


A59 & A1237 Highway Improvements - Poppleton Bar Park & Ride Site

Road Safety Audit – Stage 2

Designers' Response

City of York Council

October 2012



A59 & A1237 Highway Improvements - Poppleton Bar Park & Ride Site

Road Safety Audit – Stage 2

Designers' Response

City of York Council

October 2012

Halcrow Group Limited
Arndale House Otley Road Headingley
Leeds LS6 2UL
Tel +44 (0)113 220 8220
Fax +44 (0)113 274 2924
halcrow.com

Halcrow Group Limited has prepared this report in accordance with the instructions of client City of York Council for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

© Halcrow Group Limited 2012



Document history

A1237/A59 Highway Improvements

City of York Council

This document has been issued and amended as follows:

Version	Date	Description	Created by	Verified by	Approved by
0	17/10/12	Designers Response	LJC / AS		

Name	Company	Number of copies
Mr T Clarke	City of York Council	1
Mr E Wragg	City of York Council	1
Mr S Burrell	North Yorkshire Police	1
Mr P Broadhead	North Yorkshire Police	1

Contents

1	Introduction	1
1.1	General	1
2	Items Raised at the Stage One Audit	3
2.1	General	3
3	Detailed Appraisal - A1237/A59 Junction and Approaches	5
3.1	Alignment	5
3.2	Junction	6
3.3	Signs and Markings	8
3.4	Non-Motorised Users	12
4	Detailed Appraisal - Station Road/North Field Lane Junction	15
4.1	Alignment	15
4.2	Junction	15
4.3	Non-Motorised Users	18
5	Detailed Appraisal - On-site Road Network	21
5.1	Alignment and Usage	21
5.2	Road Markings	21
5.3	Non-Motorised Users	Error! Bookmark not defined.
5.4	Bus Only Link	22
5.5	Landscaping and Vegetation	22
6	Audit Team Statement	24
6.1	General	24

1 Introduction

1.1 General

This report is the Designer's Response to the Stage 2 Road Safety Audit undertaken for the proposed A59 and A1237 highway improvements associated with the proposed Poppleton Bar Park & Ride development, to be situated on the outskirts of York.

The park & ride development forms part of phase one of the Access York major scheme bid and will be located opposite the Poppleton Garden Centre. The site will be accessed via North Field Lane from the A59. The scheme comprises the following elements:

- Signalisation of the staggered crossroads at the Station Road and North Field Lane junctions with the A59;
- A59/A1237 roundabout enlargement;
- New subway under the A1237 for pedestrians and cyclists;
- New pedestrian/cycle route along the A59;
- Mini-roundabout on North Field Lane; and,
- New left turn only exit onto A59 from park & ride site.

The scheme aims to cater for existing and future traffic requirements; by all modes of transport, including bus priority within the traffic light sequencing. The scope of the audit comprised the proposals shown on the drawings listed in Appendix A. Consideration was given to the impact of the scheme upon private accesses along the A59, including the junction with Cinder Lane.

The audit team membership was as follows:

DR M POWELL	-	Halcrow Group Ltd, Leeds
Audit Team Leader		Transport Planning Team
E WRAGG	-	City of York Council
Audit Team Member		Sustainable Transport Service
S BURRELL	-	North Yorkshire Police
Audit Team Member		Traffic Management
P BROADHEAD	-	North Yorkshire Police
Audit Team Member		Traffic Management
M SHAW	-	Halcrow Group Ltd, Leeds
Audit Team Observer		Transport Planning Team

The audit was undertaken on Thursday 20th September 2012. At the time of the audit, the weather was fine and the road surface was dry. The audit was undertaken during the hours of daylight.

The Audit Team has examined and reported only on the road safety implications of the design in accordance with HD 19/03.

The drawings and documents examined during the audit are listed in Appendix A.

The safety aspects of the park & ride junction access and associated works were the subject of comment in a November 2008 Stage 1 Road Safety Audit Report. Following significant modifications to the design, a second Stage 1 Road Safety Audit Report was completed in October 2009. Designer's Response Reports to both Stage 1 Road Safety Audits were supplied to the Audit Team in advance of the Stage 2 Audit, and these are included as Appendix B to the Road Safety Audit report.

2 Items Raised at the Stage One Audit

2.1 General

The safety related aspects of the scheme were the subject of comment in the November 2008 and October 2009 Stage 1 Road Safety Audit Reports. The audit team considers that the following items remain a problem, either in full or in part:

Problem A2.2.1 (November 2008 Stage 1 Audit)

Problem A3.1.1 (November 2008 Stage 1 Audit)

Problem A3.1.4 (November 2008 Stage 1 Audit)

Problem B2 (October 2009 Stage 1 Audit)

Additional comment relating to each problem is provided in this Chapter, with the Designer's Response Reports to the Stage 1 Road Safety Audits included as Appendix B.

All other issues raised in the Stage 1 Road Safety Audits have been resolved.

2.1.1 Problem A2.2.1 (November 2008 Stage 1 Audit)

Summary: Access for fuel tankers and car transporters to the garage

The designer's response to the issues raised in the 2008 Stage 1 Audit was that the splitter island had been amended such that tankers approaching the forecourt from the roundabout can wait between opposing flows. The designer also stated that the reversing manoeuvre can now be made totally within the forecourt area. Whilst the issues raised in the 2008 Stage 1 Audit have been designed out, the Stage 2 audit team has fresh concerns with regards to the arrangements for vehicles turning right into the petrol station; these concerns are discussed in paragraph 3.1.3.

2.1.2 Problem A3.1.1 (November 2008 Stage 1 Audit)

Summary: Visibility along shared use foot/cycleway

The designer's response to the issue raised in the 2008 Stage 1 Audit was that the hedge at this location would be cut back to the limits of the highway boundary. The Stage 2 audit team notes that an uncontrolled crossing facility is now proposed to be relocated within this section of footway where visibility is currently constrained. The audit team noted that visibility to the right is currently obstructed by vegetation when crossing from the northern side of the A59 at this location; however, it is considered that the proposed cutting back of the hedge should be sufficient to resolve this issue. This issue is therefore brought to the attention of the design team, but is not discussed further within this report.

2.1.3 Problem A3.1.4 (November 2008 Stage 1 Audit)

Summary: Inter-visibility through subway

The designer's response to the issue raised in the 2008 Stage 1 Audit was that the subway had been re-designed in accordance with design standards and Secured By Design. The Stage 2 audit team has reviewed the design as submitted for the Stage 2 Audit and still has concerns over the issue of personal security for non-motorised users. The issue therefore remains, and is commented upon further in paragraph 3.4.2.

2.1.4 Problem B2 (October 2009 Stage 1)

Summary: Lack of priority to pedestrian movements through site

The designer's response to the issue raised in the 2009 Stage 1 Audit was that no measures would be introduced to give pedestrians priority over other vehicles. The design team did indicate that crossing points could be emphasised by providing red-hatched areas and appropriate signing, and that this would be considered at the detailed design stage. The audit team has reviewed the detailed designs submitted for the Stage 2 Audit; no proposals have been made to give priority to pedestrians and no red marking or signs are proposed to emphasise pedestrian routes. The audit team therefore remains concerned over how pedestrians and vehicles will interact within the car park; this issue remains, and is discussed further in paragraph 5.3.1.

3 Detailed Appraisal - A1237/A59 Junction and Approaches

3.1 Alignment

3.1.1 Problem (Location 1)

Summary: Narrow lane widths on A1237 approaches

Lane width measurements for the A1237 approaches have been estimated using the scale drawings submitted to the audit team for the Stage 2 Audit. The nearside lane of the A1237 northbound approach was measured as being 2.7m wide, whilst the middle and offside lanes of both the northbound and southbound A1237 approaches were measured as being 2.8m. The audit team considers these widths to be too narrow, particularly when considered in combination with the signed speed limits and the presence of three lanes on each approach, albeit that hatched markings separate the nearside and middle lanes. The narrow lane widths increase the likelihood of vehicles being 'squeezed' on approach to the junction, resulting in an increased risk of side swipe collisions.

Recommendation

Increase the width of the traffic lanes on the A1237 northbound and southbound approaches to ensure that the movements of all vehicle types can be accommodated.

Designers Response

The Auditors' comments are noted. All approach widths on the northern and southern arms align with the requirements of TD16/07 which states a minimum of 3m width for multi-lane entries. There is scope to widen the lanes at the give-way line by reducing the width of the splitter islands though due consideration to the pedestrian refuge is required to ensure an acceptable width is still provided. No change is proposed.

3.1.2 Problem (Location 2)

Summary: A59 eastbound alignment increases risk of late lane change manoeuvres.

The combination of a bend to the right in the carriageway immediately in advance of an entry deflection to the left on the A59 eastbound approach increases the likelihood of vehicles performing sudden lane change manoeuvres across the hatched markings. The required manoeuvre appears particularly tight for HGVs on this approach; this increases the risk of side swipe and shunt collisions as well as being a maintenance issue. The issue is accentuated by the presence of the pedestrian refuge island to the west of the junction, which ensures that vehicles are aligned to the nearside lane when the flaring to the second and third lane commences.

Recommendation

Reduce the length of hatching between the nearside and middle lanes to give vehicles more time and distance to move into the middle and offside lanes.

Designers Response

The Auditors' recommendations are noted and accepted. Hatch markings will be reduced in length on the approach to the splitter island, between the nearside and middle lanes, as per the recommendation. In addition hatch markings between the island crossing to the west and splitter island will be reduced in width to achieve a smoother approach alignment.

3.1.3 Problem (Location 3)

Summary: Egress from petrol station

The proposed modifications to the A59/A1237 roundabout include bringing the footprint of the junction closer towards the petrol station on the A59 westbound approach. The proximity of the junction to the petrol station means that the left turn filter lane, for movements towards the A1237 southbound, commences adjacent to the egress area of the station forecourt. Vehicles travelling towards Harrogate or the A1237 northbound will experience difficulty in exiting the petrol station and will be required to perform one of the following manoeuvres: use the nearside filter lane for left turners to perform an ahead or right turn movement at the roundabout, increasing the risk of side swipe collisions with vehicles performing the same manoeuvre from the middle and offside entry lanes of the roundabout; or, cross the hatched marking area which separates the nearside and middle lanes, which also increases the risk of side impact collisions with vehicles on the A59 westbound approach to the roundabout.

Recommendation

Ensure that the roundabout entry lanes which allow for movements towards Harrogate and Scarborough can be accessed directly from the petrol station egress.

Designers Response

The Auditors' recommendation is noted and accepted. The hatched area between the islands at the forecourt area will be removed.

3.2 Junction

3.2.1 Problem (Location 4)

Summary: 'Garage Only' marking increases risk of side swipe and shunt collisions

The A59 eastbound is a single lane on exit from the roundabout; however, an area of carriageway immediately on exit from, and adjacent to, the circulatory carriageway is to be designated as 'Garage Only' and the audit team understands that this is for the use of HGVs delivering fuel to the garage. The audit team has concerns over how this marking will be interpreted by drivers; whilst the audit team understands that it is intended that the area will only be used by fuel tankers, it is possible that drivers may interpret this marking differently and assume it is a right turn facility. The audit team has several safety concerns with the marking being used by all vehicle types, namely: an increase risk of shunts associated with vehicles exiting the roundabout to find vehicles queuing in the area; an increased risk of side swipe collisions resulting from drivers misinterpreting the extra carriageway width as a two lane exit; and, an increased risk of side impact collisions from vehicles crossing three traffic lanes to enter the garage.

Recommendation

Remove 'Garage Only' text and provide hatched markings. The hatched markings will dissuade drivers from using this section of the carriageway to turn right into the garage; however will still enable fuel delivery vehicles to undertake their necessary manoeuvre.

Designers Response

The Auditors' concern is noted. The Auditors understanding that "the area will only be used by fuel tankers" is actually incorrect. This area has been the subject of lengthy consideration and the layout shown was the preferred solution to meet CYC and designer objective of maintaining all access and egress arrangements for all vehicle types to and from the

garage in a similar arrangement to that currently provided. The inclusion of the “Garage Only” marking is felt to identify to road users that this section of the carriageway is not a two lane exit.

Hatched markings were previously proposed, but felt to be incorrect for the movement of any type of right turning traffic to the garage. The introduction of hatched markings would deter this movement which is not desirable and conflicts with the Auditors recommendation for Location 3 above – to remove markings to enable all turning manoeuvres. A section of hatched markings will be added at the edge of the circulatory carriageway in order to identify that there are not two lane exits from the roundabout. Vehicles will therefore leave in one lane and move over to the Garage Only section if intending to turn right into the forecourt area.

A dialogue with the owners and operators of the garage is ongoing and the proposals may change as a result of subsequent negotiations. At this stage no change is proposed.

3.2.2 Problem (Location 5)

Summary: Reduced length of carriageway between A1237 approach give-ways and uncontrolled crossing area.

Uncontrolled crossings of the A1237 approaches are provided in the form of tactile paving and dropped kerbs. The crossings are located too close to the roundabout entry give-way markings, with only 3.5m between the pedestrian crossing area and the northbound give-way lines. At lengths of less than 5.0m there is potential for vehicles waiting at the give-way line to encroach onto the crossing, increasing the likelihood of pedestrians and cyclists crossing away from the area where drivers would expect them. There is therefore an increased risk of collisions between vehicles and non-motorised users.

Recommendation

Re-position the tactile paving and dropped kerb facilities further away from the A1237 northbound and southbound junction entries, ensuring a minimum distance of 5.0m between the uncontrolled crossing points and the give-way markings.

Designers Response

The Auditors' recommendation is note and accepted. The tactile crossing locations will be relocated to provide a minimum of 5.0m, but without compromising pedestrian desire lines.

3.2.3 Problem (Location 6)

Summary: Part-time signals on A1237 approaches increases the risk of collisions at the two-to-one lane merge on exit

The A1237 is two lanes wide on exit from the roundabout but merges to one lane downstream on both the northbound and southbound exits. Part-time signals are proposed for the A1237 approaches to the roundabout in order to regulate the flow of traffic into the junction at peak times. Signalisation of the A1237 approaches will increase the likelihood of vehicles travelling adjacent to each other when exiting the junction. There is therefore an increased risk of side swipe collisions associated with the part-time signalisation of the A1237 approaches.

Recommendation

Closely monitor the performance of the junction during peak hours under give-way control and reassess the need for part-time signals as part of this monitoring.

Designers Response

The designer does not accept that the risk of side swipe collisions will be increased as a result of introducing a peak period part-time signalised control; traffic ordinarily approaching the give way line in peak periods will do so adjacent to other vehicles. It should also be noted that this part time signal system is not to be installed at the outset of the scheme and only introduced in the future should delays to buses be evident.

In the event that the part time signals are introduced, the Auditors' recommendation that the performance of the signal control be monitored is noted.

3.3 Signs and Markings

3.3.1 Problem (Location 7)

Summary: No signs to warn of merge to one lane on A1237 exits

The A1237 is two lanes wide on exit from the roundabout but merges to one lane downstream on both the northbound and southbound exits. No signing is provided on either of the A1237 exits to warn drivers of the downstream reduction in the number of traffic lanes. There is an increased risk of side swipe and shunt collisions associated with vehicles suddenly moving into the path of other vehicles at the merge.

Recommendation

Provide appropriate signing on the A1237 northbound and southbound exits from the junction to warn of the two-to-one lane merge.

Designers Response

The Auditors' recommendation is noted and accepted. Merge signs to diagram 872.1 will be included, as per the recommendation.

3.3.2 Problem (Location 8)

Summary: Double headed, carriageway lane guidance arrows with associated text destination markings may confuse drivers

Double headed, carriageway lane guidance arrows are to be provided at four locations, with two sets on the circulatory carriageway of the roundabout and a single set on each of the A1237 approaches to the junction. At each location where the double headed arrows are proposed, text destination markings are also to be provided. Double headed arrows with associated text could confuse drivers, since it will be unclear to which direction the text refers. This increases the likelihood of late lane change manoeuvres and sudden braking, increasing the risk of side swipe and shunt collisions.

Recommendation

Remove text destination markings at every location where an associated double headed arrow is to be placed in the same lane. Where text destination markings are provided in the traffic lane adjacent to the double headed arrow and text, this must also be removed to avoid drivers using a single lane when travelling to a given destination since both lanes may actually be available for the movement.

Designers Response

The Auditors' recommendation is noted. However, the markings proposed are consistent with those at the A19/A1237 roundabout junction, for which this was the preferred layout

and lining regime. No issues have been reported to the designer of that scheme associated this style of lining and therefore to remain consistent on the A1237, no change is proposed.

3.3.3 Problem (Location 9)

Summary: A1237 northbound lane destination sign and carriageway markings give conflicting guidance

Sign Rs03, to Diagram 2017 of TSRGD, is to be located on the A1237 northbound approach adjacent to where the carriageway widens to three lanes. The sign indicates that York can be accessed from both the middle and offside lanes; however, further downstream, closer to the junction entry, text destination markings provide conflicting guidance, showing York to only be accessible from the offside lane. The conflicting guidance between signing and carriageway markings has the potential to confuse drivers and increases the likelihood of late lane change manoeuvres and/or sudden braking. There is therefore an increased risk of side swipe and shunt collisions.

Recommendation

Omit the 'York' text from the carriageway markings on the A1237 northbound approach.

Designers Response

The Auditors' recommendation is noted. Read in conjunction with Item 3.3.5 Problem (Location 11) sign RS03 is to be simplified to that shown for RS11. This is also consistent with the signing regime provided at the A19/A1237 roundabout junction.

Carriageway Marking "York" will be retained in conjunction with simplified signing.

3.3.4 Problem (Location 10)

Summary: A59 eastbound Advance Direction Sign (ADS) and carriageway markings give conflicting information

ADS Rs09, to Diagram 2022 of TSRGD, is to be located on the A59 eastbound approach to the junction. This ADS suggests that York can be accessed from both the nearside and middle lanes; however, further downstream, closer to the junction entry, text destination markings provide conflicting guidance, showing York to only be accessible from the middle lane. The conflicting guidance between signing and carriageway markings could confuse drivers and increases the likelihood of late lane change manoeuvres and/or sudden braking. There is therefore an increased risk of side swipe and shunt collisions.

Recommendation

Omit the 'York' text from the carriageway markings on the A59 eastbound approach.

Designers Response

The Auditors' recommendation is noted. Upon further discussion with CYC the convention of signing "York (C&N)" has been deemed inconsistent with city wide signing. Sign RS09 will be amended to replace the reference to "York (C&N)" with York North" and the Road Marking "York" will be retained.

Note: this sign under consideration is that shown on drawing THAYPR-PB-1201. Unfortunately a different sign, referenced also as RS09, appears on drawing THAYPR-PB-1202. This sign will be renumbered.

3.3.5 Problem (Location 11)

Summary: Over provision of destination guidance on A1237 and A59 westbound approaches

Two map type signs are proposed on each of the four approaches to the junction; the first giving primary route guidance and the second showing local destinations. Closer to the junction, a lane guidance sign is also proposed on each approach (two on the A1237 southbound approach) with text repeating the destinations listed on the upstream map type signs (exception being A59 eastbound lane guidance which does not show any associated text). The amount of destination signing on the A1237 and A59 westbound approaches has the potential to 'overload' drivers with information, causing confusion and increasing the likelihood of the more important and commonly used destinations being 'lost' amongst the other signed destinations. There is therefore an increased likelihood of drivers performing late lane change manoeuvres and/or sudden braking, leading to an increased risk of side swipe and shunt collisions.

Recommendation

Simplify signs Rs03, Rs07, Rs15 and Rs16 by removing the destination and route text, providing only the lane guidance arrows (as found on sign RS11) ensuring that the lane guidance arrows are consistent with those proposed on the carriageway surface.

Designers Response

The Auditors' recommendation is noted and accepted. Ample carriageway markings and directional signing have been proposed. Signs RS03, RS07, RS15 and RS16 will be simplified to the style shown for RS11 (to diagram 877) as per the recommendations.

3.3.6 Problem (Location 12)**Summary: Signing that differentiates between York and York (C & N) could confuse drivers**

Map type signs Rs01 and Rs09, located on the A1237 northbound and A59 eastbound approaches respectively, advise that York can be accessed via two directions from the roundabout and differentiate between 'York' and 'York C & N'; the first being reached via the non-primary A59 eastbound route, the latter via the A1237 northbound. It is possible that drivers will not understand that 'York C' refers to central York. Furthermore, in the context of the 'York C & N' destination, drivers may be confused as to what is meant by the 'York' destination. Consequently there is scope for uncertainty as to which route should be used to access the city. There is therefore an increased likelihood of drivers performing late lane change manoeuvres and/or sudden braking, leading to an increased risk of side swipe and shunt collisions.

Recommendation

Remove 'York' text from the A59 non-primary route of the map style signs RS01 and RS09.

Designers Response

The Auditors' recommendation is noted. "York A59" is to be retained and "York (C&N)" replace with "York North" on signs RS01 and RS09.

3.3.7 Problem (Location 13)**Summary: Private accesses shown on map style ADS signs**

Signs Rs05 and Rs06 on the A59 westbound approach show the private accesses located along the link as 'stubs'. These private accesses will not be used by the vast majority of vehicles on the approach and could cause confusion for drivers travelling to a destination accessed via the A1237 southbound (such as Leeds, Selby or Acomb) and who are looking for a left turn downstream. There

is therefore an increased likelihood of drivers performing late turning movements and/or sudden braking, leading to an increased risk of shunt collisions.

Recommendation

Remove the private access 'stubs' from signs Rs05 and Rs06.

Designers Response

The Auditors' recommendation is note and accepted. Stubs are to be removed from signs RS05 and RS06 as per the recommendation.

3.3.8 Problem (Location 14)

Summary: Inappropriate use of junction warning signs

Three junction ahead warning signs are proposed on the A59 (east) arm to warn drivers of the private accesses in the vicinity of the roundabout junction. Two 'Side Road Ahead' signs to Diagram 506.1 of TSRGD are proposed: one on the westbound approach which refers to a side road adjacent to the petrol station, the other is to be on the eastbound exit from the A59/A1237 roundabout which refers to Cinder Lane. The third proposed junction warning sign is a 'Crossroads Ahead' sign to Diagram 504.1 of TSRGD, which is to be located further east along the A59 (east) and refers to 'The Knoll' and a farm house access. Junction ahead warnings signs are not commonly used to highlight the presence of private accesses. These private accesses will not be used by the vast majority of vehicles on the A59 and could cause confusion for drivers travelling to a destination accessed via the A1237 (such as Leeds, Selby, Clifton Moor or Acomb) or the A59 eastbound, and who are looking for probable turning points to the nearside and offside. There is therefore an increased likelihood of drivers performing late turning movements and/or sudden braking, leading to an increased risk of shunt collisions.

Recommendation

Remove the proposed junction warning signs to Diagrams 504.1 and 506.1 of TSRGD.

Designers Response

The Auditors' recommendation is noted. These three signs have been included to address residents concerns expressed by residents at Public Consultation. They are concerned that the amended layout will increase vehicle speeds above 40mph and result in accidents for residents exiting Cinder Lane and neighbouring properties. Little detrimental impact is envisaged by inclusion of these signs. No change is proposed.

3.3.9 Problem (Location 15)

Summary: Inappropriate use of red surfacing and 'Slow' marking

Red carriageway surfacing with associated 'Slow' marking is proposed at three locations: two on the A59 (east) arm, of which one is to be located on the eastbound exit from the roundabout to warn of the Cinder Lane access and the other further east, on the westbound carriageway to warn of 'The Knoll' and farm house private accesses; the third red surface patch with 'Slow' marking is to be located on the A59 (west) exit from the roundabout and is intended to warn drivers of private accesses on the A59 westbound between the roundabout and Station Road. These private accesses will not be used by the vast majority of vehicles on the A59 and there is therefore an increased likelihood of drivers failing to understand which hazards the markings refer to, leading to driver confusion. The overuse of red surfacing and 'Slow' warnings at locations not deemed to be hazards will detract drivers' attention away the more prominent hazards associated with the A59/A1237

roundabout junction. There is therefore an increased likelihood of drivers performing late turning movements and/or sudden braking, leading to an increased risk of shunt collisions.

Heavy braking associated with slowing vehicles has the potential to wear away the red surfacing, creating a continual maintenance issue whereby the surfacing will require refreshing.

Recommendation

Omit the proposed red surfacing and accompanying 'Slow' marking from all three proposed locations.

Designers Response

The Auditors' recommendation is noted. The location of the red surfacing and SLOW road markings was included to address residents concerns expressed by residents at Public Consultation. They are concerned that the amended layout will increase vehicle speeds above 40mph and result in accidents for residents exiting Cinder Lane and neighbouring properties. Little detrimental impact is envisaged by inclusion of these markings. No change is proposed.

3.3.10 Problem (Location 16)

Summary: Inappropriate position of chevron signs on A1237 southbound and A59 eastbound entries

Chevrons to Diagram 515.1A of TSRGD warning of sharp deviation on entry to the roundabout are to be located on the roundabout central island opposite each junction approach. The proposed chevron boards opposite the A59 eastbound and A1237 southbound approaches are aligned to directly face the give-way markings. Due to the sharp deviation to the left in the alignment of the carriageway on these approaches, the forward visibility of the chevrons when approaching the junction is reduced. This increases the likelihood of vehicles failing to recognise the deviation in the route, thereby increasing the risk of loss of control and failure to give-way collisions.

Recommendation

Re-position the chevron signs opposite the A1237 southbound and A59 eastbound entries to provide improved forward visibility and an earlier warning of route deviation on approach to the junction.

Designers Response

The Auditors' recommendation is noted and accepted. The Chevron boards to Diagram 515.1A will be relocated to align with approaches, as per the recommendation.

3.4 Non-Motorised Users

3.4.1 Problem (Location 17)

Summary: Lack of warning to non-motorised users that traffic approaches from various directions at crossings

Uncontrolled crossings of the A1237 are provided in the form of tactile paving and dropped kerbs across the northern and southern arms. Refuge islands split the crossing of both arms into three movements. For two of the crossing movements on each arm, traffic will approach the non-motorised user from a different direction to the third movement. It is possible that non-motorised users will become accustomed to traffic approaching from one side and not recognise when traffic

approaches from a different direction. There is an increased risk of collisions between vehicles and non-motorised users associated with these crossing movements.

Recommendation

Provide 'Look Left, Look Right' carriageway markings for non-motorised users at the crossing points proposed on the A1237 south and north arms.

Designers Response

The Auditors' recommendation is noted. However, this road marking was similarly discussed for use at the A19 / A1237 roundabout junction and CYC Network Management team opposed such a facility. It was and is perceived that there will be sufficient road markings in the vicinity of the crossings and ordinarily high enough volumes of traffic that non-motorised users will be aware of the direction vehicles are approaching from. No change is proposed.

3.4.2 Problem (Location 18)

Summary: Provision of underpass across A127 (north) arm

A segregated use underpass is proposed across the A1237 (north) arm providing a connection for east/west non-motorised user movements along the A59. Alternative at-grade crossings of the A1237 are provided in the form of new dropped kerbs and tactile paving across the north and south arms. The provision of an underpass may encourage user groups who previously felt unable to use the existing at-grade crossing to undertake east/west movements across the junction; such groups may include: the elderly, parents with children and visually/mobility impaired users. However, the audit team considers the design of the proposed underpass poses a personal security concern for non-motorised users, namely that the alignment of the underpass does not allow users a view of the exit when entering the facility. This means that somebody already in the underpass, or entering the underpass at the opposite side of the A1237, cannot be seen upon entry. The user groups that will potentially be most concerned by this issue are the vulnerable groups listed above, as users whose movements are likely to be encouraged by the underpass. Vulnerable non-motorised users may therefore decide to use the new at-grade facility, which, although an improvement on the existing uncontrolled facility, will still be difficult to use for vulnerable groups, given the high traffic flows through the junction. Increased numbers of vulnerable users crossing the A1237 carriageway at uncontrolled, at-grade facilities increases the risk of collisions between vehicles and non-motorised users.

The design of the underpass could also create a maintenance issue, as the lack of inter-visibility through the underpass increases the likelihood of vandalism and anti-social behaviour.

Recommendation

Alter the alignment of the underpass to provide greater inter-visibility through the facility.

Designers Response

The Auditors' recommendation is noted. Provision of an underpass of the A1237 at this location is consistent with other major roundabouts on the A1237. The alignment of the underpass is constrained by the land available for its development, but has been designed in accordance with guidance in TD36/93 and "Secure by Design". The inner radii approach ramp walls will be kept to the absolute minimum height (determined by existing ground water table levels) combined with embankments to achieve maximum inter-visibility. No change is proposed.

3.4.3 Problem (Location 19)

Summary: Inappropriate level of lighting in and adjacent to the proposed underpass

Details of the internal lighting of the underpass were not submitted to the audit team for the Stage 2 Audit. The audit team therefore has concerns over the level of lighting within the underpass. Low lighting levels are likely to create personal security concerns amongst users, particularly with vulnerable groups such as: the elderly, parents with children and visually/mobility impaired users. Able-bodied female users are also likely to have personal security concerns at night if inadequate lighting is provided. Vulnerable non-motorised users may therefore be forced into using the new at-grade facility, which is considered unsuitable for use by vulnerable groups as described in paragraph 3.4.2. Increased numbers of vulnerable users crossing the A1237 carriageway at uncontrolled, at-grade facilities increases the risk of collisions between vehicles and non-motorised users, particularly during the hours of darkness, the period of the day when personal security concerns with regards to low lighting levels are most pertinent and most likely to lead to people avoiding the underpass.

Recommendation

The design team should ensure that lighting levels are consistent on entry, through and on exit from the underpass, with no dark patches along the route. Altering the alignment of the underpass, as recommended in paragraph 3.4.2, would also help to alleviate personal security concerns.

Designers Response

The Auditors' recommendation is noted. The detailed design of the underpass will be carried out by the Contractor successful in tendering for the works. This will include all aspects of the structure and associated infrastructure, including lighting. As such this level of detail is not as yet available to provide to the Audit Team. The requirements for all elements of design are included in an End Performance Specification. The Contractor will be required to submit details of all elements of the underpass to CYC for approval; lighting levels will be included in this approval proposal.

3.4.4 Problem (Location 20)

Summary: Inappropriate signing associated with change from segregated to unsegregated shared use path

The shared use path that runs parallel to the northern side of the A59 is unsegregated along the majority of the route, with the exception of being segregated through the proposed underpass. The design drawings submitted to the audit team for the Stage 2 Audit do not show any proposed signing in the vicinity of the changeovers from segregated to unsegregated use and vice versa. There is an increased risk of collisions between non-motorised users as a result of the lack of warning of the change between segregated and unsegregated shared use provision.

Recommendation

Provide signing to Diagrams 956 and 957 of TSRGD to adequately warn non-motorised users of the change between segregated and unsegregated shared use paths.

Designers Response

The Auditors' recommendation is noted and accepted. Signing to diagrams 956 and 957 will be added as appropriate to the segregated sections of the footway / cycleway as per the recommendation.

4 Detailed Appraisal - Station Road/North Field Lane Junction

4.1 Alignment

4.1.1 Problem (Location 21)

Summary: Alignment of vehicles turning left out of Station Rd & North Field Lane

Large turning radii are proposed for the left turns from Station Road and North Field Lane onto the A59. The large radii will cause vehicles to approach the give-way markings at an acute angle, increasing the likelihood that drivers will be required to look backwards over their shoulder into the 'blind spot' area in order to observe vehicles approaching on the A59; this would be especially difficult for bus and coach drivers. There is therefore an increased risk of vehicles emerging from the give-way left turn into the path of vehicles already on the A59.

Recommendation

Adjust the alignment of the carriageway on the left turn exits from Station Road and North Field Lane to enable vehicles (especially buses\coaches) to approach the give-way at an angle that is more perpendicular to the markings. Alternatively, the left turn lanes should be signalised.

Designers Response

The Auditors' recommendations are noted. The proposed left turn from Northfield Lane to the A59 has been designed to cater for the swept path of large vehicles (HGVs). Buses will not need to make this manoeuvre. Any change to the kerb line from Northfield Lane to the A59 would likely compromise this movement.

The proposed left turn from Station Road to the A59 will be reviewed.

4.2 Junction

4.2.1 Problem (Location 22)

Summary: Vehicle egress from maintenance bay

A maintenance bay is proposed on the western side of the staggered junction, adjacent to the A59 westbound carriageway and immediately downstream of the left turn give-way exit from North Field Lane. The audit team considers the lay-by to be located too close to the junction. There is the potential for maintenance vehicles to pull out of the lay-by without being able to see vehicles approaching from all directions, particularly the left turn out of North Field Lane. There is therefore an increased potential for side impact collisions associated with maintenance vehicles pulling into the path of vehicles already on the A59.

Recommendation

The service bay should be re-sited further away from the junction, so that access and egress can be carried out by servicing vehicles in a safe manner.

Designers Response

The Auditors' recommendation is noted. The position of the maintenance bay has been located dependent on the position of the signal controller equipment, which itself needs to be sited such that the operator is able to see the signals from this equipment. Visibility at this location should be sufficient. All movements are controlled by the signalised junction

and therefore ample opportunity should be provided to allow the egress of maintenance vehicles at this location. Furthermore, such movements will be very infrequent, limited to a few visits annually.

4.2.2 Problem (Location 23)

Summary: Narrow carriageway at mid-junction link between Station Rd & North Field Lane

Lane width measurements have been estimated for the A59 mid-junction link using the scale drawings submitted to the audit team for the Stage 2 Audit. The eastbound traffic lane of the A59 was measured as being 2.8m wide and the adjacent on-carriageway cycle lane was measured as 0.9m; whilst the westbound traffic lane was slightly wider, at 3.0m, also with an adjacent on-carriageway cycle lane of width 0.9m. The audit team considers the carriageway in both directions to be too narrow to separately mark an on-carriageway cycle lane. The presence of a marked cycle lane gives the impression to drivers that the carriageway width is sufficient to allow an overtaking manoeuvre without encroaching into the marked area; drivers are therefore more likely to maintain their speed when overtaking cyclists, increasing the likelihood of side swipe collisions between vehicles and cyclists. The relevance of this issue is increased given that the number of large vehicles using this section of carriageway will increase once the park and ride site is operational.

Recommendation

Increase the width of the west and eastbound mid-junction links to ensure that all anticipated vehicle types using this section of carriageway can pass cyclists with sufficient clearance.

Designers Response

The Auditors' recommendation is noted. The westbound lane width is 3.2m wide with an adjacent 1.0m wide cycle lane. The eastbound lane is 3.5m wide with an adjacent 1.0m wide cycle lane. These widths are deemed to be sufficient, although there is scope to widen the lane widths if required. No change is proposed.

4.2.3 Problem (Location 24)

Summary: Lack of guidance at the left turn only park & ride exit could lead to inappropriate movements

A left turn only give-way exit from the park & ride site is to be located on the A59, west of North Field Lane; vehicles are not permitted to enter the park & ride site at this location.

The designs submitted to the audit team propose a raised traffic island in the centre of the A59 carriageway, parallel to the give-way markings of the left turn exit. The raised traffic island, being the same length as the give-way markings, is not considered to be long enough and may not dissuade all drivers from turning right out of the junction, travelling past the raised island and crossing the hatched markings to join the A59 eastbound carriageway.

The designs do not show any proposed signing to advise westbound vehicles already on the A59 that the junction is exit only and that a left turn is not permitted.

The lack of proposed street furniture to enforce the left turn only exit increases the likelihood of vehicles turning right out of the park & ride site or turning left into the exit. There is therefore an increased risk of head-on and side impact collisions at this location.

Recommendation

The audit team recommends the following additions: extend the length of the raised traffic island in the centre of the A59 carriageway to prevent vehicles from turning right out of the exit; provide a 'Turn Left Ahead' sign to Diagram 609 of TSRGD in advance of the give-way line for vehicles exiting the park & ride site; and, provide 'No Entry' signs to Diagram 616 of TSRGD to prevent vehicles from turning left into the exit road from the A59.

Designers Response

The Auditors' recommendations are noted and accepted. The island will be lengthened to the east to prevent right turn movements; a sign to Diagram 609 will be included in the on site proposals, in addition to signing already indicating left only turn movements; and no entry signs to Diagram 616 will be included.

4.2.4 Problem (Location 25)

Summary: Lack of warning of give-way layout for drivers turning left

The majority of movements at the Station Road/North Field Lane staggered junction are proposed as being under signal control; the exceptions to this are the left turn exits from North Field Lane and Station Road which will operate as give-way priorities. No signing to advise drivers of the give-way control is proposed on the North Field Lane and Station Road approaches. Given the amount of signal controlled movements through the junction, there is a possibility that drivers may become accustomed to having priority when performing a turning movement and consequently fail to notice the change in control to give-way operation. There is therefore an increased risk of side impact collisions associated with drivers failing to give-way to vehicles already on the A59.

Recommendation

Provide 'Give-way' signs to Diagram 602 of TSRGD on the North Field Lane and Station Road left turn entries to the A59.

Designers Response

The Auditors' recommendations are noted and accepted. Give Way signs to Diagram 602 will be added as per the recommendation.

4.2.5 Problem (Location 26)

Summary: No signing to warn of mini-roundabout

The design proposals submitted for the Stage 2 Audit suggest that no signing will be provided to warn drivers of the mini-roundabout junction on North Field Lane. Drivers approaching the mini-roundabout will have no advance warning of the junction, which increases the likelihood of drivers failing to observe the give-way priority. The lack of advanced warning is exacerbated by the possibility of vehicle queuing associated with the North Field Lane/A59 junction extending back across the circulatory carriageway of the mini-roundabout, reducing the conspicuity of the junction. There is therefore an increased risk of collisions associated with drivers failing to give-way and shunts resulting from sudden braking.

Recommendation

Provide appropriate signing to give advanced warning to drivers of the mini-roundabout junction.

Designers Response

The Auditors' recommendations are noted and accepted. Signing to Diagrams 510 and 611.1 will be added. Lighting will be required to these signs as they are within 50m of proposed street lighting system.

4.2.6 Problem (Location 27)

Summary: Lack of warning of junction layout from A59 approaches

Advanced guidance information for drivers approaching the Station Road/North Field Lane junction on the A59 is to be provided by proposed signs Rs25 and Rs26 (westbound) and Rs31 (eastbound). The signs are not consistent in format and none of the signs advise of the staggered layout of the junction.

Proposed sign Rs25 on the A59 westbound approach suggests that the junction ahead is a t-junction with a minor road to the right. Sign Rs25 therefore only gives advanced guidance of Upper Poppleton and the rail station; the park & ride site and business park are signed as a left turn on sign Rs26, downstream of sign Rs25. Signs Rs25 and Rs26 have the potential to confuse drivers as they do not give an indication of the relative position of each available turning movement within the junction.

Proposed sign Rs31 on the A59 eastbound approach is a variant of TSRGD Diagram 2005. Drivers could mistakenly interpret from sign Rs31 that the junction has a standard crossroads layout rather than the proposed staggered layout. It is therefore possible that drivers travelling to Poppleton may become confused when they encounter the right turn towards the park & ride site but do not find an adjacent left turn towards Poppleton.

There is an increased likelihood of late lane change and braking manoeuvres as a result of drivers reacting to an unexpected junction layout, increasing the risk of side swipe and shunt collisions.

Recommendation

Provide signing that is consistent across both junction approaches and advises of the staggered layout of the junction.

Designers Response

The Auditors' recommendation is noted and accepted. Signing consistent to this junction will be included; RS31 will be amended to a conventional staggered form; and signs RS25 and RS26 will be combined and amended to a conventional staggered form.

4.3 Non-Motorised Users

4.3.1 Problem (Location 28)

Summary: Red surfacing across the garden centre entry/egress to/from mini-roundabout could cause confusion

The designs indicate that an area of red surfacing is proposed across the garden centre car park entry/egress. The function of the red surfacing is not made clear within the designs submitted for the Stage 2 Audit; however, it is the assumption of the audit team that the red surfacing is intended to bring to the attention of drivers entering/exiting the garden centre car park the presence of non-motorised users crossing the carriageway at this location. The audit team considers that the surfacing may be interpreted differently by different road users. Whilst drivers may interpret the surfacing as a warning of non-motorised user activity in the area, pedestrians and cyclists may mistakenly believe that they have priority when crossing at this location. The lack of clarity as to the

level of non-motorised user priority at this location is exacerbated by the absence of dropped kerbs and tactile paving.

There is an increased risk of collisions between non-motorised users and vehicles at this location, resulting from inconsistencies in the form of crossing facilities proposed and the potential for misinterpretation of the carriageway markings at these crossings.

Recommendation

Remove the red surfacing from the carriageway and provide dropped kerbs and buff coloured tactile paving to the crossing point of the foot/cycleway.

Designers Response

The Auditors' recommendations are noted and accepted. The red surfacing will be removed and a buff coloured tactile crossing will be added, as per the recommendations.

4.3.2 Problem (Location 29)

Summary: Combination of non-motorised user crossing types at Station Road junction

A combination of different non-motorised user crossing facilities is proposed at the Station Road junction with the A59. Toucan crossings are proposed across the left turn entry into, and right turn exit from, Station Road, whilst a zebra crossing is to be provided across the left turn exit from Station Road. The audit team has several concerns regarding the proposed crossing facilities. Firstly, the installation of zebra and toucan crossings across the Station Road entry to the A59 will lead to a potentially confusing mixture of signal poles and belisha beacons in close proximity to each other on the traffic island that separates the left and right turn vehicle movements from Station Road. Drivers of vehicles turning right or left will be able to see the signal poles and belisha beacons, potentially causing uncertainty as to which form of junction control is applicable to their intended movement. There is also an increased risk of pedestrians becoming confused as regards priorities, due to the close proximity of the different crossing types and associated street furniture.

The provision of a zebra crossing facility across the left turn movement from Station Road results in an associated give-way control where vehicles enter the A59 eastbound carriageway. Given the predicted high volume of traffic travelling eastbound along the A59, and consequential difficulties this may create for vehicles turning left from Station Road, the audit team is concerned that drivers of vehicles approaching the junction on Station Road may place greater attention to identifying gaps in upstream A59 traffic than on non-motorised user movements at the junction. The possibility of vehicles queuing back from the left turn give-way would also increase the likelihood of vehicles encroaching onto the zebra crossing and pedestrians being forced to cross between stationary vehicles.

There is therefore an increased risk of collisions between vehicles and non-motorised users associated with the installation of a zebra crossing across the left turn from Station Road.

A toucan crossing is proposed across the left turn lane from the A59 towards Station Road. The left turn is relatively short and appears long enough to store a queue of approximately two to three vehicles. The audit team is concerned that the left turn queue may exceed this length during the intergreen period associated with non-motorised users using the crossing, with an associated increased risk of shunt collisions involving vehicles queuing back through the junction.

Recommendation

Omit the proposed zebra crossing from the Station Road left turn and replace with a toucan facility. Review the forecast queue length for the left turn into Station Road. If the forecast queue cannot be

accommodated within the available length proposed, then remove the proposed toucan facility from the left turn into Station Road and replace with an uncontrolled crossing, incorporating buff tactile paving and dropped kerbs.

Designers Response

Agree with auditor's comments regarding combination of signal controlled and zebra controlled crossings.

The left turn to Station Road and ahead movement on A59 eastbound are on the same phase, and hence this has no potential to cause shunt type accidents. The proposed toucan crossing facility across the left turn to Station Road runs in the same stage as the right turn into Station Road. The left turn flow into Station Road is very low and as a proportion of the total eastbound movement at this point is 1% in AM and 2% in PM peak.

In order to determine the most appropriate form of crossing at this location, the following have had to be considered.

- The Consultation process feedback conveyed concerns about a controlled crossing facility at this location, with particular reference to queuing traffic.
- The traffic modelling shows very low movements city bound from Station Road.
- The current existing pedestrian/cyclist movements in this area are very low.

It is felt that the provision of a signal controlled (Toucan) crossing may provide a facility that is not well used and consequently provide an unwanted excessive provision at this location. In addition, drivers are likely to experience unnecessary delays arising from a crossing phase that would be infrequently used and this could lead to driver frustration and the lights possibly being ignored. It is also considered that due to the low vehicle movements that pedestrians will have ample time to identify crossing opportunities.

The crossing cannot really be considered to be beneficial in these circumstances.

The Designer therefore recommends that the controlled crossings for the left turn in and left turn out of Station Road be removed and replaced with uncontrolled crossings, with the following future provision:

- The proposed crossing provisions should be monitored to consider future pedestrian usage
- The junction should be constructed for future controlled crossing provision
- Ducting and NAL sockets (for signal heads) should be installed at this stage and for future financial consideration
- If at a future time a need for controlled crossings is then identified, the Give Way markings would be removed, ducting utilised, tactile paving lifted and with slight modification changed to controlled crossing configuration and signal heads located.

5 Detailed Appraisal - On-site Road Network

5.1 Alignment and Usage

5.1.1 Problem (Location 30)

Summary: Unsuitable designation of caravan parking area

A parking area for ten caravans has been designated in advance of the main car park and to the immediate left on entry to the park & ride site. The area assigned for caravan parking is relatively small and will require drivers to reverse, with little space available for turning manoeuvres. The entrance and exit to the parking area is via the same two-lane entry/egress meaning that all vehicles using the parking area will be required to perform some level of turning manoeuvre. The constrained parking area and low manoeuvrability of caravans increases the likelihood of (low speed) vehicle collisions in this area, especially given the proximity of the car park to the busy park & ride site entrance.

Recommendation

Either: provide a parking area for caravans which does not require reversing manoeuvres; or, ensure that, where caravan parking is to be provided, adequately sized spaces and carriageway are available for vehicles to perform turning manoeuvres, such as reversing, safely.

Designers Response

Rejected – The area identified has been specifically modelled for camper vans, not caravans. Autotrack has been used during the design stage(s) and show adequate space for reversing manoeuvres. Signage will be amended to highlight restriction of caravans into that parking area.

5.2 Road Markings

5.2.1 Problem (Location 31)

Summary: Inappropriate vehicle speeds through site

A 20mph roundel is to be located on the carriageway in the vicinity of the main site entrance. There is potential that drivers will view this as an appropriate speed at which to drive within the park & ride site. Given the likely high number of vehicle turning manoeuvres and conflicting pedestrian/cycle manoeuvres this is deemed to be an inappropriate speed, increasing the likelihood of collisions between motorised vehicles and non-motorised users.

Recommendation

Remove the 20mph roundel and either replace with a 10mph roundel or leave unmarked. Provide vertical speed calming measures through the site to manage vehicle speeds, with particular emphasis to speed reduction being placed on the straighter exit link along the spine of the car park, where vehicle speeds are likely to be higher.

Designers Response

Following further discussions with CYC, the provision of zebra crossing facilities is believed to be unwarranted on the basis that low vehicle speeds, low vehicle numbers and good visibility for all do not create the conditions for a problem. Experience of Park and Ride facilities running for 20 years have shown this unnecessary and would promote further maintenance liabilities.

5.2.2 Problem (Location 32)

Summary: Potential for vehicles to maintain a high speed through crossing areas

Uncontrolled pedestrian footways with buff tactile paving are proposed along the radial pedestrian routes which connect the terminal building with the curved links of the car park. Where the footways cross the carriageway, road stud delineation markings are proposed. The combination of long and sweeping car park circulatory links with vehicle priority at pedestrian crossing points increases the likelihood of vehicles maintaining a higher than desirable speed when travelling around the park & ride site. There is an increased risk of collisions between non-motorised users and vehicles, resulting from higher than desirable vehicle speeds arising from a lack of speed reduction measures and perceived vehicle priority around the site.

Recommendation

Increase the level of pedestrian priority within the site by providing zebra style crossings at all locations where the uncontrolled pedestrian footways intersect with the vehicular carriageway. To avoid confusion, buff tactile paving should be replaced with red tactile paving at the edge of the footway adjacent to zebra style crossings.

Designers Response

Accepted in part – Further discussions required with CYC with regards to use of zebra crossing points.

5.3 Bus Only Link

5.3.1 Problem (Location 33)

Summary: Potential for private motor vehicles to use bus only link

The entry to the bus only link, located immediately before the main car park entrance, is not controlled by any physical measure, with the only reference to its designation as a bus link being the carriageway marking of the right turn bay into the link. The lack of signing and restrictive measures on entry to the bus only link increases the likelihood of private motor vehicles using the link either by accident or on purpose, the former being especially likely during peak hours when the carriageway marking of the right turn bay may become obscured by vehicles waiting to turn.

Increased vehicular activity in the predominantly non-motorised user area close to the terminal building increases the risk of collisions between motorised and non-motorised users.

Recommendation

Install a 'Buses Only' sign (in white writing on a blue background to diagram 953.3 of TSRGD).

Designers Response

Accepted – Sign 953.3 will be added to the drawings.

5.4 Landscaping and Vegetation

5.4.1 Problem (Location 34)

Summary: Proposed landscaping in car park will potentially obscure pedestrians at crossings

The landscaping proposals indicate that trees will be placed at the end of the parking aisles, adjacent to uncontrolled pedestrian crossing points. The presence of mature trees with fully developed canopies has the potential to reduce inter-visibility between drivers and pedestrians waiting to cross the car park internal access roads, increasing the risk of collisions between pedestrians and vehicles.

Recommendation

Ensure any landscaping works proposed in the areas surrounding pedestrian crossing points utilise low level vegetation, which do not have the potential to grow to a height that may obscure inter-visibility between pedestrians and drivers of vehicles using the internal access roads of the car park.

Designers Response

Comments Noted - The long term management plan (currently being produced) is specifying that all trees in the car park areas be retained with a 2 metre clear stem as they develop to ensure good visibility. No multi stemmed trees are included, also for that reason. Trees have generally been restricted within the car park areas to ensure good visibility.

All groundcover planting has been selected to not grow higher than 1m to ensure visibility. The long term management plan will specify that vegetation in the car park areas should be maintained below this level.

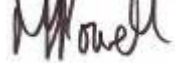
6 Audit Team Statement

6.1 General

I certify that this audit has generally been carried out in accordance with HD 19/03. I certify that all members of the Audit Team have examined the drawings and documents listed in Appendix A of this Road Safety Audit Report. The Road Safety Audit has been carried out with the sole purpose of identifying any feature that could be removed or modified in order to improve the safety of the scheme. The problems identified have been noted in the report, together with associated suggestions for safety improvements that we recommend should be studied for implementation.

No-one on the Audit Team was involved with the design of the measures.

AUDIT TEAM LEADER:

Name:	Mark Powell	Signed:	
Position:	Associate Director (Transport Planning)	Date:	11 October 2012
Organisation:	Halcrow Group Ltd		
Address:	Arndale House, Otley Road, Headingley, Leeds, LS6 2UL		

AUDIT TEAM MEMBERS:

Name:	Eric Wragg
Position:	Road Safety Engineer
Organisation:	City of York Council
Address:	Transport Projects/Sustainable Transport Service, 9 St Leonard's Place, York, YO1 7ET

Name:	Steve Burrell
Position:	Traffic Management Officer
Organisation:	North Yorkshire Police
Address:	Traffic Management, Central Area Headquarters, Fulford Road, York, YO10 4BY

Name:	Peter Broadhead
Position:	Traffic Management Officer
Organisation:	North Yorkshire Police
Address:	Skipton Police Station, Otley Road, Skipton, BD23 1EZ

AUDIT TEAM OBSERVER:

Name: Mark Shaw

Position: Consultant (Transport Planning)

Organisation: Halcrow Group Ltd

Address: Arndale House, Otley Road, Headingley, Leeds, LS6 2UL



Appendix A

Drawings and Documents Examined During the Audit

Drawing Number THAYPR-PB/102 – General Arrangement

Drawing Number THAYPR-PB/117 – Existing Survey Sheet 1 of 4

Drawing Number THAYPR-PB/150 – Existing Topographical Survey

Drawing Number THAYPR-PB/153 – Chainage and Typical Long Section Location Plan

Drawing Number THAYPR-PB/154 – Carriageway Long Sections

Drawing Number THAYPR-PB/155 – Typical Carriageway Long Sections (Sheet 1 of 2)

Drawing Number THAYPR-PB/156 – Typical Carriageway Long Sections (Sheet 2 of 2)

Drawing Number THAYPR-PB/157 – Carriageway Cross Sections Alignment M001

Drawing Number THAYPR-PB/158 – Carriageway Cross Sections Alignment M002

Drawing Number THAYPR-PB/159 – Carriageway Cross Sections Alignment M003 (Sheet 1 of 2)

Drawing Number THAYPR-PB/160 – Carriageway Cross Sections Alignment M003 (Sheet 2 of 2)

Drawing Number THAYPR-PB/161 – Carriageway Cross Sections Alignment M002

Drawing Number THAYPR-PB/201 – Site Clearance Street Furniture Sheet 1 of 4

Drawing Number THAYPR-PB/205 – Site Clearance Surfacing Sheet 1 of 4

Drawing Number THAYPR-PB/601 – Earthworks Sheet 1 of 4

Drawing Number THAYPR-PB/605 – Site Clearance Capping Sheet 1 of 4

Drawing Number THAYPR-PB/701 – Pavements Sheet 1 of 4

Drawing Number THAYPR-PB/1101 – Kerbs, Footways and Paved Areas Sheet 1 of 4

Drawing Number THAYPR-PB/1150 – Kerbing Layout

Drawing Number THAYPR-PB/1205 – Road Markings Sheet 1 of 4

Drawing Number THAYPR-PB/1209 – Traffic Signal Layout Sheet 1 of 2

Drawing Number THAYPR-PB/1210 – Traffic Signal Layout Sheet 2 of 2

Drawing Number THAYPR-PB/1301 – Street Lighting Layout Sheet 1 of 4

Drawing Number THAYPR-PB/1351 – Street Lighting Sheet 1 of 3

Drawing Number THAYPR-PB/1352 – Street Lighting Sheet 2 of 3

Drawing Number THAYPR-PB/1353 – Street Lighting Sheet 2 of 3

Drawing Number THAYPR-PB/1700 – Underpass General Arrangement

Drawing Number THAYPR-PB/1701 – Underpass Long Sections Indicative Layout

Drawing Number THAYPR-PB/1702 – Indicative Underpass Cross Sections

Drawing Number THAYPR-PB/3001 – Phase 1 Planting Plan

Drawing Number THAYPR-PB/3010 – Phase 1 Planting Plan Station Road/North Field Lane
Junction

For details of your nearest Halcrow office, visit our website
halcrow.com

