



Stockton-on-Tees

BOROUGH COUNCIL

DEVELOPMENT & NEIGHBOURHOOD SERVICES

Technical Services

MOUNT LEVEN ROUNDABOUT

ROAD SAFETY AUDIT STAGE 1

REPORT



Stockton-on-Tees
BOROUGH COUNCIL

Mount Leven Roundabout

Stage 1 Road Safety Audit

Date	15/05/14		
	Prepared by	Checked by	Approved by
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Signature			



Stockton-on-Tees
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Mount Leven Roundabout

Stage 1 Road Safety Audit

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1 Introduction

- 1.1 This report details the results of a Stage 1 Road Safety Audit of the new access into Mount Leven.
- 1.2 The audit has been undertaken in accordance with Stockton-on-Tees Borough Council's Road Safety Audit Procedure.
- 1.3 The audit team consisted of Mr A Wilton, Principal Engineer and Mr J McMahon Principal Officer who undertook a site visit on Thursday 15th May 2014. Weather conditions on site were overcast whilst the road surface was dry.
- 1.4 A list of information provided to the audit team has been provided as appendix A to this report.
- 1.5 Road Safety Audit is based upon a qualitative risk assessment process and there is no measure of the success achieved by any recommendations. Road Safety Audit cannot guarantee the safe operation of the scheme under consideration in this report as accidents are rare and random events and are largely caused by factors outside the Audit Team's influence, such as driving behaviour and to a lesser extent vehicle condition.
- 1.6 The following information was not made available to the audit team and as such any specific influence of these details on road user safety has not been considered by this audit:
 - Site Clearance
 - Drainage
 - Landscape
 - Utilities Apparatus
 - Lighting
 - Safety fencing
 - Auto tracking
- 1.7 Due to unavailability of land horizontal approach curvature is 2 steps below the desirable minimum on the westbound approach.
- 1.8 A previous audit has been completed in December 2012.



2 Site Description

- 2.1 The development site is located on the north side of the A1044 Leven Bank Road (adjacent to the access road to Mount Leven). The A1044 Leven Bank Road is a principal road broadly oriented east to west. The section of A1044 Leven Bank Road adjacent to the site is subject to a 40mph speed limit.
- 2.2 The A1044 Leven Bank Road is a single carriageway providing a link between Ingleby Barwick and Yarm. The A1044 is used by the Highway Agency as a tactical diversion route for the A19 northbound and occasionally southbound. In the last twelve months the A1044 has been utilised approximately 24 times as a tactical diversion route, although the majority of these occasions have been overnight closures for maintenance work. The existing carriageway is approximately 6.7m to 7.2m wide and is predominately rural bounded on both sides by grass verge, with no footways and is unlit.
- 2.3 A speed survey undertaken in May 2013 indicated an 85th percentile speed of 40.5mph in both directions. The available traffic data for the A1044 Leven Bank Road was provided from a survey in April 2012. The peak two way traffic volumes was approximately 1400 and 1300 vehicles during the morning and evening peak hours respectively.
- 2.4 The collision history shows 2 reported collisions occurring between January 2011 and December 2013. Both collisions involved vehicles exiting properties onto the A1044 Leven Bank Road, one at Mount Leven Farm and the other at Hillcroft.



3 Scheme Description

- 3.1 The scheme comprises of the development of 350 Continuing Care Retirement Community units and 100 bed nursing home which will be accessed off the A1044 Leven Bank Road via a new roundabout.

4 Stage 1 Road Safety Audit

4.1 Problem

Location: A1044 Leven Bank Road.

Summary: Insufficient temporary advanced warning signs may increase the risk of collisions occurring.

Description: The proposals do not show any advanced warning signs on either of the approaches. The omission of these temporary warning signs may result in late decision making and sudden braking manoeuvres, thus increasing the risk of collisions occurring.

Recommendation: Provide Temporary warning signs (TSRGD 7014, NEW ROUNDABOUT AHEAD) on both approaches of the A1044 Leven Bank Road.

4.2 Problem

Location: A1044 Leven Bank Road (westbound approach).

Summary: High approach speeds may lead to an increase in collisions occurring.

Description: The roundabout is located on a crest which can lead to a reduction in driver's forward visibility of the junction area, when approaching on the "up gradient". The speed limit is currently 40mph; recent speed survey provided show 85th percentile speeds in both directions are 40.5mph. High approach speed can lead to late and heavy braking, thus increasing the risk of collisions occurring.

Recommendation: It was previously suggested that a reduction in the speed limit to 30mph, 200m before the roundabout on both approaches to reduce high approach speeds. However the underlying principles of speed management policies should achieve a safe distribution of speeds consistent with the speed limit that reflects the function of the road and the road environment. Therefore a reduction in the speed limit in isolation which doesn't reflect the function of the road and the road environment is likely to be ineffective and lead to non-compliance.

Therefore suggest a PSV value of 68 or higher is provided on the west bound approach to the roundabout on the A1044 (including change in surface colour). Relocate TSRGD signs 510 and 511, 30m east of the entrance of Handley Cross (westbound), also add yellow backing boards and distance plates to these signs. To ensure the sign is clearly visible to drivers a significant amount of vegetation will need to be removed from the verge. Provide “SLOW” road markings, reinforced with red surfacing adjacent to the warning signs. Block paving (515.2) is constructed around the ICD with maximum slope.

4.3 Problem

Location: A1044 Leven Bank Road (westbound approach).

Summary: Substandard stopping sight distance on the westbound approach may increase the risk of collisions occurring.

Description: The plans show a departure from standard on the stopping sight distance on the westbound approach. The substandard stopping sight distance may result in heavy/late braking, thus increase the risk of collisions occurring.

Recommendation: Introduce recommendations in 4.2 and also an additional TSRGD sign 510 (replace existing bend warning sign) with yellow backing board and “SLOW” road marking, reinforced with red surfacing.

4.4 Problem

Location: A1044 Leven Bank Road (westbound approach).

Summary: Potential queuing on the westbound approach may lead to an increase in shunt type collisions occurring.

Description: Vehicles approaching the proposed roundabout must bypass an uphill gradient. Vehicles that egress the proposed development may generate queues back towards the hill (especially during the morning peak). There is potential of vehicles travelling along the uphill gradient being unaware of queuing traffic, thus increasing the risk of shunt type collisions occurring.

Recommendation: Provide TSRGD sign 584 “traffic queues likely on road ahead” in advance of the roundabout on the westbound approach.

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4.5 Problem

Location: A1044 Leven Bank Road (eastbound approach).

Summary: Substandard stopping sight distance on the eastbound approach may increase the risk of collisions occurring.

Description: The proposed visibility splay on the eastbound approach crosses the centre line and is within the opposite carriageway lane. Therefore vehicles travelling in the opposite direction would obstruct forward visibility of the roundabout. The substandard stopping sight distance may result in heavy/late braking, thus increasing the risk of collisions occurring.

Recommendation: Suggest a PSV value of 68 or higher is provided on the east bound approach to the roundabout on the A1044 (including change in surface colour). Relocate TSRGD signs 510 and 511 to existing bend warning sign add yellow backing boards and distance plates to these signs. Provide an additional TSRGD sign 510 (at the location of the proposed sign 510). Provide "SLOW" road marking, reinforced with red surfacing adjacent to the warning signs. Block paving (515.2) is constructed around the ICD with maximum slope.

4.6 Problem

Location: South side of roundabout.

Summary: Insufficient width of off road cycle lane may increase the risk of conflict.

Description: The proposals show the introduction of a cycle lane on the south side of the roundabout, to allow cyclists to safely bypass the roundabout. However from the plans provided it appears to be approximately 1.2m wide. Although the audit team have not received the street lighting layout, it is assumed that at least one lighting column will be located along this section. The lack of width may result in pedal cyclists losing control or re-joining the carriageway un-expectedly, thus increasing the risk of collisions occurring.

Recommendation: Ensure the cycle lane is 1.7m in width.

4.7 Problem

Location: North and south side of roundabout.

Summary: Proposed layout may increase the risk of pedal cycle/vehicular conflict.

Description: The proposals show the cycle lanes to allow cyclist to safely bypass the roundabout. However it's unclear how the pedal cyclist will re-enter the carriageway. Incorrect layout is likely to increase the risk of pedal cycle/vehicular conflict.



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Recommendation: Ensure the correct layout is provided for cyclists to re-enter the carriageway.

5 Audit Team Statement

I certify that this audit has been carried out in accordance with Stockton-on-Tees Borough Council's Road Safety Audit Procedure.

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Signed
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6 Appendix A – Documents and Drawings

Documents

Audit Brief
Transport Assessment

Drawings

Proposed Roundabout Access – C.950.G.001

