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## INTRODUCTION

This report contains the results of a Stage 1 Safety Audit carried out on the above scheme. The Audit was carried out at the request of Norfolk County Council, Development Control.

The Audit Team membership was as follows:-

Julian Fonseca (Audit Team Leader)	Project Technician, Casualty Reduction Norfolk County Council
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Malcolm Jones	Senior Engineer, Casualty Reduction Norfolk County Council
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### Specialist Advisors:-

Ivan Ward	Area Casualty Reduction Officer Norfolk County Council
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Chris Seago	Technician ITS Norfolk County Council
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The Audit took place at County Hall on 08 July 2009. The audit comprised an examination of the Safety Audit submission document (see attached contents list) and a site inspection by the Audit Team Leader.

The terms of reference are as described in Planning and Transportation Design Office Practice Manual Procedure 11. The Auditors have examined and reported only on the road safety implications of the scheme as presented and have not verified the compliance of the design to any other criteria.

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## **ITEMS RAISED AT PREVIOUS AUDIT**

All issues raised at the previous audit have been resolved.

## **ITEMS RAISED AT THIS STAGE 1 AUDIT**

### **1.0 General**

1.1 No comment

### **2.0 Alignment**

2.1 Problem – Circulatory width at improvements to Gayton Road roundabout

Entry flares and circulatory widths on Arms A and C are 10m. While this falls within the specification laid out in TD16/07 (para 7.8) it is the opinion of the Audit Team that circulatory widths of 1.2 x the maximum entry width are more appropriate for high speed approach roads / high traffic volumes.

#### **Recommendation**

Designer to increase circulatory carriageway width to accommodate high flows / speeds on the A149.

2.2 Problem – Circulatory width at new roundabout on A149

The circulatory width for traffic entering from Arm A of the new roundabout is 1x the entry width. As stated in 2.1 above, 1.2x the entry width is preferable on high speed / high flow roads. This is especially true of three lane entries where the likelihood of sideswipe collisions is greater.

#### **Recommendation**

Designer to adjust this arm to accommodate greater circulatory width for traffic entering the roundabout from Arm A.

The A149 metre strips on Arm A of the roundabout redevelop much later than those on Arm B leading meaning that the north-east bound carriageway is of a lesser standard than the south-west bound carriageway.

**Recommendation**

Designer to redevelop metre strips on Arm A closer to the roundabout.

**2.4 Comment**

The new A149 roundabout is unbalanced, having three lane entry from Arm A but two lane entry from Arm B, designer to clarify reason for this

**3.0 Junctions**

**3.1 Comment**

The supplied documents make no mention of signal timings at the alterations to the Scania Way junction. Given the high traffic volume on the A149 approach to the Hardwick roundabout it is important that the new link road is not made an attractive alternative route. Designer to ensure balance of signal timings so as to be sufficient to clear traffic from Scania Way but not to make the new link road a more attractive proposition for drivers travelling from the A149 into King's Lynn.

**3.2 Comment**

The purpose of the south arm of the Scania Way roundabout is unclear from the supplied documents. Designer to clarify it's purpose. If it is intended as a secondary access to the supermarket development it may be superfluous.

**3.3 Comment**

There is an lack of junction consistency along Scania way. There are two roundabouts, a segregated right turn lane junction and two simple t-junctions. It is presumed that these differing junction types are designed to cater for differing levels of anticipated use – designer to clarify.

#### **4.1 Problem – Inadequate cycle lane width**

The 0.8m on carriageway cycle lane shown on Oldmedow Road is of insufficient width. This can lead to vehicles passing too close to cyclists bringing them into conflict.

##### **Recommendation**

Designer to provide a 1.2m wide cycle lane. If this is unachievable then it is preferable to make no formal provision for cyclists.

### **5.0 Signs, Lighting and Markings**

#### **5.1 Problem – Insufficient entry path guidance at Gayton roundabout improvements**

There is a likelihood of sideswipe accidents occurring on the roundabout due to insufficient path guidance introduced by the proposed implementation of three lane approaches on Arms A and C.

##### **Recommendation**

Designer to provide circulatory guidance warning markings to Diagram No. 1004.1 (TSRGD2002).

#### **5.2 Problem - Insufficient entry path guidance at new A149 roundabout**

There is a likelihood of sideswipe accidents occurring on the roundabout due to high approach speeds / vehicle flows.

##### **Recommendation**

See 5.1 above.

There are no lane destination arrows shown on the new roundabout which will lead to ambiguity or uncertainty in drivers, leading to sideswipe collisions.

**Recommendation**

Designer to provide appropriate lane guidance arrows to new A149 roundabout.

**5.4 Comment**

No mention is made of streetlighting at the proposed new roundabout on the A149 or the improvements to the existing Gayton roundabout. Designer to clarify whether streetlighting will be provided at these roundabouts.

**5.4 Comment**

Toe in arrows are shown on the exits onto Arm A of the new A149 roundabout and the exits onto Arms A and C on the improvement to the existing Gayton roundabout. Designer to provide, 'Merge in turn', signing to reinforce these arrows.

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**AUDIT TEAM STATEMENT**

We certify that this audit has been carried out in accordance with Norfolk County Council Department of Planning & Transportation Procedures.

Signed (ATL) 

Dated

...22/07/09...

Julian Fonseca

Project Technician,

(Casualty Reduction)

Norfolk County Council

Signed 

Dated

...22/07/09...

Malcolm Jones

Senior Engineer,

(Casualty Reduction)

Norfolk County Council



**RESPONSE SHEET**

Problem (para no.)	Agree/ Disagree	Reasons/Proposals

To:- Principal Engineer (Casualty Reduction): fao Julian Fonseca

From.....

Signed.....Project Engineer

Dated: .....

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