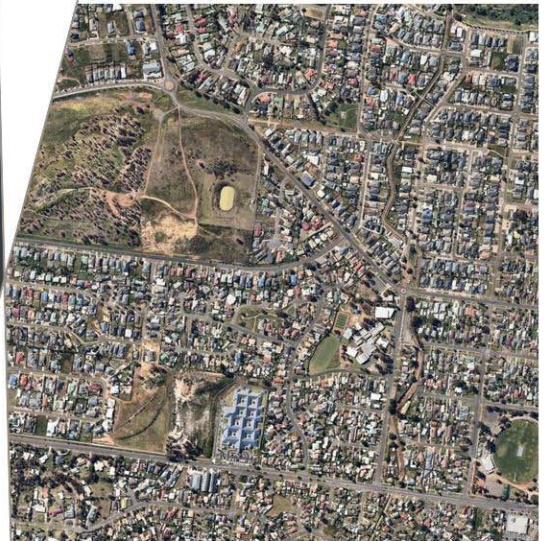


Draft LATM Plan

Bacchus Marsh Local Area Traffic Management Study – Stage 3

V190895



Prepared for
Moorabool Shire Council

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Table of Contents

1	Introduction	5
1.1	Study Area	5
1.2	Existing LATM Measures	5
2	Scope of Works	7
2.1	Overview	7
2.2	Complementary Projects	7
3	Overview of Potential LATM Treatments	8
3.1	Centre Blister (or similar)	8
3.2	Modified T-Intersection	9
3.3	Speed Hump	10
3.4	Raised Treatment	11
3.5	Left-In / Left-Out	12
3.6	Sharrows	13
3.7	Full Road Closure	14
3.8	Surface Treatment	15
3.9	Other Treatment Options	15
4	Proposed LATM Measures and Recommendations	16
4.1	Key Issues	16
4.2	Objectives	16
4.3	Proposed LATM Treatments	16
4.4	Proposed Treatments	18

Appendices

Appendix A Existing Conditions

Appendix B Draft LATM Measures

Appendix C Grey Street Traffic Improvements

Figures

Figure 1-1	Bacchus Marsh LATM Study Area Map	5
Figure 1-2	Existing Traffic Management Measures	6
Figure 3-1	Centre Blister	8
Figure 3-2	Modified T Intersection	9
Figure 3-3	Speed Hump	10
Figure 3-4	Raised Intersection	11
Figure 3-5	Left-In / Left-Out	12
Figure 3-6	Sharrows	13

Figure 3-7	Full Road Closure	14
Figure 3-8	Threshold Treatment	15
Figure 4-1	Proposed Draft LATM Plan	17
Figure 4-2	The roundabout at the intersection of Albert Street and Nelson Street	18
Figure 4-3	Fitzroy Street at the intersection with Raglan Street	19
Figure 4-4	The intersection of Holts Lane and Seton Way	20

1 Introduction

Cardno has been engaged by Moorabool Shire Council to undertake a Local Area Traffic Management (LATM) study for the Darley area (Stage 3 of the LATM study for the greater Bacchus Marsh township). The study is being undertaken in response to increased population growth and traffic volumes, and is in direct response to recommendations within the Bacchus Marsh Integrated Transport Strategy.

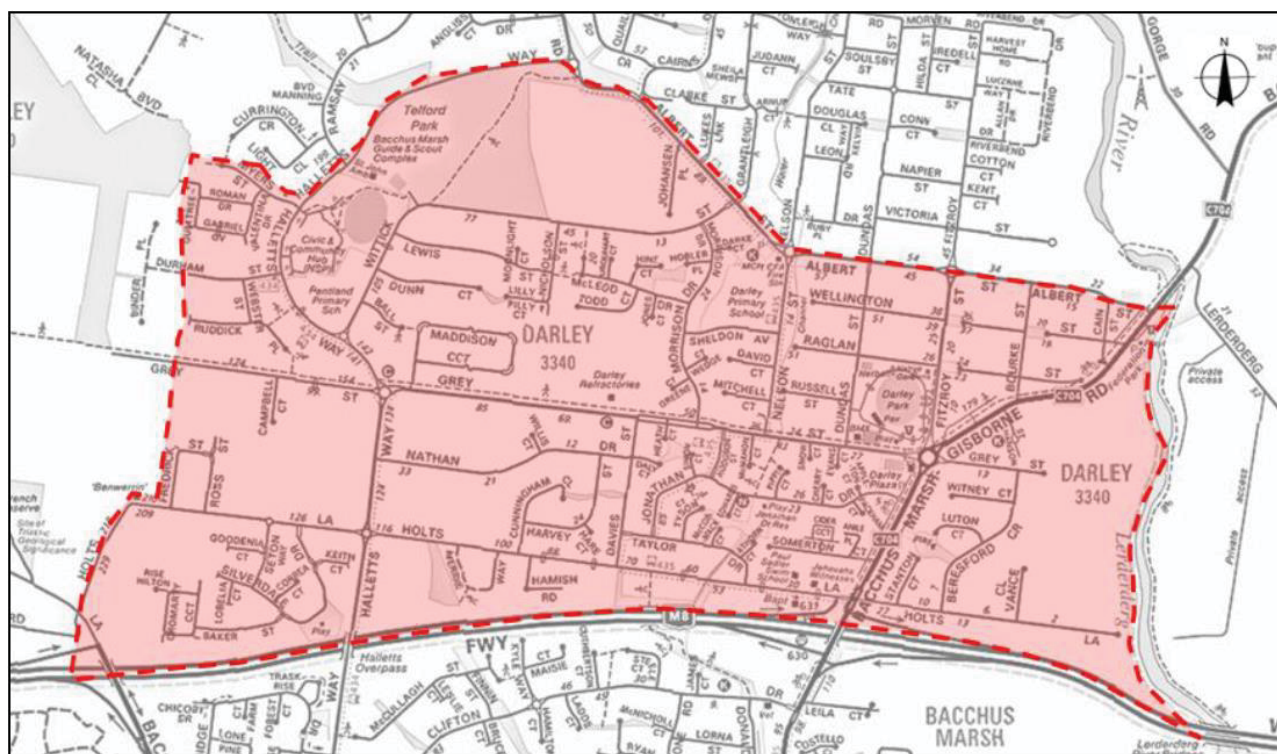
The following report provides a draft LATM plan to address the concerns raised during the first stage of the LATM plan, also conducted by Cardno, which consisted of an existing condition assessment of the study area (V190895REP001D01). This assessment collated relevant background information, traffic data, community consultation surveys and an on-site investigation, and should be read in conjunction with the Draft LATM plan outlined within this report.

In the course of preparing the Draft LATM plan, Cardno has consulted with Moorabool Shire Council to discuss the measures proposed.

1.1 Study Area

The study area is bound by Albert Street / Halletts Way to the north, the Western Freeway to the south, Holts Lane to the west, and Lerderderg River to the east. The extent of the study area is generally shown in Figure 1-1.

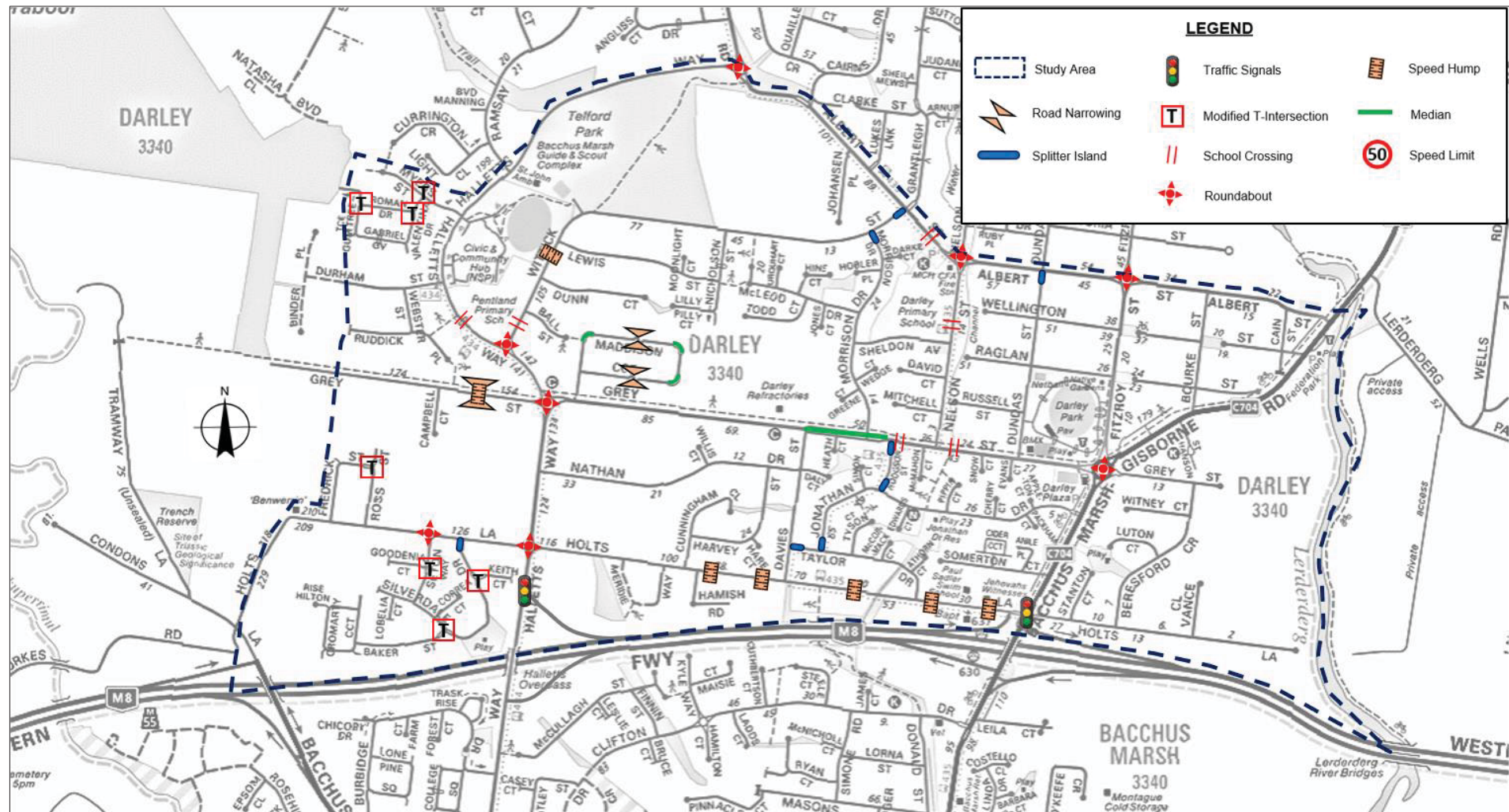
Figure 1-1 Bacchus Marsh LATM Study Area Map



1.2 Existing LATM Measures

The existing traffic management devices previously implemented in the local area by Council are shown in Figure 1-2.

Figure 1-2 Existing Traffic Management Measures



2 Scope of Works

2.1 Overview

The Local Area Traffic Management (LATM) measures proposed in the following sections are informed by Cardno's understanding of the study area as set out within the Existing Conditions Assessment (V190895REP001D01) and the principles of the Austroads Guide to Local Area Traffic Management.

It is imperative to understand that the scope of an LATM plan cannot directly impose measures on arterial roads managed by VicRoads, as any works associated with maintenance or improvements to these roads cannot be undertaken by Council. However, an LATM plan does consider these roads at all stages and endeavours to accommodate the needs of the local community wherever possible.

Within the study area there is one VicRoads operated road, which is Bacchus Marsh-Gisborne Road, operating in a north-south direction on the east side of the study area.

Similarly, although car parking issues can be highlighted by a LATM study, directly fixing parking supply issues is not the main intent of an LATM study. However, parking access can be addressed and where possible, car parking provision improvements can sometimes be made indirectly.

2.2 Complementary Projects

Cardno understands that a number of studies and projects are currently being undertaken by VicRoads, the Victorian Planning Authority, and Moorabool Shire Council that aim to address major concerns within the study area relating to traffic congestion and road safety. Significantly, it is understood that these studies and associated projects aim to address congestion along Gisborne Road/Grant Street (C704), as well as address concerns regarding heavy vehicle movements through the wider township. There is also a Grey Street Traffic Improvements study where Council seeks to better utilise the use of existing pavement and provide better pedestrian and cycling links.

Accordingly, it is noted here that this LATM study does not address community concerns relating to heavy vehicle movements and traffic congestion along Bacchus Marsh-Gisborne Road. Rather, this LATM study complements the broader studies being undertaken, whilst addressing concerns from the community regarding congestion and road safety within the local street network.

3 Overview of Potential LATM Treatments

In order to guide decisions concerning implementation of certain measures, it is important to have a thorough understanding of the potential treatments available to address issues such as those raised by the local Bacchus Marsh community, throughout the study area.

The following sections comprise descriptions of several LATM treatments that are considered appropriate for the urban context of Darley, and provides the respective advantages and disadvantages of each treatment.

It is noted that these treatments may be considered individually or in combination with one other, and that on long stretches of road it is best to implement a number of treatments to maintain the same profile throughout.

3.1 Centre Blister (or similar)

A centre blister is a concrete island positioned at the centreline (median) of a street with a wide oval plan shape that narrows the lanes, diverts the angle of traffic flow into and out of the device, and can be used to provide pedestrians with a refuge. Figure 3-1 provides an example of a centre blister LATM treatment.

Figure 3-1 Centre Blister



Courtesy of Nearmap

Advantages of Centre Blisters:

- > Reduce vehicle speeds;
- > Prevent drivers from overtaking others;
- > Provide a refuge for pedestrians and cyclists crossing the street;
- > Flexibility in design allows buses and commercial traffic to be accommodated; and
- > Visually enhance the street through landscaping and reduce the 'gun barrel' effect on long straight roads.

Disadvantages of Centre Blisters:

- > Prohibit or limit access and movement from driveways;
- > Reduce on-street parking adjacent to the islands;
- > Can create a squeeze point for cyclists if not appropriately catered for in the design;
- > May require kerb and footpath realignment in narrow streets;
- > Ineffective at reducing through traffic; and
- > Relatively expensive to install and maintain.

3.2 Modified T-Intersection

Modified T-Intersections are used to affect a change in the vehicle travel path, thereby slowing traffic via deflection of traffic movements and/or reassignment of priority. Figure 3-2 shows an example of a modified T-intersection treatment.

Figure 3-2 Modified T Intersection



Courtesy of Nearmap

Advantages of Modified T-Intersections

- > Control traffic movements and improve traffic flow;
- > Reduce vehicle speeds at the treatment point;
- > Facilitate safe pedestrian crossing;
- > Remove/reduce the number of vehicle conflict points;
- > Can lower vehicle speeds along the length of the street when installed in a series; and
- > Can accommodate buses and heavy vehicles.

Disadvantages of Modified T-Intersections

- > Relatively expensive devices;
- > Can create squeeze points for cyclists if not appropriately catered for in the design;
- > Reduce the availability of on-street parking opportunities.

3.3 Speed Hump

A speed hump is a speed reduction device in the form of a raised curved profile extending across the roadway. Speed humps are typically 70mm to 120mm high, with a total length of three to four metres. Figure 3-3 presents an example of a typical speed hump treatment.

Figure 3-3 Speed Hump



Courtesy of Western Linemarking

Advantages of speed humps

- > Significantly reduce vehicle speeds in the vicinity of the device;
- > Can significantly reduce road crashes;
- > Relatively inexpensive to install and maintain;
- > Discourage through traffic;
- > Regulate speeds over the entire length of a street when used in a series; and
- > Can be designed to limit discomfort to cyclists.

Disadvantages of speed humps

- > Traffic noise may increase just before and after the device due to braking, acceleration and the vertical displacement of vehicles;
- > Can divert traffic to nearby streets without LATM measures;
- > Can be uncomfortable for vehicle passengers and cyclists; and
- > May adversely affect access for buses, commercial vehicles and emergency vehicles.

3.4 Raised Treatment

A raised treatment is a raised section of roadway approximately 90mm to 100mm high, ramped up from the normal level of the street with a platform extending over more than a standard car length (at least 6 m but typically more). Raised sections of roadway can be located at mid-block locations, or they can cover an intersection between two roadways. Figure 3-4 presents an example of a raised intersection treatment.

Figure 3-4 Raised Intersection



Courtesy of Nearmap

Advantages of a Raised Treatment

- > Significantly reduce vehicle speeds in the vicinity of the device;
- > May discourage through traffic;
- > Can be used as a form of threshold treatment;
- > Can highlight the presence of an intersection; and
- > Can regulate speeds over the entire length of the street when used in a series.

Disadvantages of a Raised Intersection

- > Traffic noise may increase just before and after the device due to braking, acceleration and the vertical displacement of vehicles;
- > Can divert traffic to nearby streets without LATM measures;
- > Can be uncomfortable for vehicle passengers and cyclists; and
- > May adversely affect access for buses, commercial vehicles and emergency vehicles.
- > Require care that ramp markings are not confused with intersection control markings when located at an intersection.

3.5 Left-In / Left-Out

A left-in/left-out treatment is typically represented by a raised triangular island at an intersection, which aims to obstruct right turns and through movements to and from the intersection, street or driveway. Figure 3-5 shows an example of a Left-In / Left-Out treatment.

Figure 3-5 Left-In / Left-Out



Courtesy of Nearmap

Advantages of Left In / Left Out

- > Reduce the traffic volume;
- > Reduce the number of conflict points;
- > Provide a refuge for pedestrians and cyclists;
- > Reinforce the need for drivers crossing the dividing line to give way; and
- > May enhance the appearance of the street when landscaped.

Disadvantages of Left In / Left Out

- > Restrict access to local streets and / or driveways;
- > May create a squeeze point for cyclists;
- > Divert traffic to other local streets without the same restriction; and
- > Drivers may not comply if an appropriately designed median island is not incorporated.

3.6 Sharrows

Sharrows are pavement markings consisting of a bicycle symbol and two chevron markings. The intention of sharrows is to position cyclists into the centre of the traffic lane and to encourage them to mix with through traffic, to avoid conflicting with cars and other vehicles at narrow sections of road or squeeze points, such as small roundabouts. Figure 3-6 shows an example of a sharrow treatment at a roundabout.

Figure 3-6 Sharrows



Courtesy of Drivingtests.co.nz

Advantages of Sharrows

- > Encourage cyclists to ride in a safe road position;
- > Inexpensive to implement and maintain; and
- > Reinforce awareness of cyclists in local street networks.

Disadvantages of Sharrows

- > No regulations or road rules supporting the use of sharrows in Victoria;
- > May be confusing for drivers and cyclists; and
- > Limited research into the effectiveness of sharrows.

3.7 Full Road Closure

A full road closure is the closure of a street to two-way traffic. It serves as a means of eliminating through traffic from a street or simplifying an intersection layout to reduce the possible number of conflict points and the consequent crash risk. Figure 3-7 shows an example of a full road closure.

Figure 3-7 Full Road Closure



Courtesy of City of Stockton

Advantages of a Full Road Closure

- > Reduce traffic volumes;
- > Remove / reduce the number of conflict points when used at an intersection;
- > Increase pedestrian safety;
- > Remove non-local traffic;
- > Can accommodate pedestrian, cyclist and/or bus access; and
- > Provide landscaping opportunities.

Disadvantages of a Full Road Closure

- > May restrict or reduce accessibility for local residents;
- > May divert traffic to other adjacent local streets without closures, resulting in increased traffic volumes in those streets;
- > May restrict access by emergency services;
- > May increase travel times for some road users; and
- > May reduce the availability of on-street parking.

3.8 Surface Treatment

Surface treatments or threshold treatments (when used at an intersection or a driveway) are coloured and/or textured road surface treatments that contrast with the adjacent roadway. Surface treatments aim to alert drivers that they are entering a driving environment that is different from the one they have just left by the use of visual and/or tactile clues. Figure 3-8 presents an example of a threshold treatment.

Figure 3-8 Threshold Treatment



Courtesy of Hamilton City Council

Advantages of Threshold Treatments

- > Reduce approach speeds to an intersection;
- > Highlight the presence of an intersection;
- > Provide separation between residential areas from areas of non-residential use; and
- > Alert the driver that they are entering into a local area.

Disadvantages of Threshold Treatments

- > Increase maintenance requirements;
- > Texturing may create stability problems for cyclists, motorcyclists and pedestrians;
- > Turning traffic from and into the low speed local area may be more likely to affect traffic flow on the connecting arterial roads;
- > Vehicle priority may be unclear to pedestrians in some circumstances; and
- > Effectiveness is limited unless complemented by other devices in the street.

3.9 Other Treatment Options

Other treatment options available that have been utilised are more or less self-explanatory, all of the below treatments improve safety of both pedestrians, cyclists and drivers and/or define priority on sections of the roadway. These treatments are:

- > Speed Limit Reductions; and
- > Linemarking changes to improve clarity of communication.