

TRANSPORT ASSESSMENT
TRAVEL PLAN
TRANSPORT STATEMENT
ROAD SAFETY AUDIT
HIGHWAY ASSESSMENT
TRAFFIC SURVEY

APPENDIX H



LINTON VILLAGE, NEAR WETHERBY,
WEST YORKSHIRE

12070 / November 2012

**HY
CONSULTING**



LINTON VILLAGE, NEAR WETHERBY,
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HIGHWAY ASSESSMENT

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1 INTRODUCTION

1.1.1 HY Consulting has been appointed to prepare this Highway Assessment of the existing road network in the village of Linton, near Wetherby in West Yorkshire. This in association with the preparation of the Linton Neighbourhood Plan. Appendix A shows the location of the village in relation to the regional and local highway network.

1.1.2 The village is located to the south west of Wetherby and to the west of the A1(M) in West Yorkshire. The main roads through the village generally run north to south.

1.1.3 This assessment considers the items in the following paragraphs and in the Sections of this report referred to therein.

1.1.4 Section 2 of this report carries out an appraisal of the existing highway network within the village and the main routes to/from the village, including: -

- The layout and character of the roads and road junctions;
- The existing geometry of the road network in the context of current standards, existing traffic flow and safety;
- An assessment of the theoretical capacity of the network (roads and junctions) in relation to current traffic flow;

1.1.5 In Section 3 of this report an analysis of the existing conditions is provided including:

- Consideration of the level of service provided by the existing road network (i.e. how well it is able to accommodate current demand);
- Identification of any existing matters for concern in terms of operational capacity or safety

1.1.6 Section 4 of this report analyses the likely impact of future changes in traffic volume and character due to: -

- Traffic growth based on National Forecasts;
- Development in or in close proximity to the village.

1.1.7 Section 5 of this report identifies any works or improvements required now or in the future to: -

- Address any existing shortcomings;
- Mitigate against potential effects of forecast traffic growth;
- Mitigate against the effects of development within the village or elsewhere.

1.1.8 In Section 6 the findings of this report are summarised and conclusions drawn.

2 EXISTING HIGHWAY NETWORK

2.1 Village Location and Description

2.1.1 The village is located about 2km to the south west of Wetherby and to the west of the A1(M) in West Yorkshire. The village of Collingham lies to the immediate south of Linton and the City Centre of Leeds is some 17 km to the south west.

2.1.2 The village comprises of about 270 households located primarily to the immediate main road frontages with several short culs-de-sac serving small clusters of houses. The effect of this is to stretch the built up area of Linton along the main road corridors particularly in a north – south orientation.

2.1.3 The Windmill Inn lies in the approximate centre of the village providing a public house and dining facilities. A community hall is located to the north of the Windmill Inn which benefits from a large car park. It is used by local community groups and a small children's' nursery. There are no shops in the village and the nearest school is in Collingham on the Linton Road close to its junction with Harewood Road.

2.1.4 The National Planning Policy Framework (NPPF) was published on 27th March 2012. This document superseded a number of national Planning Policy Statements and Guidance Notes (PPS's and PPG's). The national transport policy relating to transport and development that was formerly set out in PPG 13 'Transport' is now replaced by Section 4 of the NPPF.

2.1.5 However the guidance within PPG 13 is still useful as a reference and the relevant policies within the Council's UDP still apply.

2.1.6 The local school is within the normally accepted walking distance for most of the residents in the village. However the shops in either Collingham or Wetherby are a lot further and only really reachable by cycle, public transport or private car.

- 2.1.7 With regards to cycling, PPG 13: Transport stated that “Cycling also has the potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport. All of Collingham and Wetherby are within this distance. This demonstrates that there are residential and commercial areas within this catchment providing potential for residents to cycle from their homes to work, shop or for leisure purposes.
- 2.1.8 Wetherby Golf Club lies to the northern extremity of the village and the greens form a boundary to the east of the village which in themselves are also bounded by the River Wharfe which bends to the south of the village separating it from Collingham but connected to it via Linton Bridge. The village is bounded to the west by open fields / farm land.
- 2.1.9 A plan showing the location of Linton with respect to the above can be found in Appendix A to this report.

2.2 Highway Network

- 2.2.1 The main road through the village generally runs north to south from Linton Road / Sicklinghall Road through to the A659 Harewood Road. At the northern end of the village Linton Lane forms a priority junction with Linton Road / Sicklinghall Road. About 1000m to the west of this junction, Northgate Lane intersects with Sicklinghall Road at a priority junction. Northgate Lane then runs south east from Sicklinghall Road to join Linton Lane within the village where the main route (Linton Lane) continues southwards as Main Street.
- 2.2.2 Main Street continues as the main traffic route over the Linton Bridge and becomes Linton Road which has a priority junction with the A659 Harewood Road in Collingham.

- 2.2.3 Linton Lane, Main Street and Linton Road are designated as “secondary distributor roads” in Leeds City Council’s Street Design Guide. The effect of this is that for the application of design standards for new junctions and road layouts then the document the Council would wish to refer to is within the Design Manual for Roads and Bridges rather than the lower figures within Manual for Streets. However HY Consulting has recently tested this onerous stance for a development within the built up area of a local village at a Planning Appeal and won in terms of accepting the use of Manual for Streets.
- 2.2.4 There are two further roads within the village of note, namely Trip Lane and Linton Common. The former provides access to two short culs-de sac serving small clusters of housing and several fields and continues west to the Wood Hall Hotel and the Carmelite Monastery. The latter is a private road providing access to a number of dwellings and Riverside Nurseries and benefits from the provision of several speed humps to manage vehicle speeds.
- 2.2.5 Linton Village is a “dark village” such that the highways do not have systems of street lighting even on the newer residential estate roads. Consequently the speed limits that exist along these roads will have been introduced by use of Orders made through the Road Traffic Regulation Act 1984.
- 2.2.6 The above mentioned roads and junctions are described in more detail below but reference should also be made to the drawing in Appendix B which shows the items mentioned in a more graphical format.

Linton Road / Sicklinghall Road / Linton Lane Junction

- 2.2.7 This is a priority junction with Linton Lane being the minor route. All approaches to the junction are subject to a 30 mph speed limit and are single carriageways of generally about 5.5m width with intermittent footway provision.
- 2.2.8 The wide verges along the main road provide adequate visibility for traffic emerging from Linton Lane in accordance with Manual for Streets.

Linton Lane

- 2.2.9 Linton Lane is subject to a 30 mph speed limit from its junction with Linton Road / Sicklinghall Road and benefits from the provision of street lighting and a footway (on the western side). The speed limit increases to 40 mph at the Linton village boundary marker a few metres north of its junction with Linton Hills Road. We have been advised that the Highway Authority proposes to reduce this speed limit to 30 mph subject to availability of funding and the necessary statutory procedures.
- 2.2.10 The street lighting stops at the Linton Hills Road junction but the footway continues as far as the entrance to Wetherby Golf Club. The street lighting system does not start again until just north of the Linton Road / Harewood Road junction.
- 2.2.11 From the Linton village boundary marker there is generally only built development along the west side with the golf club lying to the east as far as the start of the 30mph speed limit just north of the gradual "S" bend in Linton Lane north of the community hall.
- 2.2.12 Linton lane stops at the intersection with Northgate Lane with the route continuing as Main Street. As the drawing in Appendix B shows there is only intermittent footway provision on Linton Lane within the village boundary.

Linton Lane / Main Street / Northgate Lane Junction

- 2.2.13 This is a priority junction with Northgate Lane being the minor route. All approaches to the junction are subject to a 30 mph speed limit with intermittent footway provision. Northgate Lane joins the main route at a slight angle and whilst visibility to the north is good, the footway raised on a slight embankment along Main Street to the south does cut off visibility in that direction.

2.2.14 The angle of Northgate Lane relative to Main Street is such that the corner radius leading from the latter in to the former is quite generous resulting in higher than necessary speeds of turning vehicles. This coupled with the embankment on the western side of Main Street reduces the forward visibility of the width restriction (mentioned below) and of any vehicle passing through it.

2.2.15 In addition Northgate Lane narrows to 4.5m close to the junction forming a constraint on movement of traffic although no problems were observed on our site visits with the exception of the higher approach speeds from Main Street due to the generous corner radius. The photograph below illustrates this point.



Northgate Lane junction with Main Street – corner radius and narrowing

Main Street

- 2.2.16 At its junction with Northgate Lane, Main Street does benefit from the provision of footways to both sides although the one on the west side is located on the top of an embankment for some distance before the carriageway alignment. The footways continue southwards along both sides as far as the junction with Trip Lane and then on the eastern side narrowing across the frontage to the Windmill Inn and then continuing south having a varying but narrow width (1m or less) before stopping outside a dwelling called The Barn.



Main Street looking south

- 2.2.17 Main Street then narrows to 5.2m and rises over a slight hill which limits the forward visibility (to about 50m) and pedestrians have to walk in the carriageway. The narrow nature of the road at this point results in the rapid deterioration of the central road markings due to vehicle over running. This situation continues as Main Street bends and then drops down to Linton Bridge.



Main Street looking north at narrowing



Main Street looking south at narrowing

- 2.2.18 A narrow footway is provided over the bridge on the east side of the carriageway. After crossing the bridge the road becomes Linton Road. Linton Road is laid out to a good standard with the footway continuing along the east side and then along both sides south of Beck Lane.

Northgate Lane

- 2.2.19 In addition to the carriageway width restriction in Northgate Lane close to its junction with Linton Lane there is a further restriction to the north of its junction with Northgate Rise / Muddy Lane to 4.8m. However forward visibility is good at this location. It then widens and continues in a northerly direction with dwellings to both sides then at the end of the 30 mph speed limit, development only occurs on the eastern side for further 280m before entering the open countryside.



Northgate Lane looking northwest at narrowing

- 2.2.20 As Northgate Lane continues northwards its width varies with a number of narrow points and a long section just south of its junction with the Sicklinghall Road where the width (3.4 – 3.8m) results in significant verge over running / damage.



Northgate Lane looking north at narrow section



Northgate Lane looking south at narrow section

Northgate Lane / Sicklinghall Road Junction

- 2.2.21 All approaches to this junction are subject to the national speed limit for a single carriageway (60 mph). However visibility to the right appears to be less than the guidance (215m) due to adjacent hedgerows and the vertical alignment of Sicklinghall Road in that direction. The visibility to the left is better due to the road bending favourably.
- 2.2.22 All approaches are narrow in width but typical of a rural priority junction.

Linton Road / A659 Harewood Road Junction

- 2.2.23 This junction has been laid out to current design standards for an A class road (TD42 / 95) with good visibility and carriageway widths and a central right turning lane in Harewood Road to allow vehicles to wait in safety. The junction and approach roads benefit from the provision of street lighting and footways.
- 2.2.24 Due to the proximity of the local primary school there are keep clear markings along Linton Road. All approaches are subject to a 30 mph speed limit.
- 2.2.25 The A659 has a junction with the A58 Leeds to Wetherby road in Collingham about 360m to the east of this junction. This junction is laid out with central traffic islands creating a single lane dualling layout.

Trip Lane

- 2.2.26 At the junction of Trip Lane with Main Street, the former road splits in to two narrow (3.7m) carriageways around a triangular grassed area. Whilst each carriageway is too narrow for passing vehicles, the presence of large stones in the adjacent verges discourages over running.



Trip Lane junction with Main Street

- 2.2.27 There is no indication whether vehicles should use this road layout in a one way fashion but local people were observed doing so. Visibility at the informal “exit” is good however should a vehicle use the “entry” to join Main Street then visibility to the right is only 17.6m.
- 2.2.28 Trip Lane is a narrow lane (typically 3.6 to 3.8m) with occasional widened sections (5.2m). There is a single speed reducing hump part way along its length which has been formed from tarmac.
- 2.2.29 There is a short narrow (1.1m) footway along the northern side up to its junction with Northcote Fold. The latter has almost no visibility to the right for vehicles joining Trip Lane.



Trip Lane looking west at Northcote Fold junction and narrowing

- 2.2.30 There is development along the south side of Trip Lane which stops as it enters the countryside and narrows to a typical country lane.
- 2.2.31 Other Junctions in Linton
- 2.2.32 The only other junction within the village of Linton that is worthy of specific comment is the one of Stammergate Lane with Main Street just north of Linton Bridge.
- 2.2.33 At this location Stammergate Lane joins Main Street at an acute angle on the inside of a bend such that the visibility distances to the right and left are 6.5m and 24.5m respectively. The former is significantly below the guidance within Manual for Streets.

2.3 Public Transport Provision

2.3.1 There are several bus stops provided along Linton Lane and Main Street some with timetable cases but none have high boarding kerbs. The one outside the Windmill Inn benefits from the provision of a shelter. The 99 / X99 service uses these stops and operates an hourly service (two hourly in evenings and on Sundays) between Leeds, East Keswick, Collingham, Linton and Wetherby.

2.3.2 Journey times in to Wetherby and Leeds are about 5 mins and 47 mins respectively.

2.4 Traffic Flows

2.4.1 HY Consulting were provided with the output from several automatic traffic counts that were carried out in various locations along the main route through Linton. Whilst most were carried out in 2012 there were some to the south of Linton Bridge undertaken in 2007. No information was made available for traffic flows along Northgate Lane.

2.4.2 The surveys carried out to the south of Linton Bridge in 2007 and 2012 allow the following information to be extracted.

Year	AM Peak			PM Peak		
	Northbound	Southbound	Two Way	Northbound	Southbound	Two Way
2007	155	191	346	215	143	358
2012	138	163	301	168	113	281

Table 1:- Weekday Peak Hour Flows on Linton Lane South of Linton Bridge

Year	Daily (Mon to Fri)		
	Northbound	Southbound	Two Way
2007	1933	1925	3858
2012	1703	1667	3370

Table 2:- Daily Weekday Flows on Linton Lane South of Linton Bridge

2.4.3 A comparison of the flows in Tables 1 and 2 shows that traffic flows have reduced by 13% and 21.5% in the AM and PM peak hours respectively between 2007 and 2012. Over the whole day the flows have decreased by 12.6% in the same period.

2.4.4 Four further surveys were carried out in January and May of 2012 along Main Street and Linton Lane respectively. The location details for these four surveys are as follows:

- 1 Main Street – Jan 2012 – South of Middle Lane
- 2 Main Street – Jan 2012 – Trip Lane
- 3 Linton Lane – May 2012 – North of The Ridge
- 4 Linton Lane – May 2012 – At golf club house

2.4.5 These surveys are summarised in the following tables:

Location	AM Peak			PM Peak		
	Northbound	Southbound	Two Way	Northbound	Southbound	Two Way
1	132	153	285	152	91	243
2	122	153	275	130	97	227
3	115	117	232	128	110	238
4	106	140	246	134	116	250

Table 3:- Weekday Peak Hour Flows on Main St / Linton Lane

Location	Daily (Mon to Fri)		
	Northbound	Southbound	Two Way
1	1525	1511	3036
2	1379	1506	2885
3	1430	1440	2870
4	1521	1544	3065

Table 4:- Daily Weekday Flows on Main St / Linton Lane

2.4.6 Tables 3 and 4 show that peak hourly flows are typically between 220 and 290 vehicles (two way) with daily flows in the region of 2900 to 3100 vehicles two way.

2.4.7 Traffic data was also provided for Linton Road and Sicklinghall Road the most recent survey being carried out on the latter in March 2012. This survey is summarised in the table below:

Time Period	Eastbound	Westbound	Two Way
AM Peak	200	161	361
PM Peak	182	184	366
Daily	2173	2114	4287

Table 5:- Flows on Sicklinghall Road

2.5 Injury Accident Record

2.5.1 The injury accident record for a five year period (from 1 January 2007 to 6 November 2012) has been obtained from the Council. The details are provided in Appendix C.

2.5.2 Of the 5 incidents recorded within the study area, four resulted in a slight casualty with the other having serious injuries. 2 incidents occurred in 2009 and 2011 and 1 occurred 2008 with none in 2007, 2010 or so far in 2012.

- 2.5.3 Three of the incidents which resulted in slight injuries occurred on Linton Road south of Linton Bridge. One of these involved a pedestrian but this was a child who alighted the vehicle and was hit by another at the junction with Harewood Road. The other two occurred on the bend just south of Linton Bridge and were probably speed related.
- 2.5.4 The incident which resulted in a serious injury occurred on the narrow section of Main Street in Linton. This was a single vehicle which lost control in the hours of darkness and collided with a wall. The remaining incident which caused a slight injury occurred at the entrance to the community hall where a shunt occurred.
- 2.5.5 Overall, whilst any road traffic accident is regretted, the records show that there are no clusters of incidents and those that have occurred appear to be disparate events with no common causation factors or trends. It is worthy of note that no incidents have been recorded at either of the junctions on Sicklinghall Road nor at the junctions within the village of Linton itself.

2.6 Theoretical Capacity of Road Links and Junctions

- 2.6.1 The theoretical capacity of a road link is related to a number of factors including width, number of side road junctions, parking and deliveries and alignment / geometry. National guidance for this is given in TA79 / 99 which for a 6.1m wide urban road with on street parking and deliveries (the lowest order of road), the theoretical capacity would be 1250 vehicles per hour (based on a busiest directional flow of 750 vehicles equivalent to a 60 : 40 split).
- 2.6.2 Chapter 32 of Transport in the Urban Environment provides further advice on the traffic capacity of road links and also comments on the work undertaken by Buchanan on the environmental capacity of a road. This is defined as *“The capacity of a street or area to accommodate moving and stationary vehicles, having regard to the need to maintain the (chosen) environmental standards.”*

- 2.6.3 The environmental capacity of a road link is dependent upon the character of the area that the road passes through, the presence of footways, verges and parking and the sensitivity of the area to disturbance due to traffic noise (i.e. if there are terraced properties close to the carriageway edge). Given such variables Buchanan suggested that the environmental capacity of an access road / local distributor lies within the range of 300 to 600 vehicles per hour.
- 2.6.4 Thus the maximum traffic flow that might be compatible with maintaining a good environment is significantly less than the traffic capacity determined by the width and alignment of the road.
- 2.6.5 In terms of junction capacity, this is determined by the geometry of the junction in terms of road widths, whether through traffic might be obstructed by right turning traffic in to the side road and the volume of the individual turning movements. Consequently without peak hour turning counts at the junctions being considered it is difficult to comment or offer advice on the theoretical capacity of these junctions in anything other than general terms.

3 ANALYSIS OF EXISTING HIGHWAY NETWORK AND CONDITIONS

3.1 Qualitative Appraisal of Road Network

3.1.1 In general the road network through Linton is of a nature typical of a rural village with varying carriageway widths and intermittent footway provision. Whilst there are pinch points (such as on Main Street) and narrow sections where over running of verges occurs (such as along Northgate Lane) it is our view that overall the level of provision in highway terms is reasonable having regard to the current volume of traffic which uses the local network.

3.1.2 If the centre of the village is defined as being between the Windmill Inn and the community hall, the level of footway provision here is considered reasonable. However this is reduced and lost completely to the south and places pedestrians (particularly those who might walk to the local school) in conflict with traffic travelling along a narrower section with limited forward visibility. The photograph below shows a recent incident that occurred when two buses met each other on this narrow section.



Main Street looking north at narrow section

3.1.3 The width of the highway at this point (5.2m) is less than what would normally be looked for from a new road to cater for use by buses (6.0 to 6.75m). The presence of walls and fences close to the carriageway edge tends to push vehicles more towards the middle of the road.

3.2 Quantitative Appraisal of Road Network

3.2.1 Our site visits and observations have identified several shortfalls in visibility provision at certain junctions (Main Street with Stammerge Lane, Trip Lane and Northgate Lane as mentioned above) but from the injury accident record none appear to be resulting in a road safety problem of any significance. This confirms the view expressed in Manual for Streets that shortfalls in visibility provision are not necessarily reflected by an increase in injury accidents.

3.2.2 The pinch points identified on Northgate Lane do not appear to cause any operational difficulties and are natural calming features. However the one close to the junction with Main Street is affected by the higher approach speeds from Main Street due to the generous corner radius. In addition the section of Northgate Lane close to its junction with Sicklinghall Road is a cause for concern and will only deteriorate further as more vehicles over run the verge and the edge of carriageway frets away.

3.2.3 Whilst the situation on Main Street for pedestrians as described in 3.1 above is not ideal, and the occasional difficulties caused when two large vehicles meet causes temporary congestion problems, the lack of an injury accident record indicates that there is not a safety problem of any significance.

3.2.4 However the lack of footways on this section of Main Street could be quite intimidating for vulnerable road users, particularly if they are children or elderly and does not encourage accessibility to Linton from the south by these road users.

3.3 Capacity Assessment of Road Links

3.3.1 The traffic surveys provided to HY Consulting show that current peak hour flows through Linton are of the order of 220 to 290 vehicles (two way).

3.3.2 Based on the narrowest carriageway width on Main Street of 5.2m and allowing a 15% reduction in capacity due to the presence of tall lateral obstructions close to the kerb edge (boundary fencing / walls) then the theoretical capacity of the route through the village would be about 900 vehicles per hour.

3.3.3 It is suggested that the environmental capacity of Main Street in this location would be towards the lower end of the range given above so say 350 to 400 vehicles per hour.

3.3.4 The present level of traffic using Main Street at peak hours is below 300 vehicles per hour so in terms of theoretical and environmental capacity the route is operating well within these figures.

3.4 Capacity Assessment of Road Junctions

3.4.1 As stated in 2.6 above it is difficult to comment or offer advice on the theoretical capacity of the junctions mentioned in anything other than general terms without peak hour turning counts at the junctions being considered.

3.4.2 Given the present peak hour flows along Linton Lane and Main Street are below 300 vehicles per hour (two way) then it is considered that their respective junctions with Northgate Lane and Trip Lane will operate well within their theoretical capacities.

3.4.3 If we examine the flows on Linton Lane and Sicklinghall Road in the same manner then a similar conclusion is drawn even though peak hour flows on the latter are slightly higher but still below 400 vehicles per hour (two way). We do not have any flow data for Harewood Road so are unable to offer an opinion on the capacity of the Linton Road junction.

3.5 Road Safety

3.5.1 Information regarding the injury accident record in the area is given at 2.5 above and in Appendix C.

3.5.2 Overall, whilst any road traffic accident is regretted, the records show that there are no clusters of incidents and those that have occurred appear to be disparate events with no common causation factors or trends. It is worthy of note that no incidents have been recorded at either of the junctions on Sicklinghall Road nor at the junctions within the village of Linton itself.

3.6 Sustainability

3.6.1 Whilst not included within our brief for this report the issue of sustainable access for all road users is an important consideration of any assessment of the suitability or otherwise of the local road network.

3.6.2 As mentioned above the village of Linton does not have any shops or a school or any substantial employment centres. The bus service that passes through the village operates hourly during the working day.

3.6.3 Local and national policies would suggest that any significant developments within Linton would not be sustainable without further mitigation measures. This view was confirmed by the Inspector's decision for a nursing home on a site near Wetherby Golf Club which was dismissed on sustainability (or lack of) grounds.

3.6.4 Consequently any significant development in the village is likely to generate a greater proportion of journeys by private car than a similar scale of development in a more sustainable location.

4 IMPACT OF FUTURE TRAFFIC GROWTH / DEVELOPMENT IN LINTON

4.1 General Traffic Growth

4.1.1 Traffic growth occurs on the road network as a result of many factors including increasing levels of car ownership and development in the area and in the wider environs as a consequence of a growing economy.

4.1.2 A comparison of the flows in Tables 1 and 2 shows that traffic flows on the local road network have reduced by 13% and 21.5% in the AM and PM peak hours respectively between 2007 and 2012. Over the whole day the flows have decreased by 12.6% in the same period. Whilst this situation may be in part due to the economic climate over the same period that is unlikely to be the sole reason for what are significant reductions in traffic using the roads through the village. It is possible that the improvements to the A1 to the east of the village (coupled with the traffic conditions in Wetherby Town Centre) have reduced the incentive to travel through Linton to access this route.

4.1.3 The above situation does not reflect the predicted growth in traffic in the Wetherby area over the same period of about 3.5% and 3.1% at peak periods and over the whole day respectively (based on the Tempro 6.2 Database). Over the next five years in the Wetherby area, the Database predicts growth of 7.8% and 7.9% at peak periods and over the whole day respectively.

4.1.4 It is therefore questionable whether such levels of traffic growth will occur along the roads within Linton given the experience over the last five years unless it is as a direct result of developments within or close to the village.

4.2 Traffic Growth as a result of Development

4.2.1 Based upon the evidence over the last five years it is likely that traffic flows within Linton will only increase as a direct result of developments within or close to the village. The present number of households in the village is about 270 and HY Consulting has been made aware of several potential sites which might come forward for housing developments in the future.

4.2.2 It is considered that it will be these developments which will directly increase flows on the road network through the village rather than from external sources unless conditions at junctions outside the study area (e.g. the A58 / A659 junction) deteriorate.

4.3 Impact of Traffic Growth on Road Links and Junctions

4.3.1 In general highway terms and having due regard to the present low levels of traffic which use the roads through Linton, should these increase as a result of development in the village it is not considered any significant capacity problems would occur on much of the road network. There are however the concerns regarding the width and poor alignment on Main Street and the constriction points on Northgate Lane and the long narrow section of the latter towards Sicklinghall Road which could create congestion and safety problems and potential damage to the highway structure.

4.3.2 Given the present peak hour flows along Linton Lane and Main Street are below 300 vehicles per hour (two way) then it is considered that their respective junctions with Northgate Lane and Trip Lane will operate well within their theoretical capacities even with traffic growth added in over say the next five years. However the potential safety implications of poor visibility splays and layout would need to be addressed.

4.3.3 The only junction where a coarse capacity analysis could be carried out is the one of Linton Lane with Linton Road and Sicklinghall Road. We have used the present geometry of the junction and the two link traffic surveys carried out on the respective routes and made assumptions regarding the turning proportions. We have then doubled these flows and input this information in to the PICADY computer program which is used to analyse the capacity of priority intersections such as this.

4.3.4 The outcome of this theoretical exercise was that the junction would continue to operate within capacity despite the significant increase in traffic modelled. However there may be safety issues to address as a result of the potential increase in traffic at this junction.

5 POTENTIAL IMPROVEMENTS / MITIGATION MEASURES

5.1 Main Street

5.1.1 Main Street is at the heart of the village and the conservation area. It is considered that any improvements proposed either now or as a result of development pressures need to be mindful of this.

5.1.2 A significant area of concern is the narrow nature of the road and poor alignment travelling to the south of the village together with the lack of footways for pedestrians. As traffic volumes increase then this situation will only deteriorate and become more intimidating for vulnerable road users such as pedestrians and cyclists.

5.1.3 Vehicle speeds along Main Street do not appear to be excessive and the road character naturally lends itself to encourage a low speed environment without the need for the creeping urbanisation that traffic calming measures (such as road humps) might bring. Therefore the introduction of a 20 mph speed limit / zone along Main Street from the community hall to Linton Bridge would be of benefit to vulnerable road users and could be achieved without traffic calming (subject to confirmation by speed surveys).

5.1.4 As traffic volumes increase along Main Street the conditions created by the narrowing and poor forward visibility will become more difficult for drivers and more particularly, pedestrians and cyclists. In such circumstances a priority system controlled by traffic signals would allow the carriageway to be narrowed further to provide a footway over a greater length of Main Street (which may have to be limited in width at the narrowest section) and so improve road safety and reduce the potential for conflicts.

5.2 Trip Lane

5.2.1 It is our view that any significant increase in the volume of traffic using Trip Lane would cause potential conflicts in the use of the informal one way system around the triangular grassed area at its junction with Main Street. Whilst there are other narrow sections along Trip Lane, the forward visibility is adequate to allow drivers to give and take in safety and so accords with the principles of Manual for Streets.

- 5.2.2 The informal one way system mentioned above could be readily sign posted to avoid any doubt or confusion and to encourage traffic turning out of Trip Lane to use the exit with the better visibility.

5.3 Northgate Lane

- 5.3.1 There are two potential areas for improvement along Northgate Lane. These are the width restriction close to its junction with Main Street and the long length of narrow carriageway towards its junction with Sicklinghall Road.

- 5.3.2 Due to boundary constraints it would not appear possible (without land acquisition) to remove the width restriction but what is more readily achievable is a modification to tighten the corner radius leading from Main Street in to Northgate Lane. If this was reduced (with perhaps some adjustment to the northern kerb radius) then approach speeds to the width restriction would be reduced and forward visibility would be increased of any vehicles passing through it.

- 5.3.3 On the section of Northgate Lane close to its junction with Sicklinghall Road, it would be possible to widen some or all of the carriageway thus providing the opportunity for two vehicles to pass each other without having to overrun the grass verge. This would be a safety and a highway maintenance benefit in the longer term.

5.4 Linton Lane

- 5.4.1 The lack of a continuous footway along Linton Lane to the north of the village, particularly where the speed limit increases to 40mph is intimidating and potentially dangerous for pedestrians. Where a footway is provided it is generally substandard (less than 2m) in width. This road is comparatively wide and observations suggest that speeds are quite high.

- 5.4.2 The provision of a continuous 2m wide footway along Linton Lane would offer significant benefits to vulnerable road users.

5.5 Linton Road / Sicklinghall Road / Linton Lane Junction

5.5.1 The coarse capacity assessment carried out in 4.3 above shows that even if the present flows were doubled on all approaches there would still be some theoretical reserve capacity. However if safety considerations are taken in to account then the introduction of a mini roundabout (like the one at the junction of Linton Road with the A661) would be beneficial.

5.6 Delivery of Potential Improvements / Mitigation Measures

5.6.1 There are three possible sources of funding of the potential improvements / mitigation measures mentioned above. These would be from either the Highway Authority (Leeds City Council), the Parish Council or as a result of development(s) in the village (or a combination of all three).

5.6.2 The most common way local highway authorities prioritise the allocation of their funding is on a worst site first basis in terms of injury accidents. In other words locations with significant or severe accident records are targeted first. In the case of Linton Village, the existing road safety record is very good and so is unlikely to attract funding from this source although there may be other pots within the Council which local (City) councillors might be asked to pursue via the Parish Council.

5.6.3 The Parish Council might be able to fund these works by raising monies through their precept. This could be a substantial impact on their budget (and not be palatable to either them or local residents) and the Parish Council will no doubt have other priorities for their funds.

- 5.6.4 With regard to funding by any new developments in the village this could be delivered through the planning process (possibly Section 106 Agreement). It might be argued that if they are of significance (applying a 10% of households rule say 30 dwellings or more) then they could be required to fund the above works or particular works such as on Trip Lane or Northgate Lane depending on the location of the development site and where it would impact the greatest. In the latter instance then the developer would be expected would fund the full cost of these works via a Section 278 Agreement (Highways Act 1980).
- 5.6.5 Similarly this could be applied to smaller developments which on their own might be equivalent to less than 10% of households in the village but cumulatively would have a significant impact. A Section 106 Agreement could be put forward to obtain contributions from developers towards the works proportionate to the number of units proposed (a cost per unit could be calculated).

6 SUMMARY

6.1.1 This assessment shows that the present levels of traffic along the main routes through Linton are relatively light and have actually significantly reduced in the last five years. None of the road links or junctions experience capacity problems that warrant improvements at the present time.

6.1.2 The injury accident record for the area over the same period does not indicate any significant road safety problems which would warrant the introduction of remedial measures.

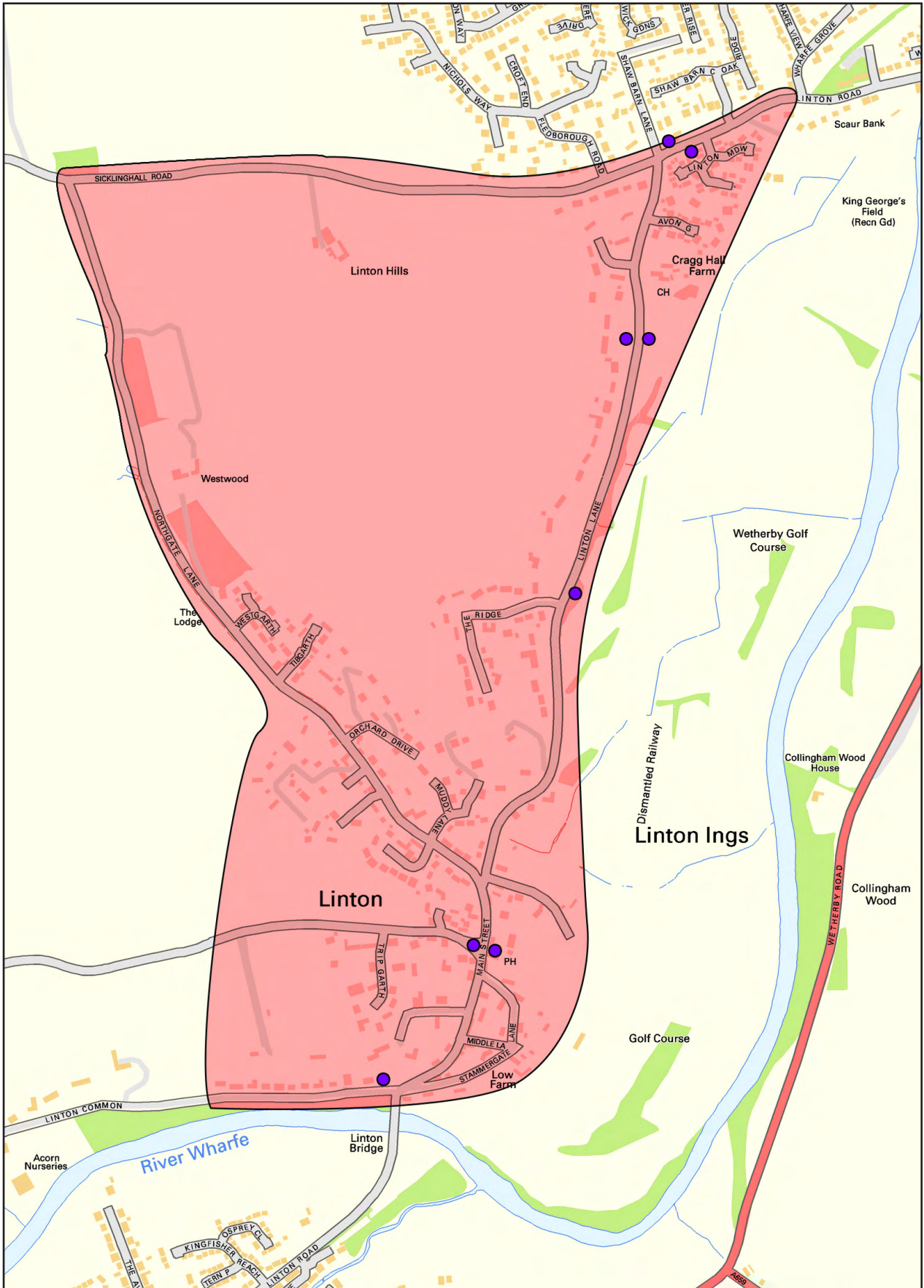
6.1.3 There are, however, several areas of concern which if traffic volumes were to increase as a result of development in or near the village, may cause an increase in accident potential if not addressed. These items and their potential solutions are given below:

- Main Street between Trip Lane and Linton Bridge – narrow width – priority system with traffic signals
- Main Street – lack of footways – reduce speed limit to 20 mph
- Northgate Lane at its junction with Main Street – high speeds – reduce corner radius
- Northgate Lane south of its junction with Sicklinghall Road – narrow width – widen carriageway
- Trip Lane close to its junction with Main Street – narrow width – formalise one way system
- Linton Lane – intermittent and narrow footways – provide new footway
- Linton Rd / Sicklinghall Rd / Linton lane junction – potential future safety issues – provide mini roundabout

6.1.4 The lack of local facilities and an infrequent bus service has shown that a development of any significance within Linton would not be sustainable without further mitigation measures.

APPENDICES

APPENDIX A
SITE LOCATION PLAN



● BUS STOP

FIGURE 1
SITE LOCATION PLAN



APPENDIX B
EXISTING HIGHWAY
INFRASTRUCTURE PLAN

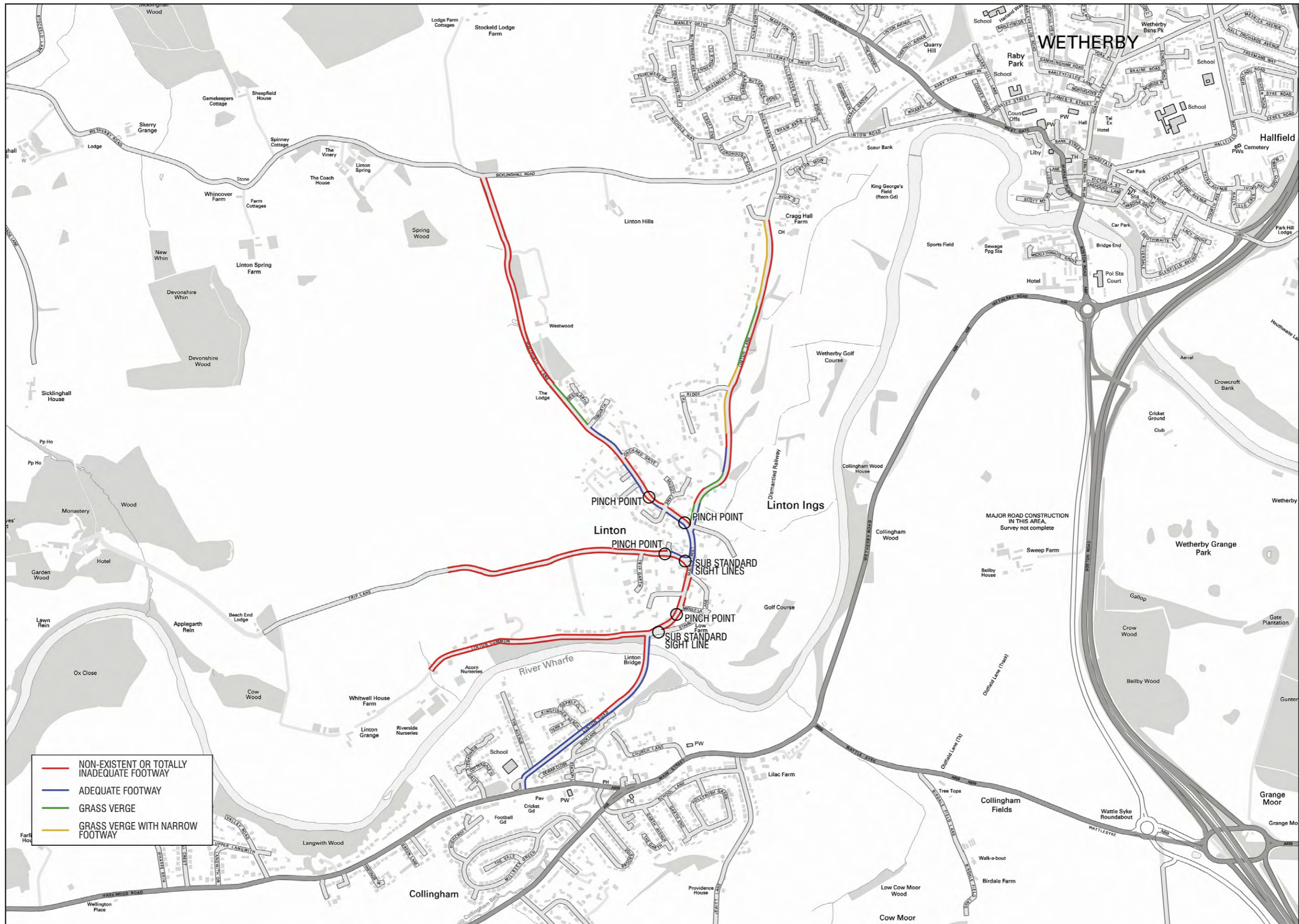
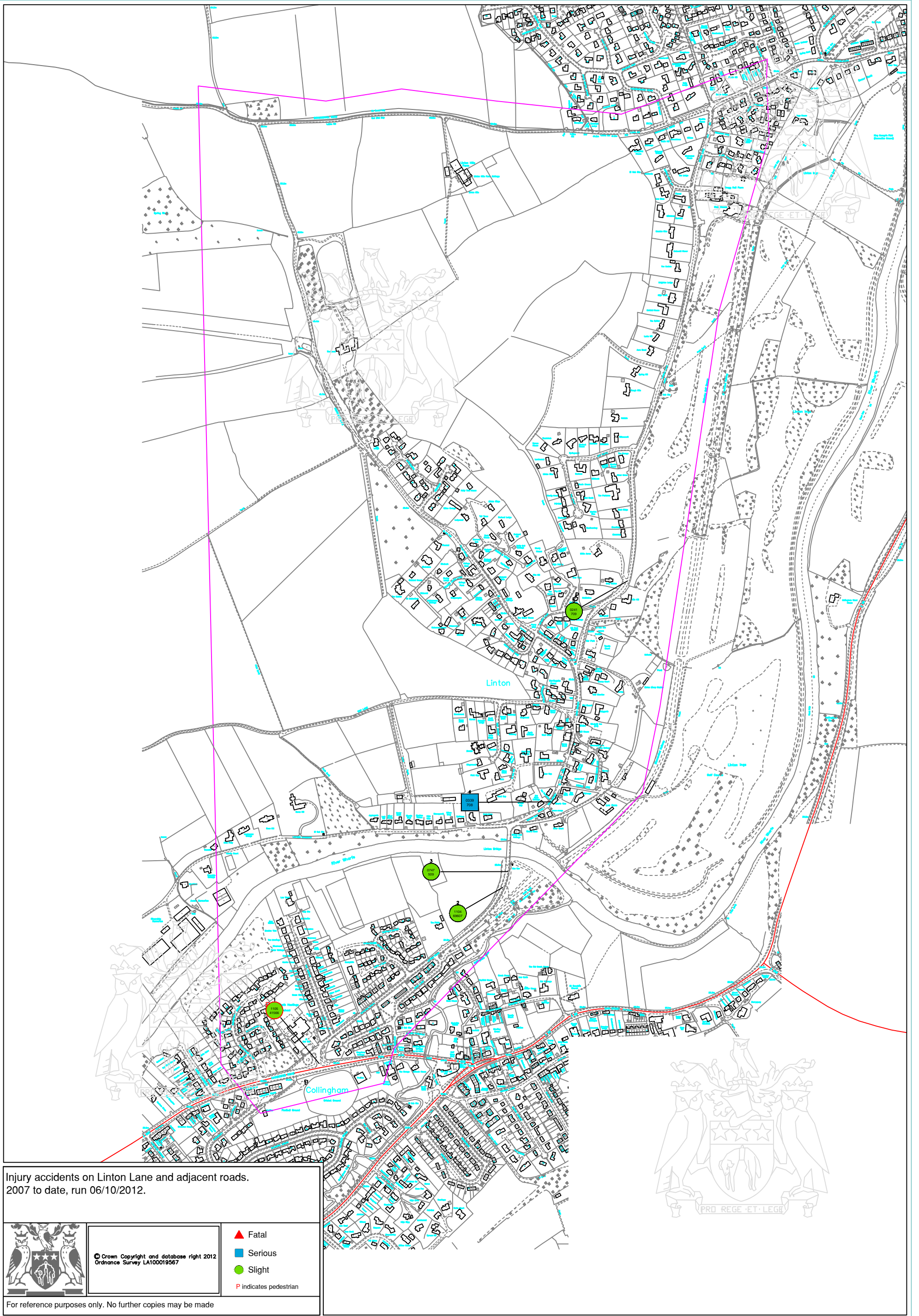


FIGURE 2
EXISTING HIGHWAY
INFRASTRUCTURE PLAN



APPENDIX C
INJURY ACCIDENT RECORD



Injury Accidents on Linton Lane and Adjacent roads, 2007 to date. Run 06/11/2012.

110541566 SLIGHT 438415/445936 25/11/2011 16:35
LOCATION LINTON ROAD AT JUNCTION WITH HAREWOOD ROAD, LEEDS
DESCRIPTION CHILD PEDESTRIAN CASUALTY WAS SITTING IN MUM'S CAR STATIONARY ON LINTON ROAD WAITING TO ENTER HAREWOOD ROAD. CAS1 SAW FRIEND ON OPPOSITE SIDE OF ROAD SO ALIGHTED CAR. V1 CAR WAS WAITING FOR GAP TO TURN RIGHT FROM HAREWOOD ROAD ONTO LINTON ROAD. V1 TURNED INTO LINTON ROAD AS CAS1 RAN INTO ITS PATH AND COLLISION OCCURS.

VEHICLES	DRIVER	CASUALTIES	VEH	SEX	AGE
1 Car	Male	62 1 Pedestrian	SLIGHT	1 Female	9

110469607 SLIGHT 438846/446350 13/10/2011 09:34
LOCATION LINTON ROAD, 145 METRES SE OF MAIN STREET, COLLINGHAM
DESCRIPTION V1 TRAVELLING ALONG LINTON ROAD TOWARDS LINTON APPROACHING A SLIGHT LEFT HAND BEND WHEN VEHICLE VEERED TO OPPOSITE SIDE OF ROAD. V2 TRAVELLING ALONG LINTON ROAD TOWARDS COLLINGHAM APPROACHING SLIGHT RIGHT HAND BEND. V2 COLLIDES WITH V1.

VEHICLES	DRIVER	CASUALTIES	VEH	SEX	AGE
1 Car	Male	37 1 Driver/Rider	SLIGHT	1 Male	37
2 Car	Female	42 2 Driver/Rider	SLIGHT	2 Female	42

0747509 SLIGHT 438857/446387 11/09/2009 14:48
LOCATION LINTON ROAD 100 METRES SOUTH OF LINTON COMMON, WETHERBY
DESCRIPTION V1 BUS TRAVELLING ALONG LINTON ROAD FROM DIRECTION OF LINTON COMMON. AS V1 IS NEGOTIATING SHARP RIGHT HAND BEND V2 VAN TRAVELS ROUND BEND IN OPPOSITE DIRECTION AT SPEED. V1 BRAKES CAUSING ELDERLY PASSENGER TO FALL ON BUS. V2 MAKES NO CONTACT WITH V1 AND DRIVES OFF.

VEHICLES	DRIVER	CASUALTIES	VEH	SEX	AGE
1 Bus or Coach	Male	59 1 Passenger	SLIGHT	1 Female	80
2 Goods < 3.5t	Not traced	-1			

0339708 SERIOUS 438959/446551 19/04/2008 00:55
LOCATION MAIN STREET, 80 METRES NW OF STAMMERGATE LANE, LINTON, WETHERBY
DESCRIPTION VEH 1 FAILS TO NEGOTIATE LEFT HAND BEND IN LINTON VILLAGE NO STREET LIGHTS PRESENT VEH 1 LEAVES CARRIAGEWAY AND COLLIDES WITH STONE WALL

VEHICLES	DRIVER	CASUALTIES	VEH	SEX	AGE
1 Car	Male	22 1 Driver/Rider	SLIGHT	1 Male	22
		2 Passenger	SERIOUS	1 Male	22

0241709 SLIGHT 439139/447070 26/03/2009 09:10
LOCATION LINTON LANE, COLLINGHAM, WETHERBY
DESCRIPTION V1 TRAVELS ALONG LINTON LANE, V1 IS WAITING TO TURN INTO CARPARK OF CHERRY TREE NURSERY, V2 HAS APPROACHED FROM REAR AND COLLIDED WITH REAR OF V1. DRIVERS EXCHANGE DETAILS BUT HAE ENDED UP WITH OWN DETAILS, FULL DETAILS OF V2 NOT KNOWN

VEHICLES	DRIVER	CASUALTIES	VEH	SEX	AGE
1 Car	Female	32 1 Driver/Rider	SLIGHT	1 Female	32
2 Car	Female	-1			