

Traffic Flow Diagrams

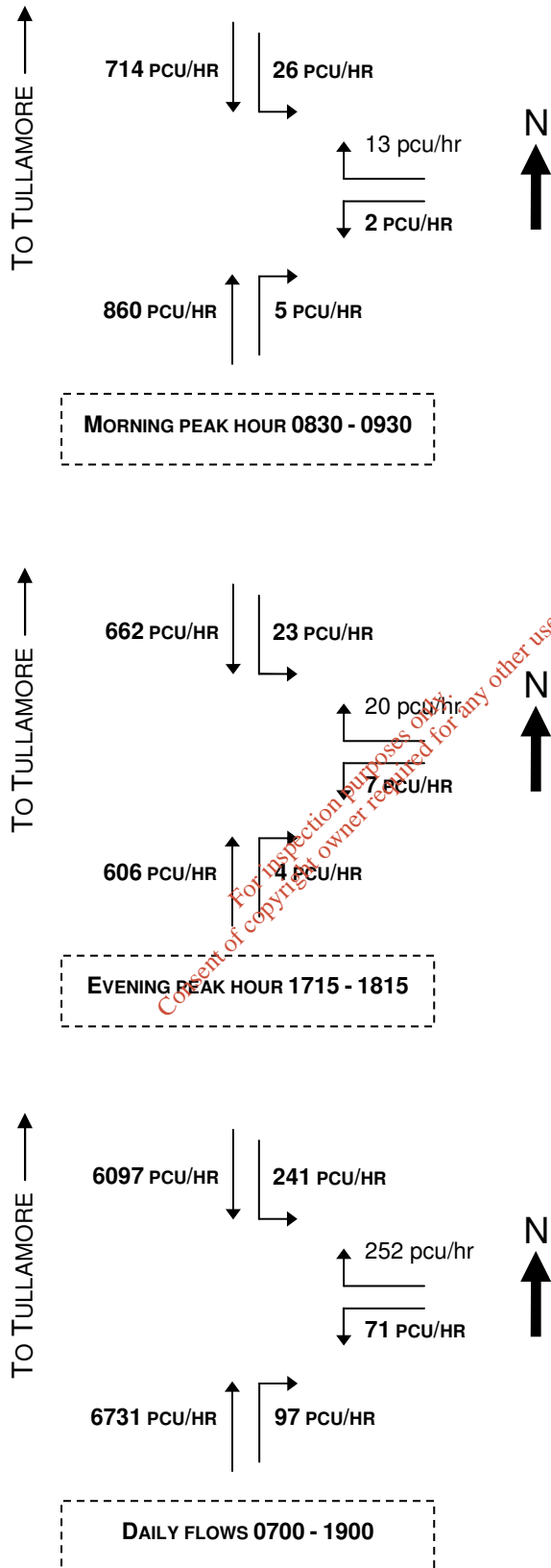


Figure 1: Existing flows at N80 / development entrance junction (Do-nothing)

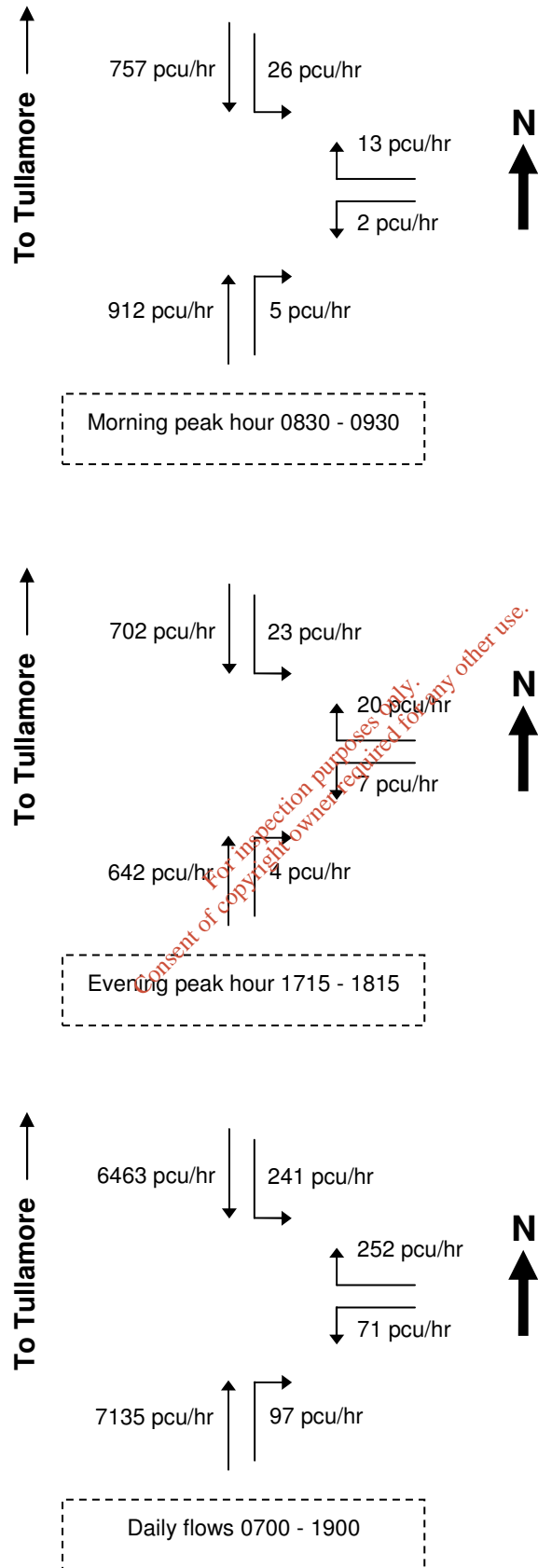


Figure 2: Day of opening flows at N80 / development entrance junction (Do-nothing)

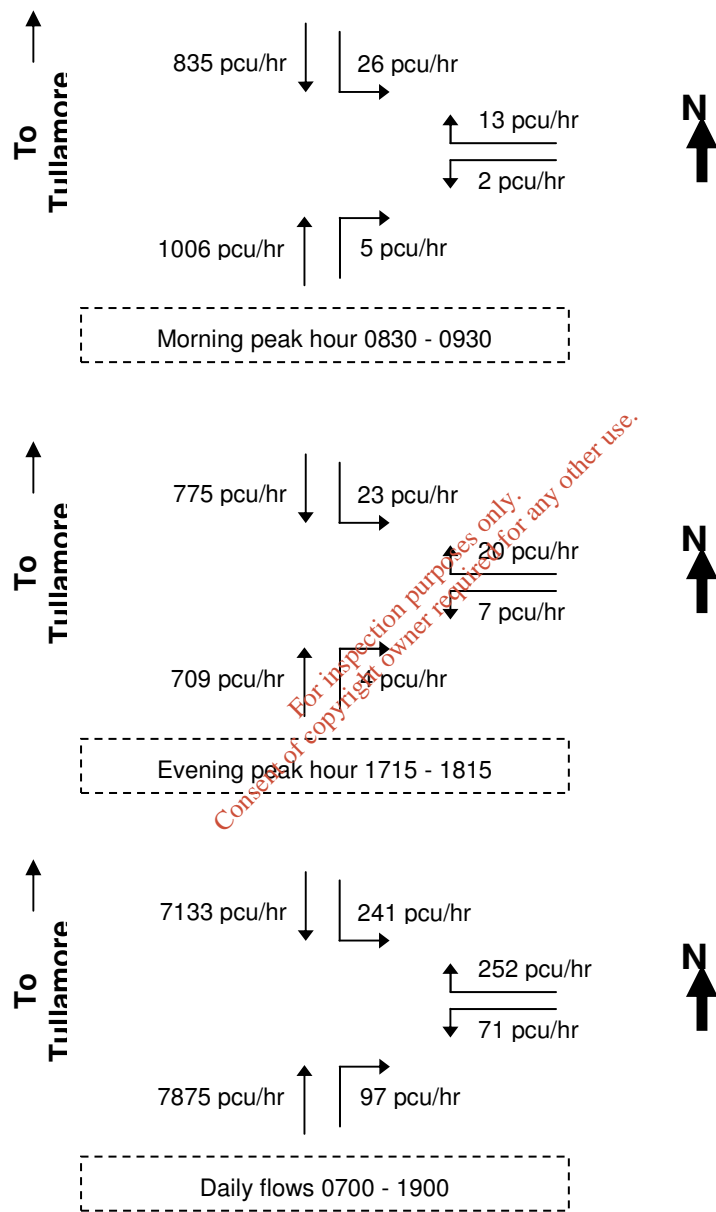


Figure 3: Initial design year (2018) flows at N80 / development entrance junction (Do-nothing)

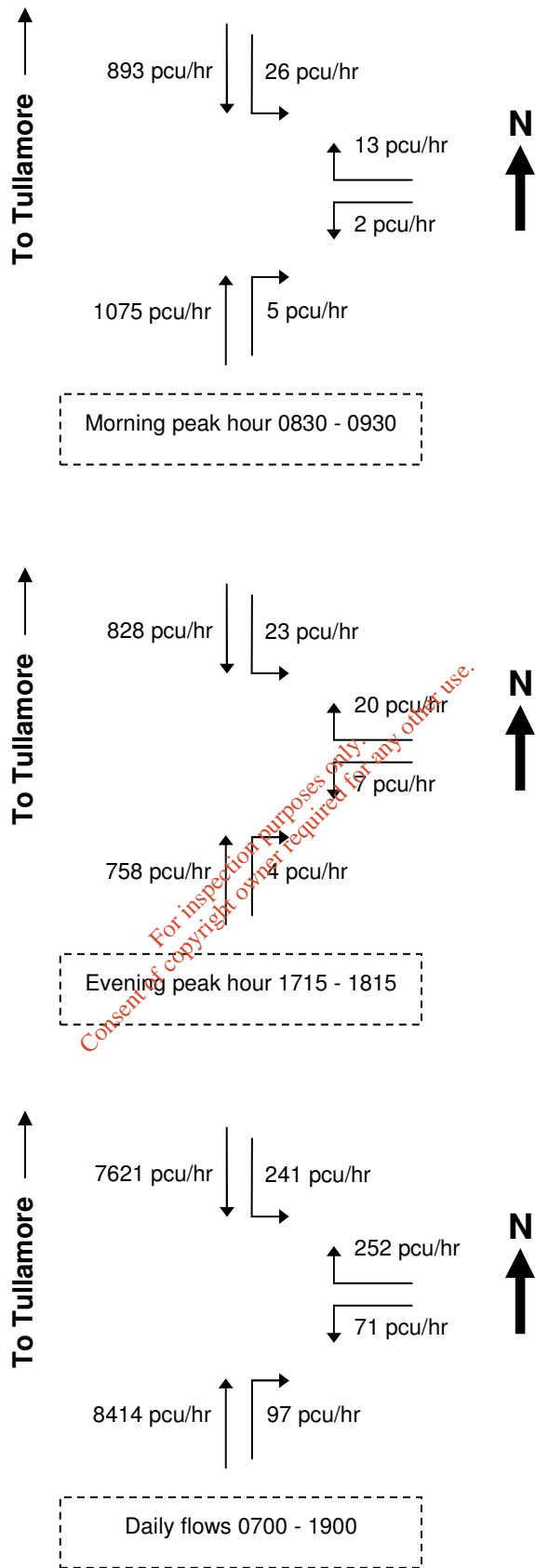


Figure 4: Final design year (2028) flows at N80 / development entrance junction (Do-nothing)

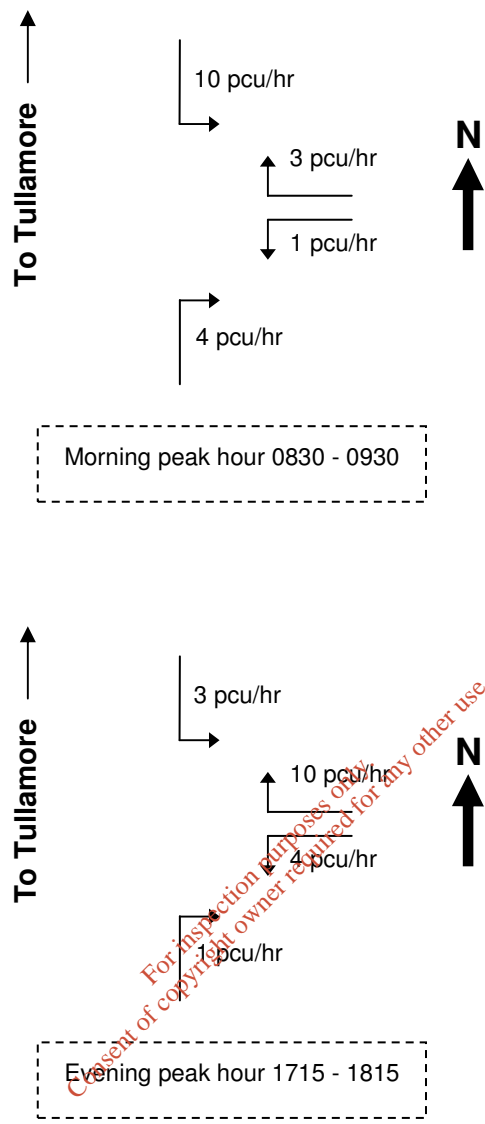


Figure 5: *Distribution of peak hour trips generated by proposed development*

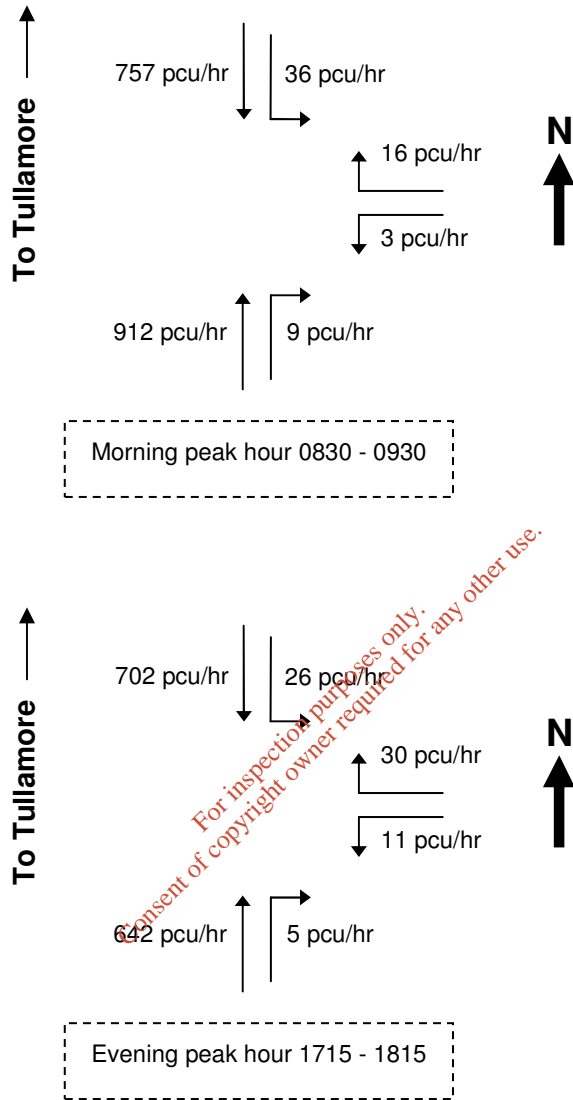


Figure 6: Day of opening flows at N80 / development entrance junction (Operational Phase)

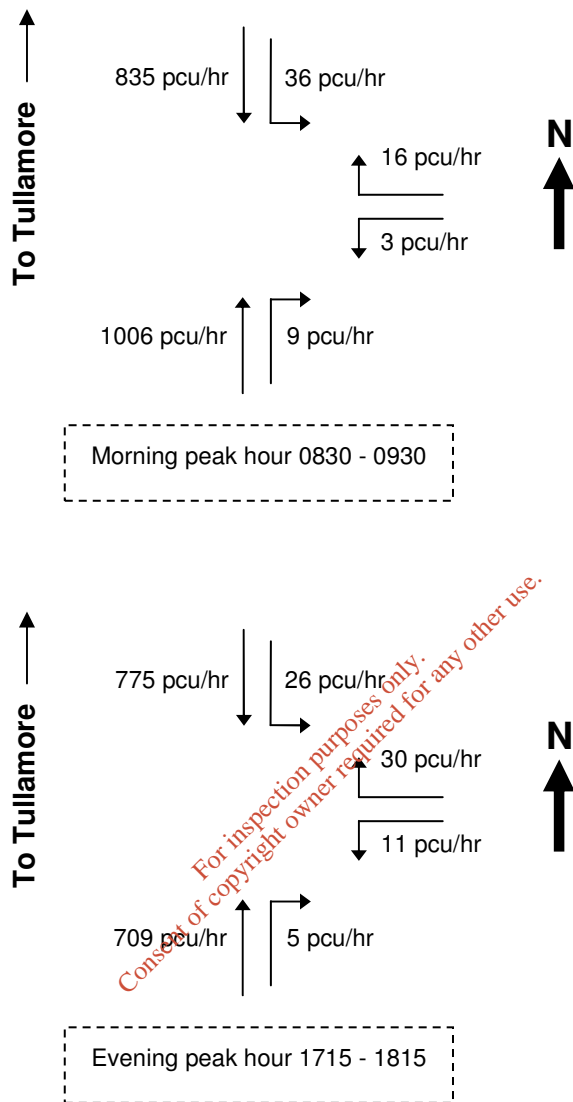


Figure 7: Initial design year (2018) flows at N80 / development entrance junction (Operational Phase)

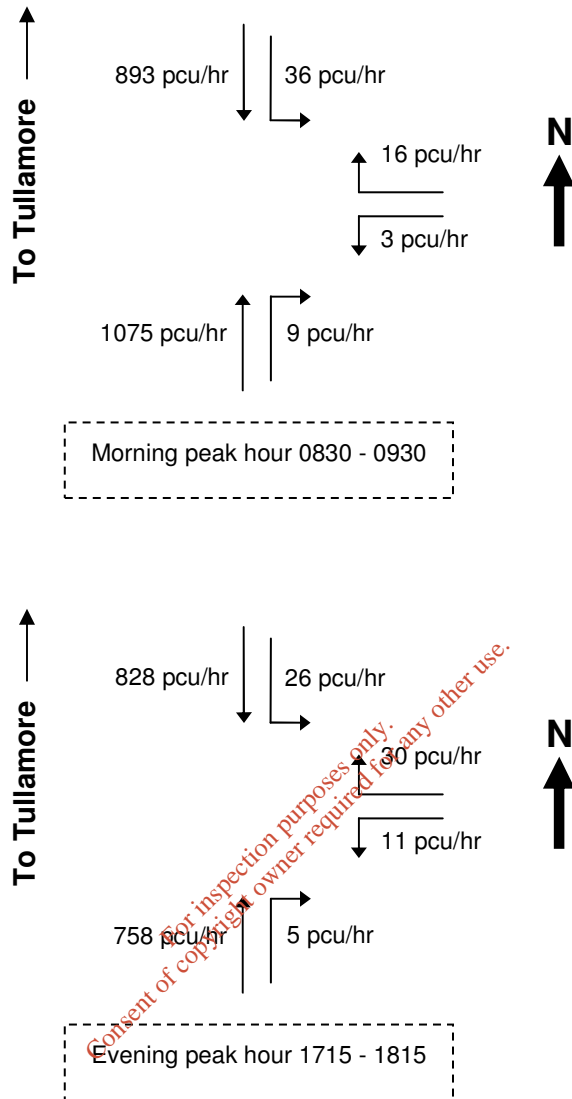


Figure 8: Final design year (2028) flows at N80 / development entrance junction (Operational Phase)

Road Safety Audit



Road Safety Consulting Ltd

Drumtarsna
Borrisoleigh
Nr Thurles
Co Tipperary
Ireland

Tel/Fax: 00353 504 50825

Email:mgandy@roadsafetyconsulting.net

May 17, 2010

P M Group
Killakee House
Belgard Square
Tallaght
Dublin 24

FAO: Mr Patrick Doherty

Dear Patrick

N89 DERRYCLURE, TULLAMORE, Co.OFFALY- Road Safety Audit

I refer to the above and enclose 2 bound copies of the Stage 1 Road Safety Audit report, as requested, and a completed copy of the Designer's response.

I also enclose our invoice for your Accounts office.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Malcolm Gandy'.

Malcolm Gandy

Encs.

Directors:
Malcolm K Gandy
Hilary E Gandy
Company Reg. No. 5225549
Registered Office: Brickwall Dairy, Sible Hedingham, Halstead, Essex CO9 3RH

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DRAFT

ROAD SAFETY AUDIT RESPONSE

Feedback on Audit Reports

Scheme: N80 Derryclure, Tullamore, Co. Offaly

Audit Stage: Road Safety Audit Stage 1

Date Audit: March 2009

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted	Alternative measures (describe)	Alternative measure accepted by Auditors (yes/no)
3.1.1	YES	YES		
3.2.1	YES		PROPOSAL INCLUDES DIVERTING THE DITCH INTO ADJOINING LAND TO AVOID ROAD	YES
3.2.2	YES	YES		
3.2.3	YES		AUTO BACK SWERTH PATH	YES
3.2.4	YES		ANALYSIS TO BE USED TO CHECK GRASS IS SUFFICIENT	YES
3.3.1	YES		DRAWING'S NOTE LIGHTING DESIGN TO BE CARRIED OUT AT DETAILED DESIGN STAGE.	YES.

Signed:

Project Team Leader

Date: 17 MAY 2010

Please complete and return to Road Safety Auditor.

Safety Audit

ABOVE RESPONSES ACCEPTED

Signed:

M.K. GANDY

RSC LTD



**N80 DERRYCLURE
TULLAMORE, Co. OFFALY
ROAD SAFETY AUDIT STAGE 1**

Date: May 2010

Report produced for: PM GROUP

Report produced by: Road Safety Consulting Ltd

Reference: RSC/MKG/10034/Derryclure

Road Safety Consulting Limited
Drumtarsna, Borrisoleigh,
Co. Tipperary
Directors: Malcolm Gandy, Hilary Gandy
Tel/Fax: 00353 (0)504 50825
Co. Reg. No. 440875 Vat Reg. No. IE9666894Q



Document Control Sheet

Project Title	Derryclure Energy Centre
Report Title	Road Safety Audit Stage 1
Revision	
Status	FIRST ISSUE
Control Date	May 2010

Record of Issue

Issue	Originator	Date	Team Member	Date	Authorised	Date
FIRST	M K G	17-05-10	T McG	17-05-10	H E G	17-05-10

Distribution

Organisation	Contact	Copies
PMGROUP	Patrick Doherty	2+email

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ROAD SAFETY AUDIT STAGE 1

1. INTRODUCTION

- 1.1 This report describes a Stage 1 Road Safety Audit carried out on proposed access modifications associated with the Derryclure Landfill Site located on the eastern side of the N80, to the south of Tullamore, on behalf of PM Group, Killakee House, Belgard Square, Tallaght, Dublin 24.
- 1.2 The audit team members were as follows:-
- Malcolm Gandy, MCIHT, MSoRSA;
Road Safety Consulting Ltd
- Team Member: Trevor McGarr – B. Eng, PG Dip, A. Eng, AMIEI
(Waterman Boreham) Consultant for Road Safety Consulting Ltd
- 1.3 The audit comprised a daylight examination of the site on 29th April 2010. The weather was fine and dry.
- 1.4 This Stage 1 audit has been carried out in accordance with the relevant sections of HD 19/09. The team has examined only those issues within the design relating to the road safety implications of the scheme, and has therefore not examined or verified the compliance of the design to any other criteria.
- 1.5 All of the problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise accident occurrence.



2. Scope

- 2.1 The proposals involve a modified junction for the access road with the N80, including a deceleration lane and a new internal roundabout.
- 2.2 Section 3 contains the Issues Raised by the Stage 1 Road Safety Audit together with recommendations to be considered. Section 4 contains the Auditor Team Statement. Appendix A provides the details of the drawings provided by PM Group. The issues raised in Section 3 can be cross referenced with the annotated scheme drawing showing problem locations attached in Appendix B. The design team response to the Road Safety is provided in Appendix C – Design Team Response.

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3 Issues Raised by the Stage 1 Road Safety Audit

3.1 General

3.1.1 Problem

Location – Southbound approach to the access road junction - Locations A to B

Summary – Drainage

There is no information provided relating to the drainage of surface water on the main carriageway. The revised layout will need to be adequately drained.

Recommendation

Details of revised drainage arrangements should be provided at the detail design stage.

3.1.2 Observation

Location – The access junction – Location C.

Summary – Surfacing

It is assumed that the junction area will be re-surfaced. The exiting junction area has areas of loose stones that are carrying onto the main carriageway.

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3.2 Junctions and Alignment

3.2.1 Problem

Location – Southbound approach to the access road junction - Locations A to B

Summary – Deceleration lane

A deceleration lane and a significantly greater left turn entry radius are proposed. The existing narrow hard shoulder runs close to a steep sided ditch and it appears that there may be inadequate clearance between the deceleration lane and the ditch hazard.

Recommendation

There should be an appraisal of the clearance. It may be necessary to pipe the ditch along this length.

3.2.2 Problem

Location – The access junction – Location C

Summary – Visibility

Visibility of and from the junction is currently inhibited by chain link fencing and support posts. The drawing shows a 'Y' distance visibility splay to the left that excludes the southbound lane. Inadequate visibility can result in 'pull-out' type accidents.

Recommendation

It should be ensured that visibility from the junction is clear and unobstructed, in accordance with traffic speeds. The 'Y' distances from the access junction should be shown to the nearer edge of the major carriageway in both directions.

3.2.3 Problem

Location – The access junction - Location C

Summary – Turning movements

There is some concern that some large vehicles may have difficulty making some turning movements into and out from the access junction without the



risk of kerb collisions and over-run. For example, it appears that large vehicles may over-run the dedicated right turning lane when turning left from the access road. Restricted entry may extend the time required for turning movements with possible increased risk of collisions.

Recommendation

It should be ensured that all vehicle turning movements can be safely accommodated with adequate margins for error.

3.2.4 Problem

Location – The internal roundabout - Location D

Summary – Turning movements

The roundabout is to be provided with traffic separator islands on each of the four arms. This is supported as they provide clear guidance and control on vehicle entry and exit positions. There is some concern however that some large vehicles may have difficulty making some turning movements without the risk of kerb collisions and over-run.

Recommendation

It should be ensured that all vehicle turning movements can be safely accommodated with adequate margins for error.

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3.3 Road Signs, Road Markings and Lighting

3.3.1 Problem

Location – The new access junction and approaches - Locations A to E

Summary – Lighting

There is no street lighting along this section of the N80. Large vehicles making right turns in or out from the access road will be exposed side-on to approaching main road traffic. During the hours of darkness on an unlit road, drivers approaching at up to 100 kph may not realise that a large vehicle is making such a turning movement. There may be a risk of side impacts.

Recommendation

There should be street lighting through the junction and immediate approaches.

End of Safety Comments

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4. Auditor Team Statement

We certify that we have examined the site in daylight on 29th April 2010. These examinations have been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for improvement which we recommend should be studied for implementation.

No one on the Audit Team has been otherwise involved with the design of the measures audited. This audit has been carried out in accordance with NRA HD 19/09.

Audit Team Leader

Malcolm Gandy, MCIHT, MSoRSA

Road Safety Consulting Ltd
Drumtarsna
Borrisoleigh
Nr Thurles
Co. Tipperary
Ireland

Dated 17-05-10

Audit Team Member

Trevor McGarr B. Eng, PG Dip, A. Eng, AMIEI

Consultant for Road Safety Consulting Ltd

Dated 17-05-10



Appendix A

List of Drawings & Other Documents

Drawing No. 0R10 Project IE0310150-30-SK-001

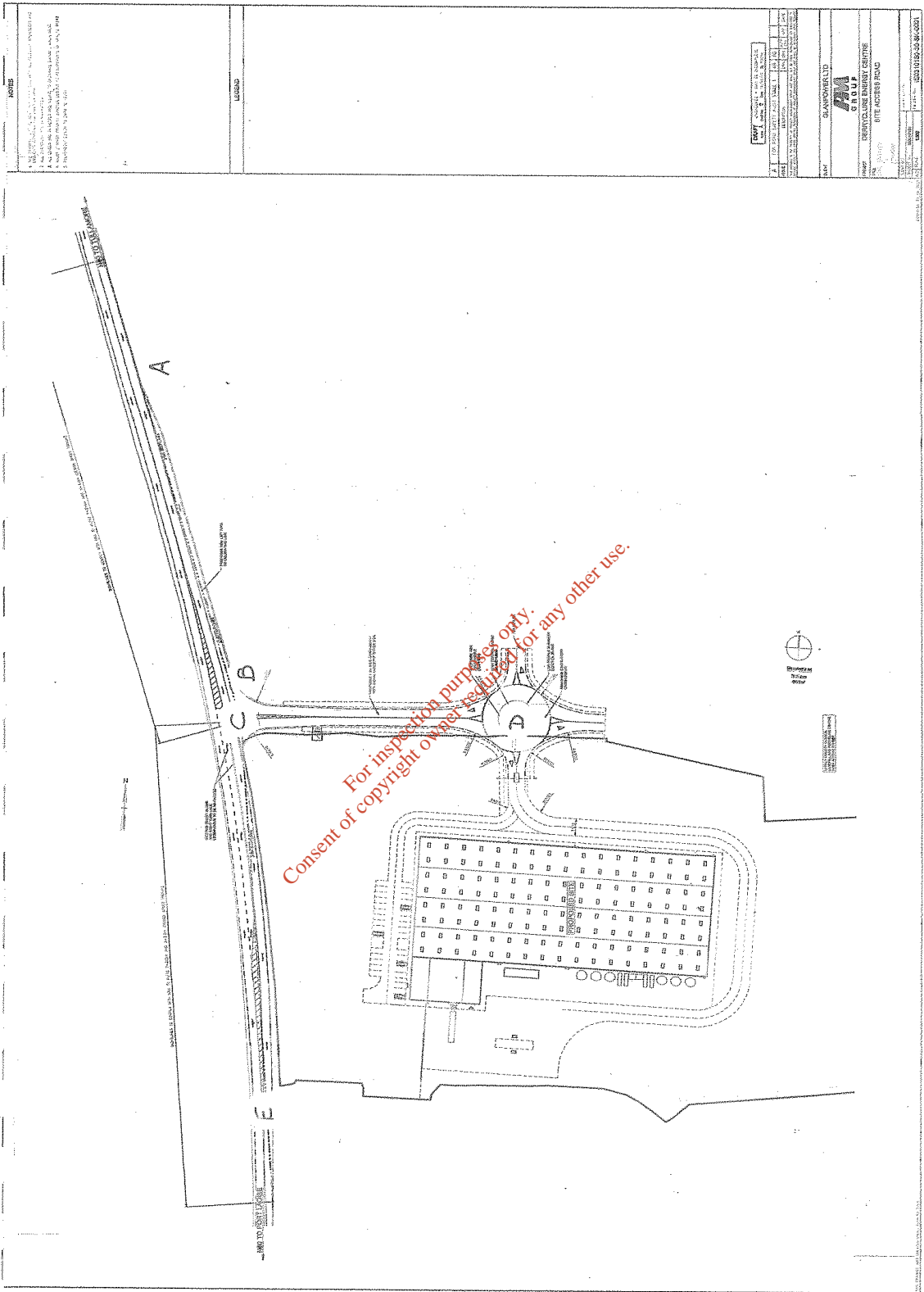
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Appendix B

Drawing showing Problem Locations

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DATE: 2012/06/26		SCALE: 1:1000	
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Appendix C

Design Team Response

NRA HD 19/09 'Road Safety Audits' specifies that for schemes on National Roads the Design Team Leader should prepare an Audit Response for consultation with the Design Office Project Manager (DOPM) and/or the NRA. Ultimately, for National Road schemes, the DOPM will produce an Exception Report if the recommendations of the Road Safety report are not to be actioned.

The NRA has stipulated the tabulated format for the preparation of the Design Team response for National Road Schemes. It is recommended that this or a similar format is adopted by all Design Teams in recording discussion and response to the issues raised by the Road Safety Audit and that a copy of this Audit Response and any ensuing Exceptions Report is forwarded to the Auditors.

Please copy completed form to:

Malcolm Gandy, MIHT
Road Safety Consulting Ltd
Drumtarsna
Borrisoleigh
Nr Thurles
Co. Tipperary
Ireland

Tel/Fax: 00 353 (0)504 50825

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ROAD SAFETY AUDIT RESPONSE

Feedback on Audit Reports

Scheme: N80 Derryclure, Tullamore, Co. Offaly

Audit Stage: Road Safety Audit Stage 1

Date Audit: March 2009

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted	Alternative measures (describe)	Alternative measure accepted by Auditors (yes/no)
3.1.1				
3.2.1				
3.2.2				
3.2.3				
3.2.4				
3.3.1				

Signed: _____ **Project Team Leader**

Date: _____

Please complete and return to Road Safety Auditor.

Safety Audit

Signed: