
**PROPOSED FOOD STORE, MELTON
ROAD/TROON WAY, LEICESTER**

Proposed Highway Works

**Stage 2 Road Safety Audit
Requested by Motion**

March 2013



Project: Proposed Food store, Melton Road/Troon Way, Leicester
Proposed Highway Works

Requested by: Motion

Document: Stage 2 Road Safety Audit

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1 INTRODUCTION

1.1 This report describes a Stage 2 Road Safety Audit (RSA) of highway works proposed in association with a new supermarket located on the north-eastern side of the Melton Road/Troon Way junction, Leicester.

1.2 The proposed store access will be via a new 3-arm traffic signal controlled junction on Melton Road, north of its junction with Troon Way. Melton Road forms the northern and southern arms of the junction and comprises a dual carriageway subject to a 40mph speed limit. The eastern arm is the access to the proposed supermarket. The two existing site accesses on Melton Road will be closed.

1.3 In addition to the new site access junction, improvements are to be implemented at the Melton Road/Troon Way/Watermead Way and Troon Way/Nicklaus Road/Gleneagles Avenue signal controlled junctions, including pedestrian/cycle crossing enhancements and the relocation of bus stops. Melton Road will be widened to provide three southbound lanes between the site access and Troon Way.

- 1.4** Gateway TSP has previously undertaken Stage 1 Road Safety Audits of the site access and Melton Road/Troon Way/Watermead Way junctions (January and August 2012) and the Troon Way/Nicklaus Road junction (August 2012). A review of the Audit Team's recommendations and the Design Team's actions is recorded in Section 3 below.
- 1.5** This Stage 2 RSA was carried out by Steve Giles and Mark Barrett between 14th and 22nd March 2013. The Audit consisted of a desktop study and a site visit, which was carried out on Monday 18th March 2013; the weather was sunny and the road surface was dry. Traffic congestion was observed on both Troon Way approaches to its junction with Nicklaus Road.
- 1.6** The Audit Team is independent of the project design team and has had no involvement in the design process.

- 1.7** This Stage 2 RSA has been undertaken in accordance with the relevant sections of HD19/03, part of the Design Manual for Roads and Bridges (DMRB). The Safety Audit Team has examined only the road safety implications of the scheme and has not verified compliance of the design to any other criteria. Problems identified in this report are considered by the Audit Team to merit action in order to improve the safety of the scheme and to minimise accident risks for all users.
- 1.8** The Audit Team has not been made aware of any Departures from Standard. Whilst reference may be made to design standards, this report is not intended to provide a design check. The Auditors have only reported on matters that might have an adverse effect on road safety in the context of the chosen design and no attempt is made to justify the scheme or the appropriateness of the design.
- 1.9** Recommendations contained within this report are aimed at addressing potential road safety problems. However there may be other acceptable ways to overcome a particular problem, taking into account wider constraints and opportunities. The recommendations contained herein do not absolve the Designer of his/her responsibilities. The Auditors would be pleased to discuss such alternative solutions as appropriate.

2 ITEMS CONSIDERED BY THIS STAGE 2 RSA

Document ref.	Rev.	Originator	Title
12009-100	B	Motion	General Arrangement Overview
12009-101 to 106	C	Motion	General Arrangement (Sheets 1 to 6)
12009-301 to 306		Motion	Drainage (Sheets 1 to 6)
12009-351 to 356		Motion	Levels and Contours (Sheet 1 to 6)
12009-401 to 406	B	Motion	Construction Areas (Sheets 1 to 6)
12009-501 to 507	B	Motion	Lighting, Markings and Signs (Sheets 1 to 6)
12009-701 to 705		Motion	Long Sections (Sheets 1 to 5)
12009-751 to 762		Motion	Cross Sections (Sheets 1 to 12)
12009-801		Motion	Pavement Construction
12009-S01 to S39		Motion	Sign (various)
LT/106189/L(0)/801	x	Leicester City Council	Melton Road – Troon Way, Proposed Lighting
LT/N106189/L(0)/801	x	Leicester City Council	Nicklaus Road – Troon Way, Proposed Lighting
HT/N106433P/L(0)/961	B	Leicester City Council	Troon Way/Nicklaus Road, Signals Layout
HT/N106433P/L(0)/962	B	Leicester City Council	Troon Way/Nicklaus Road, Signals Layout
SG/VP/12/0802/RSA1		Gateway TSP	Melton Road/Troon Way, Stage 1 RSA (22 nd August 2012)
SG/VP/12/0814/RSA1		Gateway TSP	Troon Way/Nicklaus Road, Stage 1 RSA (31 st August 2012)

Additional/background material provided to the Audit Team

- None

3 ISSUES RAISED AT STAGE 1 RSA

Stage 1 RSA Recommendation	Action Taken
Provision of sections and details of drainage, signs, markings and lighting, for review at Stage 2 RSA.	Details provided for this Stage 2 RSA.
Undertake vehicle swept path assessments for the improved junctions.	Swept path assessments not submitted for RSA. There are no obvious problems but it is recommended that turning movement swept paths be reviewed prior to final approval of the design.
Review traffic analysis to minimise risk of queuing through adjoining junctions.	Traffic modelling not provided to RSA Team. It is recommended that a further review is undertaken prior to final approval of the design.
Ensure that access to/from the residential service road opposite the site access is located away from the new traffic signal junction.	Incorporated into the detailed design.
Review pedestrian/cycle crossing facilities to ensure that they accommodate future desire lines.	It is understood that a cyclists' group has suggested retention of the uncontrolled crossing on Watermead Way, on the west side of Melton Road. Furthermore, the Audit Team considers that the development might generate demand for cyclists crossing Troon Way to/from Gleneagles Avenue, which are not adequately accommodated by the current design. These matters are addressed further within this Stage 2 Audit.
Provide facility for northbound cyclists on Melton Road.	Incorporated into the detailed design.
Accommodate a bus lay-by on Troon Way west of Nicklaus Road, to avoid the risk of head-on conflicts due to overtaking buses.	Incorporated into the detailed design.

Stage 1 RSA Recommendation	Action Taken
Consider whether the merge lengths on Troon Way are adequate for the anticipated flows.	No response provided to RSA Team. It is recommended that the proposed merge lengths on Troon Way be checked prior to final approval of the design.

4 ITEMS RAISED AT THIS STAGE 2 AUDIT

Item No.	Audit Team Comments	Audit Team Recommendation(s)
Checklist B1 – General Matters		
4.1	Comment: The Audit Team raises no concerns at this Stage 2 RSA in respect of general matters.	N/A

Item No.	Audit Team Comments	Audit Team Recommendation(s)
Checklist B2 – Local Alignment		
4.2	Comment: The Audit Team raises no concerns at this Stage 2 RSA in respect of local alignment.	N/A

Item No.	Audit Team Comments	Audit Team Recommendation(s)
Checklist B3 – Junctions		
4.3	Comment: The Audit Team raises no concerns at this Stage 2 RSA in respect of junctions.	N/A

Item No.	Audit Team Comments	Audit Team Recommendation(s)
Checklist B4 – Non-motorized User Provision		
4.4	<p>Comment: Potential for cyclists to lose control on inspection covers <i>Location: Melton Rd/Troon Way junction</i></p> <p>Description: The proposals involve widening areas of carriageway or shared cycleway to where inspection covers currently lie within the footway or verge. If the associated service ducts are not diverted several covers will be close to cyclists' (or motorcyclists') desire lines and could become slippery in wet weather or due to oil deposits. Also, unless properly reinforced they could subside, creating hazards for two-wheeled and other road users.</p>	Existing inspection covers falling within new areas of carriageway should be reinforced to withstand expected vehicle loadings and should have surfaces with friction values closely matching the surrounding carriageway.
4.5	<p>Comment: Tactile paving omitted <i>Location: Traffic splitter island on Melton Road (south)</i></p> <p>Description: Tactile paving has been omitted from the island separating the ahead and right turn lanes on LCC drawing HT/N106433P/L(0)/961/B (although it is shown on Motion drawing 12009-103/C). If omitted it could confuse blind or partially sighted pedestrians and lead them into conflict with vehicles.</p>	Show tactile paving on island separating the ahead and right turn lanes on LCC drawing HT/N106433P/L(0)/961/B.

Item No.	Audit Team Comments	Audit Team Recommendation(s)
4.6	<p>Comment: Possible NMU/vehicle conflicts <i>Location: Watermead Way, west side of Melton Road junction</i></p> <p>Description: It is understood that cyclists presently travel north/south along the west side of Melton Road, using the existing uncontrolled crossing on Watermead Way. The proposals involve removing the uncontrolled crossing and installing full-height kerbs. However, cyclists and pedestrians may choose to cross here anyway rather than traverse three arms of the junction, which could lead to conflicts with vehicles.</p>	<p>Provide guard railings to prevent cyclists and pedestrians from crossing Watermead Way, on the west side on the Melton Road junction. Alternatively, if traffic capacity allows, provide controlled crossing facilities across Watermead Way.</p>
4.7	<p>Comment: Possible cyclist/vehicle conflicts <i>Location: Troon Way, west side of Nicklaus Way junction</i></p> <p>Description: The development is likely to generate pedestrian and cyclist trips to/from Gleneagles Avenue. Pedestrians will be able to cross safely using the controlled facilities at Nicklaus Road but no cycle facilities are proposed (it is understood that the northern footway on Troon Way cannot be shared due to constraints imposed by adjoining trees). Cyclists may therefore attempt to cross Troon Way where it is unsafe to do so, in conflict with moving/queuing vehicles, or ride on the footway and pedestrian crossing in conflict with pedestrians.</p>	<p>Provide an on-road cycle lane on Troon Way, between the path that emerges from the development to the Nicklaus Road junction. Consider providing an eastbound cyclists' advance stop line at the junction itself.</p>

Item No.	Audit Team Comments	Audit Team Recommendation(s)
4.8	<p>Comment: No corduroy paving <i>Location: Throughout</i></p> <p>Description: No corduroy paving is shown to alert pedestrians, in particular those with visual impairments, that they are entering a shared footway/cycleway. This may increase the risk of pedestrian/cycle conflicts.</p>	<p>Provide corduroy paving where all footways interface with the shared footway/cycleway.</p>

Item No.	Audit Team Comments	Audit Team Recommendation(s)
Checklist B5 – Road Signs, Carriageway Markings and Lighting		
4.9	<p>Comment: Misleading lane destination arrows <i>Location: Melton Road between access and Troon Way junctions</i></p> <p>Description: Upstream lane destination arrows in the northbound and southbound middle lanes show 'right and ahead', but downstream only the 'ahead' movement is permitted at the stop line. This could cause late lane changes and potential side-swipe conflicts.</p>	<p>The upstream lane destination arrows in the northbound and southbound middle lanes, on Melton Road between the site access and Troon Way, should indicate 'ahead' only.</p>
4.10	<p>Comment: Insufficient information on entry to superstore <i>Location: Melton Road at access to supermarket</i></p> <p>Description: Motorists turning right in to the superstore from Melton Road may wrongly assume the right turn lane out of the store is for access.</p>	<p>Provide an additional no entry bollard on the northern island and provide no entry markings.</p>
4.11	<p>Comment: Sign located in carriageway <i>Location: Melton Road southbound approach to Troon Way</i></p> <p>Description: Sign 39 appears to be located in the running carriageway. It has been assumed this is a CAD error.</p>	<p>Ensure sign 39 is located within the footway providing sufficient clearances from the carriageway.</p>

Item No.	Audit Team Comments	Audit Team Recommendation(s)
4.12	<p>Comment: Risk of right turning traffic entering opposing traffic lane. <i>Location: Melton Road junction with Troon Way</i></p> <p>Description: Right turning traffic at the junction of Melton Road and Troon Way may mistakenly turn right into the opposing traffic lane as there is only one small no entry symbol on the bollards. This could lead to conflicts.</p>	<p>Provide additional/larger no entry and keep right signs on traffic islands and provide no entry road markings.</p>
4.13	<p>Comment: Insufficient advance warning <i>Location: Troon Way westbound approach to Melton Road</i></p> <p>Description: The proposed location of the tourist information sign S18 does not give motorists advance notice of which lane to take for their destination. This could lead to late lane changes or braking, resulting in vehicle conflicts.</p>	<p>Relocate tourist sign S18 further east to give motorists sufficient time to select the correct lane.</p>

5 AUDIT TEAM STATEMENT

5.1 We certify that this Road Safety Audit has been carried out in accordance with document HD 19/03, its sole purpose being to identify features of the scheme that could be modified to improve safety. No member of the Audit Team has been involved in the scheme design.

Audit Team Leader

Stephen Giles BEng(Hons), IEng, FIHE, MCIHT, MICE, CMILT

Signed 

Date: 25th March 2013

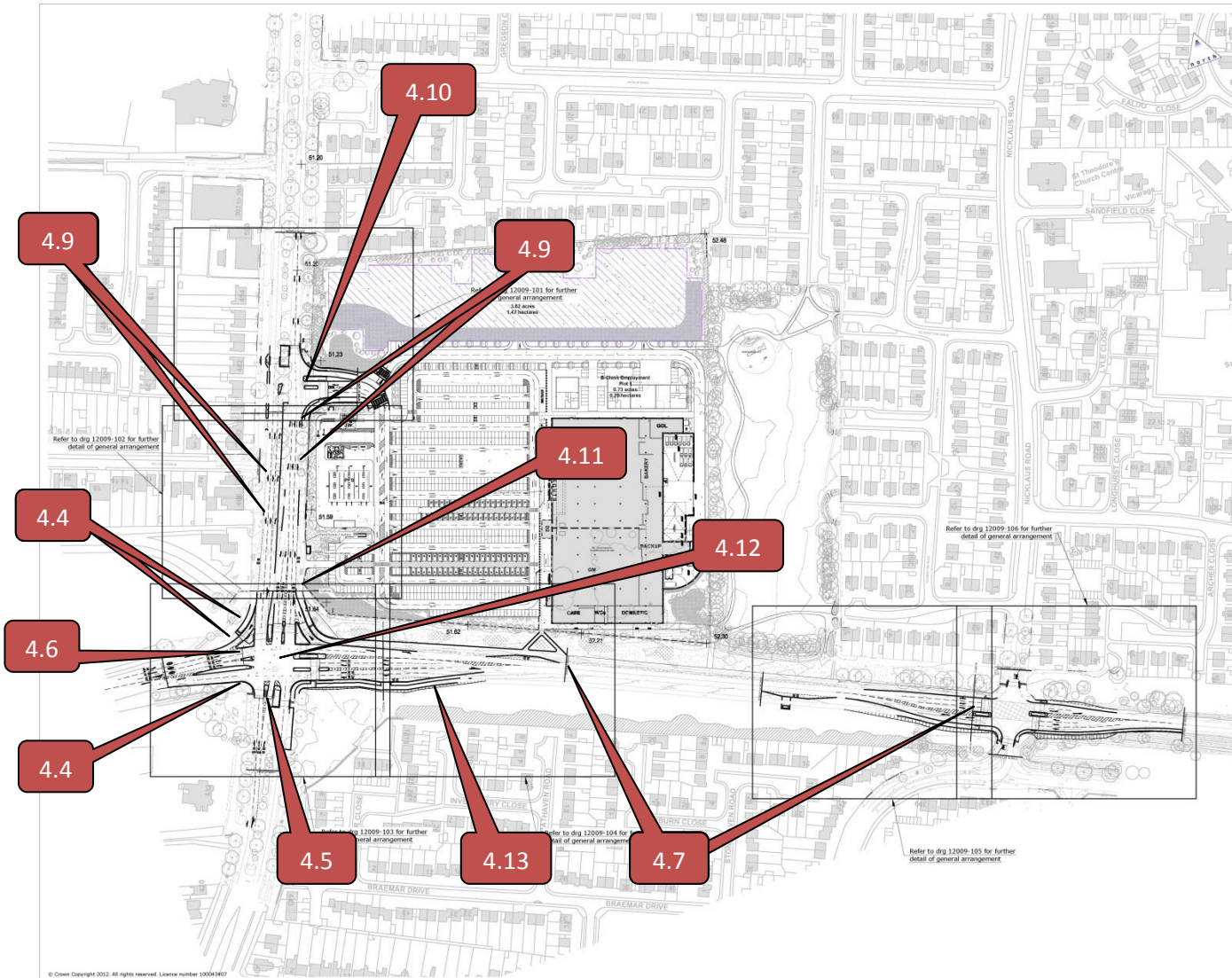
Audit Team Member

Mark Barrett
Road Safety Consultant

Signed 

Date: 25th March 2013

APPENDIX A
Location Plan(s)



Notes

1. All works to be in accordance with the Specification for Highway Works.
2. All dimensions are in metres unless stated otherwise.
3. This drawing should be read in conjunction with all other relevant architect and engineering details, drawings and specification.
4. Any discrepancies should be reported to the engineer immediately, so that clarification can be sought prior to commencement of work.
5. For traffic signals details see LCC drawing HT/8106433P/L(0)/922 and HT/106433P/L(0)/961 and HT/8106433P/L(0)/962.
6. For street lighting details see LCC drawing LT/106189/L(0)/801 and LT/8106189/L(0)/801.
7. All works are to be carried out in accordance with LCC 6Cs Design Guide and Specification for Highway Works for New Developments.

Rev	Date	Amendments	DR	RJ	RB
B	21/02/13	Revised to incorporate safety	DR	RJ	RB
A	27/11/12	Updated Layout	CW	RJ	RB

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Sainsbury's Supermarkets Limited • client
GE Lighting Site • project

1:1250 • scale @ A1
1:2500 • scale @ A2
July 2012 • date
12009-100 (GA Overview) (DWG) • title file
CW • drawn by
RJ • checked by
RJB • approved by

General Arrangement Overview • title

12009-100 • drawing number
B • revision

APPENDIX B
Designer's Response

Item No.	Audit Team Recommendation(s)	Designer's Response
4.1	N/A	
4.2	N/A	
4.3	N/A	
4.4	Existing inspection covers falling within new areas of carriageway should be reinforced to withstand expected vehicle loadings and should have surfaces with friction values closely matching the surrounding carriageway.	Existing inspection covers which now fall within the carriageway will either be relocated or suitably reinforced as part of the highway works.
4.5	Show tactile paving on island separating the ahead and right turn lanes on LCC drawing HT/N106433P/L(0)/961/B.	Tactile paving has not been provided on the island because it is not intended for people to stop on the island and they should cross in one movement.
4.6	Provide guard railings to prevent cyclists and pedestrians from crossing Watermead Way, on the west side on the Melton Road junction. Alternatively, if traffic capacity allows, provide controlled crossing facilities across Watermead Way.	Guard railings have been added to prevent cyclists and pedestrians crossing Watermead Way.
4.7	Provide an on-road cycle lane on Troon Way, between the path that emerges from the development to the Nicklaus Road junction. Consider providing an eastbound cyclists' advance stop line at the junction itself.	The existing road is not wide enough to provide a dedicated on-road cycle lane, but a drop kerb has been included to allow cyclists to rejoin the carriageway and travel east on Troon Way. An advance stop line has also been ruled out on Troon Way because it is a high speed road.

Item No.	Audit Team Recommendation(s)	Designer's Response
4.8	Provide corduroy paving where all footways interface with the shared footway/cycleway.	The auditor's recommendations have been incorporated into the latest drawings.
4.9	The upstream lane destination arrows in the northbound and southbound middle lanes, on Melton Road between the site access and Troon Way, should indicate 'ahead' only.	The drawings have been amended accordingly.
4.10	Provide an additional no entry bollard on the northern island and provide no entry markings.	LCC have decided that they do not wish to use 'no entry' bollards, but 'no entry' text and kerb alterations have been included to help prevent vehicles travelling into the wrong lane.
4.11	Ensure sign 39 is located within the footway providing sufficient clearances from the carriageway.	Sign 39 is being relocated and will have the necessary clearances from the edge of carriageway.
4.12	Provide additional/larger no entry and keep right signs on traffic islands and provide no entry road markings.	LCC have decided that they do not wish to use 'no entry' bollards, but 'no entry' text, kerb alterations, and lane guide markings have been included to help prevent vehicles travelling into the wrong lane.
4.13	Relocate tourist sign S18 further east to give motorists sufficient time to select the correct lane.	The auditor's recommendations have been incorporated into the latest drawings.

Designer's Statement:

I certify that I have considered the items that have arisen in the Stage 1 Road Safety Audit Report and my response to its recommendations are set out above.



.....
Designer

Date: 14th May 2013

Audit Team Statement:

I agree/~~do not agree~~ with the Designer's Response (*delete and/or add comments as appropriate*)



.....
On behalf of Audit Team

Date: 14th May 2013

Highway Authority/Project Sponsor/ Client Organisation Statement:

I accept/do not accept the Designer's Response *(delete as appropriate)*

.....
On behalf of Highway Authority/Project Sponsor/Client Organisation
(delete as appropriate)

Date: