

Appendix 2.0 (Part 1 of 2)

Your Ref: DC/15/0873/FUL
Our Ref: 570\CON\1408\15
Date: 29th June 2015
Enquiries to: Ms Samantha Bye
Tel: 01473 260429
Email: samantha.bye@suffolk.gov.uk



Gemma Pannell
St Edmundsbury Borough Council
West Suffolk House
Western Way
Bury St Edmunds
Suffolk
IP33 3YU

Cc: Councillor Joanna Spicer, Suffolk County Council
Councillor John Griffiths, St Edmundsbury Borough Council
Mandy Adlington, Ixworth Parish Council

Dear Gemma,

Further information: Planning Application DC/15/0873/FUL - Introduction of a right turn ghost island junction on the A1088 to provide vehicular access. Roundabout, A1088, Ixworth, Bury St Edmunds, Suffolk.

Concerns have been raised, by Ixworth Parish Council and local councillors, regarding the proposal for a right turn ghost island junction on the A1088 and the advice provided by County Council officers on the same proposal. This letter seeks to explain the reasons for the recommendation made by the County Council as Highway Authority on 3rd June 2015, and to provide a review of the County Council's formal comments on this proposal as it has emerged since 2007.

Assessing the current proposal

When providing local planning authorities with advice on transport matters, the County Council has regard to relevant policies and technical standards. In this case, relevant national and local policy includes:

- Chapter 4 of the *National Planning Policy Framework* – 'Promoting sustainable transport'.¹
- Relevant sections of the Government's *Planning Practice Guidance*.²
- St Edmundsbury Borough Council's Core Strategy (adopted 2010), Rural Vision 2031 (adopted 2014) and the West Suffolk Development Management Policies (adopted 2015).

This policy background guides us to prioritise road safety as a key matter in decision making, among other considerations such as the ensuring that preference is given to sustainable modes of travel.

¹ See: <http://planningguidance.planningportal.gov.uk/blog/policy/achieving-sustainable-development/delivering-sustainable-development/4-promoting-sustainable-transport/>

² See: <http://planningguidance.planningportal.gov.uk/blog/guidance/transport-evidence-bases-in-plan-making/> and <http://planningguidance.planningportal.gov.uk/blog/guidance/travel-plans-transport-assessments-and-statements-in-decision-taking/>

Technical engineering standards are then used to determine whether detailed designs are appropriate and safe. The *Design Manual for Roads and Bridges*, produced and regularly updated by Highways England (formerly the Highways Agency), is used by Suffolk County Council as the set of standards against which proposals such as these are assessed. Volume 6 is key in this application and the previous application for a roundabout (ref: DC/14/0196/FUL).

Technical guidance is, when necessary, held up alongside studies of the performance of similar junctions. In the case of this application, County Council officers have used accident records from the local highway network and national evidence on the safety records of similar junction types to test the application against the standards in the *Design Manual for Roads and Bridges*.

Summary of the Technical Assessment

The current application (ref: DC/15/0873/FUL), for a right turn ghost island junction, is considered to meet the relevant national policy and technical standards such that the local planning authority can grant planning permission (with conditions).

Key safety issues considered have been:

- Traffic speeds,
- Visibility,
- The relationship between the proposal and other junctions and
- Accidents.

The proposal meets relevant DMRB requirements for visibility splays' to the maximum design speed of the road which is national speed limit of 60mph, to demonstrate the detailed consideration you've given this, related to the concerns raised by the Parish Council.

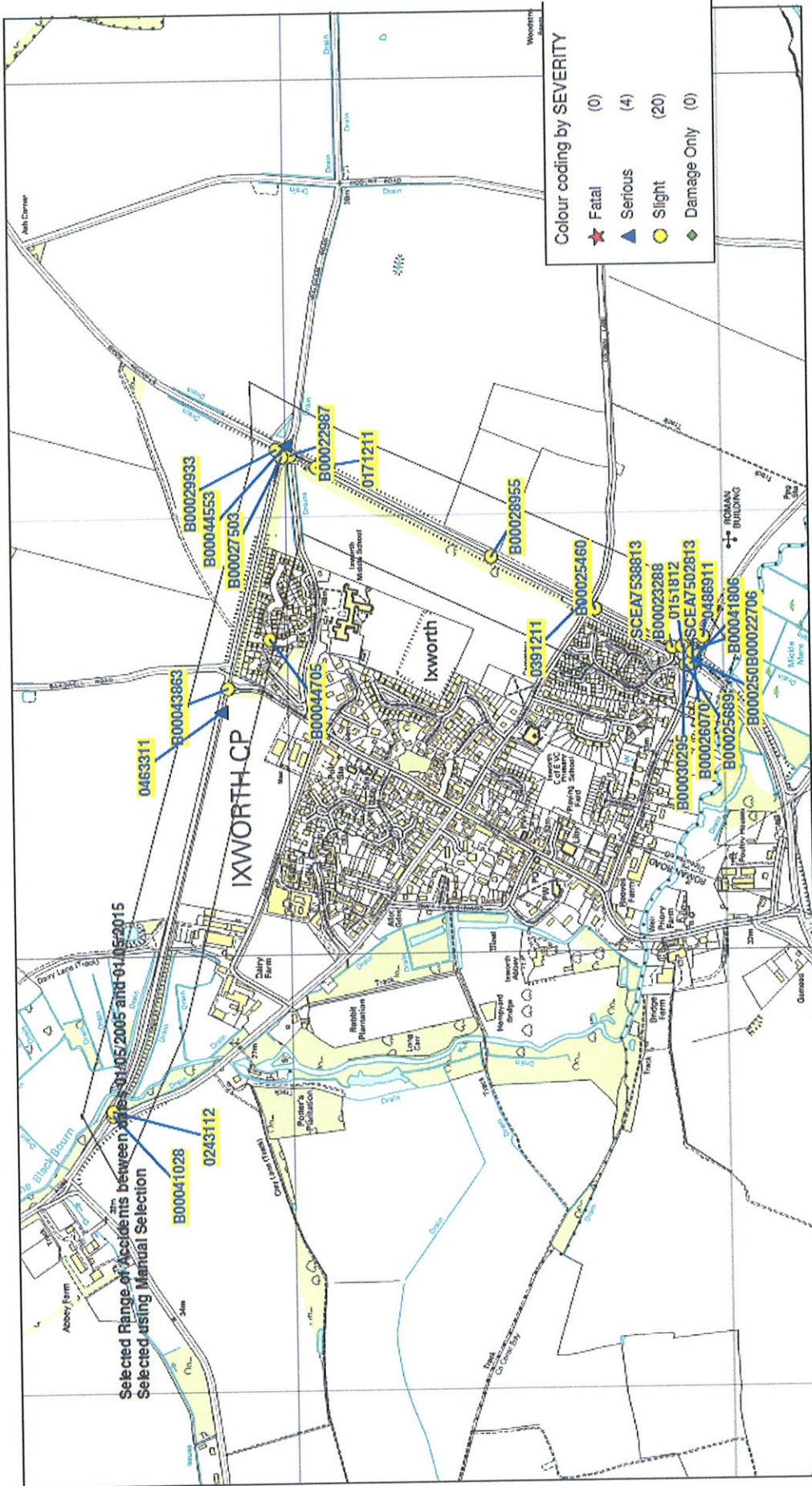
The ghost island junction is proposed between the Roundabout on the A143 and a similarly designed right turned junction at the top of the High Street. This allows drivers sufficient time to adjust from each junction and have good forward visibility to the proposed junction. The proposed junction has the required visibility required on the western side of the junction and has good inter-visibility to the eastern side to and including the existing roundabout.

Accident records, collected and used by Suffolk County Council and Suffolk Constabulary, show no fatal accidents in the vicinity of this development in the last ten years. Accident data pertaining to relevant local junctions has been reproduced overleaf. It shows significantly more injury accidents at the 5 – arm junction between the A1088, A143 and Stow Road (SE Ixworth) than at the 4 – arm junction between the A1088, A143 and Walsham Road (NE Ixworth). It also demonstrates that the current right turn ghost island at the top of the High Street has had significantly fewer injury accidents than the 4-arm roundabout.

This difference in the accident rate mirrors national data, which shows a marked increase in accidents per year as number of arms on a roundabout increases. This data, from the *Design Manual for Roads and Bridges*, is set out below.

Table 2/1: Average Accident Frequency at Roundabouts Between 1999 and 2003


No. of arms	No. of sites	Accident frequency (accidents per year)				Accident severity (% fatal and serious)
		Single carriageway roads	Dual carriageway roads	Grade separated junctions	All roads	
3	326	0.63	1.28	2.70	0.79	9.3
4	649	1.08	2.65	5.35	1.79	7.1
5	157	1.72	3.80	7.67	3.66	7.1
6	30	2.11	4.62	8.71	5.95	5.2
All	1162	1.00	2.60	6.28	1.87	7.2



Selected Range of Accidents between 01/05/2005 and 01/05/2015
 Selected using Manual Selection

Colour coding by SEVERITY

- ★ Fatal (0)
- ▲ Serious (4)
- Slight (20)
- ◆ Damage Only (0)

 Suffolk County Council	Selected map area		Her Majesty's Office (c) Crown Copyright	
	SCALE	1 : 12000	DATE	24/06/2015
	DRAWING No.		DRAWN BY	
	© Crown Copyright. All rights reserved. Suffolk County Council Licence No. 100023395 2015 Suffolk County Council Licence No. 100023395			

It is this assessment of the current and previous applications which leads the County Council to recommend that a right-turn ghost island junction is a safer option for Ixworth than an increase in the number of arms on the current roundabout.

Previous Comments

A review of Suffolk County Council records on this matter reveals the following formal comments from the County Council on junction arrangements for accessing the land bordered by Crown Lane, the A143 and A1088.

27/11/2007 – Safety Audit of 5-arm roundabout proposal

See Appendix 1 – audit reproduced in full.

This study was carried out by County Council road safety engineers, to assess the potential for a new five-arm roundabout at the junction of the A143 and A1088. The assessment assumed an increase in the diameter of the roundabout from 30 metres to 65 metres. The audit raised a number of concerns related to the number of arms on the roundabout, which is considered to increase the probability of collisions, and the size of the roundabout which is considered to encourage higher vehicle speeds and reduce lane discipline.

04/07/2008 – Comments on the Land off Crown Lane Concept Statement

Comments read as follows:

'Re-build of roundabout at junction A143/A1088/Walsham Road to create 5 access – The new 5 arm roundabout on the A143 will need to be a much larger roundabout than the existing 4 arm. A design has been submitted for road safety audit to our own safety engineering team and been accepted, but much more work is needed. It will have to be designed to comply with all the relevant DMRB standards and be built by the developer all under legal agreement and supervision of SCC.'

The above comments were submitted as comment on a draft concept statement for Land off Crown Lane. It accepted that a five arm roundabout could be made acceptable if safety concerns were allayed and if the requirements for the Design Manual for Roads and Bridges were met.

31/03/2014 – Highway Authority response to application DC/14/0196/FUL

See Appendix 2 – response reproduced in full.

This application sought to replace the existing 31m diameter 4-arm roundabout with a 65m diameter 5-arm roundabout. The County Council response recommended that the Borough Council refuse the planning application on grounds of highway safety, and explained why 5-arm roundabouts are not preferred in principle, and why the specific design proposed was did not meet standards set out in the Design Manual for Roads and Bridges.

Correspondence from 2008, between the applicant and a County Council Road Safety Engineer, was reproduced as part of the 2014 application. In an email exchange, the County Council Engineer appeared to support the principle of a 5-arm roundabout, whilst still questioning details of the proposal. The 2014 letter explains that the 2008 correspondence did not consider the different characteristics of a retro-fitted roundabout. Furthermore, this advice was provided without the benefit of consideration of national evidence on accident rates at 5-arm roundabouts. It is this evidence which leads County Council engineers to conclude that the right turn ghost island is the safest option for access to the sites allocated by Rural Vision 2031.

I hope that these comments are helpful in explaining the process which the County Council has followed in coming to a recommendation on this proposal.

Yours sincerely,

MS S D BYE

Ms Samantha Bye
Senior Development Management Engineer
Highway Network Management Group
Economy, Skills & Environment



Suffolk County Council Environment & Transport

Road Safety Audit Report

by

Road Safety Engineering Team
SUFFOLK COUNTY COUNCIL

STAGE 1

Completion of Preliminary Design

Scheme Details:	
Title:	A143/A1088 Walsham Road roundabout
Location:	Northern Roundabout Ixworth bypass
Date:	27th November 2007
Client:	EAS Transport Planning Ltd. (Stephen Adams)
Audit Reference No:	RSA/2007/101/034/1
File Reference:	T:\TRN\UTM\Safety audit

Contents

Section:		Page:
1.	Introduction	3
2.	Site Description	4
3.	Departures from Standards	4
4.	Items Raised by Audit	5
5.	Audit Team Statement	8
6.	Appendices	9

1.0 Introduction

- 1.1 This report is a record of the Stage 1 Road Safety Audit carried out on the proposed alterations to A143/A1088 Walsham Road roundabout at the request of EAS Transport Planning Ltd. (Stephen Adams). The Audit was carried out on 22 November 2007.
- 1.2 The Audit Team was comprised of the following members:

Audit Team Leader: Brian Lomax	Road Safety Engineer Suffolk County Council Endeavour House 8 Russell Road Ipswich IP1 2BX
Audit Team Member: Luke Barber	Road Safety Engineer Suffolk County Council Endeavour House 8 Russell Road Ipswich IP1 2BX

The terms of reference of the audit are as described in the Suffolk County Council Road Safety Audit Policy (2004) and in the Road Safety Audit Standard (HD 19/03) in the Design Manual for Roads and Bridges (DMRB).

The team has examined and reported only on the road safety implications of the measures as presented and has not specifically examined or verified the compliance of the designs to any other criteria.

All traffic sign and road marking diagram number references are made to the Traffic Signs Regulations and General Directions, 2002 (TSRGD).

1.3 The audit was undertaken at Suffolk County Council Environment & Transport Directorate Offices Endeavour House, Ipswich. The audit was carried out in accordance with Audit Brief Form 411/F02. The Audit Brief consisted of the following:

- Safety audit brief
- Scheme Drawing (including location plans).
- Traffic Flow Information

- General Scheme details

2.0 Site Description

The existing junction is a four arm roundabout located to the north east of Ixworth on the Ixworth bypass. The roads joining the roundabout are the A143 to the south and the north, the A1088 to the west and the C645 to the east, all of which are single carriageway. The A143 and A1088 are important all-purpose single carriageway roads that provide access to communities in northwest Suffolk and into Norfolk. The C645 is a local access road providing access to Walsham-le-Willows and Long Thurlow. All roundabout arms are subject to the national speed limit for single carriageway roads (60mph). The roundabout is provided with street lighting.

The proposed alterations to the roundabout include increasing the ICD from approx. 30m to 65m with the addition of a fifth arm between the A143 southern and the A1088 arms. The fifth arm is proposed to allow access to proposed residential development on Crown land located to the southwest of the roundabout.

3.0 Departures from Standard

No departures from standards have been notified to the audit team on the proposals.

4.0 Items Raised by the Audit

GENERAL

4.1 Problem

Location: The whole roundabout

Drawing No.: 034/2007-006

Summary: A fifth arm will increase the number of potential conflicts within the junction.

Description

The introduction of a fifth arm will increase the number of potential conflict points within the junction. At large 5-arm roundabouts drivers are often confused about which lanes they should use. This is likely to result in an increase in the number of accidents.

Recommendation

Investigate whether access, to the development, can be provided from elsewhere on the highway network thus avoiding the need for the additional roundabout arm and size increase. If an acceptable alternative cannot be found it will be necessary to address the problems raised in the 4.2 to 4.5, inclusive, below.

4.2 Problem

Location: The whole roundabout

Drawing No.: 034/2007 -006

Summary: High vehicle speeds through and around the roundabout are likely.

Description

The proposed increase in size of the roundabout results in a greater length of circulatory carriageway between entry/exits. This is likely to encourage high vehicle speeds on the circulatory carriageway with the risk of collisions between vehicles entering the roundabout and vehicles negotiating the circulatory carriageway and loss of control accidents on the circulatory carriageway.

Recommendation

Consider whether the size of the roundabout can be reduced. If this cannot be achieved without compromising design standards, apply lane markings to encourage good lane discipline.

4.3 Problem

Location: The whole roundabout

Drawing No.: 034/2007-006

Summary: High vehicle speeds through and around the roundabout are likely.

Description

The proposed increase in size of the roundabout results in a greater length of circulatory carriageway between entry/exits. This is likely to encourage high vehicle speeds on the circulatory carriageway with the risk of collisions between vehicles entering the roundabout and vehicles negotiating the circulatory carriageway and loss of control accidents on the circulatory carriageway.

Recommendation

As 4.2 above

4.4 Problem

Location: A143 entries

Drawing No.: 034/2007-006

Summary: Two lanes at both A143 entries

Description

The proposed marking of the A143 entries into two lanes may result in vehicles entering the roundabout together and competing with each other while negotiating the circulatory carriageway. This could lead to collisions on the circulatory and in the roundabout exits.

Recommendation

Provide single lane entries on all arms of the roundabout using hatch markings.

LOCAL ALIGNMENT

4.5 Problem

Location: The whole roundabout

Drawing No.: 034/2007-006

Summary: The increased size of roundabout is likely to result in poor lane discipline on the circulatory carriageway.

Description

The proposed increase in size of the roundabout has resulted in short lengths of reverse on the of the inscribed circle diameter alignment in the northwest and southeast sectors. This and the overall size of the roundabout are likely to lead to poor lane discipline on the circulatory carriageway as it is expected that drivers would take a straight line across the area of the reverse curve, leading to the possibility of collision between vehicles that are negotiating the roundabout together.

Recommendation

Remove the reverse curves by reducing the size of the roundabout or by linking the entry and exit curves by short straights. Also see 4. above regarding A143 entry lanes.

JUNCTIONS

No comments.

NON-MOTORISED USER PROVISION

No comments.

ROAD SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING

See 4.2, 4.4, and 4.5 above.

5.0 Audit Team Statement

We certify that we have examined the drawings and documents listed in Appendix A, to this Road Safety Audit Report. The Road Safety Audit has been carried out with the sole purpose of identifying any feature of the design, which could be removed or modified in order to improve the safety of the scheme. The problems identified have been noted in this report together with associated suggestions for safety improvements. No one on the Audit Team has been involved with the design of the measures.

Audit Team Leader:	Brian Lomax		
Signed:		Date:	
Position:	Road Safety Engineer		
Organisation:	Suffolk County Council		
Address:	Endeavour House 8 Russell Road Ipswich IP1 2BX		

Audit Team Member:	Luke Barber		
Signed:		Date:	
Position:	Road Safety Engineer		
Organisation:	Suffolk County Council		
Address:	Endeavour House 8 Russell Road Ipswich IP1 2BX		

6.0 Appendices

Appendix A:

The following documents were provided to the audit team:

Document or Drawing Number	Description	Revision Date and/or Number
034/2007-006	Proposed 5 arm Roundabout Layout	25 September 2007
034/2007-007	Proposed 5 arm Roundabout Layout With Swept Paths	25 September 2007
	Transport Assessment Report	October 2007 - Draft 2

Appendix 2 – Response to 2014 Planning Application



Your Ref: DC/14/0196/FUL
Our Ref: 570\CON\0412\14
Date: 31 March 2014
Enquiries to: Jon Noble
Tel: 01473 260894
Email: jon.noble@suffolk.gov.uk

The District Planning Officer
St Edmundsbury Borough Council
West Suffolk House
Western Way
Bury St Edmunds
Suffolk
IP33 3YU

For the Attention of: Dave Beighton

Dear Dave,

**TOWN AND COUNTRY PLANNING ACT 1990
CONSULTATION RETURN DC/14/0196/FUL**

PROPOSAL: Planning Application - Improvements to A143/A1088
roundabout to provide vehicular access to serve potential
future residential development

LOCATION: Roundabout, A1088, Ixworth, Bury St Edmunds, Suffolk

Notice is hereby given that the County Council as Highways Authority recommends that permission be refused.

Issues with the 5-arm roundabout

This application is to replace the existing 4-arm roundabout for a new, much larger 5-arm roundabout to serve new development in Ixworth. Discussions between the applicant's technical advisors and Suffolk County Council highways have been ongoing for many years.

A Road Safety Audit for the proposed 5-arm roundabout was undertaken in 2008. Serious concerns were raised about the safe operation of the proposal.

The Audit Team continued to have concerns about the design for a 5-arm roundabout, as is shown in the email from Brian Lomax (Suffolk County Council) to Paul Silcock (EAS) and included within the TA dated January 2014.

Within this email Mr Lomax states "I would remain concerned about the size of the proposed 5-arm roundabout and the effect this would have on traffic speed and lane discipline on the circulatory carriageway, Safety Audit problems 4.2 and 4.5 refers".

I have also reviewed the drawings and feel that there are number of remaining issues which might negatively affect the safe operation of a 5-arm roundabout at this junction.

These issues are:

1) Separation of approaches

The proposed additional arm onto the roundabout is close in proximity to both the A143 northbound approach and the A1088 approach. This unbalanced roundabout design may result in a number of problems:

- a) Uneven traffic speeds on the circulating carriageway may result – this is exacerbated by part (2) below.
- b) Driver confusion as to when to signal left and when is straight over and no signalising is required.
- c) Driver confusion as to when to signal right and when is straight over and no signalising is required.
- d) Driver confusion as to which of the circulating lanes to be in and when to move over to leave the roundabout - this is exacerbated by part (4) below

2) Island not centrally located

The central island has not been located centrally within the junction (it lies to the southeast of centre). As a result, traffic travelling from north to south may travel faster through the junction than any other vehicles. Conflicts are more likely as a result.

3) Entry Alignment

The Design Manual for Roads and Bridges, TD 16/07 states that "the entry should lie on an arc which, when projected forward, meets the central island tangentially". None of the approaches achieve this, with the projected path of oncoming vehicles heading straight for the central island. Some drivers will take a smoother path onto the roundabout than others and this may result in side swipe type collisions. Also, the speed of some traffic as it enters the roundabout may not be appropriate and vehicles may strike the central island.

4) Entry Kerb Radius

The Design Manual for Roads and Bridges, TD 16/07 states that "the entry kerb radius should be not less than 10m". There are entry kerb radii that are less than 10m and in fact there are two entries that have a reverse section. Drivers tend not to drive into the area created by the reverse kerb, but instead cut across the junction in a more natural path. There is therefore a risk that a car turning left will swipe a car behind it which is heading straight over a little faster.

5) Unbalanced flows

The fifth arm of the roundabout will be to the proposed development. The amount of traffic using this arm will be very low. Drivers will become accustomed to there being