



Proposed Garden Centre, 720 Welshpool Road Wattle Grove

Preliminary Design (Stage 2) Road Safety Audit

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Prepared for:
Peritas Group

July 2021

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1.0 INTRODUCTION

This Road Safety Audit Report has been prepared by Transcore on behalf of Peritas Group.

The report contains a Stage 2 (Preliminary Design) Road Safety Audit based on the *Austrroads Guide to Road Safety Part 6: Managing Road Safety Audits* and in accordance with the requirements contained in the *Main Roads Western Australia Policy and Guidelines for Road Safety Audit*.

This report results from a Stage 2 – Preliminary Design Road Safety Audit carried out on the proposed for the proposed garden centre at Lot 150 (No.720) Welshpool Road East, Wattle Grove in the Shire of Kalamunda (refer **Figure 1** for site details).

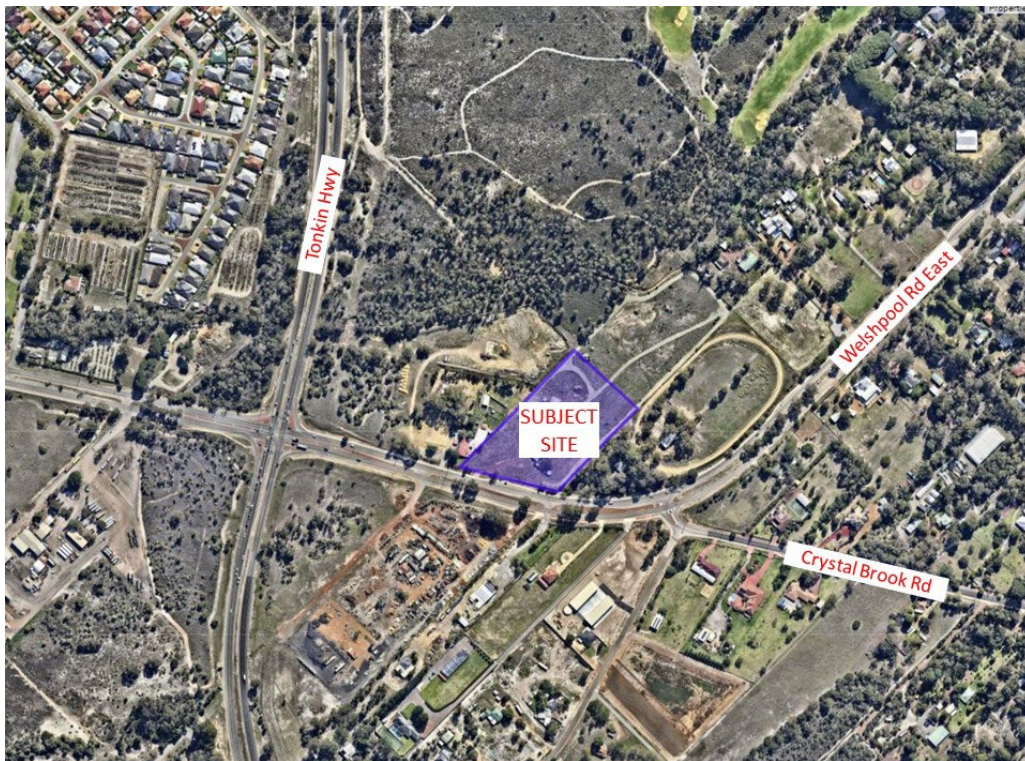


Figure 1: Aerial view of the subject sites

The proposed garden centre comprises the following components:

- ✚ Pots and water features display buildings;
- ✚ Limestone blocks and slabs sales and display area;
- ✚ Pots and nursery sales area;
- ✚ A storage shed;
- ✚ Product sales areas;
- ✚ A lunchroom/sales office;

- ✚ A checkout office;
- ✚ Landscape supplies storage bins in multiple locations;
- ✚ Internal roadways;
- ✚ A car parking area including (approximately) 50 car parking bays located along the Welshpool Road frontage of the site; and,
- ✚ An internal car parking area including 10 parking bays located adjacent to the sales office.

Audits for this project were previously undertaken in June 2017 and subsequently in October 2020. The site plans have since been modified to include internal site modifications, site crossover modifications including modifications to the Welshpool Road East median break kerbing and median itself. In addition, sightline assessment plans including turn path plans have been prepared to demonstrate the suitability of the design for the proposed crossover on Welshpool Road East. Accordingly, and in line with the City of Kalamunda request, an update to the original Road Safety Audits is now prepared.

The subject site currently gains access via a left-in/left-out crossover on Welshpool Road East which is proposed to be relocated to the easternmost end of the subject site and converted to a full-movement standard. The proposed new location for the crossover is directly opposite the existing median break on Welshpool Road East and a crossover to an existing development on the other side of Welshpool Road East.

This Stage 2 Road Safety Audit is therefore carried out on the design plans made available to Transcore in June 2021 which are listed below:

- ✚ PC16017-CI-1100-REV H;
- ✚ PC16017-CI-SK3-REV D;
- ✚ PC16017-CI-SK4-REV D;
- ✚ PC16017-CI-SK5-REV D;
- ✚ PC16017-CI-SK6-REV D;
- ✚ PC16017-CI-SK7-REV C;
- ✚ PC16017-CI-SK8-REV C; and,
- ✚ PC16017-CI-SK9-REV C.

Recommendations arising from the Road Safety Audit are detailed in Section 3 of this report. Also, the resulting Corrective Action Report is contained in Section 5 of this report.

The audit team has examined and reported only on the road safety implications of the project as presented and has not examined or verified the compliance of the design to any other criteria, however reference to relevant standards and guidelines are made where appropriate.

2.0 BACKGROUND DETAILS

2.1 Site Details

The subject of this Audit is the preliminary design of the proposed garden centre at 720 Welshpool East Road, in Wattle Grove, City of Kalamunda.

The subject site is located at the north side of Welshpool Road East approximately 220m to the east of the signalised intersection of Tonkin Highway and Welshpool Road East. The site is located within a predominantly rural setting. It is presently occupied by a single residential dwelling and a horse stable.

Welshpool Road East in the vicinity of the subject site is a four-lane dual carriageway road with a kerbed and solid central median. Each carriageway is approximately 7.4m wide and the median varies in width from approximately 4.5m near the western property boundary to approximately 8.5m wide near the eastern property boundary. Median breaks and turn pockets are provided at multiple locations in this vicinity. These turn pockets are not compliant with respect to the requirements of Austroads Guidelines as it relates to deceleration length requirements. A pedestrian footpath on the southern and a shared path on the northern side of Welshpool Road East is in place in the vicinity of the subject site.

According to the *Main Roads WA Metropolitan Functional Road Hierarchy* document, Welshpool Road East is classified as a *Distributor A* road. Refer **Figure 2** and **Figure 3** for more details.



Figure 2: Westbound view along Welshpool Road East in the vicinity of subject site



Figure 3: Eastbound view along Welshpool Road East in the vicinity of subject site

Welshpool Road East is under with care and control of the local authority (vested by WAPC (*Other Regional Road*)).

Power poles are in place along the northern side of Welshpool Road East with two power poles adjacent to the proposed new site crossover. A bus embayment is also located at the north side of Welshpool Road East between the existing and the proposed new location for the site crossover.

Substantial vegetation is also in place along the northern side of Welshpool Road East at the location of the proposed new crossover as is within the Welshpool Road East median.

2.2 Traffic and Speed Data

A summary of available traffic data for Welshpool Road East (East of Tonkin Highway) is provided below.

Table 1: Traffic Data

Location	VPD (HV%)	Date	Source
Welshpool Road East (East of Tonkin highway) SLK 0.24	17,652 (12.8%)	2020/21	MRWA

Welshpool Road East and operates under a sign posted speed limit of 80km/h in the vicinity of the subject site.

2.3 Crash History

According to the Main Roads WA Crash Map tool, there has been a total of six crashes (one casualty) along the 250m-long section of Welshpool Road East in the immediate vicinity of the site over the 5-year period ending 31 December 2020. The information obtained from Main Roads WA indicates that three of the six crashes were "rear end" types, two were recorded as "overtake" and one was "off path - hit object in verge" type.

All of the crashes occurred during daylight and one during wet conditions. No crashes involved pedestrians.

2.4 Road Safety Audit

A Road Safety Audit is a formal examination of a future road or traffic project or an existing road, in which an independent, qualified team reports on the project's crash potential and safety performance. The Audit Team must be independent of the designer, so that the design is viewed with "fresh eyes". The purpose of the report is not to rate the design, but rather to address any road safety concerns.

In reviewing the safety aspects of a road project, the reporting procedure is not intended as a redesigning process, but to outline potential or existing road safety issues and establish a basis upon which a design could produce an acceptable solution to the safety problem. The recommendations will indicate the nature or direction of a solution, rather than specify the details of how to solve the problem.

The objectives of a Road Safety Audit are:

- ✚ To review the designs and background information and form conclusions about safety performance and accident potential of the redesigned road;
- ✚ To evaluate the proposal in terms of interaction with its surrounds and nearby roads, and to visualise potential impediments and conflicts for road users; and,
- ✚ To report on the conclusions drawn and to make recommendations regarding aspects which involve unnecessary or unreasonable hazards.

It is intended that the recommendations for corrective action be discussed with the designer/client to determine whether the recommendations should be implemented, and where it is decided otherwise, to give reasons in writing for the decision.

2.5 Safe System Findings

The aim of *Safe System Findings* is to focus the Road Safety Audit process on considering safe speeds and by providing forgiving roads and roadsides. This is to be delivered through the Road Safety Audit process by accepting that people will always make mistakes and by considering the known limits to crash forces the human body can tolerate. This is to be achieved by focusing the Road Safety Audit on particular crash types that are known to result in higher severity outcomes at relatively lower speed environments to reduce the risk of fatal and serious injury crashes.

The additional annotation “**IMPORTANT**” shall be used to provide emphasis to any road safety audit finding that has the potential to result in fatal or serious injury or findings that are likely to result in the following crash types above the related speed environment: head-on (>70 km/h), right angle (>50 km/h), run off road impact object (>40 km/h), and crashes involving vulnerable road users (>30 km/h), as these crash types are known to result in higher severity outcomes at relatively lower speed environments.

The exposure and likelihood of crash occurrence shall then be considered for all findings deemed “**IMPORTANT**” and evaluated based on an auditor’s professional judgement.



Auditors should consider factors such as, traffic volumes and movements, speed environment, crash history and the road environment, and apply road safety engineering and crash investigation experience to determine the likelihood of crash occurrence.

The likelihood of crash occurrence shall be considered either “**VERY HIGH**”, “**HIGH**”, “**MODERATE**” or “**LOW**” and this additional annotation shall be displayed following the “**IMPORTANT**” annotation on applicable findings.

2.6 *Audit Process*

This report details a Stage 2 (Preliminary Design) Road Safety Audit of the proposed garden centre on Welshpool Road East in Wattle Grove.

The Audit Team consisted of:

 Team Leader	Behnam Bordbar (3 S)	Transcore
 Team Member	Vladimir Baltic (244 A)	Transcore

The Auditors were briefed and drawings subject of this Audit were made available to the Audit Team in July 2021. A site visit was originally undertaken on 15 October 2020. As no changes to the road network has occurred since, no new site visit was warranted.

All members of the Audit Team participated in the audit process using the Austroads relevant checklist.

3.0 AUDIT FINDINGS AND RECOMMENDATIONS

3.1 Finding – Drainage

The supplied drawings do not provide detailed drainage design for the proposed garden centre crossover on Welshpool Road East, adjacent private property crossover or the section of Welshpool Road East fronting the subject site.

Justification:

Appropriate drainage needs to be considered, designed and implemented in order to secure that all surface water is drained from the scheme area and no ponding occurs as a result of weather conditions. Ponds and puddles may conceal pavement marking or potholes which in return can result in creation of unsafe situations.

Recommendation:

Ensure appropriate drainage design with due regard to local climatic conditions is prepared for the proposed garden centre crossover, adjacent private property crossover and the section of Welshpool Road East fronting the subject site to ensure appropriate drainage of all surface water and to minimise the risk of ponding.

[IMPORTANT | MODERATE]

3.2 Finding – Height Clearances

Overhead power lines and power poles are in place along the northern side (subject site side) of Welshpool Road East at this location. The proposed new crossover to the subject site is located under the power lines.

Justification:

It is important to ensure that there is sufficient height clearance between the FFL of future crossover and existing overhead power lines to ensure no impact on everyday traffic including service and construction-related traffic operations.

Recommendation:

Ensure that there is sufficient height clearance between the existing overhead power lines and the FFL of the crossover for the highest vehicle expected to use this site.

[IMPORTANT | HIGH]

3.3 Finding – Crossover Design

The supplied turn path plans PC16017-CI-SK3-REV D and PC16017-CI-SK4-REV D illustrating 19m semi-trailer (service vehicle) exit movements from the proposed crossover show vehicle crossing over to the adjacent crossover to the neighbouring site.

Additionally, as shown in PC16017-CI-SK4-REV D plan, the 19m semi-trailer path mounts the median while performing a left-turn out movement from the site's crossover.

Justification:

All ingress and egress movements in and out of the site should be confined within the site's crossover envelope so that vehicles entering or exiting the site do not cross over to adjacent crossovers as such operation may lead to hazardous situations in case where adjacent crossover is being used by another vehicle.

Similarly, all vehicles egressing the site onto the adjacent road should do so by staying within the trafficable portion of the road and not mount the kerb as such incidents may lead to vehicles overturning or losing control.

Recommendation:

Ensure the proposed site's Welshpool Road West crossover is designed to fully accommodate all ingress and egress movements for all patrons and service vehicles.

Ensure the proposed site's Welshpool Road West crossover is designed to facilitate safe egress of all vehicles onto adjacent road.

[IMPORTANT | VERY HIGH]

3.4 Finding – Crossover Design

The proposed new crossover to the garden centre appears to be overlaying the existing adjacent property crossover. Ensure that the design of the garden centre crossover maintains adequate accessibility for the adjacent property and that two adjacent crossovers have matching grades in order to ensure seamless ingress/egress operations for users of both crossovers.

Justification:

It is important to ensure that the functionality of the proposed garden centre crossover and the existing adjacent private property crossover are maintained so to avoid any accessibility issues or potential for vehicle crash or loss of control.

Recommendation:

Ensure that the design for the proposed garden centre crossover maintains adequate accessibility for the adjacent property crossover.

[IMPORTANT | HIGH]

3.5 Finding – Internal Site Design

The internal site driveways need to be designed so to accommodate a safe and unobstructed movement of largest vehicles expected to access the site.

Justification:

Access, egress and internal site driveways need to be designed to ensure that the 19m semi-trailer can easily navigate the site so to ensure easy and efficient delivery of goods and safety of patrons moving within the site and avoid potential traffic congestion.

Recommendation:

Ensure that the internal garden centre driveway system is designed to accommodate the largest design vehicle expected to service the site, which in this case is a 19m semi-trailer.

[IMPORTANT | HIGH]

3.6 Finding – Left Turn Deceleration Lane Substandard

The existing bus stop/embayment on the north side of Welshpool Road East is proposed to be incorporated in the design of the proposed left-turn pocket for the new site's crossover. The total combined length of such facility is estimated to be approximately 110m, inclusive of taper. According to the Austroads *AGRD Part 4a Unsignalised and Signalised Intersections* an 80km/h sign posted road (i.e., 90km/h design speed) would require a 120m long left-turn deceleration lane (inclusive of taper) to achieve a 20km/h exit curve speed.

Justification:

The substandard length of the deceleration lane may result in drivers starting to break/slow-down within through lane of the road before turning into the deceleration lane causing rear end crashes or overshooting the crossover due to insufficient breaking length within the deceleration lane.

Recommendation:

It is recommended that, if feasible and practical, the left-turn deceleration lane proposed for the new site's crossover on Welshpool Road East be designed to 120m length inclusive of the bus bay and taper.

[IMPORTANT | HIGH]

3.7 Finding – Bus Stop within Left Turn Deceleration Lane

The proposed left-turn deceleration facility for the new garden centre crossover incorporates an existing bus stop. A bus parked within the stop embayment may impact on the sightlines to the traffic incoming from the west. Refer **Figure 4** for illustration.

Justification:

This situation is potentially undesirable and can lead to drivers undertaking an unsafe egress movement from the site due to limited available sightlines.

Recommendation:

Investigate sight line at the crossover when a bus is parked within the turn lane in accordance with AS2890.1 for a crossover/driveway. If the sight line is not adequate investigate the feasibility of relocation of the existing bus stop further east and downstream of the existing location or deeper within the verge through liaison with PTA in order to avoid impact on sightlines at the proposed garden centre crossover.

[IMPORTANT | HIGH]



Figure 4: Westbound view along Welshpool Road East in the vicinity of the future garden centre crossover

3.8 Finding – Crossover Demarcation

The proposed new garden centre crossover and associated driveway are located immediately west of and adjacent to the existing private property crossover and driveway. The Designer has suggested that the demarcation will be addressed by appropriate signage.

Justification:

This situation may confuse the future garden centre patrons who could attempt to access the wrong crossover or stop to correct path of travel within the deceleration lane increasing the potential for rear end crashes at the entry into the garden centre. Application of signage may not be sufficient to provide adequate guidance and demarcation. Additional measure such as pavement markings or different colour bitumen are additional options to consider.

Recommendation:

Ensure that the garden centre crossover and associated driveway are demarcated (pavement marking or coloured bitumen) in such a way that there is no risk of future garden centre patrons confusing it with the adjacent private property access.

[HIGH]

3.9 Finding – Right Turn Deceleration Lane

The new garden centre access is proposed to be located immediately across the existing median opening on Welshpool Road East which presently serves the property access at the southern side of the road.

A new right-turn pocket is proposed at the median opening to facilitate the future right-turn movements from Welshpool Road East westbound direction into the garden centre crossover. The total length of this facility is estimated to be approximately 23m, inclusive of taper. According to the Austroads *AGRD Part 4a Unsignalised and Signalised Intersections* an 80km/h sign posted road (i.e., 90km/h design speed) would require a 125m long right-turn deceleration lane (inclusive of taper). If there are major sight constraints to provide this length, consideration should be given to Austroads Extended Design Domain guidelines.

Justification:

Welshpool Road East operates under the 80km/h speed limit regime with relatively high traffic volumes at this location and entails a bend immediately east of the subject site. In such environment vehicle turning into the garden centre would require a deceleration facility of sufficient length to prevent slowing down within the Welshpool Road East through lane resulting in heightened risk of rear end crashes.

Recommendation:

It is recommended that, if feasible and as a minimum, a right-turn pocket in accordance with the Austroads *Extended Domain Design* be installed within the existing Welshpool Road East median to accommodate the right-turn movements from Welshpool Road East into the proposed new garden centre crossover.

[IMPORTANT | VERY HIGH]

3.10 Finding – Special Road Users - Pedestrians

The internal garden centre driveway system would be shared by pedestrians and vehicles. In order to secure safe environment for pedestrians it is recommended that the speed limit on internal site's driveways be set at 10km/h.

Justification:

Unregulated and uncontrolled movement of vehicles within the zone where vehicles will share space with pedestrians may pose a serious safety issue to pedestrians running a risk of being hit by a vehicle.

Recommendation:

It is recommended that speed-limit of 10km/h be introduced for internal garden centre driveway system which should be communicated to all patrons by appropriate signage at the entry and throughout the subject site.

[MODERATE]

3.11 Finding – Shared Path Integration

The proposed scheme introduces new shared path sections along the northern side of Welshpool Road East which are intended to interface with the existing shared path in place at this location. It is important to maintain shared path consistency with seamless integration of existing and new sections.

Justification:

Any inconsistency such as width, surface colour, grade, alignment and similar within a shared path route may lead to misreading the path alignment or potential loss of control for cyclists resulting in serious injuries.

Recommendation:

Ensure the existing and new shared path width, colour, alignment and gradient along the northern side of Welshpool Road is consistent throughout the scheme.

[MODERATE]

4.0 ROAD SAFETY AUDIT CONCLUSIONS

This final report contains the findings, opinions and recommendations of the audit team based on an examination of the site. As a consequence, the report may not identify all deficiencies that may have existed at the time of the audit.

Recommendations stemming from the Road Safety Audit process is shown summarised in Section 5 - Corrective Action Report.

Notwithstanding that this report may contain statements in relation to technical matters, both of a general nature and in relation to specific issues; in no way should readers of the report rely solely on its contents. Readers must seek appropriate expert advice on their own particular circumstances and rely on such advice.



Behnam Bordbar - Transcore
(Audit Team Leader)

5.0 CORRECTIVE ACTION REPORT

The following Corrective Action Report (CAR) provides a summary of the audit recommendations. The CAR needs to be reviewed and signed off by the project manager/designer and the asset owner following the submission of the final audit report.

It is suggested that the CAR needs to be signed off and any issues must be resolved before the project is progressed to the next stage.

CAR REPORT

Ref	Finding	Recommendation	Agree/Disagree	Comment
	<p>3.1 Finding – Drainage</p> <p>The supplied drawings do not provide detailed drainage design for the proposed crossover, adjacent private property crossover or the section of Welshpool Road East fronting the subject site.</p>	<p>Ensure appropriate drainage design with due regard to local climatic conditions is prepared for the proposed garden centre crossover, adjacent private property crossover and the section of Welshpool Road East fronting the subject site to ensure appropriate drainage of all surface water and <u>to minimise the risk of ponding.</u></p>	<p><input type="checkbox"/>/<input checked="" type="checkbox"/></p> <p>↓</p>	<p>COUNCIL HAS APPROVED IN PRINCIPLE TO INTERNAL LAYOUT INCLUDING STORMWATER DISPOSAL & OVERFLOW TO WELSHPOOL ROAD. NOT CLEAR WHERE PONDING RISK HAS BEEN IDENTIFIED. CURRENT DESIGN CONFIRMS INTERFACE BETWEEN PROPOSED CROSSOVER & WELSHPOOL ROAD DISCHARGES SATISFACTORILY.</p>
	<p>3.2 Finding – Height Clearances</p> <p>Overhead power lines and power poles are in place along the northern side (subject site side) of Welshpool Road East at this location. The proposed new crossover to the subject site is located under the power lines.</p>	<p>Ensure that there is sufficient height clearance between the existing overhead power lines and the FFL of the crossover for the highest vehicle expected to use this site).</p>	<p><input checked="" type="checkbox"/>/<input type="checkbox"/></p>	<p>AGREE TO THIS REQUIREMENT</p>
	<p>3.3 Finding – Crossover Design</p>	<p>Ensure the proposed site’s Welshpool Road West crossover is designed to</p>	<p><input type="checkbox"/>/<input type="checkbox"/></p>	

	<p>The supplied turn path plans PC16017-CI-SK3-REV D and PC16017-CI-SK4-REV D illustrating 19m semi-trailer (service vehicle) exit movements from the proposed crossover show vehicle crossing over to the adjacent crossover to the neighbouring site.</p> <p>Additionally, as shown in PC16017-CI-SK4-REV D plan, the 19m semi-trailer path mounts the median while performing a left-turn out movement from the site's crossover.</p>	<p>fully accommodate all ingress and egress movements for all patrons and service vehicles.</p> <p>Ensure the proposed site's Welshpool Road West crossover is designed to facilitate safe egress of all vehicles onto adjacent road</p>	<input checked="" type="checkbox"/> /□	<p>AGREED REQUIREMENT. CURRENT DESIGN MEETS REQUIREMENTS.</p>
	<p>3.4 Finding – Crossover Design</p> <p>The proposed new crossover to the garden centre appears to be overlaying the existing adjacent property crossover. Ensure that the design of the garden centre crossover maintains adequate accessibility for the adjacent property and two adjacent crossovers have matching grades in order to ensure seamless ingress/egress operations for users of both crossovers.</p>	<p>Ensure that the design for the proposed garden centre crossover maintains adequate accessibility for the adjacent property crossover.</p>	<input checked="" type="checkbox"/> /□	
	<p>3.5 Finding – Internal Site Design</p> <p>The internal site driveways need to be designed to accommodate the safe</p>	<p>Ensure that the internal garden centre driveway system is designed to accommodate the largest design vehicle expected to service the site,</p>	<input checked="" type="checkbox"/> /□	<p>THE CURRENT CIRCULATION HAS BEEN DESIGNED FOR</p>

19m SEMI-TRAILER ACCESS.



	and unobstructed movement of largest vehicles expected to access the site.	which in this case is a 19m semi-trailer.		
	<p>3.6 Finding – Left Turn Deceleration Lane Substandard</p> <p>The existing bus stop/embayment on the north side of Welshpool Road East is proposed to be incorporated in the design of the proposed left-turn pocket for the new site’s crossover.</p> <p>The total combined length of such facility is estimated to be approximately 110m, inclusive of taper. According to the Austroads <i>AGRD Part 4a Unsignalised and Signalised Intersections</i> an 80km/h sign posted road (i.e., 90km/h design speed) would require a 120m long left-turn deceleration lane (inclusive of taper) to achieve a 20km/h exit curve speed.</p>	<p>It is recommended that, if feasible and practical, the left-turn deceleration lane proposed for the new site’s crossover on Welshpool Road East be designed to 120m length inclusive of the bus bay and taper.</p>	<input checked="" type="checkbox"/>	<p>THE DECELERATION LANE HAS BEEN DESIGNED TO ACCOMMODATE REQUIRED TURNING MOVEMENTS TO APPROPRIATE STANDARDS. PTA HAVE ALSO CONFIRMED THAT THEY ARE HAPPY WITH SHARED TURNING POCKET & DESIGN ARRANGEMENT.</p>
	<p>3.7 Finding – Bus Stop Within Left Turn Deceleration Lane</p> <p>The proposed left-turn deceleration facility for the new garden centre</p>	<p>Investigate sight line at the crossover when a bus is parked within the turn lane in accordance with AS2890.1 for a crossover/driveway. If the sight line is not adequate investigate the</p>	<input checked="" type="checkbox"/>	<p>BUS STOP CANNOT BE RELOCATED & PTA HAVE ACCEPTED CONCEPT DESIGN AS NOTED ABOVE.</p>

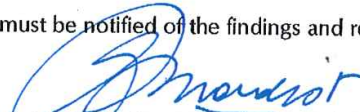
	<p>crossover incorporates an existing bus stop. A bus parked within the stop embayment impacts on the sightlines to the traffic incoming from the west.</p>	<p>feasibility of relocation of the existing bus stop further east and downstream of the existing location or deeper within the verge through liaison with PTA in order to avoid impact on sightlines at the proposed garden centre crossover.</p>		
	<p>3.8 Finding – Crossover Demarcation</p> <p>The proposed new garden centre crossover and associated driveway are located immediately west of and adjacent to the existing private property crossover and driveway. The Designer has suggested that the demarcation will be addressed by appropriate signage.</p>	<p>Ensure that the garden centre crossover and associated driveway are demarcated (pavement marking or coloured bitumen) in such a way that there is no risk of future garden centre patrons confusing it with the adjacent private property access.</p>	<p><input checked="" type="checkbox"/>/□</p>	<p>NOTED & WILL BE INCORPORATED AT DETAILED DESIGN.</p>
	<p>3.9 Finding – Right Turn Deceleration Lane</p> <p>The new garden centre access is proposed to be located immediately across the existing median opening on Welshpool Road East which presently serves the property access at the southern side of the road.</p>	<p>It is recommended that, if feasible and as a minimum, a right-turn pocket in accordance with the Austroads <i>Extended Domain Design</i> be installed within the existing Welshpool Road East median to accommodate the right-turn movements from Welshpool Road East into the proposed new garden centre crossover.</p>	<p><input checked="" type="checkbox"/>/□</p>	<p>COUNCIL HAS NOMINATED (DUE TO TREE RETENTION) THAT THEY WOULD BE HAPPY IF WE INCORPORATED A NOMINAL RHT TURNING POCKET THAT ACCOMMODATES A CAR & TRAILER ONLY, RECOGNISING THAT A FULL LENGTH OPTION IS NOT POSSIBLE WITHOUT REMOVAL OF ALL TREES IN THE MEDIAN.</p>

	<p>A new right-turn pocket is proposed at the median opening to facilitate the future right-turn movements from Welshpool Road East westbound direction into the garden centre crossover. The total length of this facility is estimated to be approximately 23m, inclusive of taper. According to the Austroads AGRD Part 4a Unsignalised and Signalised Intersections an 80km/h sign posted road (i.e., 90km/h design speed) would require a 125m long right-turn deceleration lane (inclusive of taper). If there are major sight constraints to provide this length, consideration should be given to Austroads Extended Design Domain guidelines.</p>			<p>COUNCIL WANT TO PRESERVE MEDIAN TREES.</p>
	<p>3.10 Finding – Special Road Users - Pedestrians</p> <p>The internal garden centre driveway system would be shared by pedestrians and vehicles. In order to secure safe environment for pedestrians it is recommended that the speed limit on internal site's driveways be set at 10km/h.</p>	<p>It is recommended that speed-limit of 10km/h be introduced for internal garden centre driveway system which should be communicated to all patrons by appropriate signage at the entry and throughout the subject site.</p>	<p><input checked="" type="checkbox"/>/□</p>	

	<p>3.11 Finding – Shared Path Integration</p> <p>The proposed scheme introduces new shared path sections along the northern side of Welshpool Road East which are intended to interface with the existing shared path in place at this location. It is important to maintain shared path consistency with seamless integration of existing and new sections.</p>	<p>Ensure the existing and new shared path width, colour, alignment and gradient along the northern side of Welshpool Road is consistent throughout the scheme.</p>	<p><input checked="" type="checkbox"/>/□</p>	<p>THIS IS ALREADY A SHARE REQUIREMENT & INCORPORATED IN THE DESIGN INTENT.</p>
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- This CAR must be read in conjunction with the full Road Safety Audit Report.
- The asset owner(s) must be notified of the findings and recommendations of this report.

Project Manager/Designer


 ENZO BIAGIONI-CROVOIST

Date 3/8/2021

Asset Owner
 (if different from above) x


 FREDERICK T. SAVAGE

Date 4.08.2021.