

# Highton Village Urban Design Framework- Intersection Options Review


Final Report  
1 July 2021



## Document Revision History

VERSION	DATE	DOCUMENT TYPE
Draft Report v1.0	18 June 2021	Draft Report
Draft Report v2.0	23 June 2021	Draft Report
Final Report v3.0	1 July 2021	Final Report

## Document Control Panel

	NAME	DATE	SIGNATURE
Prepared by	Joshua Jang	18 June 2021	JJ
Reviewed by	Knowles Tivendale	1 July 2021	KT
Approved by	Knowles Tivendale	1 July 2021	

Addressee: City of Greater Geelong  
 Attn: Leila Griffiths  
 PO BOX 104  
 Geelong VIC 3220  
 Wadawurrung Country

Another Project By:  
 Movement & Place Pty Ltd  
 ACN: 625 377 595

Trading As:  
 Movement & Place Consulting  
 ABN: 85 375 284 892  
 PO BOX 8101, DANDENONG VIC 3175  
 info@movementandplace.com.au  
[www.movementandplace.com.au](http://www.movementandplace.com.au)

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## Executive Summary

City of Greater Geelong commissioned Movement & Place Consulting (M&PC) to review and evaluate three concept designs proposed for intersection of Belle Vue Avenue, Taylor Court and Barrabool Road service lane.

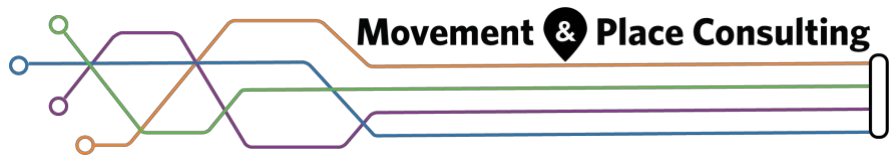
The subject intersection is situated in Highton Village Neighbourhood Activity Centre. Therefore, the three concept design options have been evaluated based on criteria covering multimodal demand, movement and place functions and safety. Evaluation of each option was based on criteria of:

- Design that encourages appropriate vehicle speed;
- Pedestrian and vehicle safety;
- Ease of movement for both pedestrians and vehicles;
- Impact on travel times for all road users; and
- Impact on public realm area and amenity.

Option 1 (with some modifications) is the highest performing of the three options. Intersection design of Option 1 generally promotes the safest outcome for all road users, greatest priority for pedestrians and largest benefits in terms of area for economic activity. Furthermore, the intersection geometry better relates to the appropriate vehicle speed and thus improves safety.

Additional recommendations for final concept design of subject intersection are suggested for consideration and potential inclusion into the design. These include:

- Install flashing 'Give way to pedestrians' signage facing the vehicles turning from Barrabool Road into Belle Vue Avenue;
- Apply a southbound only (one-way) restriction to the laneway east of Belle Vue Avenue;
- Reposition the on-street parking on southern side of Taylor Court to northern side of the road;
- Remove the ability to turn right out of Taylor Court at Belle Vue Avenue;
- Promote use of the U-turn facility 80m to the south in Belle Vue Avenue to complete manoeuvres from Taylor Court to Barrabool Avenue;
- Liaise with VicRoads to remove or paint out the left lane on Barrabool Road west of Belle Vue Avenue;
- Design to specifically allow right turns from Barrabool Road to the service lane by aligning the intersection stop line to the service lane entry and installing a protected right-turn signal; and
- Rearrange the off-street parking layout in the south-eastern car park to facilitate smoother vehicle and pedestrian access.



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## 1 Introduction

Highton Village is a Neighbourhood Activity Centre with around 8,000m<sup>2</sup> of retail and commercial space. The centre is well established and has a public realm that attracts people from across a wide area. The commercial mix includes a supermarket, banks, post office, medical services and several groceries, takeaway shops and cafes. Four key parking areas that serve the activity centre are:

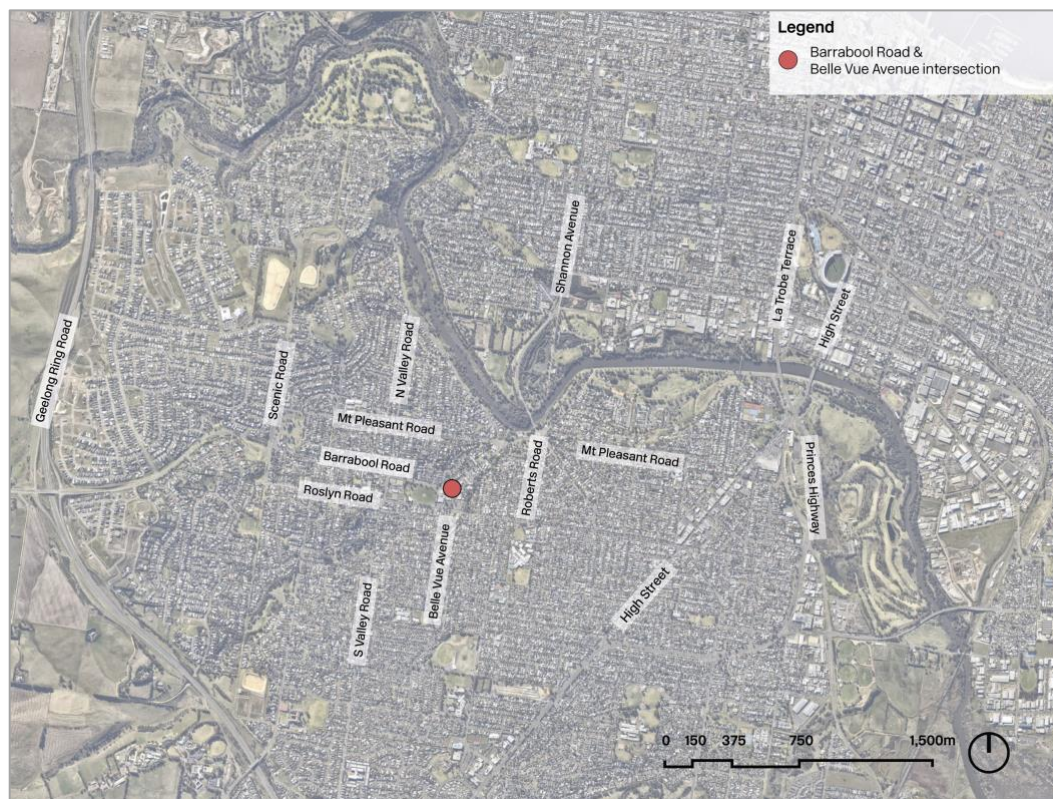
- South east off-street parking area (101 Spaces);
- South west (Woolworths) off-street parking area (144 Spaces);
- Taylor Court off-street parking area 69 Spaces);
- Barrabool Road Service Lane parking area 39 Spaces); and
- Belle Vue Avenue on-street parking 31 Spaces).

Access to Highton Village from the east, south and west is from Belle Vue Avenue and Roslyn Road. Roslyn Road provides the most direct east-west access from Wandana Heights through to Belmont and intersects with Belle Vue Avenue at the southern end of Highton Village. Access from the north is mainly via Barrabool Road, although it is relatively easy for arrivals from the north west to use Roslyn Road to access the two larger parking areas in the south.

Barrabool Road is classified as an arterial road (managed by Regional Roads Victoria) due to its connection to the Geelong Ring Road and Shannon Avenue.

Both approaches of Barrabool Road to Highton Village are angled, coming from the north east and north west. This and the surrounding road network connections make Barrabool Road important for accessing (to/from) areas north of Barwon River, but less important for areas south of the river. This is highlighted by the surrounding road network connections as shown in Figure 1-1 below.

**Figure 1-1: Highton Village and surrounds**



Source: Nearmap (2021) with M&PC Analysis

City of Greater Geelong (CoGG) is preparing an Interim Urban Design Framework (UDF) for Highton Village. Part of this process has involved understanding the safety and amenity impacts of the existing streetscape and road design. In particular, the intersection of Barrabool Road and Belle Vue Avenue (including Taylor Court) is problematic, creates confusion, leads to high vehicle speeds and reduces pedestrian safety. Overall it creates negative perceptions of Highton Village amongst users. The current layout of the intersection is shown in Figure 1-2 below.

**Figure 1-2: Intersection of Barrabool Road, Belle Vue Avenue and Taylor Court (Existing)**



Source: *Nearmap (2021)*

During the UDF consultation process, some participants have raised concerns about the concept plans for the intersection of Barrabool Road, Belle Vue Avenue and Taylor Court. As a result of this feedback, the City has developed three additional concepts (sketch designs) of the potential intersection layouts.

In addition, there is a proposed development of nine new dwellings on a property in Taylor Court. The additional car parking provided for these dwellings will not generate any significant additional burden on vehicle movements in or out of Taylor Court relevant to this analysis as the number of vehicle movements would be well below the variation in daily movements or seasonal changes in demand for parking behind the shops. The additional dwellings are therefore not expected to significantly impact on traffic congestion in the area. The dwellings will generate more pedestrian trips and more local expenditure in Highton Village.

City of Greater Geelong has requested Movement & Place Consulting (M&PC) to review the options developed to date with specific consideration of safety, pedestrian movements, vehicle movements (private and freight) and impact on the public realm.

The remainder of this report is structured as follows:

- Chapter 2 outlines the concept options put forward by Council
- Chapter 3 explains our evaluation methodology
- Chapter 4 provides the results of the evaluation and discussion of the results
- Chapter 5 outlines our recommendations



## 2 Options

Three sketch designs for traffic testing and refinement shown below were supplied by CoGG. These are shown and changes from the existing conditions are explained in the section below. In summary Option 1 has the most changes and Option 3 has the least amount of change. The four options are shown in Figure 2-1, Figure 2-2, Figure 2-3 and Figure 2-4, respectively. They are each briefly explained in the text below each figure.

**Figure 2-1: Option 1**



Source: CoGG

Key features of Option 1 include:

- Removed left-turn slip-lane from Belle Vue Avenue into Barrabool Road;
- Expanded pedestrian area on the northeast side of Belle Vue Avenue;
- Expanded pedestrian area on the northwest side of Belle Vue Avenue;
- Barrabool Road service lane entry from Barrabool Road; and
- Tightened left-turn from Taylor Court.

**Figure 2-2: Option 2**



Source: CoGG

Key features of Option 2 include:

- Removed left-turn slip-lane from Belle Vue Avenue into Barrabool Road;
- Expanded pedestrian area on the northwest side of Belle Vue Avenue; and



- Barrabool Road service lane entry from Barrabool Road.

**Figure 2-3: Option 3**



Source: CoGG

Key features of Option 3 include:

- Removed left-turn slip-lane from Belle Vue Avenue into Barrabool Road.

The road configuration option included in the draft Urban Design Framework was also analysed and is referred to as Option 4.

**Figure 2-4: Option 4**



Source: CoGG

Key features of Option 3 include:

- Removed left-turn slip-lane from Belle Vue Avenue into service lane;
- Left-turn slip-lane directly connects to Barrabool Road; and
- Introduce direct access to the service lane from Barrabool Road.

It should be noted that options 1-3 retain the existing access into and egress from Taylor Court, albeit with a change to the location of the median breaks. These options all combine the two median breaks into a single bi-directional link between the northbound and southbound carriageways on Belle Vue Avenue. Option 4 is the only one to remove the ability for drivers to turn right from Taylor Court into Belle Vue Avenue.

This median break is a key feature that is discussed in more detail in the options evaluation section of this report. Pressure on Taylor Court to provide for so many freight and customer vehicles could be reduced through a strategic approach to the wider movement network. This should include

consideration of how the laneway and parking areas that access onto Taylor Court are arranged, so as to reduce general traffic flow in Taylor Court.

All options retain the traffic signals in their current configuration and operational settings. There is potential to identify minor improvements to the infrastructure and operational settings that can improve the safety and efficiency of the traffic signals.

It is also noted that all options change the configuration of car parking spaces in various areas of the activity centre. This includes:

- A small reduction in the number of spaces in Taylor Court (which will ease traffic flow and increase outdoor dining area and amenity);
- Improved configuration of car parking in the service lane (with more car parking spaces located at the footpath, reducing the need for people to walk across the service lane to access their car); and
- Minor changes to parking spaces in Belle Vue Avenue (which will improve amenity in the core of the activity centre).

### 3 Evaluation methodology

Quantitative and qualitative data analysis was conducted to comparatively evaluate the three proposed concept options.

The evaluation was conducted in consideration of pedestrian movement, vehicle movement, impact on the public realm and safety. Criteria developed based on these considerations were:

- Road geometry that encourages appropriate vehicle speeds;
- Pedestrian-vehicle conflict;
- Turning vehicle conflict;
- Ease of pedestrian movement along Barrabool Road and Belle Vue Avenue;
- Simplified vehicle movements making it easy for all road users to understand;
- Impact on travel times for all road users; and
- Impact on public realm area and amenity.

Each option was given 'Very Positive', 'Positive', 'Neutral', 'Negative' or 'Very Negative' for each evaluation criteria. All criteria were given equal weighting.

A brief explanation of each of the criteria is provided below.

#### Road geometry that encourages appropriate vehicle speed

The road and intersection design play a critical role in guiding drivers to travel at an appropriate speed that reflects the needs of the surrounding environment. The Belle Vue Avenue at the intersection of Barrabool Road should be designed for low vehicle speeds to achieve the vision for pedestrian amenity and safety.

This requires road geometry at the intersection and Belle Vue Avenue to sufficiently slow vehicle entry and exit speeds. This can be achieved through various design elements such as road pavement width, turning angles and turning movement restrictions.

#### Pedestrian-vehicle conflict

There is a continuous strip of commercial activity along the southern side of Barrabool Road and on both sides of Belle Vue Avenue between Barrabool Road and parking areas just north of Roslyn Road. This creates a need for pedestrians to cross Belle Vue Avenue and (to a lesser extent) Barrabool Road. Pedestrian amenity and safety in this area are of high importance.

The ease with which road crossings can be made by pedestrians has a direct impact on economic activity, safety and traffic congestion at Highton Village. In extreme cases people might avoid crossing the road by driving between two parking areas, adding to traffic congestion and further eroding pedestrian amenity and safety.

Safety of pedestrian crossings can be improved by minimising the crossing distance during which pedestrians are exposed to potential conflict with vehicle movement paths.

#### Turning vehicle conflict

The intersection of Belle Vue Avenue, Barrabool Road and Taylor Court is expected to service a range of vehicle turning movements which results in multiple conflicting vehicle paths. Possibility of vehicle crashes can be minimised by reducing the number of conflict points in vehicle turning paths that arise from vehicle paths crossing and merging. These conflict points can be reduced through road geometry changes or turn bans. Turning bans also have an impact on the demand for parking at specific locations and can help to solve parking availability issues.

### **Ease of pedestrian movement along Barrabool Road and Belle Vue Avenue**

Direct and easy pedestrian movement along footpaths is critical to road design in an activity centre as it encourages pedestrians to spend more time and money in the centre. This is directly related to the level of economic activity in a place.

In this analysis, key factors that increase confidence of pedestrians such as width of footpath and directness of footpath links have been considered.

### **Simplified vehicle movements making it easy for all road users to understand**

General design of roads and intersections should match and reinforce intuition and expectations of all road users. The only exception is in areas that are carefully and specifically designed to slow cars to walking pace (such as Shared Zones and car parking areas).

Simplification of vehicle movements allows drivers and other road users increases readiness to situations and unplanned events. It also makes intersections easier to navigate and removes movements that delay many road users (while only benefiting a small number of drivers).

Right turns are particularly problematic, because they take longer to perform and waiting for a suitable break in traffic has the potential to delay many other drivers, exceeding the benefit for the single driver undertaking the turn.

### **Impact on travel times for all road users**

Layout of an intersection has a direct impact on travel time for all road users including car drivers, bicycle riders and pedestrians. Impact of increased travel time has been considered for trips at regional level for vehicles. Pedestrian travel time was also evaluated based on number of traffic lanes that pedestrians will need to cross and the level of priority they are given in each option.

Bicycle and public transport travel times are generally unaffected by the options.

### **Impact on public realm area and amenity**

Evaluation of the change in area available for public realm and amenity improvements is critical to road and intersection layout assessments as it affects perception of safety, security and confidence of all road users.

Increasing areas of public realm (such as outdoor dining, active shop frontages and trees) increases passive surveillance, contributing to safety and security. It also provides more space for canopy trees that Highton Village is well known for, helping to moderate extreme weather conditions. Public realm areas are also able to be used for economic activities such as the outdoor dining that occurs between Barrabool Road and Taylor Court.



## 4 Evaluation results

Qualitative and quantitative evaluation of each proposed option was conducted. The results are summarised in Table 4-1 below with contributing factors for the outcomes. Refer to subsequent section for further discussion. Of the design options, Option 1 is most preferred option and Option 3 is least preferred.

**Table 4-1: Evaluation of options against criteria**

Criteria	Option 1	Option 2	Option 3	Option 4
<b>Road geometry that encourages appropriate vehicle speed</b>	Improved by: <ul style="list-style-type: none"> <li>Reduced road width at Belle Vue Ave</li> <li>Tightened left-turns from all approaches</li> <li>Removed left-turn slip-lane</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Removed left-turn slip-lane</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Belle Vue Ave inappropriate road width</li> <li>Left-turns from all approaches with high-speed corners</li> </ul>	Remaining issues: <ul style="list-style-type: none"> <li>Belle Vue Ave inappropriate road width</li> <li>Left-turns from all approaches with high-speed corners</li> <li>Left-turn slip-lane with high-speed corner</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Removed left-turn slip-lane through car park</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Belle Vue Ave inappropriate road width</li> <li>Left-turns from all approaches with high-speed corners</li> <li>Left-turn slip-lane with high-speed corner</li> </ul>
<b>Pedestrian-vehicle conflict</b>	Improved by: <ul style="list-style-type: none"> <li>Reduced number of traffic lanes to cross at Belle Vue Ave</li> <li>Removed left-turn slip-lane</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Removed left-turn slip-lane</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Number of traffic lanes to cross Belle Vue Ave</li> </ul>	Remaining issues: <ul style="list-style-type: none"> <li>Number of traffic lanes to cross Belle Vue Ave</li> <li>Left-turn slip-lane with high-speed corner</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Priority at Taylor Ct</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Number of traffic lanes to cross Belle Vue Ave</li> <li>Left-turn slip-lane with high-speed corner</li> </ul>
<b>Turning vehicle conflict</b>	More conflict points were identified compared to Option 4 due to right-turn movement from Taylor Court	One additional conflict point was identified compared to Option 1 due to southbound merging at Belle Vue Ave	Two additional conflict points were identified – one due to southbound merging at Belle Vue Ave and another due to provision of access to service lane from both Belle Vue Ave and Barrabool Rd	This option generates the lowest number of conflict points due to the median break in Belle Vue Ave only providing for U-turns, not bi-directional flow

Criteria	Option 1	Option 2	Option 3	Option 4
<b>Ease of pedestrian movement along Barrabool Road and Belle Vue Avenue</b>	Improved by: <ul style="list-style-type: none"> <li>Removed of left-turn slip-lane</li> <li>Expanded footpath areas</li> <li>Reduced crossing distance</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Removed left-turn slip-lane</li> <li>Expanded footpath area from northwest</li> <li>Reduced crossing distance</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Footpath from northeast to Taylor Ct</li> </ul>	Remaining issues: <ul style="list-style-type: none"> <li>Footpath area minimised</li> <li>Left-turn slip-lane with high-speed corner</li> <li>Excessive crossing distances</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Expanded footpath area in northwest</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Left-turn slip-lane with high-speed corner</li> <li>Excessive crossing distances</li> </ul>
<b>Simplified vehicle movements making it easy for all road users to understand</b>	Removal of slip-lane aligning with Taylor Ct simplifies vehicle movement	Removal of slip-lane aligning with Taylor Ct simplifies vehicle movement	Slip-lane access to service lane that does not provide left-turn to Barrabool Rd may create confusion.	U-turn in Belle Vue Avenue is too close to Barrabool Rd, and is likely to conflict with left-turn green arrow from Barrabool Rd into Belle Vue Ave
<b>Impact on travel times for all road users</b>	Vehicle travel time from areas around the centre mostly decreases or do not change Minor increase in travel time from south-eastern areas to Barrabool St service lane Pedestrian travel times improve more than in all other options Bicycle and bus travel times do not change	Vehicle travel time from areas around the centre mostly decreases or do not change Minor increase in travel time from eastern regions to service lane was identified Pedestrian travel times improve slightly Bicycle and bus travel times do not change	Vehicle travel time from areas around the centre either decreases or do not change Pedestrian travel times impacted by the distance to cross roads – this in turn slows down traffic signal operations and delays all vehicles Bicycle and bus travel times do not change	Vehicle travel time from areas around the centre either decreases or do not change Pedestrian travel times impacted by the distance to cross roads – slows down traffic signal operations and delays all vehicles Bicycle and bus travel times do not change
<b>Impact on public realm area and amenity</b>	Improved by: <ul style="list-style-type: none"> <li>Expanded outdoor dining area</li> <li>Removed left-turn slip-lane</li> </ul>	Improved by: <ul style="list-style-type: none"> <li>Removed left-turn slip-lane</li> </ul> Remaining issues: <ul style="list-style-type: none"> <li>Minimal outdoor dining area</li> </ul>	Remaining issues: <ul style="list-style-type: none"> <li>Minimal outdoor dining area</li> <li>Left-turn slip-lane with high-speed corner</li> </ul>	Remaining issues: <ul style="list-style-type: none"> <li>Minimal outdoor dining area</li> <li>Left-turn slip-lane with high-speed corner</li> </ul>

A summary of the evaluation is provided in Table 4-2 below.

**Table 4-2: Summary of Evaluation**

Criteria	Option 1	Option 2	Option 3	Option 4
Road geometry that encourages appropriate vehicle speed	4	3	1	1
Pedestrian-vehicle conflict	4	3	1	1
Turning vehicle conflict	3	2	0	4
Ease of pedestrian movement along Barrabool Road and Belle Vue Avenue	4	3	1	2
Simplified vehicle movements making it easy for all road users to understand;	3	3	1	2
Impact on travel times for all road users	2	2	2	2
Impact on public realm area and amenity	4	3	2	2

## Discussion of results

Analysis of the wider network and traffic movements have been conducted to ensure holistic evaluation of each option. Consideration was given to what alternative routes drivers could use to reach their destination if specific turning movements are removed or made more difficult. This focussed on the likely travel time impacts of the alternative options.

### Safe and easy walking

The existing high-speed, left-turn slip-lane from Belle Vue Avenue into Barrabool Road does not provide a safe environment for pedestrians, despite the zebra crossing. Counter-intuitively the zebra crossing makes other left turns in the area less safe, because it implies that drivers only need to give way at a zebra crossing (legally the zebra crossing is not required as pedestrians already have the right of way across all slip lanes).

The angle of the zebra crossing means that pedestrians in one direction are approaching the crossing from within the drivers' blind spot, making this location particularly unsafe for pedestrians to cross the slip lane. Furthermore the complicated road network creates an environment where drivers are likely to be looking out for cars from all angles, reducing the time and capacity that drivers have to identify pedestrians.

The left-turn from Barrabool Road into Belle Vue Avenue is also designed for high-speed vehicle movements, and does not provide the safest and highest quality walking environment for pedestrians.

Similarly, the left-turn from Barrabool Road to Belle Vue Avenue and left-turns at Taylor Court all promotes high-speed left-turns which do not facilitate safe and easy walking environment.

Pedestrian crossing distance should also be minimised. This will minimise the time pedestrians spend on the roadway, minimise delay to vehicle movements and improve pedestrian safety.

A pedestrian-friendly environment can be best achieved through expansion of pedestrian area, removal of left-turn slip-lanes and expanding outdoor dining area to the east of Belle Vue Avenue as shown in Option 1 (which reduces the pedestrian crossing distance to three lanes at Belle Vue Avenue).

Pedestrian safety can be further improved by installing additional road furniture that strengthen pedestrian safety. This could include installing a raised pedestrian crossing at Taylor Court (such as wombat crossing) and 'give way to pedestrians' signage for vehicles turning left into Belle Vue Avenue. Traffic signal phasing at Barrabool Road and Belle Vue Avenue can also be made safer for pedestrian movement by introducing leading pedestrian phase (so that pedestrians will be in clear sight range for vehicles turning left from Barrabool Road)

### Safe speed and easy navigation

Promoting appropriate vehicle speeds is critical to achieving safety and amenity in the activity centre. The existing generous turning angles (at almost all intersections in the centre) do not encourage appropriate vehicle speeds in Highton Village. Appropriate speed at intersections can be achieved by tightening radii for all left-turns. This promotes lower speeds that give drivers more time and capacity to recognise pedestrians moving within the centre.

Direct alignment of Taylor Court with the left-turn slip-lane exiting Belle Vue Avenue onto Barrabool Road is also undesirable particularly so close to the signalised intersection. This is because it encourages higher-speed vehicle movements particularly as the traffic signals change and drivers try to beat the flow of the traffic.

Confusing intersection layouts that do not align with driver expectations are problematic because they occupy more of a driver's attention and focus (looking for unusual car movements), thereby reducing their capacity to see and recognise other road users.

Provision of slip-lane that does not provide left-turn to Barrabool Road as shown in Option 3 is undesirable as it is likely to encourage high-speed movements through the car parking area in the service lane. Furthermore, it is highly desirable and logical for drivers approaching from east on Barrabool Road to have direct access to the service lane. The current situation of not providing that



access, causes confusion for irregular visitors, limits access to a very small number of spaces on Barrabool Road and probably leads to more drivers driving through the Belle Vue Arcade and Village Walk than is otherwise necessary.

#### **Vehicle conflict and Taylor Court access**

The short distance between the intersection of Taylor Court and Belle Vue Avenue to the three-way intersection of Barrabool Road creates a concentration of vehicle crossing and merging points in a relatively small area. To minimise these conflict points, number of measures can be taken. This includes providing only one lane for left-turn from Barrabool Road to Belle Vue Avenue (to reduce merging conflict) and providing service lane access only from Barrabool Road as shown in Option 1 (also to reduce merging conflict at service lane entry). Neither of these changes would negatively impact on access to and from Taylor Court.

The number of vehicle conflict points can be further reduced by prohibiting right-turns from Taylor Court. This also further simplifies operation of the intersection. This will be more effective if the north-south laneway to the east of Belle Vue Avenue functions as southbound only and the layout of the off-street car parking at the southern end of the laneway is rearranged to provide easy egress for freight vehicles into Belle Vue Avenue. This would reduce the traffic volumes and bi-directional freight movements in Taylor Court which will reduce strain on parking availability and improve pedestrian amenity in Taylor Court.

On-street parking spaces at the southern side of Taylor Court are difficult to access (requiring all drivers to complete a three-point turn in order to use them. This reduces safety for all road users within Taylor Court. Repositioning these on-street parking spaces to the northern side of Taylor Court would improve access for all drivers, create easier freight vehicles movements and enable the entrance of Taylor Court to be narrowed – slightly reducing the pedestrian crossing distance. This will also allow delivery vehicles to efficiently make deliveries to the surrounding buildings and then exit to either the north (via the Taylor Court parking area) or south (via the Belle Vue Avenue parking area).

#### **Width of Barrabool Road**

Barrabool Road between Belle Vue Avenue and Belle Vue Arcade can be reduced to one lane for westbound traffic. The existing southern lane can be used as short lane for service lane access and bicycle lane further to the west. This reduces the volume of through traffic on Barrabool Road that is crossing with vehicle path turning from Belle Vue Avenue to the service lane.

## 5 Recommendations

Of the three proposed options, Option 1 provides the most significant improvement to Highton Village. Option 1 included number of desirable design elements that improve safety for all users, pedestrian movement and economic activity.

Specific design elements that should be implemented from Option 1 are:

- Expanded footpath on both sides of the Belle Vue Avenue;
- Tightened left-turns from all approaches to the intersection;
- Barrabool Road service lane provided only from Barrabool Road;
- Reduced number of traffic lane at Belle Vue Avenue north approach; and
- Removed left-turn slip-lane from Belle Vue Avenue.

The analysis also identified some additional design improvements that could further improve the outcomes for traffic flow, parking, pedestrian movement and economic activity at Highton Village.

These are listed below and highlighted by location in Figure 5-1 overleaf.

1. Install 'give way to pedestrians' signage for vehicles turning left from Barrabool Road, and apply an advance for the pedestrian signal phase to be 2-seconds ahead of the left turn;
2. Install a wombat (raised zebra) crossing at the entrance to Taylor Court;
3. Align Barrabool Road west approach stop line with the future service lane entry and introduce protected right turn signal from Barrabool Road;
4. Remove right turn from Taylor Court at Belle Vue Avenue but retain right turn into Taylor Court;
5. Promote drivers using the U-turn at the southern end of Belle Vue Avenue to complete that manoeuvre;
6. Make the laneway south of Taylor Court southbound only; and
7. Rearrange off-street vehicle parking layout located south of Taylor Court to facilitate movements from the laneway and to improve safety for all road users and to facilitate easier movement of delivery vehicles.

M&PC also recommends following changes to be made at the nearby road segments to improve the efficiency and safety of the network surrounding the subject intersection:

8. Reduce westbound through traffic lane at the west of Belle Vue Avenue to one lane and reconfigure southern lane as short access lane which changes to bicycle lane further west; and
9. Reposition the on-street parking at southern side of Taylor Court to northern side to improve safety and access.

Figure 5-1: M&PC recommendations for further updates

