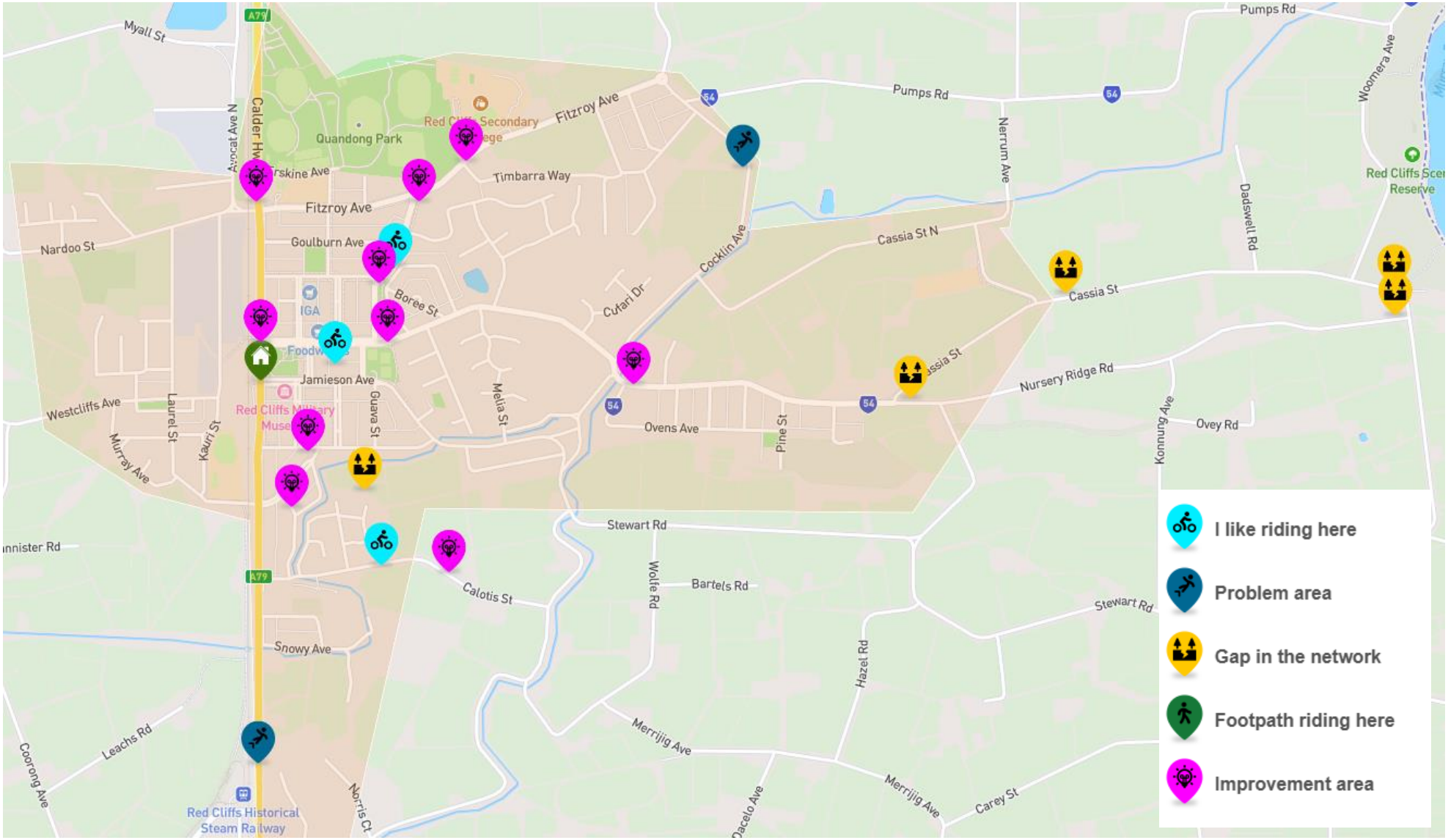


Figure 29: community mapping feedback

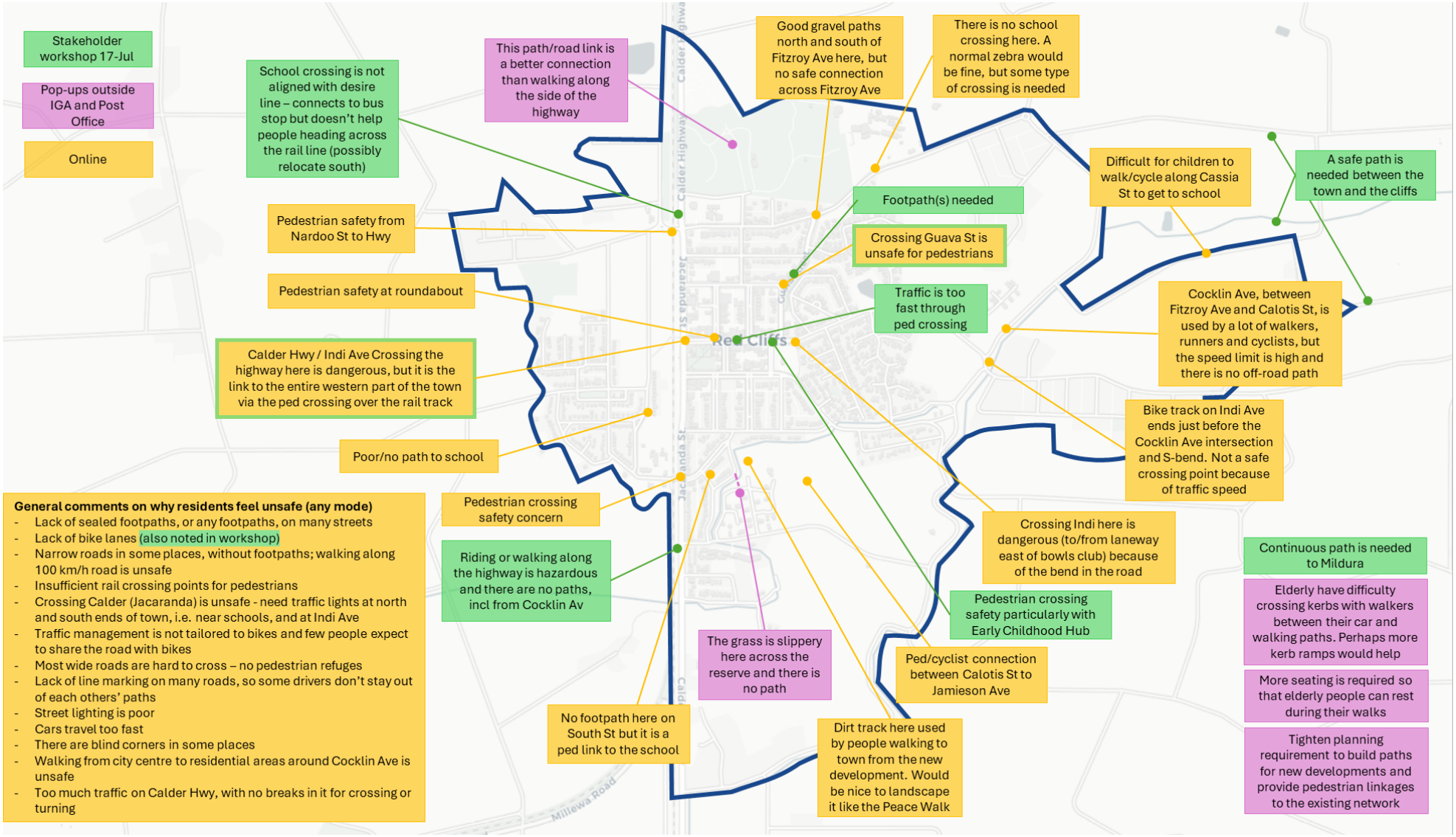


Figure 30: Summary of community conCerns

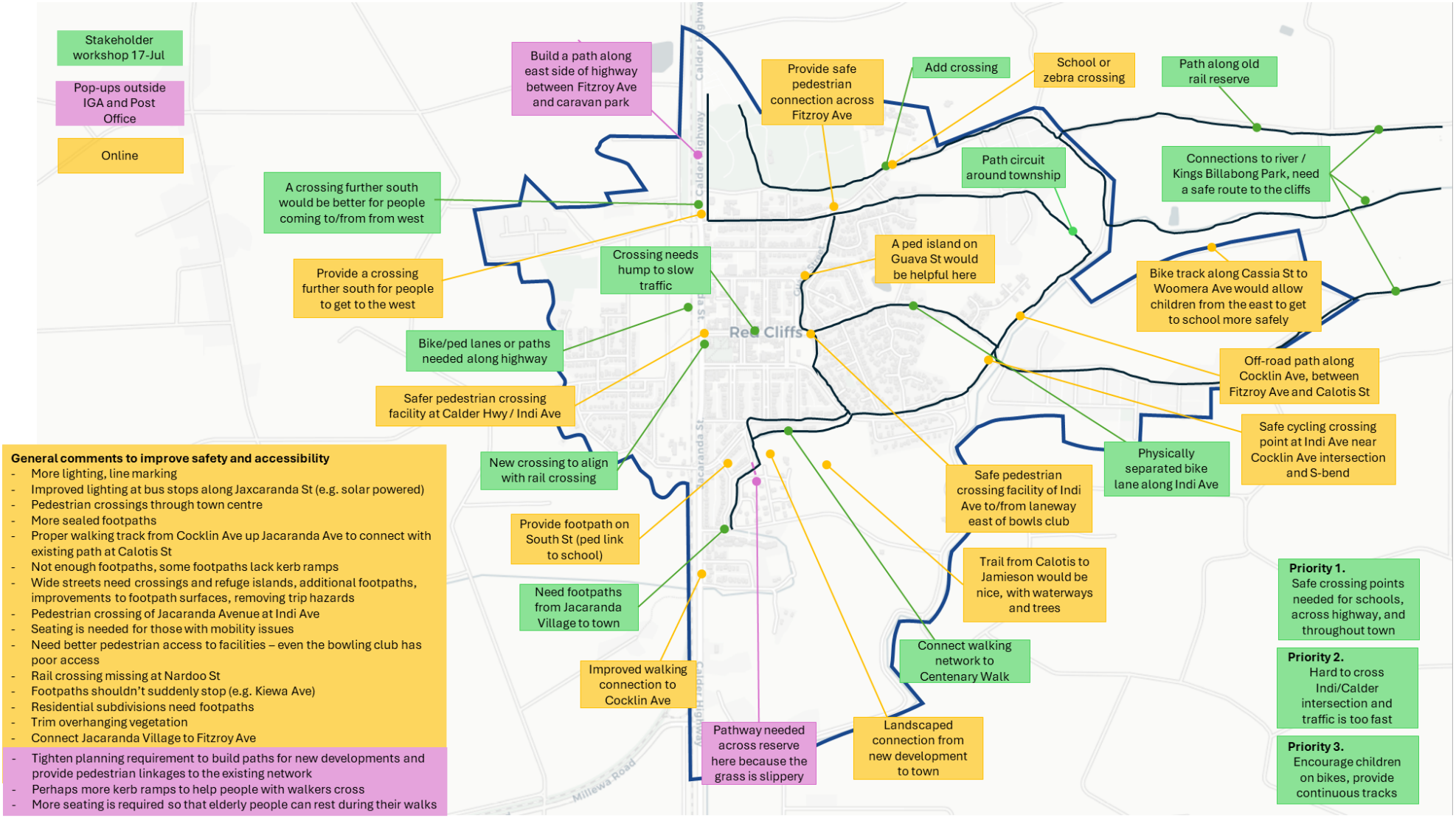


Figure 31: Summary of community suggestions

2.3 Key Issues

Figure presents an overview of key issues identified through data analysis, council input, review of community enquiries/complaints and observations.

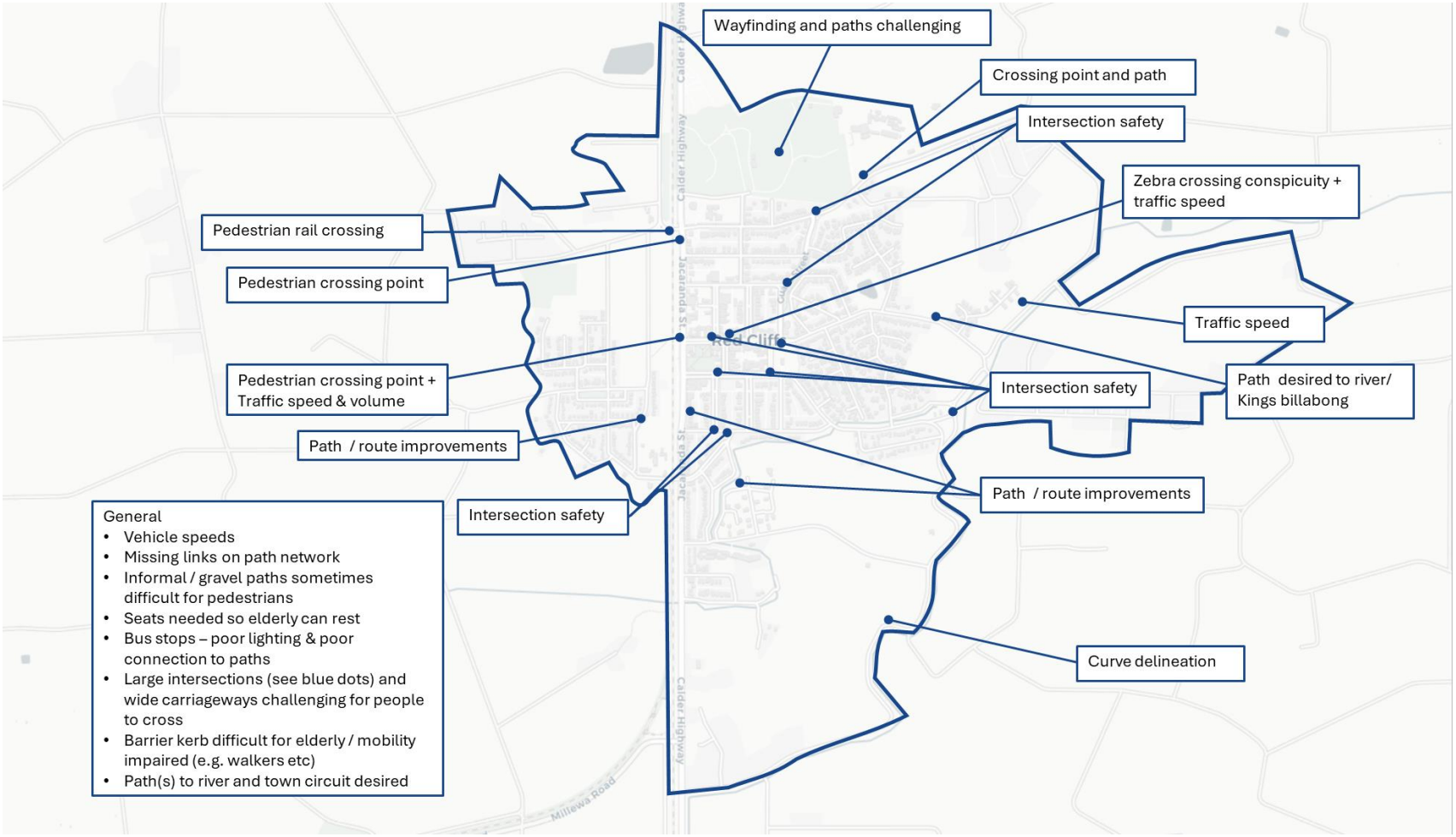


Figure 32: key issues identified during analysis & observations

2.4 Finalisation of Plan

The community were invited to provide feedback on the draft Walking and Cycling Plan via Council's online engagement platform ('Your Say') from 9 December 2024 to 19 January 2025. Following this community input, the Red Cliffs Walking and Cycling Plan was updated and finalised.

3. WALKING AND CYCLING PLAN

The Walking and Cycling Plan has been developed to guide Council in the delivery of initiatives to improve pedestrian and cyclist safety and accessibility in Red Cliffs over the next 10+ years. The actions are presented in Appendix A of the Walk and Cycling Plan. The range of treatment options were developed to address the issues identified during the investigation phase of the project and improve pedestrian and cyclist safety and accessibility. Other treatment options were identified to improve safety for other road users including motorists. An overview of the plan is provided in Figure 33 with an overview of the existing + proposed new path connections provided in Figure 34. A discussion of the plan elements is included in Section 3 of the Plan document.

To assist with prioritisation of actions in the plan, a range of metrics were taken into consideration, including:

- **Safety**
  - Safety improvement for pedestrians and cyclists (including alignment with Safe System principles)
  - Road safety improvement (including alignment with Safe System principles)
- **Connectivity, Amenity and Environment**
  - Key pedestrian / cycling connection
  - Opportunity for streetscape improvements (e.g. planting, seats, etc) to increase environmental comfort for people
  - Consideration of Movement and Place (including balance between access and placemaking opportunities)
- **Community Sentiment** – Is it a community priority or address a key issue for the community?
- **Alignment with Local Strategy and Policy** – alignment with Council objectives and strategic directions
- **Feasibility / Constructability**
  - project within Council land and able to be delivered without external approval/consultation
  - does not require major construction or infrastructure upgrades
  - can it be staged / phased?
- **Indicative Cost**
  - Low ($): <$40,000
  - Moderate ($$): 40,000 - $100,000
  - High ($$$): >$100,000

  Some actions may be funded by partner agencies (e.g. DTP) or there may be opportunities to seek external funding (e.g. see Section 1.3.5).

  Indicative costing of plan elements is included in Appendix C.

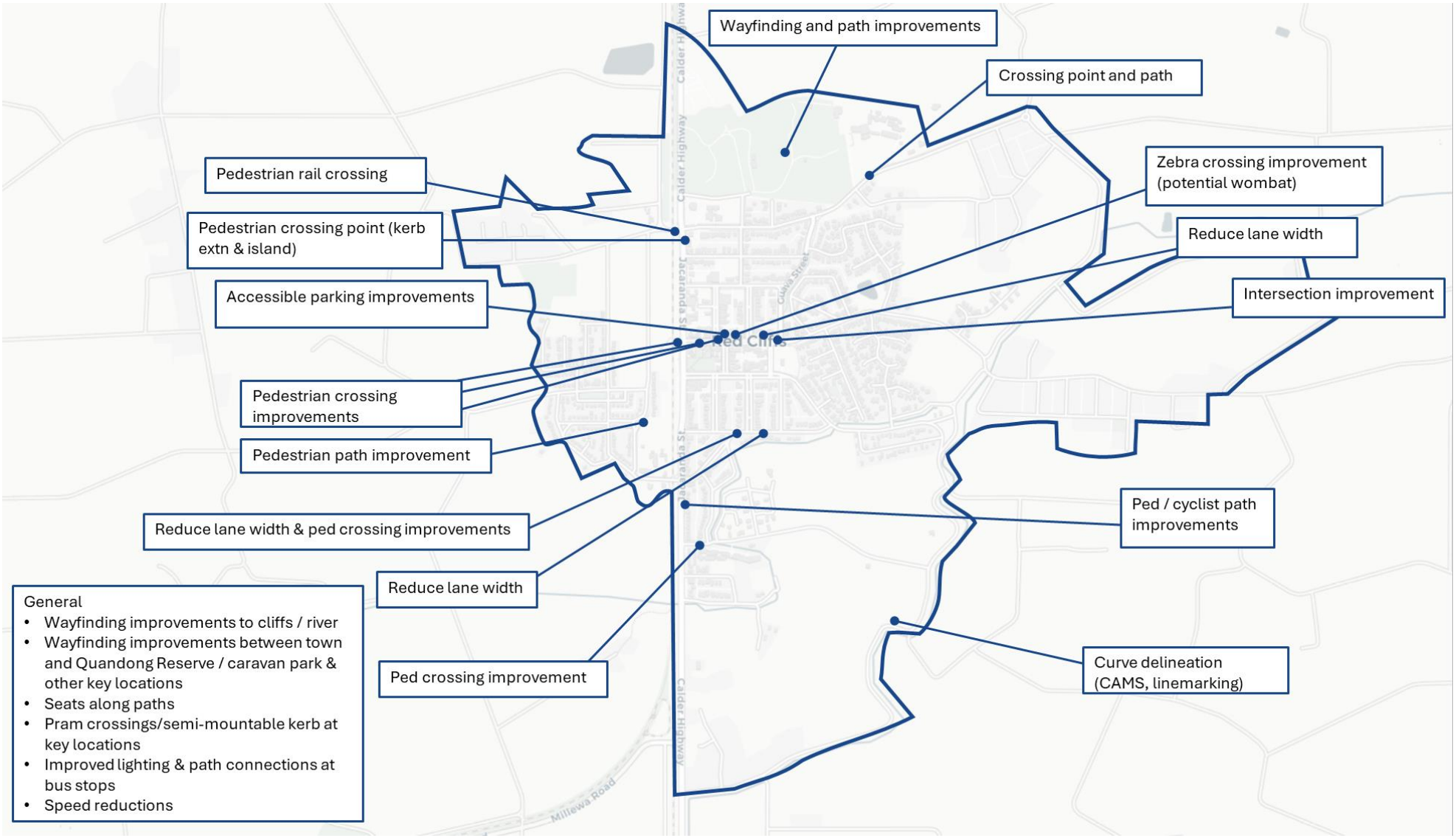


Figure 33: Treatment Plan Overview

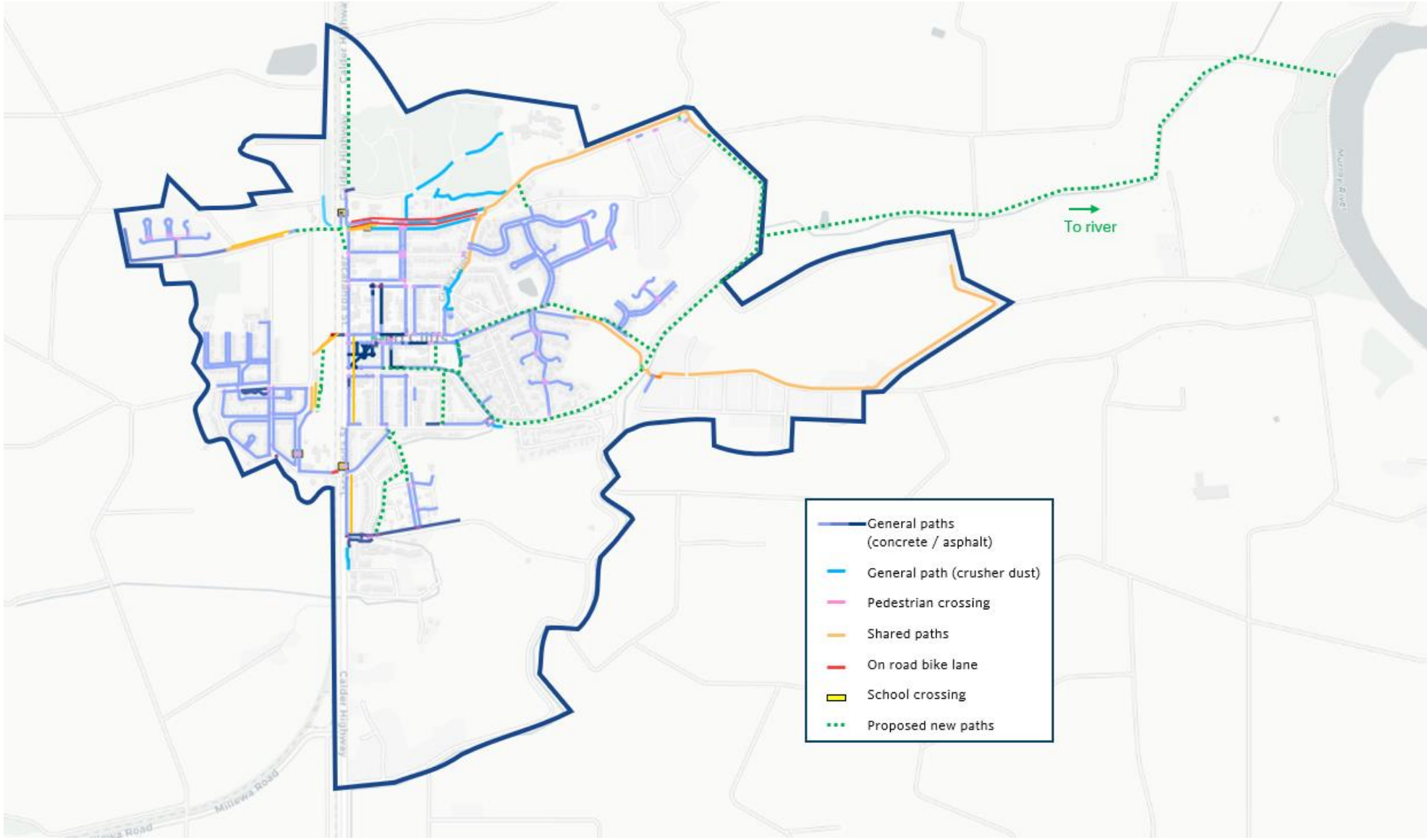


Figure 34: Existing walking & cycling facilities + proposed new path connections

APPENDIX A – CASUALTY CRASH DATA

CRASH NUMBER	DATE	TIME	DAY	SEVERITY	DCA	DCA DESCRIPTION	LOCATION	ROAD GEOMETRY	VEH DIR	LIGHT COND.	SURF COND.	NOTES
T20180012993	11/07/2018	2:27 PM	Wednesday	Other injury	173	Right off carriageway into object/parked vehicle	Fitzroy Ave btw Timbarra Way and Timbarra Way	Not at intersection	V1: NE	Day	Wet	
T20180016314	29/08/2018	1:00 PM	Wednesday	Other injury	142	Leaving parking	Jacaranda St, btw Fitzroy Ave and Golburn Ave	Not at intersection	V1: N, V2: N	Day	Dry	Young driver
T20180021896	22/11/2018	6:20 AM	Thursday	Serious injury	160	Vehicle collides with vehicle parked on left of road	Golburn Ave, btw Jacaranda St and Fowler La	Not at intersection	V1: S, V2: NK	Dusk / dawn	Dry	
T20180022780	2/12/2018	10:00 AM	Sunday	Other injury	113	Right near (intersections only)	Jacaranda St / Indi Ave intersection	T intersection	V1: W, V2: S	Day	Dry	Young driver, older driver
T20190002817	14/02/2019	7:55 AM	Thursday	Other injury	130	Rear end(vehicles in same lane)	Kauri St / Laurel St intersection	Cross intersection	V1: S, V2: NK	Day	Dry	
T20190002986	16/02/2019	7:55 AM	Saturday	Other injury	160	Vehicle collides with vehicle parked on left of road	Kauri St, south of Loddon Ave	Not at intersection	V1: N, V2-5: NK	Day	Dry	Quad Bike (V1)
T20190009966	27/05/2019	8:40 PM	Monday	Fatal	171	Left off carriageway into object/parked vehicle	Indi Ave, east of Anne Cox Dr	Not at intersection	V1: E	Dark street lights on	Dry	Young driver
T20200004491	10/01/2020	9:00 AM	Friday	Other injury	113	Right near (intersections only)	Jacaranda St / Indi Ave intersection	T intersection	V1: W, V2: S	Day	Dry	
T20200010182	6/05/2020	10:10 AM	Wednesday	Other injury	113	Right near (intersections only)	Whittaker Cres / South St	Cross intersection	V1: NW, V2: SW	Day	Dry	Light Commercial Vehicle (Rigid) (V2)
T20210011472	21/05/2021	7:55 PM	Friday	Serious injury	174	Out of control on carriageway (on straight)	Jacaranda St / Fitzroy Ave intersection	Not at intersection	V1: W	Dark street lights on	Dry	Motorcycle, Young driver
T20210024142	27/11/2021	8:41 PM	Saturday	Other injury	181	Off right bend into object/parked vehicle	Cocklin Ave, west of Carey St	Not at intersection	V1: E	Dark no street lights	Dry	
T20220026129	18/11/2022	6:07 PM	Friday	Other injury	113	Right near (intersections only)	Jacaranda St / Fitzroy Ave intersection	Cross intersection	V1: E, V2: N	Dusk / dawn	Dry	
T20230004663	24/02/2023	3:06 AM	Friday	Serious injury	173	Right off carriageway into object/parked vehicle	Indi Ave, east of Anne Cox Dr	Not at intersection	V1: E	Dark no street lights	Dry	Young driver

Table A1: Casualty Crashes in study area (1 July 2018 - 30 June 2023)

APPENDIX B – HISTORICAL COMMUNITY FEEDBACK

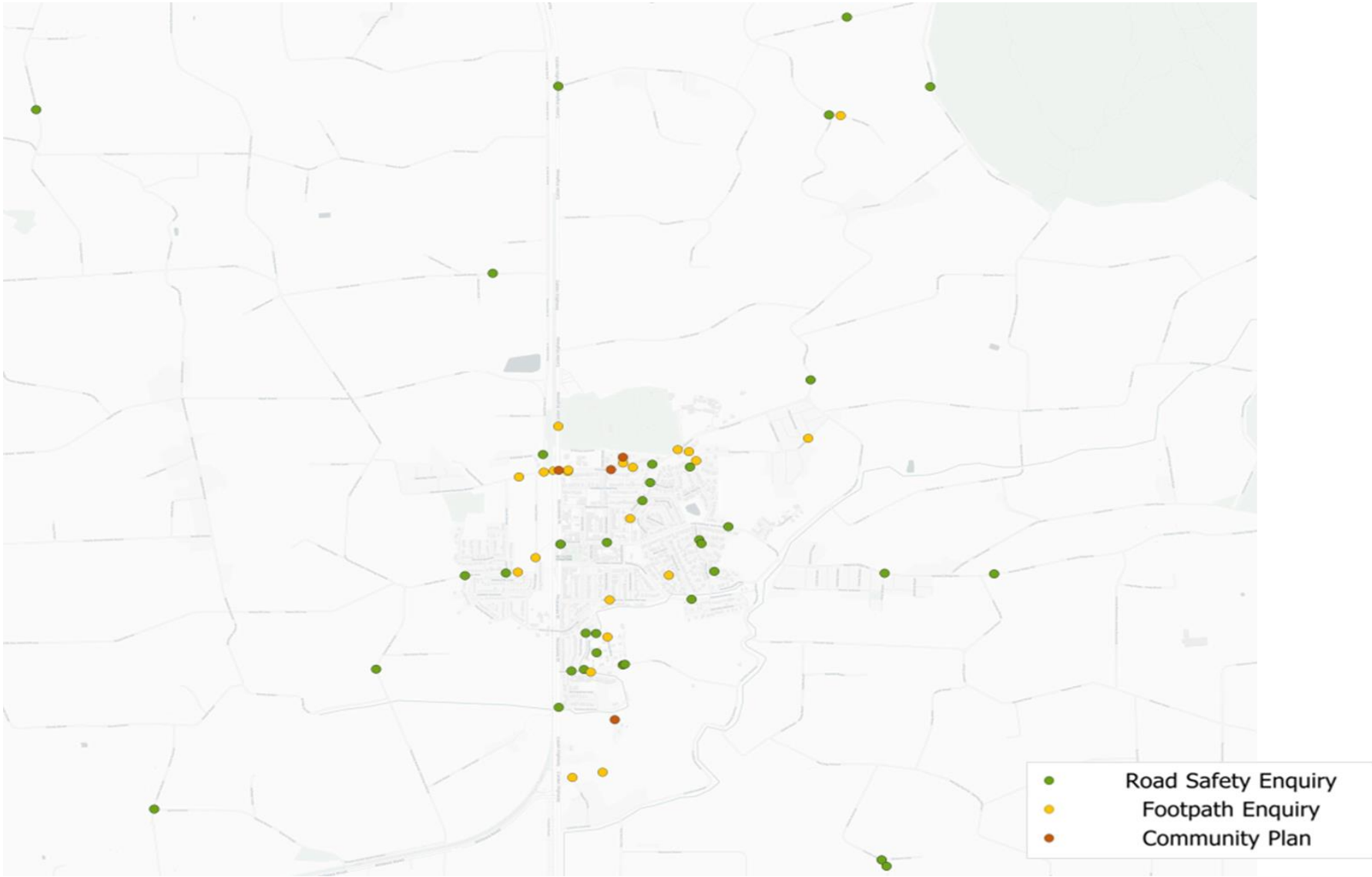


Figure B1: Historical community feedback – Overview

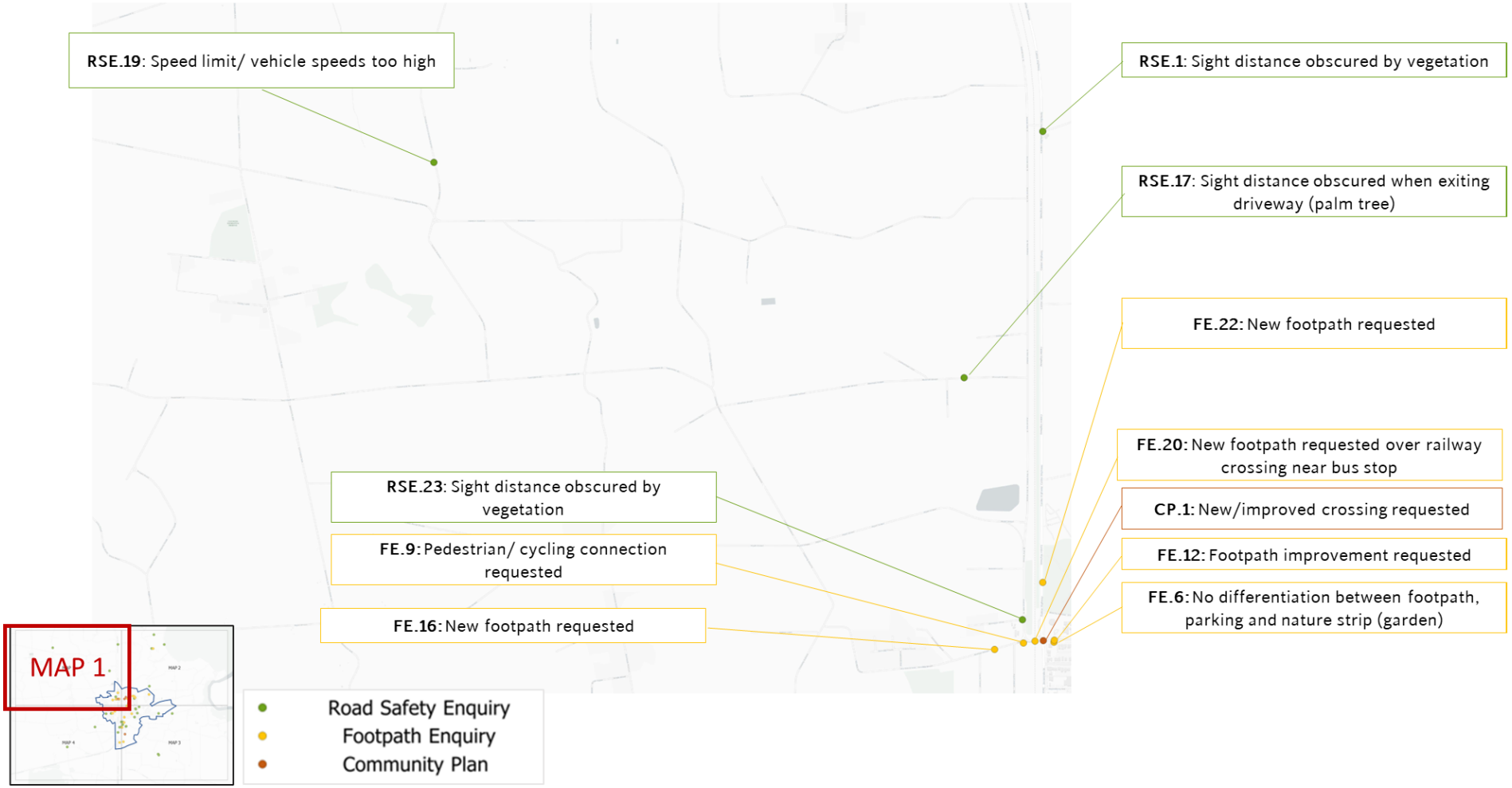


Figure B2: Historical community feedback – Map 1

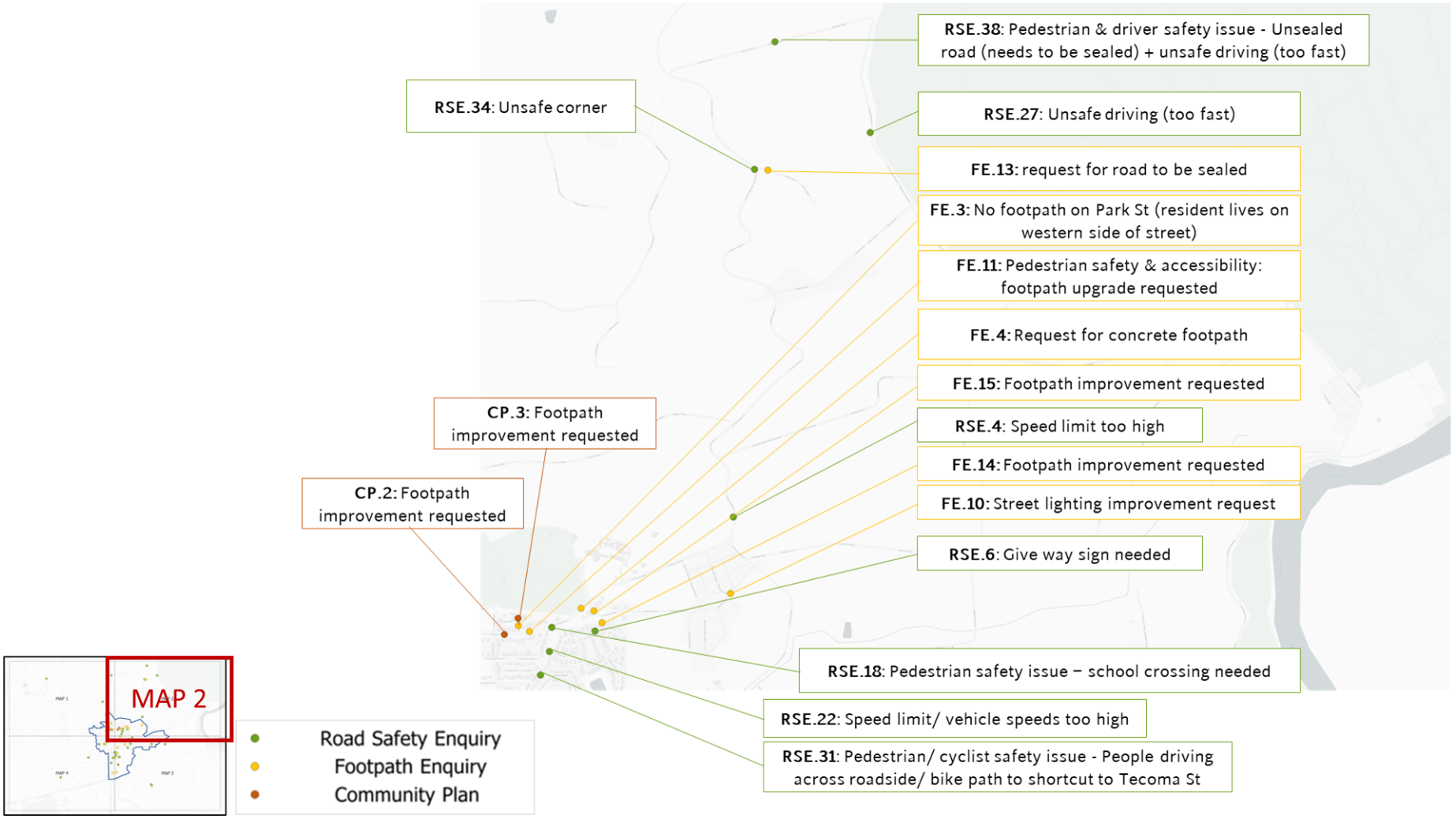


Figure B3: Historical community feedback – Map 2

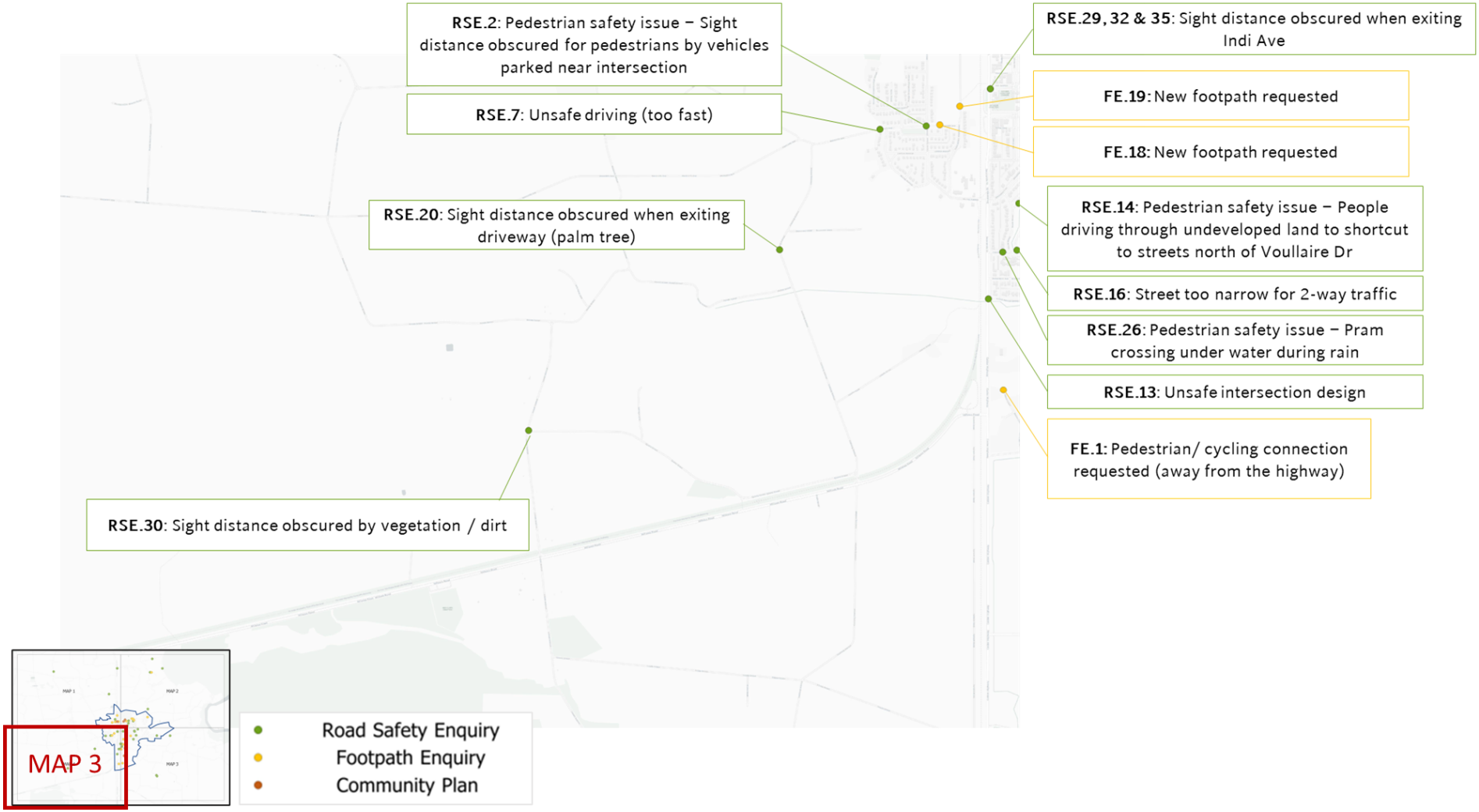


Figure B4: Historical community feedback – Map 3

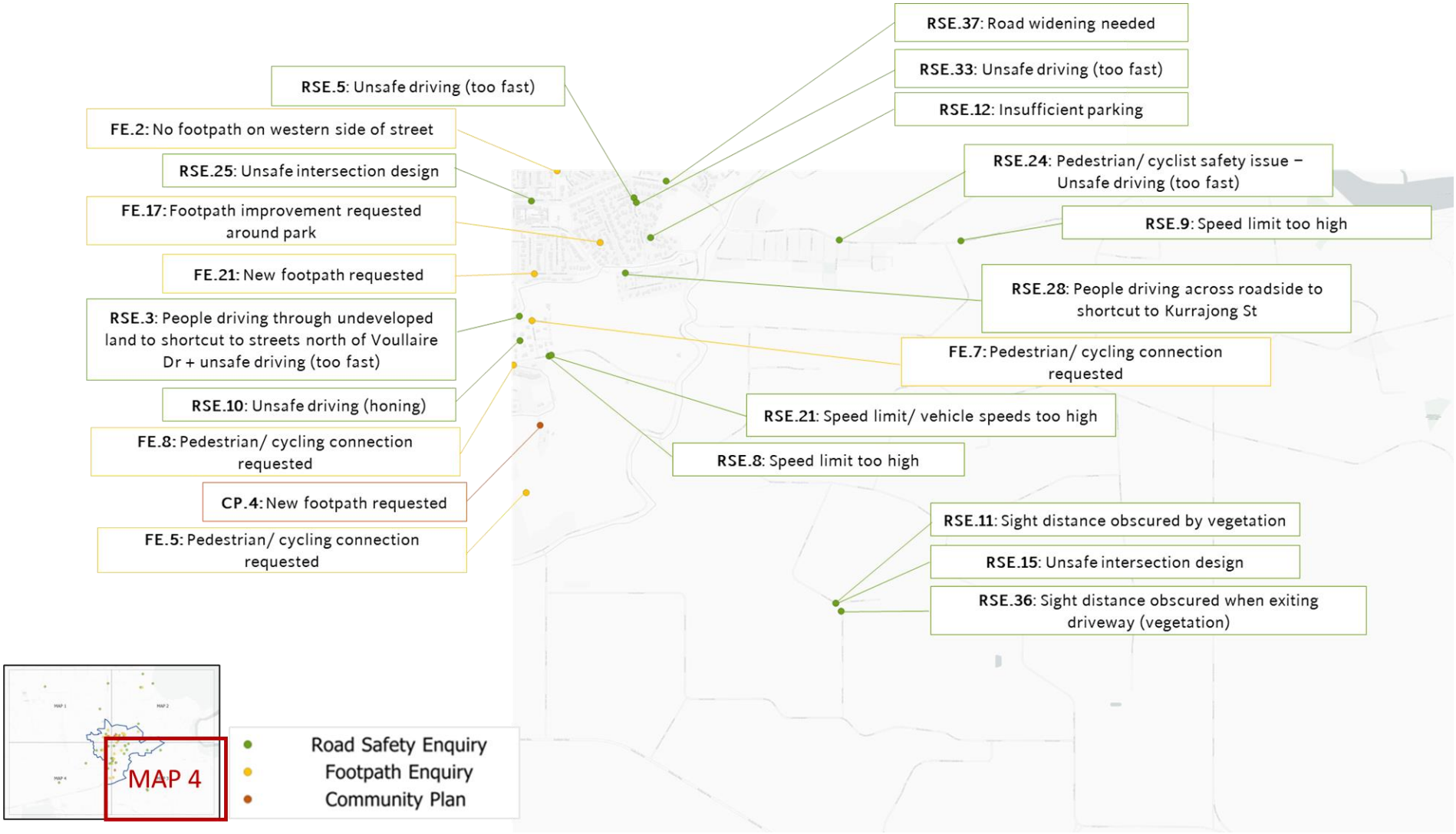


Figure B5: Historical community feedback – Map 4

APPENDIX C – INDICATIVE COSTING OF PLAN ELEMENTS

Indicative costings for the treatment plan elements are summarised in Table D1 adopting the cost categories outlined in in the table notes.

DESIGN ELEMENT	INDICATIVE COST
Splitter island (including pedestrian refuge)	Low
Kerb outstands / kerb extensions (painted treatments lower cost, treatments incorporating kerbing and/or planting higher cost)	Low to moderate
New footpath / shared path	Low to moderate
Parking / traffic management signage	Low
Line marking (e.g. centre line, edge lines, etc)	Low
Intersection signalisation	High
Pedestrian signals	High
Intersection redesign	High
Speed limit change / school zone speed limit - Static signs - Electronic signs	 Low High
On-street accessible parking bay (including kerb works etc)	Moderate
Zebra crossing	Moderate
Wombat crossing	Moderate
Footpath remediation	Low to moderate
Pedestrian fencing	Low

COST CATEGORIES: LOW ≤$40,000 | MODERATE $40,000 - $100,000 | HIGH ≥$100,000

Table C1: Indicative costing of plan elements