Table C.1 Project Summary

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Date:	14th February 2025
Prepared by:	Optima Highways and Transportation Consultancy Ltd
On behalf of:	Kirklees Council – Highway Development Management
AUTHORISATION SHEET	
Project:	Storthes Hall, Kirkburton
Report title:	Stage 1 Road Safety Audit Brief (rev 2)
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Date:	14th February 2025
I APPROVE THE RSA BRIEF AND INSTRUCT THE RSA TO TAKE PLACE ON BEHALF OF THE OVERSEEING ORGANISATION	
Name:	Adam Darwin FIHE – Group Engineer Highways Development Management (Planning)
Signed:	Adam Darwin
Organisation:	Kirklees Council
Date:	14th February 2025

Table C.2 General Details

General details				
Highway scheme name and number:		Storthes Hall, Kirkburton (Optima Reference18092) Kirklees Planning Application Reference 2023/93667		
Type of scheme:	Proposed site access arrangements and off-site highway works associated with a residential development at the former Storthes Hall Student Village, Kirkburton.			
RSA stage tick as appropriate	1 ☒	2 ☐	3 ☐	4 ☐
	Interim			
Overseeing organisation details		**Design organisation details**		
Kirklees Council		Optima Highways and Transport Transportation Ltd		
Police contact details		**Maintaining agent contact details**		
N/A		Kirklees Council		
RSA team membership				
Road Safety Initiatives Team Leader: Martin Morley BSc(Hons) MCIHT MSoRSA Certificate of Competency or Mark Hedley IEng MCIHT MSoRSA FIHE RegRSA (IHE) Certificate of Competency Team Member: Alan Bawn BSc(Hons) MICE				
Terms of reference				
DMRB GG119 (rev 2) Road Safety Audit				

Table C.3 Scheme Details

Scheme description/objective
General
The Development Site is located at the former 'Storthes Hall Student Village', located on land to the south and east of Storthes Hall Lane, Kirkburton. The Site forms part of a larger housing allocation, designated in the Kirklees Local Plan Allocations and Designations document under site reference MDGB1 'Land at Storthes Hall'. The development proposals are illustrated on the Parker Peel Architecture Indicative Masterplan (drawing ref 1862-MP-01) and comprise the construction of up to 261 dwellings. However, the development is proposed in outline only, with all matters reserved except for points of access. As such, this plan has been provided for illustrative purposes only, with any internal highway works (beyond those shown on the detailed Optima drawings) being outside of the scope of the Stage 1 Road Safety Audit. The Site forms a circa 550m wide frontage onto Storthes Hall Lane and benefits from two existing access points connected via a one-way route through the site, which forms a clockwise bus route (for a private student bus service). An entrance only is located to the north of the Site and an exit only is located to the south-western corner of the Site, referenced to hereafter as the 'northern site access' and the 'southern site access'. It is proposed to upgrade both the northern and southern site accesses to facilitate two-way movements and serve the development via an internal spine road, suitable to accommodate a bus route running between both accesses. The proposals will retain access to Shelley Community Football Club, Huddersfield Dragons Hockey Club and a single residential dwelling known as 'Ravensknowle House'. Both the proposed accesses on to Storthes Hall Lane have been designed to accommodate bus penetration through the site. Off-site highway improvement works are also proposed within the vicinity of Storthes Hall Lane bridge, at the Penistone Road/Storthes Hall Lane junctions and at the Penistone Road/North Road junction, in order to satisfy the site specific allocation requirements. These improvements are primarily aimed to improve the pedestrian route between the site and Kirkburton village centre, to address gaps in the existing provision. These proposals also include other safety measures, including improvements to junction visibility at the Storthes Hall Lane/Penistone Road junction (by rebuilding a section of retaining wall), and cycling improvements at the Penistone Road/North Road junction. **Northern Site Access** It is proposed to upgrade the existing entry only access to allow two-way operation, as shown on Optima Drawing no. 18092/GA/01/REV/E. A summary of the key alterations are: • 10m corner radii; • Removal of existing barrier system and road narrowing to provide a 6.5m wide single carriageway (6.5m rather than 6.75m is provided to minimise impacts on trees, but still facilitate the bus route, as agreed with Kirklees Council); • Internal 2m footway to the west and 0.6m margin to the east, again to minimise tree impacts;

- Inset dropped crossing with tactile paving and appropriate pedestrian visibility connecting existing footways to both sides of the site access along Storthes Hall Lane;
- Relocation of existing listed gate posts and gates to accommodate carriageway widening and appropriate pedestrian visibility; and
- Relocation of the ornamental pillars and existing boundary walls to accommodate visibility splays of 2.4m x 90m junction visibility splays in both directions.

Bus and refuse collection vehicle swept path analysis of all movements at the proposed northern site access is shown on Optima drawing no. 18092/ATR/01/REV A.

Southern Site Access

It is proposed to upgrade the existing exit only access, to allow two-way operation, as shown on Optima Drawing no. 18092/GA/02/REV F. A summary of the key alterations are:

- 10m corner radii;
- Removal of trees, existing barrier system and road narrowing to provide of a 6.75m wide single carriageway;
- Localised 1m carriageway widening to accommodate bus and refuse entry swept paths;
- 2m footways to both sides connecting with existing footways along Storthes Hall Lane;
- Inset dropped crossing with tactile paving and appropriate pedestrian visibility;
- Relocation of existing boundary wall to the north to accommodate visibility splays of 2.4m x 90m in both directions.

Bus and refuse collection vehicle swept path analysis of all movements at the proposed southern site access is shown on Optima drawing no. 18092/ATR/02.

Off-Site Highway Works

Background

The Site is required to provide local highway improvements to satisfy the following site specific allocation requirement:

- Development proposals will need to fully assess any impact on the junction of Storthes Hall Lane and Penistone Road, and if necessary, include improvement to that junction.

At present, the Site is not provided with a continuous footway connection to the closest facilities within Highburton and Kirkburton to the north and east along the A629 Penistone Road, due to the presence of pinch points as Storthes Hall Lane crosses the Woodsome Beck and as Storthes Hall Lane (east) meets Penistone Road.

The current overbridge is approximately 5.7m wide and does not include a footway, therefore pedestrians utilising the bridge are required to discharge into the carriageway, beyond where the existing footways terminate.

The Penistone Road/Storthes Hall Lane (northern link) junction is also currently problematic, due to its non-standard arrangement. Junction visibility is also restricted to c. 2.4m x 25m to the east due to the presence of existing pedestrian guard railing.

Previous Scheme

Following discussions with Highways Development Management (HDM), a scheme of off-site improvements were presented to satisfy the site specific allocation requirements.

The previously proposed works included a priority working system across the Storthes Hall bridge, in order to provide a continuous footway, with associated improvements to the Penistone road/Storthes Hall Lane and Penistone Road/North Road junctions.

Following review of the proposed off-site works, HDM confirmed that the proposals were not acceptable in their current form, specifically in relation to the priority working system over the bridge that was not considered to provide a workable solution.

Proposed Scheme

In light of the above concerns, HDM recommended that a 3-way shuttle working traffic signals arrangement over the bridge should be considered, as an alternative means of providing the new footway link, and also to manage queuing back towards Penistone Road (which was one of the concerns with the proposed priority working arrangement). Further refinement of the other off-site highway works proposals (see below) were also requested.

A further enhancement was also identified by HDM to improve visibility to the south at the Storthes Hall Lane / Penistone Road junction (northern link), which includes amendments to the existing retaining wall immediately to the south of the junction.

The latest proposals have now been reviewed by Kirklees HDM and UTMC Team, who have confirmed that the proposals appear to be viable, and as such, can now progress to the Stage 1 RSA stage.

Therefore, the proposed off-site works are illustrated on Optima drawing 18092/GA/05/REV B and can be summarised as follows:

- Provision of a shuttle working system across the bridge along Storthes Hall Lane, utilising 3-way traffic signals;
- Introduction of a continuous footway between Storthes Hall Lane and Penistone Road, over the bridge;
- Road Marking improvements to the Penistone Road/Storthes Hall Lane junction to:
    - Relocate give-way and approach lining as far north as possible to maximise visibility, improve the approach angle and to create additional width for inbound traffic from Penistone Road to Storthes Hall Lane;
    - Formalise the existing parking bays to the west of the give-way;
    - Adjust the right turn lane markings to provide a circa 2.6m wide right turn lane and 3m through lanes (at the request of KMC road safety team);
    - Segregate entry and exit movements through the provision of central area of road markings; and
    - Provide ‘no-waiting at any time’ double yellow lines traffic regulation order to assist vehicles turning right out of Storthes Hall Lane to Penistone Road, and in other locations throughout the scheme to prevent obstructive parking.
- Provision of a ‘Toucan’ controlled crossing along Penistone Road near North Road, which would then connect to a section of a shared footway/cycleway along Penistone Road/North Road, to assist cyclists turning right out of North Road to Penistone Road during busy periods.
- Amendments to the existing retaining wall immediately to the south of the Penistone Road/Storthes Hall Lane junction (northern link) in order to improve visibility to the south. The indicative works include:
    - Replacement of the existing highway retaining wall over a circa 17m length;
    - Initial 4m of the retaining wall to be topped with a 1.15m high 50mm tubular steel handrail;

- Provision of an 800m high parapet wall, topped with a 350mm high 50mm handrail over the remaining 13m length;
- The amendments to the wall would increase visibility to the south from 2.4m x 25m to 2.4m x 53m, measured 0.5m into the carriageway avoiding the parapet; and
- Visibility over the parapet wall, suitable for seeing high sided vehicles would increase to 2.4m x 90m, measured 0.5m into the carriageway.

Drawing 18092/IN/06/REV B illustrates the extent of the proposed traffic regulation orders in the vicinity of the junction.

A vehicle swept path analysis of the scheme is provided on Optima drawing 18092/ATR/04/REV B.

The summary review note of the proposed traffic signals that has been produced by Kirklees UTMC is included with this RSA Brief, which includes information regarding the anticipated operation of the traffic signals, and associated detection equipment that is likely to be included.

Design standards applied to the scheme design

DMRB (CD123/CD109), LTN 1/20, Traffic Signs Manual & Kirklees Highway Design Guide.

Design speeds

Storthes Hall Lane – 70A kph
A629 Penistone Road – 70A kph
North Road – 60B kph

Speed limits

Storthes Hall Lane – 40mph
A629 Penistone Road – 40mph
B6116 North Road – 30mph

Recorded vehicle speeds are shown on drawings 18092/GA/01/REV E, 18092/GA/02/REV F and 18092/GA/05 Rev B.

Existing traffic flows/queues

2022 Survey Flows are shown on traffic flow diagram figures 100 and 101 for the AM and PM peak hours respectively.

2032 Base Flows are shown on traffic flow diagram figures 126 and 127 for the AM and PM peak hours respectively.

Existing queue data at the Storthes Hall Lane/Penistone Road and North Road/Penistone Road junction are shown in Tables 5.3 and 5.8 of the Transport Assessment Addendum (Section 5 only provided with this RSA Brief).

Forecast traffic flows

The development is predicted to generate 164 vehicle trips two-way during both the AM and PM peak hours. 2032 Design Year Flows (that include development traffic) are shown on traffic flow diagram figures 128 and 129 for the AM and PM peak hours respectively.

Junction capacity assessments are contained within Section 5 of the Transport Assessment Addendum (Section 5 only provided with this RSA Brief).

A summary note of additional junction modelling undertaken by Kirklees UTMC of the proposed traffic signal operation is provided. This includes further details of the anticipated signal operation, including staging/timing information, as well as the likely signal detection equipment that may be utilised (subject to further development at the detailed design stage).
Pedestrian, cyclist and equestrian desire lines
Key facilities located within Highburton and Kirkburton to the north-east of the Site and are accessible within a circa 1.8km walk via Storthes Hall Lane and A629 Penistone Road. A financial contribution is to be made by the development to provide bus penetration within the development. The closest existing bus stops are located at the Penistone Road/Storthes Hall Lane junction. The development is predicted to generate relatively low volumes of pedestrian trips given the distance to local facilities (the toucan crossing modelling has assumed circa 10 trips per hour at peak times). The main desire line to facilities within Highburton and Kirkburton is along Storthes Hall Lane, A629 Penistone Road and North Road, via the improved footway provision that provides a continuous pedestrian route between the site and North Road. The proposed Toucan crossing will facilitate safe passage for pedestrians and cyclists across the A629 Penistone Road just north of the Penistone Road/North Road junction.
Environmental constraints
None known.

Table C.4 Locality

Description of locality
The Site is located on land to the southeast of Storthes Hall Lane, approximately midway along its length. The Site has a Nett area of 7.75 hectares (19.16 acres) and is located 5.5km southeast of Huddersfield and 1.7km west of the village of Kirkburton. The Site includes the former Storthes Hall Student Village, which previously accommodated 1,367 rooms. The student village closed in late 2024. The Site is bound by Storthes Hall Lane to the north and west, Shelley Community Football Club and pitches to the east (to be retained) and cleared land formerly accommodating Storthes Hall Hospital, which closed in 1991, to the south, which forms part of the large housing allocation. Storthes Hall Lane runs for approximately 2km on a northeast to southeast alignment from a priority T-junction with the A629 Penistone Road to a priority T-junction with Farnley Road to the southwest. Storthes Hall Lane is subject to a 40mph speed limit, commencing circa 180m north of the Farnley Road junction where the speed limit changes from 60mph to 40mph.

The A629 Penistone Road runs on a north to south alignment from the A642 Wakefield Road in Waterloo to Shepley Village. At the junctions with Storthes Hall Lane the speed limit is 40mph, with an area of central road hatching and a ghost island (2.1m wide) for access to the two-way section of Storthes Hall Lane.
Relevant factors which may affect road safety
See departure from standards.

Table C.5 Analysis

Collision data analysis

Personal injury collision data was obtained for the highway network in the vicinity of the Site for the 5-year period prior to July 2022 as part of the original TA. The study area included the full length of Storthes Hall Lane including its junctions with the A629 Penistone Road and Farnley Road, as well as Penistone Road up to and including the Penistone Road/North Road junction.

Collisions across the proposed scheme were recorded as follows:

Location	Severity			
	Slight	Serious	Fatal	Total
Northern Site Access	1	0	0	**1**
Southern Site Access	0	0	0	**0**
Storthes Hall Lane	0	0	0	**0**
A629 Penistone Road/Storthes Hall Lane junction	2	0	0	**0**
A629 Penistone Road (in vicinity of proposed Toucan Crossing)	0	1	0	**1**
A629 Penistone Road/North Road junction	2	0	0	**2**

Up to date PIC data has been provided by Kirklees Highway Safety Team and is included with this RSA Brief.

Departures from standards

Northern Site Access

The Northern site access is to be provided with 2.4m x 90m junction visibility splays in both directions, in order to minimise the impact on trees to the north and south of the junction, the principle of which has been agreed with HDM. The proposed visibility splays are based on DMRB CD109 Table 2.10 'one-step below' values based on recorded vehicle speeds.

Southern Site Access

The Southern site access is also to be provided with 2.4m x 90m junction visibility splays in both directions, in order to minimise the impact on trees to the north, the principle of which has been agreed with HDM. The proposed visibility splays are based on DMRB CD109 Table 2.10 'one-step below' values based on recorded vehicle speeds.

A greater level of visibility, measured at 2.4m x 134m is available to the south.

Proposed Bridge Signalisation

Footway widths of circa 1-1.7m are proposed in the vicinity of the proposed bridge signalisation along Storthes Hall Lane and on the route leading to Penistone Road, which fall below the recommended minimum widths quoted within DfT 'Inclusive Mobility' Guidance (e.g. the

minimum footway width of 1m recommended in the guidance for up to 6m lengths is exceeded, due to the width constraints). However, the proposed scheme incorporates the maximum widths that can be provided within the constraints of the adopted highway, whilst also accommodating the required vehicle swept path analysis. The scheme also provides a significant betterment to the existing situation, which results in pedestrians entering the carriageway when crossing the existing bridge and as Storthes Hall Lane (south) meets the A629 Penistone Road.

North Road Proposed Cycle Facility
In order to accommodate the required swept path analysis along North Road, the proposed shared footway/cycleway reduces to 2-2.5m over a distance of circa 17m, which is below recommended widths identified within LTN 1/20 of 3.0m. To the south, the cycle/footway widens to 2.7m before transitioning back to the existing cycle lane, and to the north widens to 3m+ for the remaining length up to the proposed Toucan crossing.

Half size SLOW markings and cycle symbols have been provided to mitigate the reduced width and downhill gradient towards Penistone Road. This issue is also mitigated as the footway/cycleway would generally only be used by cyclists heading from North Road when turning right on to Penistone Road (e.g. as cyclists from Penistone Road are more likely to remain on carriageway).

Previous road safety audit stage reports, road safety audit response reports and evidence of agreed actions

None.

Strategic decisions

None.

List of included documents and drawings

Documents

Traffic Figures 100, 101, 126, 127, 128 & 129;
Section 5 from the Transport Assessment Addendum (initial Issue) dated December 2024Summary note of review undertaken by Kirklees UTMC – 06/02/25
PIC Data

Drawings

<u>Drawings Subject to this Road Safety Audit</u>
Northern Access
Optima drawing no. 18092/GA/01/REV E – General Arrangement
Optima drawing no. 18092/ATR/01/REV A – Vehicle Swept Path Analysis
Southern Access
Optima drawing no. 18092/GA/02/REV F- General Arrangement
Optima drawing no. 18092/ATR/02 – Vehicle Swept Path Analysis
Off-site Improvement Scheme
Optima drawing no. 18092/GA/05/REV B – General Arrangement
Optima drawing no. 18092/ATR/04/REV B – Vehicle Swept Path Analysis
Optima drawing no. 18092/IN/06/REV B – Traffic Regulation Orders

<u>Drawings provided for background information</u>
Parker Peel drawing no. 1862-MP-01 – Indicative Masterplan

Table C.6 Checklist

Tick all that are included and provide reasons for those that are not included			
Site location plan	☒	Scale layout plans	☒
Departures and relaxations from standards	☒	Construction/typical details N/A	☒
Previous RSA reports N/A	☒	Previous RSA response reports and evidence of agreed actions N/A	☒
Collision data and collision data analysis	☒	Road traffic collision plot	☒
Traffic signal staging	☒	Traffic counts	☒
Speed surveys	☒	Pedestrian, cyclist and horse-riding desire lines and volumes N/A	☒
Walking, cycling and horse-riding assessment and reviews N/A	☒	Items outside the scope of the RSA/strategic decisions N/A	☒
Other factors that may impact on road safety N/A	☒	Design speeds/speed limits	☒
Design standards used	☒	Adjacent land uses	☒