

**Gresford Road / Straight Mile, Llay -
Proposed Retail Development Access Works
Stage 2 Road Safety Audit**

Prepared by



Distribution List

1. Iain Miller – Cameron Rose
3. File Copy

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Appendix A: Drawings and documents provided

Appendix B: Plan of items raised by this audit

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1 INTRODUCTION

1.1 This report results from a Stage 2 Road Safety Audit carried out relating to proposals to provide two new access junctions as part of a retail store development. A left turn in off B5102 Straight Mile and an all access priority junction off B5373 Gresford Road, Llay together with zebra pedestrian crossing facilities along Gresford Road and junction improvement measures at the Crown crossroads junction. The audit was carried out during April 2021.

1.2 The audit team consisted of:

Team Leader: Naresh Madhavan MCIHT, MSoRSA EU RSA Cert. Comp
Director
Highway Associates

Team Member: Robin Sawczyn BEng MCIHT MSoRSA
Senior Road Safety Engineer
Highway Associates

1.3 The audit took place at the offices of Highway Associates, Chester. The Road Safety Audit was undertaken in accordance with the Road Safety Audit Brief provided by Iain Miller of Cameron Rose. The Road Safety Audit comprised an examination of the documents provided, and these are listed in Appendix A.

The site was visited at the following times/conditions:

Day/Date	Time	Weather Con	Traffic Flow
Sat 3 rd April 2021	12:00 – 13:00hrs	Dry/Fine	Ave

1.4 The terms of reference for this audit are as given in GG119, Design Manual for Roads and Bridges. The scheme has been examined and this report compiled only with regard to the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other standards or criteria. However, in order to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.

- 1.5 If relevant within this report the generic term “pedestrians” can include walking pedestrians, wheelchair users, dismounted cyclists, the blind, partially sighted, mobility impaired and people with prams or pushchairs. Highway Maintenance Operatives are also included within this term. Where a problem is specific to one or more of these vulnerable groups then appropriate reference will be made in the report.
- 1.6 Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems identified. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG119, and in no way imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.
- 1.7 This Road Safety Audit makes allowance for the fact that strategic decisions on matters such as route choice, junction type, standard of provision and approved Departures from Standards already reflect an appropriate balance of a number of factors including road safety.
- 1.8 The Audit Team have not been made aware of any possible geometric departures or relaxations from standards.
- 1.9 The reader is reminded that a Road Safety Audit is not limited to the new works alone where there are features that are considered by the Audit Team to affect the general safety in the area. Section 3 of this report lists ‘Problems’ identified from the drawings and as a result of the site visit relating to the proposed changes to the highway layout that are directly, or indirectly, related to the area (e.g. features/matters within the proposed works or immediate surrounds which the Audit Team feel should be brought to the attention of the Designer or other organisations even though they might not pose an immediate risk associated with the proposed works), and which are considered by the Audit Team to warrant attention under the subject proposals, generally by the maintaining authority. On occasions there are more sensitive issues or issues that fall outside the audit brief but which are of such a nature that Auditors feel should be specifically brought to the attention of the authorities - such issues, if they arise, are usually dealt with in detail in separate correspondence.
- 1.10 Proposed centre line and lane line road markings are incorrectly specified on the design drawings as Diagram 1004. These should be Diagram 1004.1 within the 50mph speed limit.

- 1.11 Straight Mile left turn lane - Details for the existing southside signage and speed limit roundel relocation have not been provided for review. Furthermore, an additional 30mph speed limit carriageway roundel will be required for the left turn lane.

2 ITEMS RAISED BY PREVIOUS AUDITS AND REPORTS

- 2.1 A previous stage 1 road safety audit was undertaken during October 2020. Any items considered to remain outstanding are mentioned again within Section 3 of this report.

3 ITEMS RAISED BY THIS AUDIT

3.1 General

3.1.1 PROBLEM

LOCATION: Straight Mile – Proposed junction access

SUMMARY: Potential for conflict due to road layout

Concern is expressed that the small buildout on the west side of the proposed junction leading to the left turn filter lane may not be suitably conspicuous making the junction layout unclear and increasing the risk of kerb strikes which could lead to loss of control.

RECOMMENDATION

“Superstore” flag type signage as alluded to within the recommendation for Problem 3.3.1 should be installed on the buildout for westbound traffic. Furthermore, edge of carriageway lines should be installed to delineate the junction. In addition, a bi-furcation arrow should be installed to demarcate the start of the left turn lane.

3.1.2 PROBLEM

LOCATION: Gresford Road - Proposed Southbound bus stop

SUMMARY: Waiting buses could increase the risk of overtaking conflict at the junction

Due to the location of the proposed bus stop being opposite to the junction with Fair Oaks Crescent, concern is expressed that should a bus be waiting at the stop that drivers turning left out of the junction may not be expecting an overtaking south eastbound vehicle increasing the potential for head-on collisions.

RECOMMENDATION

The bus stop should be relocated to an appropriate position away from the junction.

3.2 Non-Motorised Road User Provision

3.2.1 PROBLEM

LOCATION: Straight Mile

SUMMARY: Uncontrolled crossing location could result in conflicts

An existing uncontrolled pedestrian crossing is located between the Crown Crossroads and the left turn-in entrance. Given the posted 50mph speed limit in this location and proximity to likely queuing westbound traffic and multiple traffic lanes, concern is expressed that this could lead to an increased risk of pedestrian conflicts involving crossing pedestrians in this location.

RECOMMENDATION

Further analysis should be undertaken to assess the need for a crossing on the Straight Mile due to lack of pedestrian activity on the northside footway in this location. If a crossing is deemed necessary, it should be relocated to a suitable position outside of any likely conflict areas.

3.2.2 PROBLEM

LOCATION: Gresford Road – Proposed zebra crossing

SUMMARY: Incorrect tactile could result in pedestrian confusion

Buff coloured tactile paving has been specified for the zebra crossing. This could confuse pedestrians as to the nature of the crossing potentially causing injudicious crossing leading to pedestrian to vehicular conflict.

RECOMMENDATION

The buff coloured tactile should be replaced with the correct red coloured tactile paving.

3.3 **Road Signs and Markings**

3.3.1 PROBLEM

LOCATION: All approaches to superstore

SUMMARY: Insufficient signage could result in conflicts

Whilst arrow type stack advanced direction signage has been proposed on all approaches they are not reinforced by flag type signage at the relevant junctions. Without flag type signage it may be unclear as to the appropriate path to travel leading to driver confusion and potential sudden braking conflicts and encouraging errant right turn or U-turn manoeuvres.

RECOMMENDATION

Suitable flag type direction signage should be installed at the Crown crossroads and also on the Straight Mile at the left turn in junction.

3.4 **Lighting and Signals**

3.4.1 PROBLEM

LOCATION: Gresford Road – Proposed zebra crossing

SUMMARY: Insufficient luminance could result in crossing conflicts

Whilst some street lighting is provided along Gresford Road, it is deemed to be insufficient in consideration of the proposed zebra crossing. Insufficient night-time luminance could increase

the risk of drivers failing to sufficiently appreciate crossing pedestrians resulting in vehicle to pedestrian conflicts on the crossing.

RECOMMENDATION

Ensure adequate street lighting is installed for the zebra crossing.

3.5 Landscaping

No comments at this stage

3.6 Protective Aids

No comments at this stage

3.7 Surface Characteristics and Drainage

3.7.1 PROBLEM

LOCATION: Gresford Road – Proposed zebra crossing

SUMMARY: Insufficient skid resistance could lead to conflicts

A PSV of 65 has been specified for the proposed surfacing on the approaches to the zebra crossing. This is deemed to be insufficient and could increase the risk of loss of control or failure to give way type conflicts at the crossing.

RECOMMENDATION

A minimum PSV of 68 should be specified for the approaches to the crossing.

3.7.2 PROBLEM

LOCATION: Gresford Road – Southbound approach to zebra crossing

SUMMARY: Service cover location could cause loss of control

An existing service cover appears to be located within the likely wheeltrack on the approach to the crossing. Due to the inherent lack of skid resistance afforded cast iron service covers, particularly when wet, concern is expressed that should it be struck particularly under heavy braking, that it could increase the risk of loss of control and potential incursion onto the crossing resulting in vehicle to pedestrian conflict.

RECOMMENDATION

An inset type manhole cover should be provided with a surface material that is complimentary in terms of skid resistance to the surrounding surface course.

4 AUDIT TEAM STATEMENT

We certify that this Audit has been carried out in accordance with the guidelines in GG119.

AUDIT TEAM LEADER

Naresh Madhavan MCIHT MSoRSA EU RSA Cert. Comp
Director
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Signed:



Date:

06/04/21

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Signed:



Date:

06/04/21

APPENDIX A

DRAWINGS AND DOCUMENTS PROVIDED

DRAWING NUMBER OR REFERENCE	TITLE
-	RSA2 Brief
65-02 P2	General Arrangement
605-03 P1	Site Clearance
605-04 P1	Levels
605-05 P1	Pavements
605-06 P1	Drainage and Services
605-07 P1	Signs and Markings
605-08 P1	Construction Details
605-09 P1	Risk Management
C/1743/100	Proposed Traffic Signal Modification

APPENDIX B

PLAN OF ITEMS RAISED BY THIS AUDIT

