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Hobsons Bay City Council

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Planning

Transport

Urban Design

Waste Management

Transport Safety Analysis and Concept Drawings

Maddox Road, Newport



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Project
Maddox Road, Newport

Prepared for
Hobsons Bay City Council

Our reference
20177TG

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Executive Summary

OVERVIEW

Hobsons Bay City Council (Council) has successfully obtained a grant from the Transport Accident Commission (TAC) to improve transport safety along Maddox Road, north of Railway Parade.

The grant comes from the TAC Local Government Grant Program which supports *'pedestrian and cyclist road safety projects that are aligned with the Victorian Road Safety Strategy 2021-2030 and Safe System principles and deliver positive outcomes in the community'*.

Maddox Road is classified as a Local Street under the Movement and Place Framework. North of Jubilee Street, Maddox Road is a place of local neighbourhood significance with a range of public land uses located along this section.

PURPOSE AND OBJECTIVES

The key objectives for this project are to improve local amenity and safety for walking and riding along the study corridor, and to achieve greater alignment with Safe System principles. The Safe System approach recognises the vulnerability of humans and ensures that different elements of the road transport system work together to create a safe transport environment that anticipates and accommodates human errors. Upholding the Safe Systems approach is the responsibility of all parties within the road transport system.

The purpose of this report is to detail the process undertaken through community engagement and transport safety analysis to develop concept designs and artistic renders for potential transport safety and place-based improvements on Maddox Road. This report has been prepared in consultation with Hobsons Bay City Council.

OUTCOMES

A range of improvements have been proposed for the study corridor on Maddox Road between Railway Parade and Mason Street. These improvements target pedestrian and cyclist safety and aim to address the concerns and feedback provided by the community during community consultation. The improvements proposed include traffic calming treatments such as raised safety platforms and threshold treatments; as well as greater protection to cyclist and pedestrians through the provision of treatments such as priority crossings and separated cycling lanes. Opportunities have also been sought to improve local amenity for the community, particularly around Newport Gardens Primary School and the early learning centres.

1. Introduction

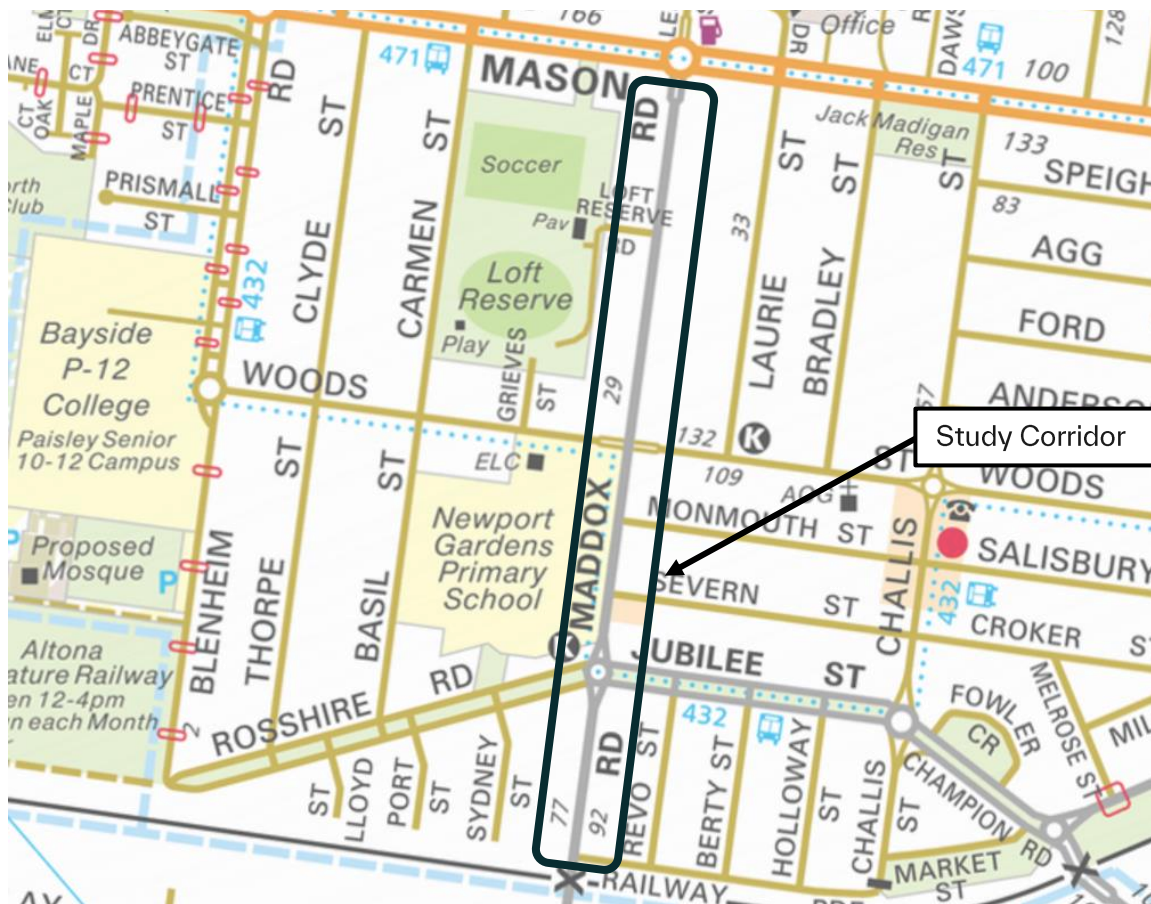
1.1. Project Overview

The study corridor for this project consists of Maddox Road, between Mason Street to the north and Railway Parade to the south.

The intersections of Mason Street and Railway Parade with Maddox Road are not being directly considered for improvements as part of this project, as Mason Street was recently upgraded as part of a separate project and the level crossing on Maddox Road is proposed for upgrade to skyrail as part of the Level Crossing Removal Project.

The study corridor is shown in Figure 1.1.

Figure 1.1 Study Corridor



Source: Melway Online

Maddox Road is constrained by an approximately 20-metre-wide road reserve width and has conflicting priorities between providing for different transport users. The Maddox Road Transport Safety Analysis project provides an opportunity to transform Maddox Road to

create a local destination that provides safe and attractive passage for walking and riding, and improved amenity for residents and visitors.

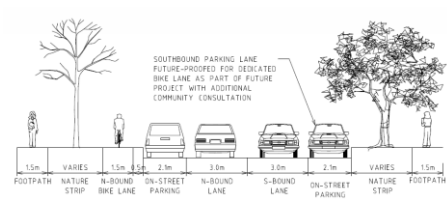
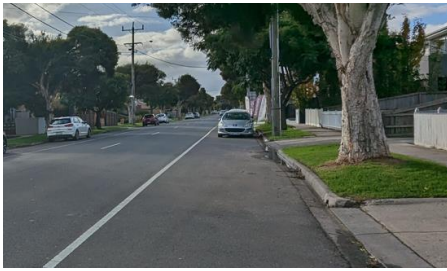
1.2. Project Methodology

The project commenced in early 2023 with Round 1 of community consultation. Data collected from the community consultation was subsequently reviewed and provided the foundation for further desktop and site investigations to determine the project issues, opportunities, and constraints.

From this, the suitability of different potential solutions for Maddox Road was considered, and an initial suite of treatments was developed and presented to Council for consideration. Concept drawings and artistic renders were commissioned and developed to help visualise these transport safety improvements.

An overview of the project methodology is outlined in Table 1-1.

Table 1-1 Project Methodology



PROJECT PHASE

1. Community Consultation Round 1

- Conducted by Council in March 2023
- Gain understanding of community concerns around transport safety and amenity

2. Transport Safety Analysis

- Review of community consultation data
- Desktop background review
- Site inspection with Council on the 29th May 2023
- Issues and opportunities analysis

3. Development of Improvements

- Toolkit
- Suite of improvements
- Concept drawings
- Artistic renders
- Draft analysis report

4. Community Consultation Round 2

- Conducted by Council in November–December 2023
- Gain community feedback on proposed treatments
- Update report and drawings

5. Project Finalisation

- Final analysis report
- Final concept drawings
- Final artistic renders
- Cost estimations

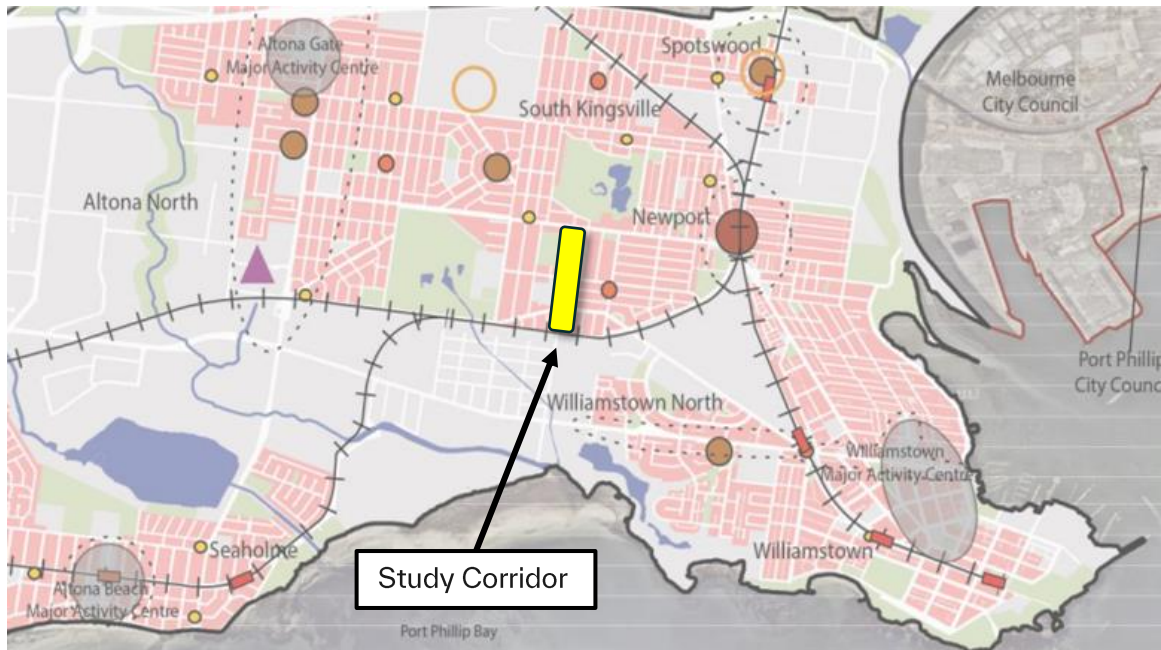
1.3. Maddox Road At A Glance

Maddox Road is located 1.2 kilometres west of Newport Large Neighbourhood Activity Centre. It is a busy local road that attracts a range of transport users including pedestrians, cyclists, buses, cars, and trucks.

Maddox Road carries approximately 7,000 vehicles per day, comprising both local and through movement traffic.

The study corridors' local context in the broader municipality is outlined in Figure 1.2.

Figure 1.2 Local Context



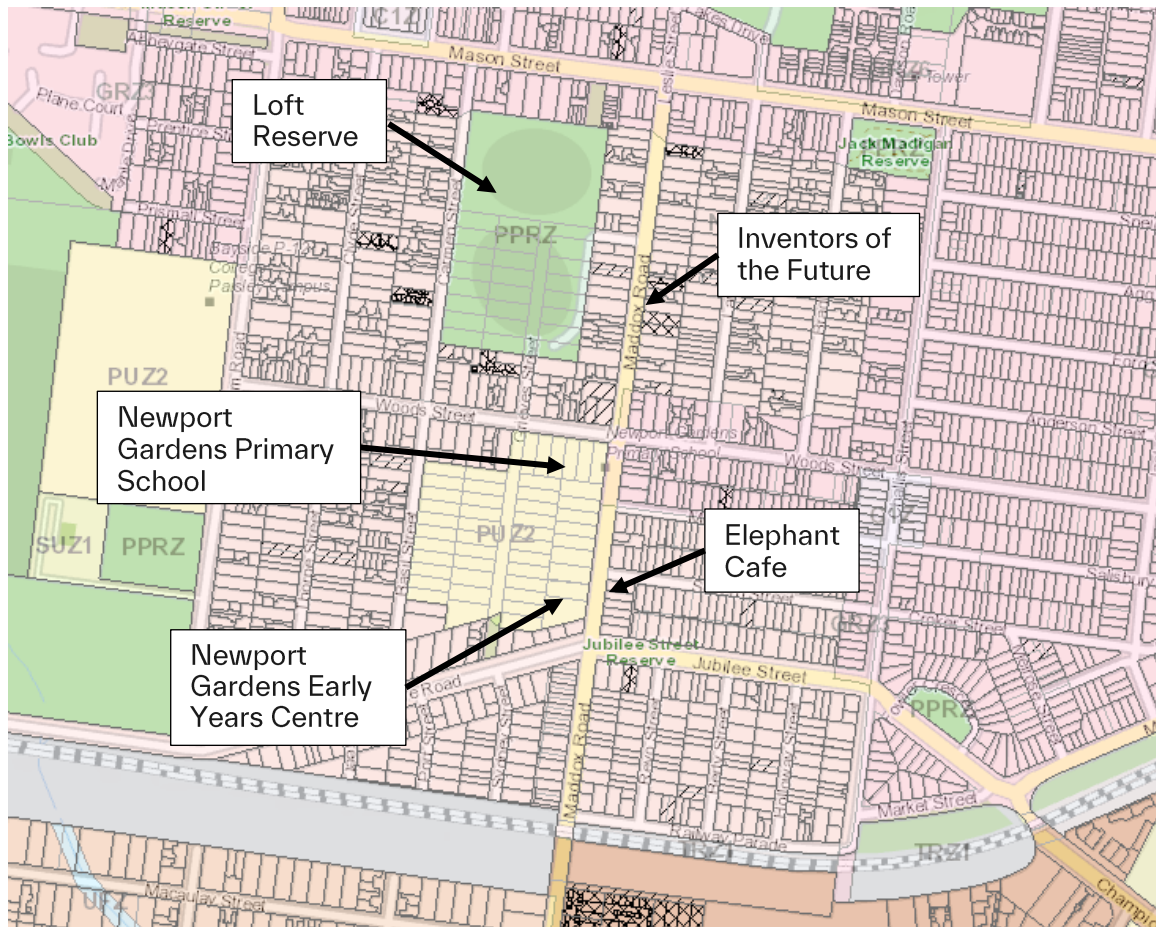
Source: Hobsons Bay Activity Centre Strategy (2019-36)

Maddox Road is a popular through movement road, however, it is not a State Government managed arterial road and therefore not designed or intended to carry large volumes of through traffic.

Maddox Road provides direct access to many residential properties and features frequent driveways and accesses. Several educational facilities are located on Maddox Road, including Newport Gardens Primary School, which attract a surge of parking and traffic activity during school peak periods. Other notable land uses on Maddox Road include the Elephant Cafe near Maddox Road and Severn Street intersection, and a sporting and recreational grounds accessed via Loft Reserve Road. Land parcels to the south of the study corridor on Maddox Road consist of various industrial land uses.

Land uses surrounding the Maddox Road study corridor are presented in Figure 1.3.

Figure 1.3 Key Roadside Land Uses



Source: VicPlan

1.4. Project Reference Material

This report has been developed with reference to the following documents and sources:

- Hobsons Bay Activity Centre Strategy (2019-36);
- TAC Local Government Grant Program Application;
- Hobsons Bay Integrated Transport Plan (2017-30);
- Newport and Williamstown North Local Area Movement Plan (LAMP);
- Department of Transport and Planning Movement and Place Framework;
- Public Transport Victoria website;
- Austroads Guide to Road Design Series;
- Cycling Aspects of the Austroads Guide;
- VicRoads Guidance on Treating Bicycle Car Doring Collisions;
- Standard for Speed Humps and Traffic Calming Devices for Buses, Department of Transport and Planning;
- Effectiveness and Implementation of Raised Safety Platforms, Austroads;
- Australian Standards 1742 and 2890 Series; and
- Other documents or information as referenced throughout this report.

2. Community Consultation

In February and March of 2023, Council undertook Round 1 of community consultation to obtain feedback on transport issues on Maddox Road to inform the development of transport safety improvements for this project.

This was followed by Round 2 of community consultation, undertaken in November and December of 2023, to obtain feedback on the draft suite of upgrades and improvements recommended on Maddox Road.

Findings from the two rounds of community consultation are summarised in the below sections.

2.1. Round 1 Consultation

In total, 198 contributions were received by 111 individual respondents during Round 1 of community consultation. A review of the data collected found that the majority of community concerns were centred within the road section between Jubilee Street and Mason Street, particularly around the Woods Street intersection. The key feedback received is summarised as follows:

Maddox Road: Mid-Block Locations

- High vehicle speeds due to:
 - Little to no traffic calming measures between Mason Street and Woods Street.
 - Vehicles dodging or straddling speed cushions between Woods Street and Railway Parade.
- High truck volumes to and from the industrial precinct, located south of the study corridor.
- Narrow shared parking and cycling lanes that increase risk of dooring and cyclist vehicle collisions at points where the lanes terminate.
- High traffic volumes for a two-lane collector road which could be further increased by the proposed Champion Road closure.
- Insufficient priority crossing points for pedestrians.
- Footpath network does not adequately support prams and disabled access.
- Speed cushions are noisy and impact local amenity.
- Difficulty with turning out of accesses and driveways during peaks.
- Parking and traffic congestion during school peaks.
- Illegal car parking across driveways and in no standing/parking zones.

Maddox Road: Intersections

Wood Street Intersection:

- High number of north approach right turn movements during school peak periods.
- Unsafe crossing points for students and guardians.
- Illegal car parking in proximity to the intersection.
- Vehicles speeding through intersection.

Jubilee Street Intersection:

- Unprotected cycling path around roundabout.
- High traffic intersection where a collector road meets another collector road.
- Low pedestrian safety with history of incidents.

Railway Parade Intersection:

- Opportunity for connection to future shared path along rail corridor.
- Shared path on east side of Maddox Road is unsafe.

2.2. Round 2 Consultation

Overview

During Round 2 of community consultation, a total of 203 survey responses were received by Council from the community. As part of this survey, the following four questions were put to the community:

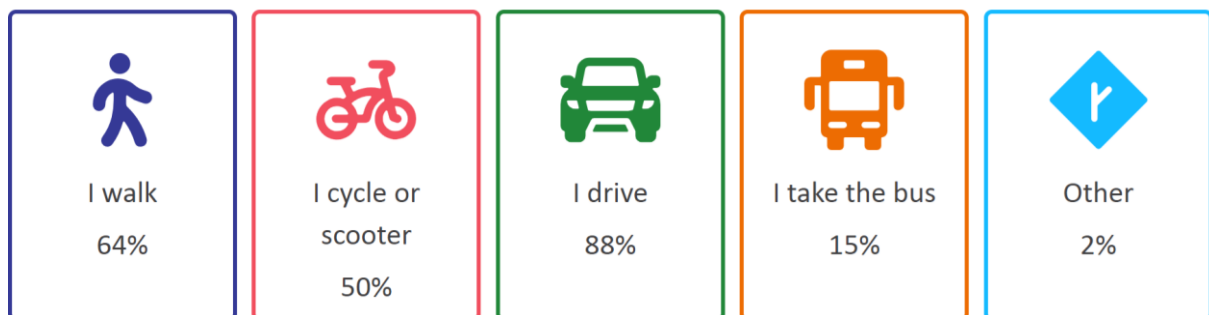
- What is your relationship to the area? (multiple selections allowed)
 - Respondents are asked to advise why they use Maddox Road.
- How do you use Maddox Road? (multiple selections allowed)
 - Respondents are asked to provide one or more transport modes.
- Are you generally supportive of the proposed upgrades? (one selection only)
- Do you have any feedback on the draft plans? (open ended responses allowed)

The responses showed that the majority of respondents (85%) are residents that lived in the area. There was also good representation from students/children, parents and employees relating to Newport Gardens Primary School and the early learning centres on Maddox Road.

The method of travel provided by respondents indicated a clear reliance on car travel as a transport option (88% of respondents), with walking and cycling also considered as other transport options. Of the respondents that use more than one transport mode, it is not known what their preferred mode is from this survey. The responses provided to mode choice are summarised in Figure 2.1.

Figure 2.1 Method of Travel – Survey Responses

People could select all that applied to them.



Source: *Maddox Road upgrades – What we heard* page, Hobsons Bay City Council website

In general, the recommended upgrades proposed on Maddox Road received good feedback from the community with 68% of respondents being either 'Very Supportive' or 'Supportive', and 13% of respondents being neither supportive nor unsupportive.

Summary of Community Feedback

The feedback received showed an overall appreciation for the project's aim to achieve greater alignment with Safe System principles and support Council's strategic aspirations to increase the walkability and bikeability of local neighbourhoods and sustainably manage car parking. The key drawback to this being the concerns around the uncertainty and impacts of the Level Crossing Removal Projects on Maddox Road and Champion Road which are outside the scope of this project.

There was overall support for the raised pedestrian treatments proposed along Maddox Road, though there were some that were concerned with their application at the proposed Woods Street and Maddox Road roundabout due to impacts to vehicle traffic during school peaks.

There was clear support for the supporting treatments proposed on Maddox Road which included a speed limit reduction and truck ban within the study corridor. The streetscaping improvements were also well received to improve local amenity and user experience around key activity generators.

The proposed cycling treatments were a welcomed addition to protect cyclists from dooring and passing traffic, with additional suggestions made by individuals to improve the design through the proposed Woods Street and Maddox Road roundabout during the next design stages. Notwithstanding, there were also concerns with the loss of an on-street parking lane to accommodate this cycling treatment, noting there will be no significant car parking reduction as part of this stage of the project. Any additional car parking removal will only be considered following further analysis and community consultation.

The mix of feedback received from the community highlights the complexities relating to a constrained study corridor that juggles conflicting place-based and movement functions, and caters for a range of transport users and services. It also showcases the need to provide staged interventions to facilitate a transition between the car dominant environment and parking entitlement that exists under the 'status quo', and Council's transport aspirations in local neighbourhoods that prioritises (not just accommodates) active and public transport modes.

3. Strategic Review

3.1. Overview

In recent years, Council has developed various strategic transport documentation including the Hobsons Bay Integrated Transport Plan (2017-30) and the Newport and Williamstown North Local Area Movement Plan (LAMP) to guide the planning, development and implementation of transport initiatives, projects, and programs.

Improving transport safety and amenity for the local community is a priority of Council, particularly in areas that attract pedestrians and cyclists such as around activity precincts and schools. Council has many completed and ongoing projects that aim to address transport safety concerns and issues for the community.



Source: Photo taken during site inspection of Maddox Road and Railway Parade intersection

3.2. Hobsons Bay Integrated Transport Plan 2017-30

Endorsed in 2017 by Council, the Integrated Transport Plan (ITP) is Hobsons Bay's plan to bring forth their vision of 'an integrated, innovative and equitable transport system, (that provides) a range of sustainable, efficient, accessible and safe ways for people and goods to reach their destination'. The ITP consists broadly of two goal areas: neighbourhood and regional. There is the goal to develop safe and connected walking and cycling routes that link people to places in their local neighbourhood, and connections between neighbourhoods and regional destinations. In the context of this project, this will be achieved by:

- Delivering and advocating for safe, connected, efficient and accessible routes and infrastructure for all local road users, including cyclists and pedestrians.
- Delivering and supporting urban design, land use planning and place making projects.
- Monitoring and managing car parking in a responsible and sustainable manner.

3.3. Newport and Williamston North LAMP

In 2020 and 2021, Council first developed the Northern Local Area Movement Plans (LAMPs) to identify issues and opportunities with movement, access, and safety for all transport users in the respective study areas. Maddox Road is captured under the scope of the Newport and Williamston North LAMP which was last updated in July 2021. Issues to do with cyclist and pedestrian safety were highlighted on Maddox Road and intersecting roads, which led to the recommendation for a 2.5-metre-wide shared path to be provided on Railway Parade and Ross Street to/from Maddox Road. The level crossing site on Maddox Road was also highlighted as a safety risk for pedestrians and cyclists. The recent installation of speed cushions on Maddox Road was acknowledged, and the importance of monitoring their success was noted.



3.4. Case Studies in Hobsons Bay

Laverton Schools Area Traffic Management Study (2021)

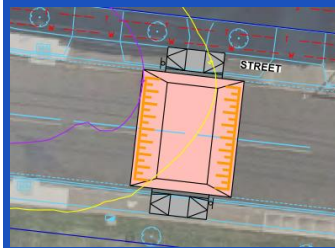
Objective: To improve movement and safety of people, particularly parents and school children in the area.

Improvements: Pedestrian crossings, footpath repairs, and school traffic and parking management.

Churchill Street Industrial Precinct Blackspot Project

Objective: To address the crash history within the precinct.

Improvements: Raised safety platforms at intersections and mid-block, and improvements to lighting, signage and line markings.



Road Safety Improvements for Williamstown School Precinct

To improve pedestrian and cyclist safety and connectivity, and reduce dangerous driving behaviour.

Proposal includes: Reduced speed limit, shared user paths, raised pedestrian crossings, footpath realignment, traffic islands, signage and line marking.

Mills Street Transport Safety Project

Objective: To improve compliance with new 40 speed limits and general road safety.

Improvements: Raised platform intersections on Mills Street.



A Safer Merton Street

Objective: Works to respond to crash history on Merton Street which included nine serious injury crashes.

Improvements: Blister islands, speed limit reduction, street lightning improvements, separated bike lanes, raised zebra crossing.

Mason Street Project

Objective: Introduce road safety treatments to address existing issues.

Improvements: C-roundabouts, speed limit reduction, improvements to bicycle facilities.



4. Movement and Place

4.1. Introduction

The Department of Transport and Planning has adopted the Movement and Place approach to planning and developing the transport network.

In simple terms, the Movement and Place approach recognises the dual function of the transport system by considering the needs for both movement and placemaking. Streets are not only ‘movement conduits’ carrying people and goods between A and B, they are also ‘a place, a destination in its own right’.

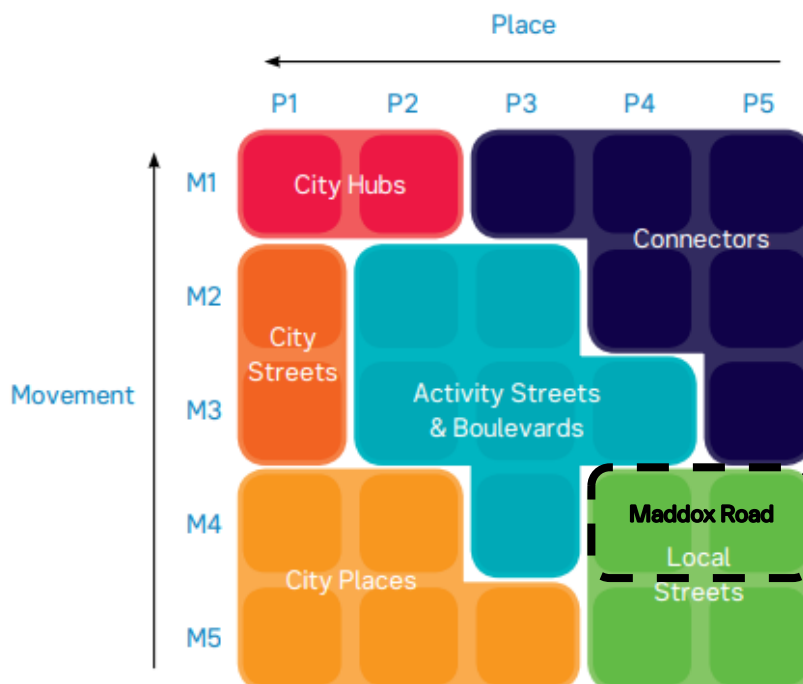
4.2. Movement & Place Classifications for Maddox Road

Overview

Under the framework, every street and road in Victoria is given a set of ‘classifications’ for a range of modes or themes. The classifications set out the ‘aspirational performance’ from a movement and place perspective. Classifications are not an indication of existing condition, nor future conditions.

The classifications are then combined to give each street an overall ‘Movement’ and ‘Place’ classification which can then be located on a Movement & Place matrix. The position of Maddox Road within the Movement & Place matrix is shown below in Figure 4.1.

Figure 4.1 Maddox Road – Movement and Place Matrix.



As shown in Figure 4.1 above, the subsequent Movement & Place classifications are separated into a range of street typologies. These typologies represent a useful tool in identifying the types of treatments that link to the aspirational performance in a particular street.

Maddox Road is classified as a ‘Local Street’ under the Movement & Place framework.

Overarching Classifications

The definitions for the overarching Movement & Place classifications for Maddox Road are outlined in Table 4-1.

Table 4-1 Maddox Road Movement and Place Classifications

Movement & Place	Classification Definition
Movement	M4 (Whole Extent)– Movement of people and/or goods within a municipality.
Places of Street Activity	PA4 (Between Woods St and Jubilee St) – Neighbourhood importance, lower levels of activity, people travel from the adjacent community to experience & use the place. PA5 (Remainder) – Residential importance, levels of activity are generally quiet, the place is only a destination for people accessing residential properties.

Local Streets provide ‘quiet, safe, and desirable residential access for all ages and abilities that foster community spirit and local pride’.

This contrasts with Maddox Road’s function as an urban collector which ‘provides route between and through residential, industrial, and commercial areas and convey traffic to link or arterial roads’ as per the definition provided in Hobsons Bay Road Management Plan 2021.

Modal Classifications

In addition to an overall Movement Classification, the Movement and Place assessment also provides mode categories as summarised in Table 4-2. These mode categories showcase the intention for Maddox Road to function as a place for community gatherings and a route for local trips by foot and bicycle.

Table 4-2 Mode or Category Classifications

Mode or Category	Classification Definition
General Traffic	GT4 (Whole Extent) – Movement of people by private vehicle within a municipality or providing primary access to Neighbourhood level places (P4).
Bus	B4 (Between Woods St and Jubilee St Only) – Movement of people at low / irregular frequency that provides access to lower order places.
Cycling	C3 (Whole Extent) - Under review – Local Trip Cycling Route – Routes attracting cyclists for short trips to local destinations.
Walking	W3 (Whole Extent) – Routes providing access to P4 Places or I3 interchanges (0.4km).

Overall, there is a gap between current performance of Maddox Road and the aspirations for Maddox Road under the Movement and Place Framework. In particular, Maddox Road plays a more significant role than intended for general traffic as an alternative road to Millers Road and Melbourne Road, whilst also lacking the infrastructure and amenities to provide a safe environment for walking and riding. Improvements are required to attract cyclists to Maddox Road and support pedestrian access to the educational and sporting & recreational facilities on Maddox Road.

5. Transport Network Review

5.1. Maddox Road

Maddox Road is configured as a two-way, two-lane undivided road that travels in north and south directions. Each traffic lane on Maddox Road is approximately 3.1 metres wide. Maddox Road intersects Mason Street at a single lane roundabout, and Railway Parade at a STOP controlled intersection. The other intersections within the study corridor are:

- Jubilee Street intersection (roundabout),
- Severn Street intersection (STOP controlled),
- Monmouth Street intersection (STOP controlled), and
- Wood Street intersections (STOP controlled).

Maddox Road represents the major (priority) road at all of the above STOP controlled intersections.

Within Council's Road Register, Mason Street is classified as a Link Road. All other intersecting roads are classified as Access Roads.

The posted speed limit on Maddox Road is 50 km/h, with a 40 km/h school zone speed limit in place during school hours between approximately 34 Maddox Road and 76 Maddox Road.

The study corridor on Maddox Road is an approved Victorian Performance Based Standards Level 1 route which allows for heavy vehicle (truck) passage¹.

5.2. Walking Facilities

The pedestrian network along Maddox Road consists of 1.5 to 1.8-metre-wide footpaths on either side of the road, and several formal and informal crossing points for pedestrians. The combined width of the footpath and nature strip on either side of Maddox Road is approximately 4 metres.

Two pedestrian crossings are provided across Maddox Road near the school and early learning centres between Woods Street and Jubilee Street. They are:

- A children's crossing with kerb extension at 46 Maddox Road, north of Monmouth Street.
- A raised zebra crossing with refuge and kerb extension, at the Elephant Café south of Severn Street.

In general, the informal pedestrian crossings across intersecting roads do not adequately support all ability access nor provide priority to pedestrians. Pedestrian refuges are provided across Woods Street and Jubilee Street at their intersections with Maddox Road.

A high-speed, high-volume vehicle environment forms a barrier for pedestrian movements. There is the opportunity to provide priority crossing points for pedestrians at many of the

¹ Heavy Vehicle Map Networks in Victoria, VicRoads website.

intersections along Maddox Road to improve access to various land uses located on either side of the road.



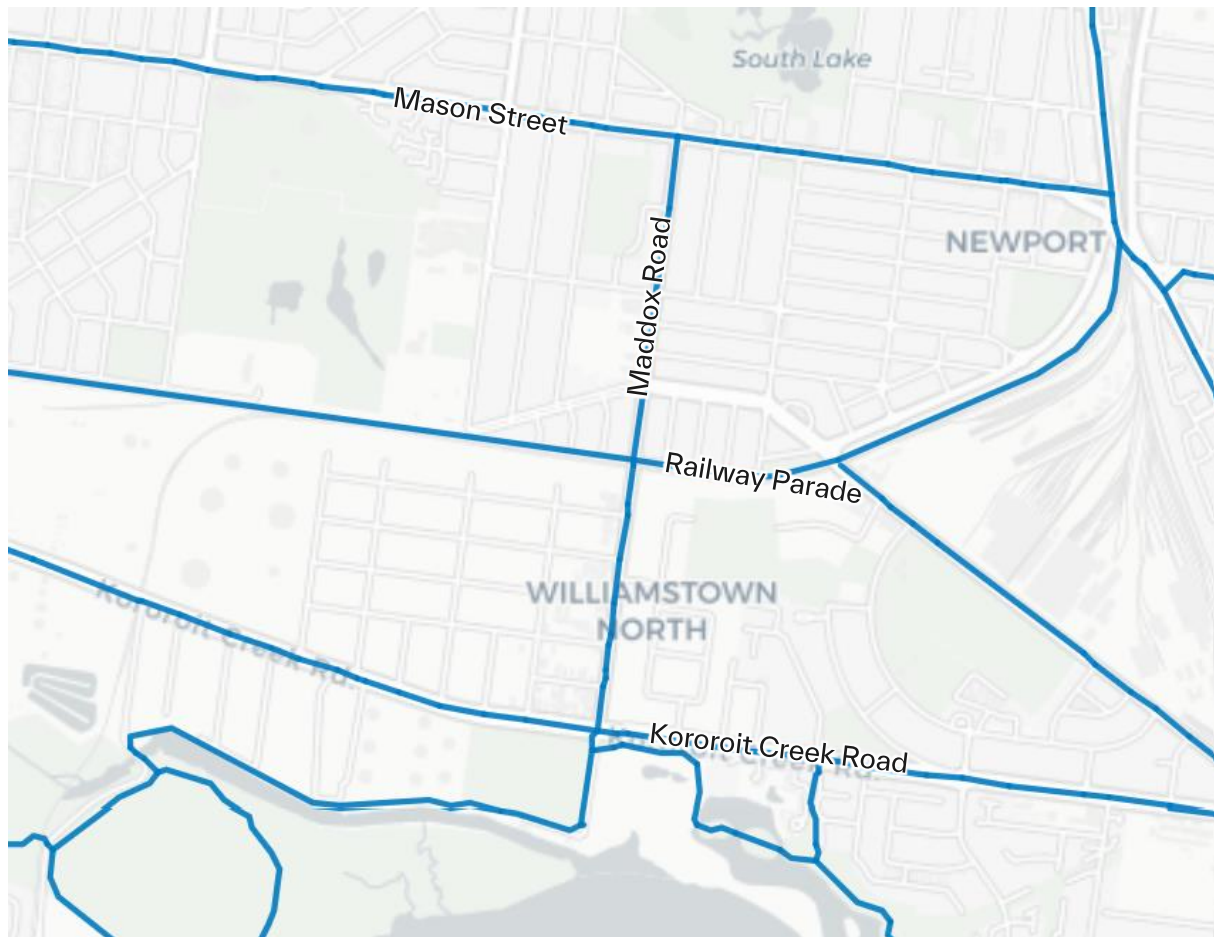
Source: Photo taken during site inspection of children's crossing on Maddox Road

5.3. Cycling Facilities

The cycling network within Victoria consists of a range of existing and proposed bicycle routes of varying significance. Within Metropolitan Melbourne, the Principal Bicycle Network (PBN) identifies bicycle routes that provide access to major destinations. The Strategic Cycling Corridor network (SCC) is a subset of the PBN that *'links up important destinations including central Melbourne city, employment and activity centres and other destinations of metropolitan and regional significance'* (Department of Transport and Planning).

The PBN surrounding the study corridor is shown in Figure 5.1.

Figure 5.1 Excerpt of the Principal Bicycle Network



Source: Department of Transport and Planning Open Data

Maddox Road is a PBN route for its full extent between Mason Street and Kororoit Creek Road/Gray Reserve Road. It intersects the rail corridor along Railway Parade which is also classified as a PBN route. Mason Street and Kororoit Creek Road are both PBN routes and SCCs.

As a PBN route, Maddox Road would desirably be equipped with bicycle facilities that provide a safe, continuous riding environment for cyclists. The existing bicycle provisions provided on Maddox Road consist of shared bicycle and parking lanes in sections where on-street parking is permitted. As such, the shared lane ends abruptly at intervals where cyclists are diverted out into the adjacent traffic lane. The shared bicycle and parking lane is approximately 2.9 metres in width and does not align with the acceptable width range of 3.7-4.5 metres as per the Austroads Guide to Road Design.

Austrroads recommended type of separation between cyclists and motor vehicles, for a road with traffic volumes and vehicle speeds such as on Maddox Road, is physical segregation.

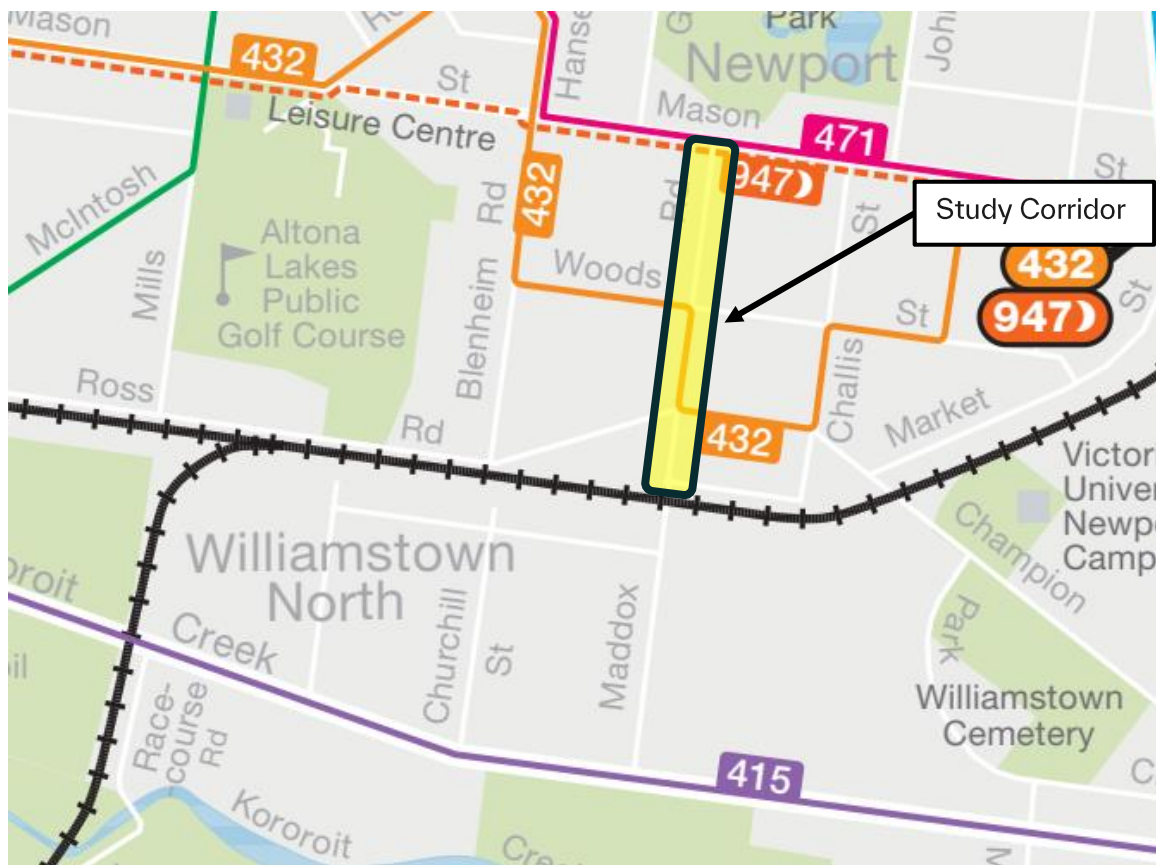
South of Railway Parade, there is an existing two-way bicycle path along the east side of Maddox Road. For the purposes of this project, it is assumed that this bicycle path will continue northwards into the study extent and split off into directional cycling lanes on either side of Maddox Road.

5.4. Public Transport

The public transport network within the study corridor consists of the Route 432 bus network, as shown in Figure 5.2.

Route 432 buses operate on Maddox Road between Woods Street and Jubilee Street. There is a bus stop located on either side of the road, one located northbound near the Woods Street intersection and another located southbound near the Jubilee Street intersection. The Woods Street/Maddox Road bus stop consists of a signed and delineated bus zone with a bus stop flag and shelter. The Jubilee Street/Maddox Road bus stop consists only of a bus stop flag with no delineation or additional signage.

Figure 5.2 Public Transport Network



Source: Public Transport Victoria

The Victorian train network operates immediately south of the study corridor. An existing at-grade crossing exists on Maddox Road south of Railway Parade intersection and is assumed to be removed as part of the State Government's Level Crossing Removal Project at some point in the future.

5.5. On-Street Parking

On-street parking is provided on either side of Maddox Road in sections. Parking spaces are generally not delineated and instead managed through 'NO STOPPING' signs. As discussed in the above 'Cycling' section, parking on Maddox Road shares a lane with cycling.

Where on-street parking is permitted, it is largely unrestricted except for sections between Woods Street and Jubilee Street signed as P10 (10-minute parking for school drop-off and pick-up between 8AM-9:30 AM and 2:30PM-4PM). There is also a NO STOPPING section along the southbound side of Maddox Road between Woods Street and Monmouth Street during the same school drop-off and pick-up periods.

An accessible parking space and bus parking bay is provided on the northbound side of Maddox Road adjacent to Newport Gardens Primary School.

5.6. Existing Transport Safety Treatments

There are several existing types of transport safety treatments currently constructed on Maddox Road. They include:

- Speed cushions installed between Woods Street and Railway Parade.
- A raised zebra crossing near the early learning centre and Elephant Café.
- Kerb extensions at the pedestrian crossings, and at Woods Street intersection.
- Roundabout treatment at Maddox Road and Jubilee Street intersection.

In general, the speed cushions work well to reduce vehicle speeds but are noisy and impact local amenity. There is also a need to extend the transport safety solutions to between Woods Street and Mason Street to achieve traffic calming along the entire corridor.

The roundabout treatment at Maddox Road and Jubilee Street intersection improves traffic efficiency and vehicle safety but is neither cyclist nor pedestrian friendly. The same applies to Maddox Road and Woods Street intersection which does not provide cyclist/pedestrian protection and experiences high through movements and frequent movements in and out of Woods Street during school peaks.

It is noted that the kerb extensions at the children's crossing and raised zebra crossing, reduce the crossing width for pedestrians, but has the consequence of diverting cyclists out into traffic at these locations.

5.7. Streetscape

Across the study corridor, there are trees on either side of the road which creates a boulevard effect but little distinction between the frontages of the public uses on Maddox Road and residential dwellings. In effect, there is no sense of arrival demonstrated around the access to Loft Reserve nor around the school precinct that invites the community in.



Maddox Road features long straight sections of roadway which are broken up only momentarily at the roundabout at Jubilee Street and Maddox Road intersection, and at a pedestrian priority crossing near the Elephant Café. Other intersections, particularly Wood Street and Maddox Road intersections, are dominated by stark asphalt/concrete surfaces which do not contribute to public realm and contribute to a movement barrier for pedestrians. The road is overcome with traffic, parking and noise particularly during the school and commuter peaks.



Source: Photo taken during site inspection of existing speed cushions on Maddox Road

6. Issues, Opportunities and Constraints

Utilising the findings from the above sections, the issues, opportunities, and constraints for the project have been identified and summarised below.

	Issues	Opportunities	Constraints
 Pedestrian	<p>Insufficient number of safe crossing points and narrow footpaths.</p> <p>Sightlines blocked by closely situated parking spaces.</p> <p>Pedestrian priority crossings provided only in select locations.</p> <p>Footpath network is not DDA compliant.</p> <p>Informal crossing movements are frequent during school peaks across Maddox Road.</p>	<p>New and/or relocated pedestrian crossing(s) on Maddox Rd that align with desire lines.</p> <p>Additional pedestrian refuges and medians on Maddox Rd to provide safe passage for pedestrians.</p> <p>Where practical, incorporate pedestrian crossings within raised safety platforms.</p> <p>Use of street furniture and vegetation barriers to guide pedestrians to crossing points.</p>	<p>Limited space available to reallocate road space and provide priority to pedestrians without potentially compromising provisions for other road users.</p>
 Bicycle	<p>Bike lane integrated within parking lanes and not continuous along corridor.</p> <p>No cyclist priority or separation provided at intersections and accesses.</p> <p>Risk of dooring with shared parking and cycling lane. The existing lane width does not comply with design guidelines.</p>	<p>Provision of wider cycling lane(s) on Maddox Rd.</p> <p>Cyclist priority and protection at intersections and accesses.</p> <p>Improved connectivity between future LXR and SCC on Mason Street.</p> <p>Use of buffer zones between cycling lane and traffic/parking lane.</p> <p>On-street bicycle hoops.</p> <p>Separate cyclists and pedestrians at crossings.</p> <p>Use of colour pavement treatment to highlight cyclist route.</p>	<p>Limited road space to provide 'ideal' bicycle provision on either side of the road.</p> <p>School children may not obey traffic rules (i.e., travelling contraflow on directional bike lane, and may prefer riding along footpath.</p> <p>To link in with existing two-way shared path south of level crossing.</p> <p>Geometric constraints through intersections may limit possibility for cyclist separation.</p>



Public Transport

Issues	Opportunities	Constraints
<p>The width of traffic lanes provided on Maddox Rd is narrow for buses. Buses may encroach into the parking/cycling lanes.</p> <p>Bus services delayed by frequent parking movements during peaks.</p> <p>Public parking within bus parking zone near school.</p> <p>Southbound bus zone on Maddox Rd is not delineated.</p> <p>Congestion on Maddox Rd results in delay to right turning bus movement from Wood St.</p>	<p>Advocate to DTP to re-route bus services to Mason St or Rosshire Rd.</p> <p>Improve bus stop provisions to support patron dwelling experience and all-ability access.</p> <p>In-lane bus stops to reallocate bus parking bays to other road users.</p>	<p>Road safety treatments must support bus movements.</p> <p>Wider parking bays required for buses which may take up additional road space.</p>
<p>Industrial precinct located to the south attracts truck movements on Maddox Rd.</p> <p>Maddox Rd is used as an alternative to arterial routes on Melbourne Rd, Millers Rd and Kororoit Creek Rd.</p> <p>Maddox Rd is operating near or at capacity as a two-lane collector road.</p> <p>High vehicle speeds observed on Maddox Rd which exceed the speed limit in sections.</p> <p>Closure of Champion Rd may increase traffic on Maddox Rd further.</p> <p>Noise and pollution in residential areas.</p>	<p>Vertical and horizontal deflection devices to reduce vehicle speeds.</p> <p>Full or partial road closure on Maddox Rd and traffic calming measures to reduce non-local traffic between Woods St and Mason St.</p> <p>Advocate for a fulltime truck ban on Maddox Road, north of railway corridor.</p> <p>Concrete island/median/kerb extensions to constrain visual appearance of traffic lanes.</p> <p>Encouraging the community to utilise active transport modes to reduce vehicle traffic to local destinations.</p> <p>Permanent reduction in speed limit to at least 40 km/h on Maddox Rd.</p>	<p>Congestion on Kororoit Creek Rd, Millers Road and Melbourne Rd may continue to divert and increase external traffic to Maddox Rd.</p>



Cars and Trucks



On-Street Car Parking

Issues	Opportunities	Constraints
<p>High volume drop-off/pick-off parking movements during school peaks which exceed parking supply.</p> <p>Inconsistent delineation of parking bays reduces parking efficiency.</p> <p>Driver non-compliance with parking restrictions and rules. E.g., exceeding parking durations, parking within no standing zones and across accesses.</p>	<p>Indented parking spaces within nature strip.</p> <p>Management of drop-off/pick-up parking spaces for schools and kindergartens.</p> <p>Delineate parking spaces to improve parking efficiency.</p> <p>Utilise kerb extensions and roadside planting to reinforce no standing zones.</p>	<p>Limited road space to balance the needs of all road users and to achieve the best safety and amenity outcomes, whilst retaining existing on-street parking.</p>
<p>Missing wayfinding markers that give character to the area, and that provide directions to surrounding activity nodes e.g., Challis St shops.</p> <p>Lack of variation between segments with different place classifications.</p> <p>Overgrown trees and vegetation block sight lines from minor approaches of intersections and property accesses.</p> <p>Roadside environment is not inviting for pedestrians.</p> <p>Infrastructure aged and worn.</p> <p>Only simple amenities provided at bus stop on Maddox Road.</p>	<p>Kerbside plantation at speed humps/raised safety platforms to mitigate confusion with raised zebra crossings.</p> <p>Kerb extension with plant installations near key land uses e.g., schools and café.</p> <p>Installation of street furniture around high foot traffic areas.</p> <p>Activate street frontage by enhancing pedestrian accesses to roadside land uses, and creating activity hotspots that the community can congregate around.</p>	<p>Large trees and vegetation exist within the nature strip which limits road space reallocation.</p> <p>Limited road space to increase tree plantation and amenities along corridor.</p>
<p>Existing traffic calming devices are not provided consistently at intervals along Maddox Rd.</p> <p>Existing speed cushion treatments are noisy and impact local amenity.</p> <p>Vehicles swerving around or straddling speed cushions.</p> <p>Clusters of traffic signs may confuse or be missed by drivers.</p>	<p>Consolidation of traffic signs.</p> <p>Replacement and relocation of vertical deflection devices.</p>	<p>Power poles exist on the edge of the nature strip which limits road space reallocation.</p> <p>Maddox Rd constrained by narrow road reserve width.</p>



Place

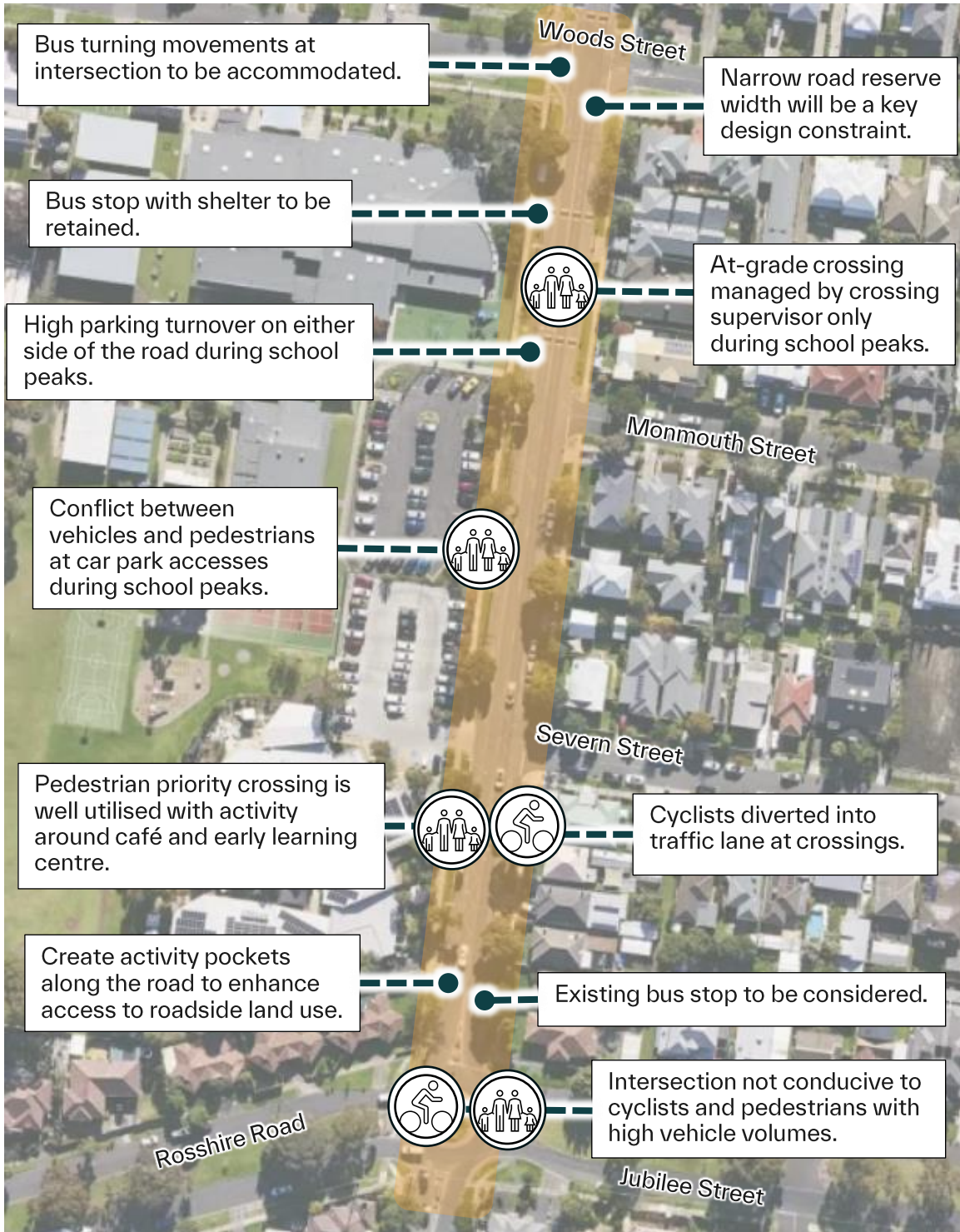


Other

BETWEEN MASON STREET AND WOODS STREET



BETWEEN WOODS STREET AND JUBILEE STREET



BETWEEN JUBILEE STREET AND RAILWAY PARADE



7. Solutions Toolkit

Considering the project objectives to improve pedestrian and cyclist safety and local amenity, a toolkit has been developed to determine suitable transport safety improvements for this project. For consistency, the toolkit draws on existing and planned transport safety treatments within the City of Hobsons Bay but also considers new treatments from Australian and international sources that support pedestrian and cyclist safety within a school and residential environment.

From consultation with Council, additional considerations for determining suitable improvements include maintaining Maddox Road’s function as an urban collector road and bus route, avoiding treatments that have significant network impacts, whilst also minimising kerb realignment and sudden loss of on-street car parking.

The toolkit is presented in the following two tables: one for improving pedestrian safety and local amenity, and the other for improving cyclist safety. Each table breaks down potential improvements by their likely suitability for the project which considers the objectives and considerations mentioned above.

The suitability of a potential improvements has been classified as ‘Likely Suitable’, ‘Might Be Suitable’ or ‘Likely Unsuitable’ based on the following definitions in Table 7-1.

Table 7-1 Definitions

Suitability	Definition
Likely Suitable	Stronger alignment with project objectives to improve safety and amenity, and Relatively minimal limitations from a design perspective and/or external stakeholder considerations.
Might Be Suitable	Stronger alignment with project objectives but restricted by one or more of the following: Limited ability to reallocate road space within a constrained road reserve. Some potential barriers from external stakeholder considerations. May be subject to local design standards and/or alignment with the local neighbourhood character.
Likely Unsuitable	Weaker alignment with project objectives. Misalignment with local road/roadside environment. Requires a substantial change to the function of Maddox Rd. Little to no design opportunities within the constrained road reserve.

Likely Suitable



Continuous Footpath: Provide pedestrians with priority at intersections, accesses, and crossovers.

Might Be Suitable



Pavement Colour Treatment: Potential application to highlight locations where pedestrians have priority, and to add character to the area.

Likely Unsuitable

Pedestrian Refuge Crossing: Priority crossings preferred near schools and kindergartens that encourage lower vehicle speeds. Refuge crossings do not provide priority as a standalone treatment.



Raised Zebra Crossing: Suitable for application mid-block on two lane streets, and with intersection treatments such as roundabouts and raised safety platforms.



Localised 'Moments': Re-allocate road space to pedestrians and create road-side dwelling points with planting, street furniture and amenities.

This will be dependent on the amount of road space that can be reallocated (if any).

Road Closure: Unlikely to be supported by the Department of Transport and Planning due to network impacts.



Lighting Improvements: New and/or upgrades to street lighting to improve perception of safety under low light conditions, and to support traffic calming treatments.



Corridor-Wide Wayfinding Improvements: Road typology variations along Maddox Rd to highlight the higher place value between Woods Street and Jubilee Street. This will likely be constrained by the narrow road reserve width.

'Noisy' Treatments: Road safety devices that are noisy (such as rumble strips and rubber speeds cushions) are unsuitable in residential areas.



Speed Limit Reduction: The Safe System threshold speed for collisions with pedestrians and cyclists is <30 km/h. A speed limit reduction down from 50 km/h could be appropriate.



Streetscaping: Planting/WSUD within kerb extensions, medians, separators to create textured, 'soothing' surfaces.

This will be dependent on the amount of road space that can be reallocated, and may be limited by the consideration of pedestrian and driver sight lines.

Mid-block horizontal displacement devices: Devices such as blister islands and chicanes will be difficult to implement on roads with narrower carriageways.

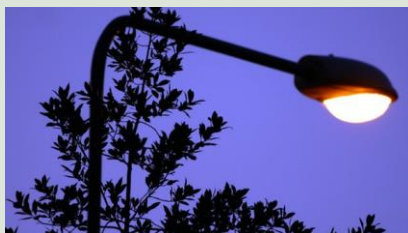
Likely Suitable



Separator Strip: Application between cycling path and adjacent parking lane or traffic lane to provide a safety 'buffer'.



Minor Reallocation of Road Space: Some reallocate of space from parking and traffic lanes to cycling lanes is possible without impact to safety and traffic capacity.

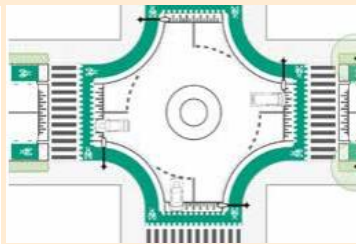


Lighting Improvements: New and/or upgrades to street lighting to improve perception of safety under low light conditions, and to support traffic calming treatments.



Speed Limit Reduction: The Safe System threshold speed for collisions with pedestrians and cyclists is <30 km/h. A speed limit reduction down from 50 km/h could be appropriate.

Might Be Suitable



Cyclist Friendly Roundabout: Application to existing intersections constrained by road reserve width and need to accommodate bus services.



Separated Cycling Lane: Aligns with Safe System principles but application constrained by narrow road width, frequent property accesses, and high parking turnover near schools.



Continuous Cycling Path: Provide cycling priority at accesses and crossovers. Option to raise cycling path is possible where civil and drainage requirements are met.



Raised Safety Platform: To be tailored to provide cyclist protection at intersections. Ramp gradients should consider cyclist comfort (and buses between Jubilee St and Woods St).

Likely Unsuitable

Shared Area: No scope to reduce vehicle speeds and volumes on Maddox Rd to a shared area environment where cyclists could safely share the road with cars.

Shared Path: Application not compatible in residential areas with frequent property accesses and crossovers like on Maddox Road.

Unprotected On-Road Cycling Lane: Not suitable on an urban collector road with higher traffic volumes like Maddox Rd.

Major Reallocation of Road Space: There are minimum design standards for parking and traffic lanes which must be satisfied without impacting the operation and safety of Maddox Rd.

8. Road Safety and Placemaking Solutions for Maddox Road

This section outlines the transport safety and place making treatments proposed for the Maddox Road Transport Safety Analysis project. It includes new solutions at intersections and mid-block sections, as well as upgrade of existing solutions to support pedestrian and cyclist movements.

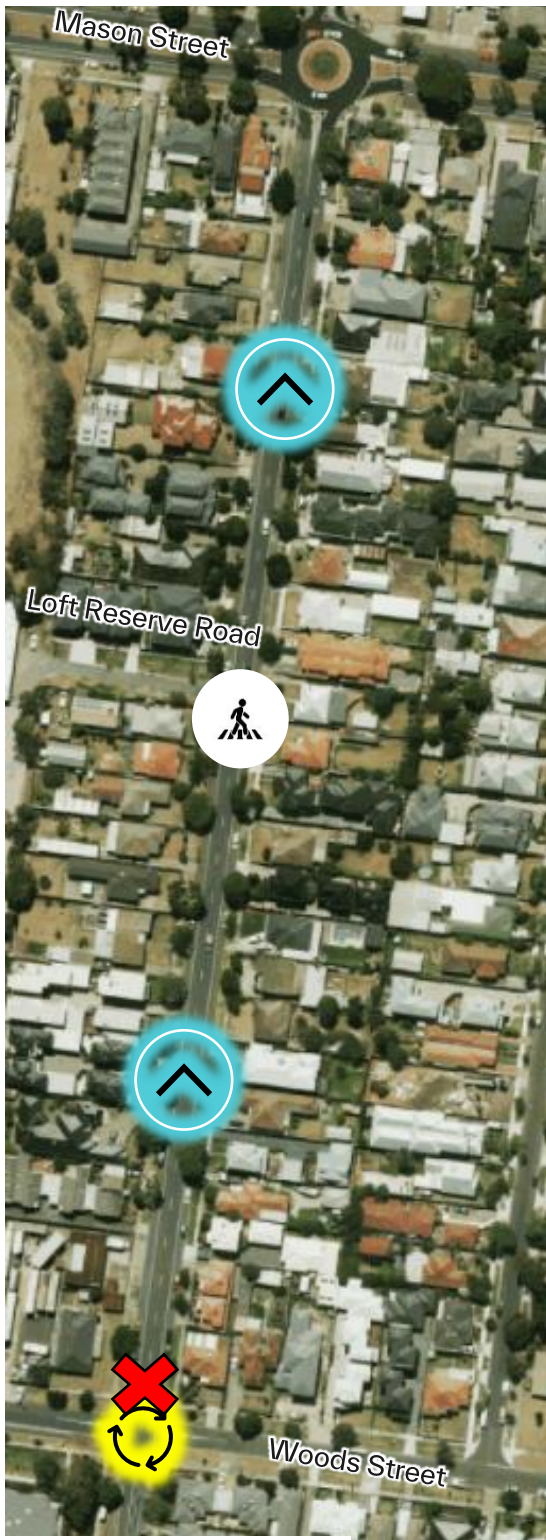
The primary solutions consist of the following:

- Raised safety platform treatment at Woods Street and Maddox Road intersection with pedestrian priority crossing.
- A series of mid-block raised safety platforms for traffic calming along Maddox Road. They are proposed to replace the existing speed cushions.
- Upgrade of the existing children’s crossing to pedestrian priority crossing with kerb extensions.
- Modification to existing pedestrian priority crossing to support cyclist movements.
- New pedestrian priority crossing near Loft Reserve Road with kerb extensions.
- Threshold treatments across Severn Street and Monmouth Street to enhance pedestrian priority.
- Shared path priority crossings across Jubilee Street and Rosshire Road at the existing roundabout treatment on Maddox Road.
- Separated cycling lanes on either side of Maddox Road with an additional raised pavement treatment for the northbound cycling lane only.
- ‘Moments’ – Activated street frontages with planting, street furniture and/or amenities.

A mock-up of these proposed primary solutions is shown below on Page 33. These solutions are discussed in more details in the below sections.

Concept drawings have been developed to provide a more detailed representation of these solutions and can be found in Appendix A.

PROPOSED TREATMENTS



Protected Intersection



Threshold Treatment



Raised Safety Platform



Raised Zebra Crossing



Removal of Existing Treatment



Upgrade of Existing Treatment



WOODS STREET AND MADDOX ROAD INTERSECTION

The Woods Street and Maddox Road intersection has been highlighted as a key area of concern for the community. To address this, a concept has been developed to upgrade the intersection to a protected roundabout with separated pedestrian and cyclist priority crossings across all approaches to the intersection.

This treatment was selected to provide traffic calming and priority crossing points for pedestrians and cyclists. Other intersection treatments, such as raised safety platforms, were considered but passed on due to lesser alignment with Safe System Principles in comparison.

Route 432 buses currently turn in and out of Woods Street at the intersection. As such consultation with the Department of Transport and Planning and the bus operator will be required as the design is further progressed. The proposed treatment includes a mountable concrete apron within the central island to accommodate the swept path of a standard bus vehicle.

It is noted that the existing road reserve at this location is narrower than at other sites where this protected roundabout treatment has previously been implemented. A modified design of this treatment has been presented as a concept, which will be further considered and detailed in the next design stage.

An artistic impression of what this treatment could look like at Woods Street and Maddox Road intersection is shown in Figure 8.1.

Figure 8.1 Artistic Impression of the Protected Roundabout



Source: Ratio Consultants

PEDESTRIAN PRIORITY CROSSINGS

Pedestrian safety on Maddox Road can be improved by providing more pedestrian priority crossings to support pedestrian desire lines and crossing movements near the primary school and early learning centres. An example of a pedestrian priority crossing is the existing one on Maddox Road shown in Figure 8.2.

Several pedestrian priority crossings have been proposed along Maddox Road in selected locations that provide regular crossing opportunities for pedestrians across Maddox Road and that cater for pedestrian desire lines at a wider street network level.

It is proposed that the existing children's crossing on Maddox Road be upgraded to a pedestrian priority crossing and relocated north of Severn Street to better serve the school precinct. A threshold treatment is proposed across Severn Street to provide priority to pedestrian movements from either side of Severn Street to this relocated crossing.

A new pedestrian priority crossing is proposed near Loft Reserve Road to serve both the sportsground and adjacent 'Inventors of the Future' early learning centre which provide off-street car parking. This crossing provides safe pedestrian access between local residences in the area and the early learning centre. The slower road environment, afforded by improvements along the entire study corridor, also provides better crossing opportunities at other locations away from priority crossings on Maddox Road.

An additional threshold treatment is proposed across Monmouth Street as a continuation of the focus placed on supporting higher pedestrian activity between Jubilee Street to the south and Loft Reserve Road to the north. Together, these treatments provide priority to pedestrians and cyclists on Maddox Road, whilst also functioning as traffic calming devices.

Figure 8.2 Existing Pedestrian Priority Crossing on Maddox Road



Source: Image taken during site inspection of existing pedestrian priority crossing on Maddox Road

SEPARATED CYCLING LANE

To improve cyclist safety, the existing shared cycling and parking lane arrangement on Maddox Road is proposed to be upgraded to separated cycling lanes on either side of the road. Like its name suggests, separated cycling lanes provide separation between cyclists and vehicle traffic and parking through the means of physical separators such as islands, bollards etc. A representation of a separated cycling lane is shown in Figure 8.3.

Figure 8.3 Artistic Impression of a Separated Cycling Lane



Source: Ratio Consultants

In general, there are complexities around implementing separated cycling lanes on residential streets with frequent property accesses such as Maddox Road. There is a need to consider management of on-street parking to ensure sufficient sight lines are provided between cyclists in the cycling lanes and drivers entering and exiting roadside land uses. This is to be considered further during the functional design stage when feature and level surveys have been undertaken.

The proposed cycling lanes will ultimately connect into the existing two-way bicycle path on Maddox Road south of Railway Parade, but will not be able to directly connect into Mason Street due to road reserve constraints. As such, the separated cycling lanes will terminate before Maddox Road meets Mason Street whereby cyclists will be diverted into the traffic lane at the intersection approach. It is unlikely this arrangement can be resolved without some land acquisition.

To support the cycling lanes, on-street parking will need to be removed on at least one side of Maddox Road. It is understood that Council intends to manage the impacts of this by retaining on-street parking and solely providing a northbound cycling lane in the interim. The southbound cycling lane will be constructed later and replace the southbound on-street parking lane. The northbound on-street parking lane on Maddox Road will be retained under all proposed scenarios.

Proposed design dimensions for the proposed cycling lanes are provided in Table 8-1 which have been impacted by constraints to the existing road width. The cycling lane widths

proposed, however, meet the minimum desirable width of 1.5 metres by Austroads Guide to Road Design.

The proposed cycling lanes span the entire study corridor and continue through intersections. The cycling lanes will, however, converge with the footpath as shared path crossings at Jubilee Street and Maddox Road intersection due to the narrow road reserve width. At Woods Street and Maddox Road intersection, separated crossing points for cyclists are provided with the proposed roundabout treatment.

Table 8-1 Cycling Lane Dimensions

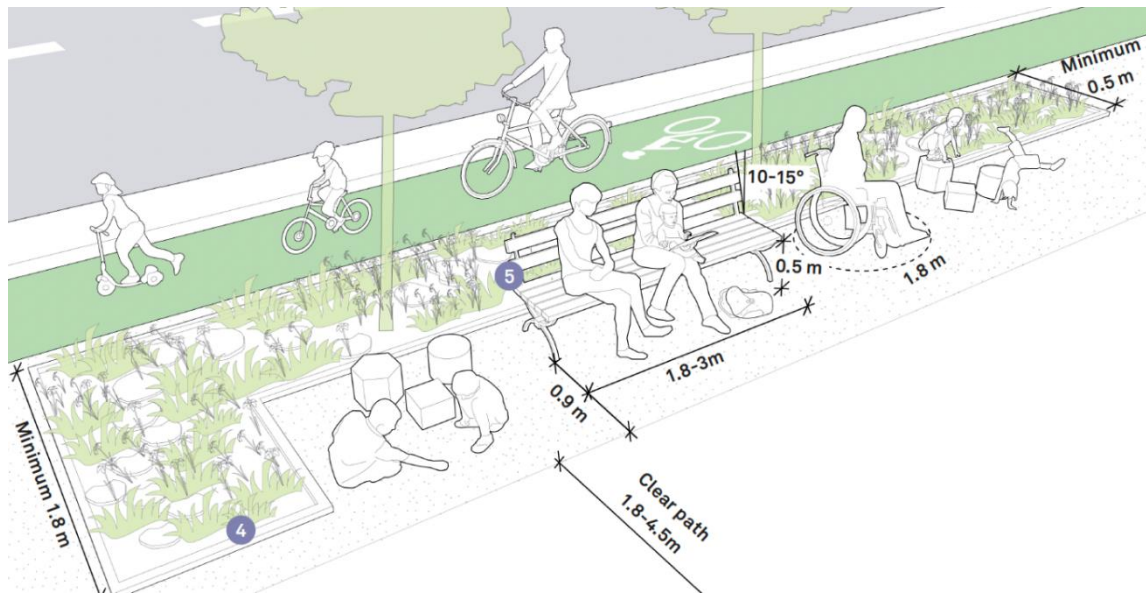
	Northbound Cycling Lane	Southbound Cycling Lane	Commentary
Interim Scenario	<ul style="list-style-type: none"> – 1.5-metre-wide cycling lane – 1-metre-wide separator with parking lane between Jubilee Street and Woods Street – 0.5-metre-wide separator with parking lane in other sections. 	<ul style="list-style-type: none"> – No cycling lane – 2.1-metre-wide parking lane 	<p>On-street parking to be retained in the interim on both sides of Maddox Road.</p> <p>A 1-metre separator width as per Austroads Guides is proposed along the school precinct which will require kerb realignment. Impact of kerb realignment on utilities should be checked and considered further during functional design stage.</p> <p>A narrower separator is proposed elsewhere with lower parking turnover, to reduce the extent of kerb realignment required.</p>
Ultimate Scenario	No change from interim	<ul style="list-style-type: none"> – 1.5-1.8-metre-wide cycling lane – 0.3-0.6-metre-wide separator with traffic lane 	2.1-metre-wide southbound parking lane to be replaced with a cycling lane and separator (combined width to be 2.1-metres).

TRAFFIC CALMING TO SUPPORT PEDESTRIAN AND CYCLIST SAFETY

Mid-block raised safety platforms (RSPs) are proposed at intervals along the entire length of the study corridor and will replace the existing speed cushions on Maddox Road. RSPs are traffic calming devices capable of reducing vehicle speeds to improve greater safety for walking and riding. Unlike speed cushions, RSPs extend laterally across the full width of the road and are typically constructed in bitumen or asphalt.

The RSPs are proposed in series and spaced at regular intervals between existing/proposed intersection treatments and pedestrian priority crossings. As per Australian Standards 1742.13, it is recommended that these raised treatments be positioned no more than 120 metres apart to achieve an 85th percentile speed of 40-50 km/h. Between Woods Street and Jubilee Street, the RSPs should be designed to support bus movements in consultation with the Department of Transport and Planning and the bus operator.

INTRODUCING STREET 'MOMENTS' AROUND ACTIVITY NODES



Source: NACTO Urban Street Design Guide

To activate the frontages of land uses such as the primary school, the early learning centres and Elephant Cafe; pockets of activity dubbed 'moments' are proposed on Maddox Road to provide roadside facilities and amenities for people to meet and congregate around. These 'moments' could include seating and wider footpaths near the school and early learning centre, and an expansion of alfresco dining near the Elephant Cafe. New plantation and greenery could also be introduced to provide canopies over seating, and natural roadside barriers to discourage adhoc pedestrian crossing movements on Maddox Road.

Figure 8.4 Artistic Impression of a Street 'Moment'



Source: Ratio Consultants

Along Maddox Road, these moments have been proposed near existing and proposed pedestrian priority crossings to enhance areas that experience higher foot traffic.

Streetscaping improvements should be visually soothing yet easy maintainable to avoid a street environment that disintegrates overtime with overgrown plantings that compromise transport safety.

SUPPORTING SOLUTIONS

In addition to the above primary solutions, the following supporting solutions have been recommended for the study corridor:

- Permanent speed limit reduction on Maddox Road to at least 40 km/h to complement traffic calming solutions proposed along the entire study corridor.
- Full or part time truck ban along Maddox Road between Mason Street and Railway Parade to improve local amenity and safety.
- School parking arrangements to be reviewed and managed in conjunction with the primary school and early learning centres to alleviate traffic and parking congestion on Maddox Road.
- Delineation of on-street parking spaces and/or construction of kerb extensions to manage on-street parking near crossovers and intersections.
- Investigation of footpath widening along Maddox Road, particularly along the frontages of the school and early centre, during the next design stages when feature and levels surveys have been undertaken to verify the proximity of adjacent trees and utility poles.
- Lighting and signage upgrades to support the mid-block and intersection treatments in accordance with AS/NZS 1158:2015-Lighting for roads and public spaces, TCG 006: guidelines for street lighting design, and A1742 Series Manual of Uniform Traffic Control Devices.
- Investigation of the re-routing of Route 432 buses in consultation with the Department of Transport and Planning and the local community during the next design stages.
- Existing southbound bus stop on Maddox Road near the Elephant Café to be relocated (or removed) to Jubilee Street, prior to the construction of the southbound cycling lane on Maddox Road. This is to eliminate impacts of buses pulling into the cycling lane for passenger alighting and boarding.
- Gateway treatment near Railway Parade/Maddox Road intersection to be advocated for as part of the Maddox Road Level Crossing Removal Project to highlight a change in road environment between north and south of the railway crossing.
- Emerald Green G13 surface colour treatment to highlight proposed cycling lanes.
- Roadside landscaping on either side of mid-block raised safety platforms to provide greater distinction from raised zebra crossings.