

Road Safety Study Policy 2021

Approval Date: 5/10/2021 Next Review Date: 2022 (following the competition of two initial Road Safety Studies)

1. Introduction

This policy will inform:

- Road Safety Studies that analyse identified road safety issues in the City of Yarra and propose treatments that aim to address these in Road Safety Plans, referred to as a road safety study or RSS throughout this document; and
- Road safety plans are the output of a RSS and include road safety treatments, referred to as “road safety plan” or “the plan” throughout this document.

This policy:

- Aims to ensure a consistent, fair and comprehensive approach to the investigation, consultation, design, implementation and monitoring of road safety treatments;
- Establishes clearly defined road safety objectives to allow for a robust, focussed approach to addressing these issues within a study;
- Ensures Yarra Council’s responsibility as road manager focuses on the provision of safe and accessible streets, particularly for more vulnerable road users;
- Recognises the contribution that Yarra has and continues to make towards road safety including the willingness to take the lead and the implementation of new and creative ideas to address road safety challenges; and
- Delivers on broader Council objectives where possible (such as increasing vegetation and permeable surfaces), while recognising that there are a range of other strategies that also address these objectives.

The primary objective of a RSS is to improve road safety and will be managed by the Traffic Unit within Yarra’s Infrastructure, Traffic and Civil Engineering Branch. Contributing to the success of these road safety studies will be the input of the community and other relevant parts of Council.

The output of the study will be a road safety plan with treatments that respond to identified actual and perceived road safety needs, with particular regard to improving and prioritising conditions for vulnerable road users, and improving streets for people. See *Figure 1*.

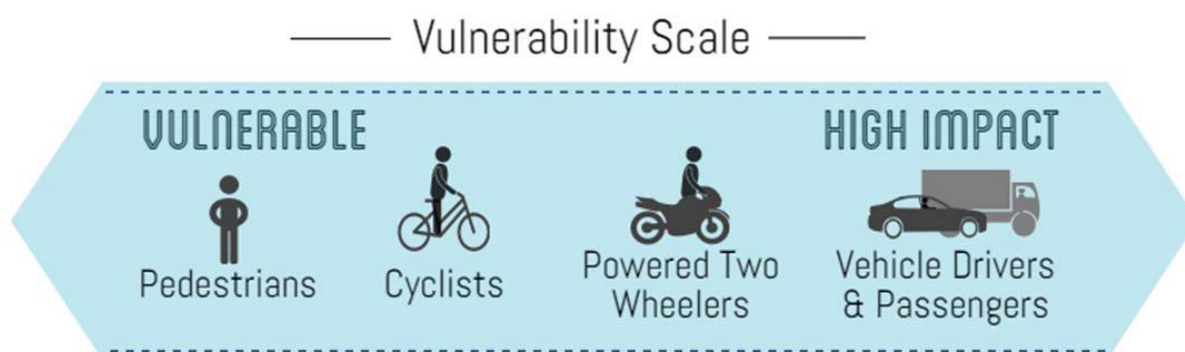


Fig 1: Safe Travel Vulnerability Scale

2. Definitions

Road Safety: creating a safe environment for road users within the road reserve, which includes the footpath.

Road user: Anyone who uses a street or footpath such as a pedestrian, cyclist or motorist.

Community consultation: A participatory process that enables community members to articulate concerns and provide feedback, by which Council gathers information.

Road Safety Study: analysis of identified road safety issues and treatments that aim to address these.

Road Safety Plan: suite of road safety treatments identified in road safety study.

Road Safety Treatment: road safety improvement projects in road safety plan.

3. Policy Context

Safe System Approach

The Safe System approach has been the cornerstone of national and state level road safety policy for the past decade.

The key underlying principle of the Safe System approach is the recognition that road users can make mistakes that can lead to death or serious injury. From a road and transport manager perspective, the Safe System principles centre around the management of vehicle speeds, a reduction in potential conflicts between road users and the provision of a 'forgiving' road environment for errant vehicles – with the view to minimising the impact of mistakes by road users.

The Safe System principles continue to feature heavily in the draft National Road Safety Strategy 2021-30 and have been incorporated within a Movement and Place planning approach (i.e. Motorways with no place value should accommodate fast movement whereas with local streets the emphasis is on slow movement).

The National Road Safety Strategy provides direction for all levels of government including priority areas, actions and implementation strategies. This includes:

- The provision of safe access for all road users, with vulnerable road users being a key priority;
- The need for evidence-based policy and programs;
- Investment tied to improved road safety outcomes; and
- Future focused research and development

The principles, scope and actions of this Policy have been developed to be consistent with the national direction to road safety and the expected role that local government will play in delivering road safety outcomes at the local level.

Local Context

The strategic direction of this policy is guided by the following Yarra City Council documents:

- City of Yarra Safe Travel Strategy 2016 – 2026;
- The City of Yarra Strategic Transport Statement (Actions updated 2012);
- City of Yarra Bicycle Strategy 2016;
- Encouraging and Increasing Walking Strategy 2005;
- Council Plan 2017/21;
- Yarra Climate Emergency Plan 2020 – 2024 and;
- Community Engagement Policy 2020
- Yarra Place Making Framework 2021
- Transport Action Plan 2021

It also has alignment with other Council policies and strategies, and where practical will add value or support relevant targets and initiatives. This includes the Urban Forestry Strategy 2017 and Parking Management Strategy 2015, as well as any streetscape masterplans for Yarra precincts.

4. Scope

The RSS Policy will focus on road safety issues identified through data analysis and engaging the local community, within either a prioritised precinct, corridor or site approach.

This approach allows for the majority of treatments to qualify for external funding from key partners in the delivery of road safety such as the Victorian State Government, Transport Accident Commission (TAC) and the Federal Government.

It will also look to gain a strategic understanding of community road safety needs (i.e. schools, libraries, cafes, parks, shopping strips etc.) and seek opportunities to provide safe and accessible connections, and/or improved infrastructure to these places for all road users to create inviting local streets.

Within scope:

Road safety treatments

- Physical and streetscape treatments;
- Improved pedestrian and cycling facilities;
- Signs, line marking and other road safety treatments; and
- Area wide or localised reduced speed limits (subject to State Government direction and acceptance)

Parking

- Parking removal will be considered to accommodate treatments to address identified road safety concerns. Parking occupancy and management (i.e. review of parking restrictions) is not within the scope of the study.

Lighting

- Will be considered in scope when this is integral to road safety treatments (e.g. appropriate lighting for a pedestrian crossing).

Trees/vegetation

- Planting will be within scope when addressing a road safety issue (e.g. reducing vehicle speeds through road narrowing) or as a complementary element to a road safety treatment.

Urban Design

- The RSS would aim to respond to strategic priorities such as post-development or major redevelopment change areas, Streetscape Masterplans, Structure Plans, Urban Design Frameworks, policies, new/upgraded transport infrastructure and schools.
- Where possible, incorporating urban design elements into road safety treatments such as increased vegetation, street furniture, and permeable surfaces, to improve the utility and amenity of treatments.

Local streets

- Yarra City Council has responsibility for local streets, which the road safety plan will identify treatments to be implemented by Council on (subject to funding).

Arterial roads

- DoT has responsibility for Victoria's arterial road network, referred to as declared roads. It is within the scope that Council advocate to the State Government to implement safety treatments, which are identified during the RSS for state arterial roads.
- The RSS may recommend that Council undertakes further or more detailed investigative work (subject to funding) to further explore issues on Arterial Roads that are important to the community and formulate proposals for consideration by the State Government.

Climate Emergency Plan

- Priorities of the Climate Emergency Plan will be addressed when within scope in regard to creating natural and built environments that are healthy and resilient in a climate impacted world. In creating safer streets for Yarra there is the opportunity to help people cope with the impacts of a changing climate by increasing permeable surfaces and vegetation.

Out of scope

Additional priority for vehicles or significant restrictions to vehicle access (unless there is a significant safety or an agreed community wide benefit)

- While some local streets in Yarra experience higher traffic volumes and congestion usually during peak periods, it is Council policy not to increase vehicle capacity or allocate more space for vehicle movements unless this best addresses an identified road safety issue (i.e. the introduction of a roundabout or traffic signals to address conflicts between vehicles and vulnerable road users).
- Increasing vehicle capacity within Yarra's constrained road network has the potential to encourage more through or non-local traffic using Yarra's local streets and restricts the space available to safely cater for other modes of transport.
- It is understood that the volume of vehicles using local streets is an issue for some members of the community. However, restrictive measures to address vehicle volumes such as road closures have not been supported by the community (as a whole) particularly where this results in restricted access to local facilities or neighbouring suburbs; increased travel times and a potential redistribution of traffic onto another street in the neighbourhood (i.e. transferring the problem elsewhere).
- It has also generally been found that less restrictive measures such as turning bans have proved to be ineffective as it requires policing and impacts on residents (there is no option to apply restrictions to non-residents only).
- There may be opportunities in areas with a high number of vulnerable road users (i.e. outside schools or near train stations) or on streets with low traffic volumes where restricted vehicle access could result in a significant safety improvement or overall community benefit. In such situations, localised restrictions on vehicle access will be investigated with the community as part of the RSS.
- Outside of this, the focus of the RSS will be addressing road safety and accessibility issues rather than traffic volume.

5. Process

The Traffic Unit will undertake road safety studies according to the allowable budget and staff resourcing for each financial year, with studies expected to be conducted over a 6 to 12 month timeframe and to be determined by the extent of the study scope.

This process takes an integrated problem-solving approach which includes engaging the community at a level appropriate to the stage of the process and road safety issues under consideration. Community engagement will be sought to identify road safety needs and assist in the development of appropriate treatments to inform the road safety plan.

Internal collaboration with other parts of Council will be sought through formation of a working group, who will be consulted throughout the process to inform the overall plan. This will also enable consideration of broader issues and ensure Council priorities are addressed wherever practical.

Subject to funding, treatments in the Council endorsed RSS plan will typically be designed in the following financial year and implemented in subsequent years. Internal and external funding will be sought to enable this. Some treatments will require approval from external stakeholders such as DoT (Major Traffic Control Devices) and/or further feasibility studies to ascertain funding and site constraints.

Coordination for implementation will be required with other Council projects from Infrastructure, Strategic Transport, Urban Design and also external projects, including State Government and utility companies.

Construction will typically be undertaken over 2-5 years, with the timeframe dependent on the number of treatments proposed and funding availability. Treatments can be delivered more quickly, should extra funding become available.

The implementation of road safety plans is subject to Council's annual budget process and also external road safety funding sources.

6. Prioritisation Process

The prioritisation process for road safety studies to be undertaken the following year will be carried out by the Traffic Unit, with input from other parts of Council including Infrastructure, Strategic Transport, Urban Design and Strategic Planning. The priority ranking list will propose what combination of precincts, corridors or sites are to be studied (subject to funding) the next financial year, with Councillors to be advised accordingly.

The prioritisation process for the area/s to be studied will be predominately informed by road safety data and other empirical data (as outlined below) and if required/possible will respond to strategic spatial priorities. Direction from other parts of Council will be required regarding strategic priorities to enable studies to be responsive to Council needs and enable coordination. The ability to respond to strategic priorities at the appropriate time should ensure that community needs, Council objectives and a coordinated organisational response are achieved.

Input will also be sought through internal consultation regarding capital and maintenance projects, for improved alignment of priorities, coordination and delivery across Council.

Criteria:

- Crash Statistics – any reported fatalities, serious injuries and other injuries in the last five years on local streets or intersections;
- Traffic speed – any local street with an 85th percentile speed generally greater than 10% above the posted speed limit;
- Activity land use generators (e.g. hospitals and schools) – considered in terms of likely pedestrian and bicycle generation, especially by vulnerable street users such as walkers and cyclists;
- Strategic priorities determined annually through internal consultation with other parts of Council, including Infrastructure, Strategic Transport, Urban Design and Strategic Planning; and
- Community feedback to Council regarding road safety and accessibility improvements, which will be cross-referenced with empirical data detailed above.

Other considerations will include road hierarchy, land use and public transport as some local streets serve as higher-order collector roads and therefore carry higher traffic volumes and cater for trams and buses, while other local streets service commercial and industrial areas which therefore experience higher proportions of heavy vehicles.

There will be the ability to address localised road safety issues independently of the RSS process to allow reactive response to these where required. This would occur by way of the recurring Spot Safety Budget.

7. Community engagement

Community engagement, undertaken with each study, will be guided by Yarra's Community Engagement Policy 2020.

The purpose of the community engagement will be to identify and understand local road safety issues and needs, from the perspective of the community.

Community input will be considered in conjunction with evidence-based assessments. Both will inform the RSS plan.

The community may be engaged further, after a draft plan has been developed, to consider options and priorities.

Engagement approach and process




Yarra's Community Engagement Policy is guided by the best-practice spectrum framework developed by the International Association for Public Participation (IAP2).

The Advocacy and Engagement Unit will oversee the engagement process, promotion and timeframe.

The community engagement process for the RSS will typically have three stages.

Selecting the appropriate approach

The approach to the engagement and the level of community influence will be determined by the complexity of road safety issues that are under consideration, and the stage of the engagement process.

| Inform the community  | Consult with the community  | Involve the community  |
|--|---|--|
| <p>At any stage of the consultation process, we may need to tell the community what we are doing, so they stay informed of changes in their neighbourhood, if:</p> <ul style="list-style-type: none"> • there are evidenced-based safety risks requiring action, or • urgent work is required. | <p>During Stage 1, we will:</p> <ul style="list-style-type: none"> • Seek input from a broad range of community members. • Closely analyse the range of input and perspectives we hear. | <p>During Stage 2 we will:</p> <ul style="list-style-type: none"> • Share what we have heard from the community. • Provide draft recommendations for the community to consider • Where there are options available, provide the details to help guide deeper thinking. • Test these recommendations or options with a focus group. |

Engagement process

| | Stage 1: Investigation | Stage 2: Analysis | Stage 3: Review |
|-----------------|---|--|--|
| Purpose | Identify and gain an understanding of the safety issues within the study area scope through crash statistics, traffic data and community input. | Analyse the feedback with the support of independent consultants (as required) to generate the draft RSS plan. Promote the opportunity for the community to have their say on the draft plan. | Consider the community's feedback from Stage 2. This will inform the final plan. Council will consider the recommendations, and potentially endorse the final plan with or without changes. |
| Output | A map of road safety issues identified and detailed within the study area. | Draft RSS plan. | Final RSS plan |
| Approach | Consult: Gather input from a broad range of community stakeholders. Promote the opportunity for the community to have their | Involve the community in a discussion on: <ul style="list-style-type: none"> • priority areas identified in Stage 1 • Potential treatments subsequently identified | Consult: Final plan is released. Council governance procedure allows community submissions to |

| | | | |
|----------------|---|---|---|
| | say on road safety issues in the precinct. | to address those priorities. Community feedback at this stage will help us understand further the suitability of the proposed treatments. | be heard at the Council meeting. |
| Methods | <ul style="list-style-type: none"> • Surveys • Social research, such as in-person focus group • Written and verbal feedback (from emails, phone calls, and direct conversations) | <ul style="list-style-type: none"> • Surveys • Social research, such as in-person focus group • Written and verbal feedback (from emails, phone calls, and direct conversations) | The community will be notified when it is due to be considered by Council for formal endorsement. |

Outreach and promotion

The first two stages of the engagement process will include proactive outreach to a diverse range of community members and other stakeholders with a special interest, in order to get their feedback and input.

All participants will be asked to provide their demographic details, to ensure as many perspectives as possible are heard.

Community stakeholders

This will include:

- local residents – both owners and renters
- people who walk, drive, cycle, or otherwise travel through the area.

Depending on the location, it may also include:

- schools and childcare centres
- businesses, including owners, employees and traders groups
- other local organisations and services.

Advisory group stakeholders

During the first two stages, input may also be sought from Yarra's established advisory committees and groups. This may include:

- Internal Council Working Group
- Bicycle Advisory Committee
- Disability Advisory Committee
- Active Ageing Advisory Group
- Yarra Environment Advisory Committee

Internal Council Working Group

Input will be sought from relevant areas of Council. This group will include representation from (but not limited to) Infrastructure, Strategic Transport, Open Space and Urban Design. This will also enable consideration of broader issues and ensure Council priorities are addressed wherever practical.

Road safety treatments must be functional with careful consideration for aesthetics. Design must reflect and enhance the character and values of the local neighbourhood, making our streets more safe and liveable by focusing on:

- Fit for purpose design that responds to the safety issue

- An acknowledgement of a hierarchy of movement including but not limited to pedestrians, cyclists, vehicles
- Simple and refined design detail that is appropriate for civic public realm spaces
- Materiality appropriate to the site
- Maximise opportunities for street tree planting and greening where possible

Outreach and promotion methods

At stage 1 and stage 2, the community consultation process will be promoted through:

- Direct letterboxing
- Direct emails to existing mailing lists
- Personal emails to local organisations, service providers and traders
- Yarra Council's social media and other relevant digital channels, including the dedicated Your Say Yarra web page
- Other methods may be considered, as appropriate.

At stage 3, before the final draft plan is due to be considered by Council for formal endorsement, the community will be notified through:

- Updates to the Your Say Yarra page
- Direct emails to existing mailing lists, including all participants and stakeholders identified during stage 1 and 2
- Direct letterboxing
- Other methods as appropriate.

Engagement methods

Your Say Yarra web page

Each individual RSS will have a dedicated Your Say Yarra web page. This will be updated regularly and include:

- Information and updates about the project, including the current status, answers to frequently asked questions, and any relevant background
- A digital survey, during stage 1 and 2 (when the consultations are open)
- Interactive maps, which provide opportunity for feedback and ideas during stage 1 and 2
- Opportunity to subscribe to a mailing list
- Contact information
- Dates for upcoming pop-up sessions
- Any draft and final plans, once developed.

Surveys

Surveys will ask the community for input on their experience or understanding of road safety issues in the area. The community will have the opportunity to provide feedback online or in person via:

- Digital survey forms
- Interactive maps
- Hard-copy survey forms (either at pop-up engagement sessions or via direct mail).

Interactive map

The Your Say Yarra page will include a map of the precinct. During each stage, it will perform different functions.

Stage 1

- Community has opportunity to place markers on the map to identify and describe locations with road safety issues.
- The map will show all comments and markers from participating community members, to support transparency about the range of needs and perspectives within the community.

Stage 2

- The map will show the initial draft plan's proposed treatment options. This will include further information and images as appropriate.
- Community will have an opportunity to give public feedback and add comments directly on the map.

Stage 3

- The map shows the final draft plan. This will include further information and images as appropriate.

Pop-up engagement sessions

During stage 1 and 2 the community will have the opportunity to meet with the project team to find out more about the project and have their say. They can provide feedback through:

- Hard-copy surveys
- Conversations with Yarra Council officers
- Other methods as appropriate, including providing feedback on a map.

These sessions will be promoted before each of the first two stages begin.

Social research

Social research methodology will be used to get a representative sample of data on community perceptions. This would be independently facilitated to ensure a fully transparent and accountable process.

This may be a focus group that will comprise a representative sample of community members, using social research methodology. It may also be household surveying.

Focus groups

Focus groups would be independently recruited and facilitated.

Stage 1

The purpose of the focus group will be to support a deeper investigation of the issues we hear from the broader community.

During Stage 1, focus group members would be interviewed about their experience of the area's road safety issues.

Stage 2

The focus group will be reconvened and independently facilitated to ensure a fully transparent and accountable process.

During Stage 2, the focus group will support a deeper investigation of the proposed treatments/options and ensure any challenges these options may present are well understood by the group.

Other engagement opportunities

The community can also provide feedback or ask for more information through emails, phone calls, written correspondence, and direct conversations.

8. Guide to Selection of Treatments and Examples

Table 1 provides a description of treatments that have been applied within Yarra to address road safety issues.

The treatments provide a benchmark of what can typically be delivered within the timescales, consultation processes and funding opportunities associated with the RSS.

Strategic infrastructure such as separated bicycle corridors or road safety infrastructure delivery on arterial roads is not included within the benchmark treatments as these would most likely require standalone project investigation, consultation, approval and delivery considerations and processes.

Table 1 has been adapted from Austroads Guide to Traffic Management: Local Area Traffic Management with the effectiveness of treatments refined to align with Yarra's inner-city transport and movement context, where this has been found (via Council officer research and knowledge) to differ from national guidelines.

The road safety treatments delivered via the RSS closely align with Safe Systems principles and best practice in road safety – including Yarra's own innovations and contributions to best practice.

Table 1 also includes a measurement of cyclist comfort as this is a consideration for selecting treatments – noting that there is a fine balance in addressing the needs and differing priorities of various stakeholders in Yarra (such as residents, businesses, visitors, pedestrians, cyclists, car owners etc.) and delivering safe local roads that encourage the harmonious interaction of all road users.

Treatments are selected to best address identified safety issues within the common range of constraints within Yarra such as existing lighting, demand for parking, underground services and storm water drainage.

Opportunities to incorporate wider Council objectives around landscaping/permeable surfaces/tree planting, water sensitive design, supporting the local economy and street activation (as appropriate) are important considerations when selecting treatments.

Table 1 - Benchmarking treatments suitable for RSS

| Treatments | | Reduce vehicle speeds | Reduce traffic volume | Reduced crash risk ^A | Increase pedestrian safety | Increase bicycle safety | Cyclist comfort ^B | Loss of parking | Other considerations |
|----------------------------------|--|-----------------------|-----------------------|---------------------------------|----------------------------|-------------------------|------------------------------|-----------------|---|
| Vertical Deflection Treatments | 1) Road cushions | Good | Poor | Yes | Indirectly ³ | Indirectly ³ | OK | No | Lower cost, community typically supportive |
| | 2) Road humps | Good | Poor | Yes | Indirectly ³ | Indirectly ³ | Poor | No | Lower cost, community typically supportive |
| | 3) Wombat crossings | Good | Poor | Yes | Directly ⁴ | Indirectly ³ | Poor | Yes | Higher cost, community typically supportive, planting opportunities |
| | 4) Raised intersections | Good | Poor | Yes | Indirectly ³ | Indirectly ³ | OK | No | Higher cost, community typically supportive |
| | 5) Gateway treatments | Good | Poor | Yes | Directly ⁴ | Directly ⁴ | Poor | No | Higher cost, community typically supportive |
| Horizontal Deflection Treatments | 6) One lane slow point | Good | OK ⁵ | Yes | Indirectly ³ | Indirectly ³ | Poor | Yes | Higher cost, community support difficult, planting opportunities |
| | 7) Two lane slow point | Good | OK ⁵ | Yes | Indirectly ³ | Indirectly ³ | Poor | Yes | Higher cost, community support difficult, planting and activation opportunities |
| | 8) Kerb build outs | Good | Poor | Yes | Directly ⁴ | Indirectly ³ | Poor | Yes | Community typically supportive, planting and activation opportunities |
| | 9) Lane narrowing | Good | Poor | Yes | Indirectly ³ | Directly ⁴ | Good | No | Lower cost, community typically supportive |
| | 10) Parking reconfiguration ⁶ | OK | Poor | Yes | Indirectly ³ | Indirectly ³ | OK | No | Lower cost, community typically supportive, planting opportunities |

| | | | | | | | | | |
|----------------------------------|--|-------------------|--------------------|------------------|-------------------------|-------------------------|------|-----|---|
| | 11) Painted median islands | OK | Poor | Yes | Directly ⁴ | Indirectly ³ | OK | No | Lower cost, community typically supportive, planting opportunities |
| | 12) Raised median islands ⁷ | OK | Poor | Yes | Directly ⁴ | Indirectly ³ | Poor | No | Higher cost, community typically supportive, planting opportunities |
| Volume Reduction Treatments | 13) Full road closure ⁸ | OK | Good | Yes | Indirectly ³ | Indirectly ³ | Good | Yes | Higher cost, community support difficult, planting and activation opportunities |
| | 14) Partial road closure | OK | Good | Yes | Indirectly ³ | Indirectly ³ | Good | Yes | Higher cost, community support difficult, planting and activation opportunities |
| | 15) Modified intersection | OK | Good | Yes | Directly ⁴ | Directly ⁴ | OK | Yes | Higher cost, community support difficult |
| | 16) Left-in/Left-out islands | OK | OK | Yes | Directly ⁴ | Directly ⁴ | Poor | No | Lower cost, community typically supportive |
| Roundabouts | 17) Vehicle orientated roundabout ⁹ | Poor ⁹ | Poor | Yes ⁹ | No | No ⁹ | Poor | No | Very high cost, planting opportunities |
| | 18) Modified roundabout ¹⁰ | OK | Poor | Yes | Directly ⁴ | Directly ⁴ | OK | No | Very high cost, planting opportunities |
| Psychological Calming Treatments | 19) On-road landscaping | Good | Poor | Yes | Indirectly ³ | Indirectly ³ | Poor | No | Lower cost, community typically supportive, planting opportunities |
| | 20) Shared zones | Good | OK | Yes | Directly ⁴ | Directly ⁴ | Good | No | Very high cost, landscaping and activation opportunities |
| | 21) Painted symbols | Good | Poor | Yes | Directly ⁴ | Directly ⁴ | Good | No | Lower cost, community typically supportive |
| Regulatory treatments | 22) Turn bans ¹¹ | OK ¹¹ | Poor ¹¹ | Yes | Indirectly ³ | Indirectly ³ | OK | No | Lower cost, community typically supportive, difficult to enforce |

| | | | | | | | | | | |
|------------------|--|------|--------------------|-----|-------------------------|-------------------------|------------------|-----|--|----|
| | 23) One-way street | Good | Good | Yes | Indirectly ³ | Directly ⁴ | Good | No | Lower cost, community typically supportive, minor compliance issues | |
| | Speed limits | Good | OK | Yes | Indirectly ³ | Directly ⁴ | Good | No | Lower cost, community typically supportive, external approval required | |
| | STOP and Give Way | N/A | N/A | Yes | N/A | N/A | N/A | No | Lower cost, community typically supportive, external approval required | |
| Other Treatments | 24) Signed pedestrian crossing | Good | Poor | Yes | Directly ⁴ | Indirectly ³ | OK ¹² | Yes | Higher cost, community typically supportive, planting opportunities | |
| | 25) Signalised pedestrian crossing | Good | Poor | Yes | Directly ⁴ | Indirectly ³ | OK | Yes | Very high cost, external approval required | |
| | 26) Bicycle Facilities ¹³ | N/A | N/A | Yes | N/A | Directly ⁴ | Good | No | Lower cost, community typically supportive | |
| | 27) Removing redundant infrastructure/barriers | N/A | N/A | N/A | Directly ⁴ | Directly ⁴ | OK | No | Lower cost, community typically supportive | |
| | 28) Branded and strategic routes ¹⁵ | Good | Poor ¹⁶ | N/A | Directly ⁴ | Directly ⁴ | OK | Yes | Higher cost, community typically supportive, planting opportunities | OK |

Table 1 – Supporting commentary relating to effectiveness of specific treatments (refer to cross reference number in Table 1 shown in superscript *):

- 1 Reduced crash risk as per Austroads research.
- 2 Cyclist comfort reflects a) separation of cyclists from vehicles through treatments and b) changes to path of travel or abruptness of changes to road surface, noting that cyclist comfort would increase if a treatment bypass (often at expense of on-street parking) is provided.
- 3 Treatment results in a reduced speed or other safety outcome which provides an overall benefit for pedestrians and cyclists.
- 4 Treatment directly (as well as indirectly) provides a road safety or priority outcome such as a safe crossing facility or waiting area; a resolution of conflict(s) between vulnerable road users and vehicles or results in road space reallocation for vulnerable road user group.
- 5 Slow points, like any treatment that does not physically prevent vehicle movements, tend not to reduce vehicle volumes on local connector roads or streets that provide direct access to destinations i.e. schools.
- 6 Street design that uses various alternating parking arrangements (i.e. a mix of parallel and angled parking) to deflect the path of a vehicle travel on a street.
- 7 New large-scale medians (such as those in Carlton North) are generally outside the scope of the RSS typically due to cost and ability to attribute costs to safety related funding opportunities.
- 8 Due to a lack of community support (due to restricted access, increased travel times and possible transference of problems onto neighbouring streets), road closures that result in significant restrictions to vehicle access will generally not be considered as part of the RSS.
- 9 Some roundabouts in Yarra have been historically installed/modified primarily to facilitate vehicle movements (by providing a larger entry path radius) – the design of which has contributed to crashes due to faster entry speeds into the roundabout.
- 10 Yarra has actively sought to upgrade/introduce modified roundabouts to address safety issues primarily relating to conflicts between vehicles and vulnerable road users (see upgraded roundabouts at Canning Street / Scotchmer Street, Carlton North and the introduction of better / more direct pedestrian crossing facilities – see Falconer Street / Michael Street, Fitzroy North).
- 11 Turn bans (peak period or permanent) are not self-policing and in many cases have been less effective in reducing traffic volumes / road user conflicts in Yarra context.
- 12 Cycling comfort will be lower if the pedestrian crossing is a wombat crossing (without bypass).
- 13 Bicycle facilities delivered as part of an RSS typically include painted bicycle lanes or priority areas, signage (exempting from certain restriction i.e. one-way) or cut through/bypass facilities.
- 14 Delivery of a range of safety treatments to facilitate/contribute towards a strategic route connecting places and key destinations (refer to example treatments).
- 15 Unless the strategic routes include localised full or partial road closures.

Example treatments (refer to cross reference number in Table 1 for each treatment):



1) Road cushions



2) Road hump



3) Wombat crossing



4) Raised intersection



5) Gateway treatment



6) One lane slow point



7) Two lane slow point



8) Kerb build out



9) Lane narrowing



10) Parking configuration



11) Painted median



12) Raised median



13) Localised road closure



14) Localised partial road closure



15) Modified intersection



16) Left-in Left-out treatment



17) Vehicle orientated roundabout



18) Modified roundabout



19) On road landscaping



20) Shared Zone



21) Painted symbols (example 1)



21) Painted symbols (example 2)



22) Turn ban



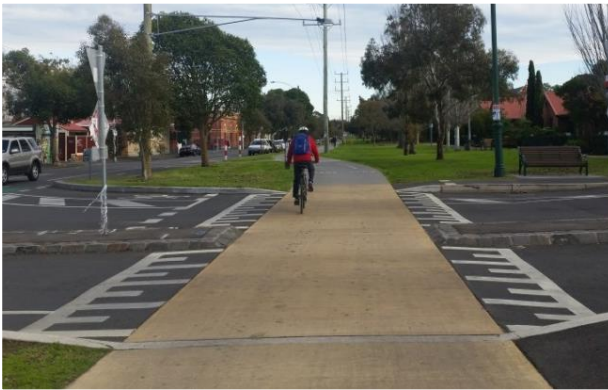
23) One-way street



24) Signed pedestrian crossing



25) Signalised pedestrian crossing



26) Bicycle facilities (example 1)



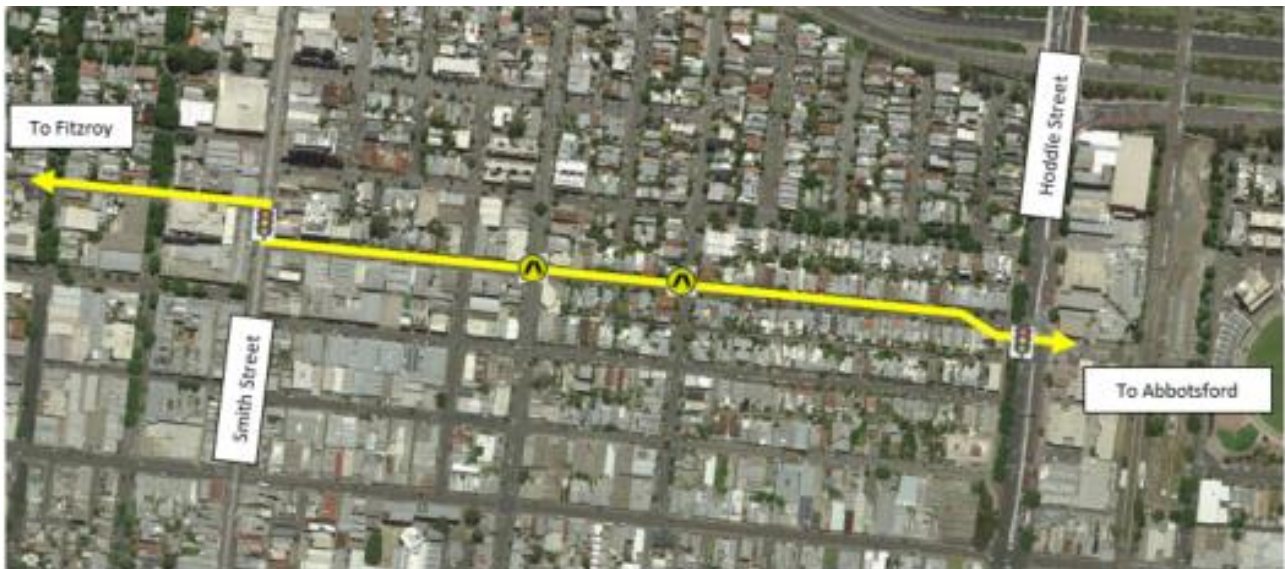
26) Bicycle facilities (example 2)



26) Bicycle facilities (example 3)



27) Removal of redundant infrastructure/barriers



28) Delivery of a range of safety treatments to facilitate/contribute towards a strategic route connecting places and key destinations