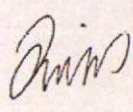
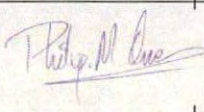




Former Goldthorpe Colliery
Proposed Residential Development
Transport Assessment
(& Travel Plan)
Sir Robert Ogden CBE LLD

November 2013 – Initial Issue

QM

Former Goldthorpe Colliery – 13058				
File reference	O:\Former Goldthorpe Colliery\TEXT\REPORTS\131129 TA & TP.Docx			
Issue/revision	Initial Issue	Revision 1	Revision 2	Revision 3
Remarks	Planning			
Date	29 November 2013			
Prepared by	S Phillips			
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1 Introduction

1.1.1 This Transport Assessment (TA) has been undertaken by Optima to consider the highways and transportation issues raised by an outline planning application for residential development on land formerly occupied by the now defunct Goldthorpe Colliery. The Site is located to the south of Doncaster Road, Goldthorpe. The location of the Site is shown on Figures 1 and 2 for the strategic and local highway networks respectively.

1.1.2 The proposed development, which is also referred to as the Site within this report, comprises up to 125 residential dwellings. Further details of the development proposals are provided in Chapter 3.

1.1.3 The site was part of a previous application for the wider redevelopment of the colliery (application reference B/04/2330/DE) which was granted permission in October 2005. A second application to use this parcel of land for 190 residential units instead of employment use (application reference 2006/1402) was refused but an appeal was subsequently allowed in August 2007 (appeal reference APP/R4408/A/07/2040687). A further application (reference 2010/0983) provided an extension of time to October 2013.

1.1.4 The Phase 1 development for the colliery Site was for a total of 321 dwellings of which 146 dwellings have already built out (at the time of the traffic surveys). Construction of the remaining 175 units is continuing on Site. The proposed application shows a decrease of 65 units in comparison with the previous 190 unit scheme which gained planning consent.

1.1.5 This report sets out the transport issues relating to the proposed development and identifies what measures will be provided to accommodate the anticipated transport impacts of the scheme. The TA considers the sustainability of the Site, reviewing the provision for, and quality of, facilities and connections to and from the surrounding areas. It covers a variety of topics and the document structure is as follows:

- Chapter 2 – describes the Site and the existing transport conditions;
- Chapter 3 – defines the development proposals including the access strategy;
- Chapter 4 – describes the accessibility of the Site by non-car modes including accessibility to local facilities/services;
- Chapter 5 – describes the Travel Plan (TP) which sets out a package of measures to improve the mode choice for those traveling to and from the Site;
- Chapter 6 – sets out the trip generation and distribution methodologies applied in the assessments of the highway network;
- Chapter 7 – provides a commentary of the assessments that have been undertaken to determine the impact of the development on the highway network; and
- Chapter 8 – highlights the conclusions of the report.



2 Existing Site Conditions

2.1.1 This chapter describes the Site and considers the existing conditions on the surrounding highway network for a range of transport modes. It includes a review of traffic count information and accident data.

2.2 EXISTING SITE

2.2.1 The proposed Site, which is currently occupied by brownfield land, the former Goldthorpe Colliery, is located on land to the south of Doncaster Road and an area of allotments. The Site is located in Goldthorpe in the Dearne Valley and is situated approximately 15km south-east of Barnsley. The location of the proposed Site is shown on Figures 1 and 2 in relation to the strategic and local highway networks.

2.3 EXISTING LOCAL HIGHWAY NETWORK

2.3.1 Vehicular access to the proposed Site is via Kingsmark Way which has an average carriageway width of 6.8m and approximate footway widths of 1.8m to either side. Kingsmark Way connects to Doncaster Road via a simple priority T-Junction. Both Kingsmark Way and Doncaster Road are subject to a 30mph speed limit.

2.3.2 The existing layout of the Kingsmark Way/Doncaster Road junction is shown on the drawing attached at Appendix A. This drawing shows visibility splays with a setback distance of 2.4m and a 43m splay which is in excess of the requirement for a 30mph speed limit. As such the visibility from this junction is appropriate for the speed limit of the road.

2.3.3 Doncaster Road generally has a carriageway width of 7.0m and provides access to the main centre of Goldthorpe 500m to the west, and the A635 to the east. It should be noted that the dwellings fronting Doncaster Road and Beever Street have parking bays available. Doncaster Road is subject to a 30mph speed limit along its length.

2.3.4 Beever Street which connects to the western boundary of the Site has a carriageway width of 7.6m with footway widths of 1.5m to either side. Beever Street is lit and connects to Doncaster Road via a priority junction.

2.3.5 The A635 Dearne Valley Parkway aligns east-west and provides access to Barnsley to the west and Doncaster to the east. The A635 corridor is subject to the national speed limit between Hickleton to the east and to Cathill Services on the A635 Barnsley Road to the west. The junction of the A635 Dearne Valley Parkway and Doncaster Road is in the form of a ghost island priority junction.

2.3.6 The B6098 High Street meets with Doncaster Road at a signalised crossroads some 500m to the west of Kingsmark Way. The signalised junction incorporates a pedestrian only phase on a demand only basis. The junction has recently been upgraded to include for a signalised arm to the Horse and Groom Pub due to previous safety concern regarding vehicles exiting during the pedestrian only phase.

2.4 EXISTING PEDESTRIAN AND CYCLE FACILITIES

2.4.1 The town centre of Goldthorpe is within an approximate 10 minute walk time, or 5 minute cycle time from the centre of the Site. Numerous local amenities/facilities are available in Goldthorpe Centre including at least 2 supermarkets, schools, a library and places of worship.



2.4.2 A local cycle route running north to south is available along Lockwood Road and connects to Barrowfield Road, in Thurnscoe. Furthermore many of the local roads such as Beever Street, Lockwood Road and High Street are lightly trafficked and facilitate access for pedestrians and cyclists alike into, and around the town centre.

2.4.3 BC Footpath 17 runs past the Site and connects to Barnburgh Lane to the South.

2.5 EXISTING BUS SERVICES/FACILITIES

2.5.1 The nearest bus stops are located on Doncaster Road approximately 500m northeast from the centre of the Site. The bus stops are located at a midpoint between the junction of Doncaster Road/Kingsmark Way and Doncaster Road/Pickhill's Avenue – both have a pole and plate.

2.5.2 Bus service X19 operates along Doncaster Road, Goldthorpe and the route and timetable is attached in Appendix B. A summary of the service routing past the bus stops on Doncaster Road (bus stop references 37051161 westbound and 37050267 eastbound) is provided in Table 2.1.

Table 2.1 – Doncaster Road Bus Service Summary

Service	Route	Service Frequency	Days of Operation
Doncaster Road			
X19	Barnsley – Darfield – Goldthorpe – Doncaster – Cantley – Robin Hood Airport	2 per hour	Mon-Fri
		2 per hour	Sat
		1 per hour	Sun

2.5.3 During the weekday and Saturday the services on Doncaster Road combine to provide an overall hourly frequency of 2 buses in each direction i.e. 4 bus services per hour two-way. These services operate for the vast majority of the day commencing between 05:31 to 20:41 hours. Furthermore, the services provide regular connections to Doncaster Frenchgate Interchange and hence onwards regional and national travel by both bus and rail.

2.5.4 On a Sunday the services combine to provide an overall hourly frequency of 1 bus in each direction i.e. 2 bus services per hour two-way.

2.5.5 In addition to the services on Doncaster Road, further frequent services to a wide range of destinations are available on High Street/Jackson Road some 900m west of the Site. These services are shown in Table 2.2.



Table 2.2 – High Street/Jackson Road Bus Service Summary

Service	Route	Service Frequency	Days of Operation
High Street/Jackson Road			
203	Barnsley Interchange – Wombwell – Broomhill – Billingley – Goldthorpe – Thurnscoe – Hooton Pagnell – Pickburn – Doncaster, Frenchgate Interchange	1 every 2 hours	Mon-Fri
		1 every 2 hours	Sat
		No service	Sun
216	Wombwell – Wath Upon Dearne – Bolton Upon Dearne – Goldthorpe – Thurnscoe – Grimethorpe	3 per day	Mon-Fri
		3 per day	Sat
		3 per day	Sun
217	Thurnscoe – Bolton Upon Dearne – Mexborough – Swinton – Rawmarsh – Rotherham Interchange	2 per hour	Mon-Fri
		2 per hour	Sat
		No service	Sun
219	Barnsley – Ardsley – Darfield – Thurnscoe – Goldthorpe – Barnburgh – Spotborough – Doncaster Frenchgate Interchange	2 per hour	Mon-Fri
		2 per hour	Sat
		1 per hour	Sun
226	Barnsley Interchange – Wombwell – Brampton – Wath Upon Dearne – Bolton Upon Dearne – Goldthorpe – Highgate – Thurnscoe	2 per hour	Mon-Fri
		2 per hour	Sat
		1 per hour	Mon-Fri

2.5.6 These additional bus services provide regular connections to the interchanges in Barnsley, Rotherham and Doncaster in addition to local towns such as Bolton Upon Dearne, Thurnscoe and Wombwell. Further connections to the rest of the region and beyond are available from Barnsley, Rotherham and Doncaster.

2.6 RAIL FACILITIES

2.6.1 Goldthorpe Train Station is located approximately 1.3km to the northwest of the Site. The station provides an hourly connection to Leeds via Wakefield Westgate. Wakefield Westgate is an approximate twenty six minute journey time from Goldthorpe Station and the onward journey time to Leeds is a further 22 minutes. Additional hourly services are provided to Sheffield with a 34 minute journey time.

2.6.2 The station benefits from seating, shelters, a help point, timetable information and ramp access. A limited capacity Park and Ride free car park of 7 spaces operates at this station.

2.7 EXISTING TRAFFIC COUNTS

2.7.1 Fully classified turning counts have been undertaken at three locations on the local highway network. A summary of the surveys is provided in Table 2.3.



Table 2.3 – Summary of Traffic Surveys

Location	Type	Date Undertaken	Assessment Periods
1. Doncaster Road/Nora Way/Doncaster Road/Kingsmark Way	Fully Classified Manual Turning Count	Thursday 7 th November 2013	07:00-10:00 & 16:00-19:00
2. A635 Dearne Valley Parkway/A635 Doncaster Road/Doncaster Road	Fully Classified Manual Turning Count	Thursday 7 th November 2013	07:00-10:00 & 16:00-19:00
3. Doncaster Road/High Street/Barnsley Road	Fully Classified Manual Turning Count	Thursday 7 th November 2013	07:00-10:00 & 16:00-19:00

2.7.2 The traffic count surveys have identified the existing weekday morning and evening peak hour periods as follows:

- Weekday AM Peak – 07:45 to 08:45; and
- Weekday PM Peak - 16:45 to 17:45.

2.7.3 The surveyed AM and PM existing traffic flows are shown on Figures 10 and 11.

2.8 EXISTING ACCIDENT DATA ANALYSIS

2.8.1 Personal injury accident data has been obtained for the highway network in the vicinity of the Site for the most recently available five year period between 1st January 2008 and 31st December 2012. The study area includes Doncaster Road from its junctions with High Street to the west to the A635 to the east. The accident data, including a location plan, obtained from BMDC is attached at Appendix C.

2.8.2 For the five year period, there have been a total of 22 personal injury accidents within the study area – six of which were classified as serious, the remainder being slight in nature.

2.8.3 No fatal accidents have been recorded within the study area and no accidents have been recorded at the junction of Doncaster Road and Kingsmark Way.

2.8.4 Nine accidents have been recorded along Doncaster Road at varying locations. A further seven accidents were recorded at the junction of Doncaster Road with the A635. A single accident was recorded along the A635 with the remaining 5 accidents occurring along minor side roads. A summary of the accidents has been tabulated below.



Table 2.4 – Personal Injury Accident Analysis

Year/Severity	2008		2009		2010		2011		2012		Total
	SL	SE	SL	SE	SL	SE	SL	SE	SL	SE	
Failed to give way	2	1	0	0	0	0	0	1	0	1	5
Loss of control	0	0	0	0	1*	0	1	0	1	0	3
Pedestrian	0	0	0	0	1	1	1	1	2	1	7
Cyclist	1	0	0	0	0	0	0	0	0	0	1
Right turn	0	0	0	0	0	0	0	0	1	0	1
Rear shunt	1	0	0	0	0	0	2	0	0	0	3
Driver error	0	0	0	0	0	0	2	0	0	0	2
Total	4	1	0	0	2	1	6	2	4	2	22

*ice on carriageway

2.8.5 Whilst any accident is regrettable, no accident trends or significant clusters have been identified within the study area over a 5 year period. Although accidents have been recorded at the Doncaster Road/A635, the geometrical layout of this junction is not considered to have been a significant factor.

2.8.6 The low incidence of accidents over a five year period combined with a number of causal factors and a variety of locations within the study area, lead to the conclusion that there are no specific concerns relating to either existing or future highway safety.



3 Development Proposals and Access Strategy

3.1.1 This section of the report provides details of the development scheme including the proposed access for vehicles, pedestrians and cyclists. As the scheme is an outline application, the on site details are indicative only.

3.2 THE DEVELOPMENT PROPOSALS

3.2.1 The proposed application is shown on the Architects Masterplan attached at Appendix D and comprises:

- Up to 125 Residential Dwellings; and
- Associated Parking, Landscaping and Infrastructure Works.

3.3 PREVIOUS PERMISSION

3.3.1 The previous development on the Site was for up to 190 residential units. The main point of access for the previous application was taken from the existing roundabout at the southern extent of Kingsmark Way.

3.4 VEHICULAR ACCESS

3.4.1 Access into the Site is proposed to be taken from the existing roundabout at the southern end of Kingsmark Way. This roundabout is currently built, but is currently provided without a central island. The phase one construction is still on going and the junction is not currently utilised as a roundabout due to the missing central island. A stub road which the Phase 2 Site will utilise is already built. The Site will connect to the stub road and the layout will provide appropriate turning facilities internally to allow for refuse vehicles and other heavies to turn and exit the Site in a forward gear.

Kingsmark Road

3.4.2 The Site is proposed to access via Kingsmark Road which has a carriageway of some 6.8m in width, with 1.8m footways to either side. Kingsmark Road extends for some 300m south from Doncaster Road to the access roundabout and has speed humps at regular intervals along its length. Kingsmark Way connects to Doncaster Road via a simple priority T-Junction. Both Kingsmark Way and Doncaster Road are subject to a 30mph speed limit. The visibility from this junction is appropriate for the speed limit of the road.

3.5 PROPOSED PEDESTRIAN/CYCLE ACCESS

3.5.1 The Masterplan contained in Appendix D shows several access points into the proposed development by foot onto Kingsmark Way and onto Beaver Street.

3.5.2 As identified in Manual for Streets (MfS) pedestrian routes should be direct and accord with pedestrian desire lines as much as possible. The proposed layout meets with these requirements in that the links bring pedestrians to existing facilities in the nearby area from where schools and facilities can be easily accessed.

3.5.3 Internally the Site layout and any shared surfaces will ensure that vehicle speeds will be kept to a minimum, therefore making the bicycle an attractive form of transport when travelling through the Site. Whilst for the majority of trips, travelling through the Site will comprise a small section of the overall journey distance, it is important to recognise that good design of the internal layout will act as a further incentive for cycling.

3.5.4 All of the proposed residential units will have the facility to securely store one or more bicycles.



3.6 PARKING

3.6.1 Parking on site will accord with the BC Supplementary Planning Document on Parking (March 2012) with one space provided for 1 and 2 bedroom dwellings and 2 spaces provided for 3+ bedroom dwellings. Parking for visitors can be safely accommodated either on individual driveways, dedicated visitor bays or on-street.

3.6.2 The proposed provision of spaces on and off curtilage will ensure that the demand for parking on Site will not affect the local highway network operation or safety.

3.7 SERVICING

3.7.1 The internal residential layout has been designed to ensure that the servicing requirements of the development can be comfortably accommodated. Fire tenders are also able to get within 45.0m of the ground floor of all dwellings included as specified as a requirement in Section 6.7 of MfS.



4 Site Accessibility and Measures to Influence Travel Behaviour

4.1.1 This chapter describes the accessibility of the Site by non-car modes.

4.2 ACCESSIBILITY BY FOOT

4.2.1 As described in the previous chapter the measures proposed which will positively influence trips by foot include:

- Several boundary connections with the existing highway network to facilitate trips in all directions from (and through) the Site; and
- Numerous internal links and pedestrian routes;

4.2.2 It should be noted that the above measures will not only benefit new residents of the development Site but also existing residents living on surrounding estates. For example the connection through the Site to Beever Street will improve access for residents of the existing and approved developments to the town centre and the Train Station.

4.2.3 The residential design guide “Manual for Streets” (MfS) advises that “walkable neighbourhoods are typically characterised by having a range of facilities within ten minutes (up to about 800m) walking distance of residential areas...” (ref para 4.4.1). However, this is not regarded as an upper limit in MfS and reference is also made to walking offering “the greatest potential to replace short car trips, particularly those under 2km”. The acceptability of walking trips up to 2km (an approximate 25 minute walk time) is also supported in the IHT document “Providing for Journeys on Foot”.

4.2.4 Typical walk times (up to 25 mins) to key local facilities situated in close proximity to the proposed Site are summarised as follows:

- The nearest primary school (Dearne Goldthorpe Primary School) is within approximately a 6-7 minute walk distance of the centre of the Site;
- The nearest secondary school (Dearne Advanced Learning Centre on Goldthorpe Road) is approximately an 18 minute walk distance. This incorporates the Dearne Leisure Centre within the grounds;
- Goldthorpe Centre can be reached within a 5 minute walk of the Site where numerous shops/facilities can be found including food retail, doctors/health centre, pharmacist, cash points, florists, library, pubs, banks, takeaways and barbers. In addition there is a post office, local stores and churches. As well as providing convenient services to local residents the majority of these facilities also provide accessible employment opportunities. There are also a number of other employment/businesses located close to the centre in the Goldthorpe Industrial Estate;

4.2.5 It is therefore concluded that the proposed Site will provide excellent accessibility by foot and cycle to a wide range of services and facilities – all within a 5 to 20 minute walk.

4.2.6 Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

4.3 ACCESSIBILITY BY CYCLE

4.3.1 As described in the previous chapter the measures proposed which will positively influence cycle trips include:



- Several boundary connections with the existing highway network to facilitate trips in all directions from the Site which would provide a more convenient/attractive route to the Train Station, shops and facilities to the northwest of the Site ; and
- Numerous internal links and cycle routes.

4.3.2 It should be noted that all of the above measures will not only benefit new residents of the development Site but also existing residents living on surrounding estates.

4.3.3 Doncaster Road (west of Beever Street) and Beever Street are classified as advisory cycle routes on Barnsley Council's Cycle Map and connect the Site to Goldthorpe, Bolton upon Dearne and local centres of employment. To the south of the Site the Trans Pennine Trail Route 62 can be accessed via Adwick upon Dearne within an 18 minute cycle ride time.

4.3.4 An acceptable and comfortable distance for general cycling trips is considered to be up to 5 kilometres as referred to in Local Transport Note 2/08 (published by the DfT). However, the same guidance also refers to commuting cycle trips up to 8km. The Dearne Cycle Walk Plan in Appendix E shows the following:

- All of the numerous shops and facilities within Goldthorpe town centre including schools, healthcare and food stores can be reached within a 5 minute cycle of the Site;
- Bolton Upon Dearne and its associated facilities is within a 16 minute cycle journey; and
- Goldthorpe Industrial Estate and Fields End Business Park are within a 12 minute cycle time where numerous additional employment opportunities are available.

4.3.5 It is therefore concluded that the proposed Site will provide excellent accessibility by cycle to a vast range of local services and facilities within a ten minute cycle ride as well as significant employment opportunities beyond the immediate local area including Bolton upon Dearne and Thurnscoe.

4.3.6 Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

4.4 ACCESSIBILITY BY BUS

4.4.1 Additional boundary connections to the existing highway network to the west of the Site into Beever Street will facilitate trips to the bus stops on Doncaster Road. This will have a positive influence on trips by bus.

4.4.2 Typical walk times from the nearest bus stops to and through the proposed Site are as follows:

- The northern boundary of the Site is within an approximate 275m distance of the Doncaster Road bus stops;
- The centre of the Site is within 450m distance from the existing Doncaster Road bus stops, which equates to just over a 5 minute walk; and
- The vast majority of the Site is within a 550m walk distance of a bus stop.

4.4.3 Indicative journey times from the Doncaster Road bus stops, (taken from timetable information) to the following destinations are as follows:

- Barnsley Interchange/Barnsley Town Centre – within a 23 minute journey time on average; and



- Doncaster Frenchgate Interchange/Doncaster City Centre – just under a 30 minute journey time on average.

4.4.4 Therefore a regular bus service from the Doncaster Road stops will provide residents with access to interchanges in Barnsley and Doncaster via a number of other towns and villages in the Dearne Valley. Both of the above principle destinations (as well as others) provides accessibility to significant further employment opportunities beyond Goldthorpe and the immediate local area.

4.4.5 It is therefore concluded that the proposed Site will provide accessibility by bus to a range of local services and facilities as well as to wider employment opportunities.

4.4.6 Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.

4.5 ACCESSIBILITY BY RAIL

4.5.1 The Site is located approximately 1.3km to the west of the Site which is an approximate 16 minute walk or a 5 minute cycle.

4.5.2 Goldthorpe Train Station provides hourly connections to Leeds via Wakefield Westgate. Additional hourly services are provided to Sheffield. Regular national and regional connections for long distance commuting and leisure journeys can be accessed via these stations.

4.5.3 Indicative journey times from Goldthorpe rail station, (taken from timetable information) to the following destinations are as follows:

- Wakefield Centre – a 26 minute journey time on average;
- Leeds City Centre – an approximate 48 minute journey time; and
- Sheffield City Centre – an approximate 34 minute journey time.

4.5.4 The stations at Wakefield provide frequent onward connections to Manchester, Leeds, Sheffield, London and Edinburgh amongst other destinations.

4.5.5 Therefore the regular rail services from Goldthorpe station will provide residents with direct access to Wakefield, Leeds and Sheffield City Centres. Each of the above principle destinations (as well as others) provides accessibility to significant further employment opportunities beyond Goldthorpe and the immediate local area.

4.5.6 It is therefore concluded that the proposed Site will provide accessibility by rail to a vast range of services, facilities and employment opportunities.

4.5.7 Furthermore the Travel Plan will have a positive influence on the sustainable travel choices made by residents of the development Site.



5 Travel Plan

5.1 INTRODUCTION

5.1.1 This TP sets out potential facilities/initiatives to encourage residents to use sustainable transport along with suggested initiatives for consideration by the developer marketing company. This TP contains the following elements:

- Objectives and scope of the Plan;
- Travel Plan targets;
- Description of roles and responsibilities;
- Potential additional measures to encourage, promote and increase the use of public transport, cycling and walking and reduce the level of single occupancy car trips; and
- A brief communication strategy.

5.2 OBJECTIVES AND SCOPE OF THE PLAN

5.2.1 The Travel Plan shall, by containing appropriate measures, assist in improving the environment by reducing the number of trips made to and from the development by private car. Residents shall be made aware of the measures included within the Travel Plan in order that positive benefits can be delivered and the number of trips undertaken by public transport, walking or cycling can be increased.

5.2.2 In order to ensure that the measures contained within the Travel Plan are capable of delivering a sustainable travel demand pattern for the development it is important to identify some key objectives. The overall travel management objectives for the proposed development are:

- Promoting walking, cycling and public transport as the primary mode of travel; and
- To deliver mode shift from single occupancy car journeys to alternative modes including multi-occupancy vehicle trips.

5.3 TARGETS

5.3.1 The Travel Plan will aim to promote travel choice for the occupiers and users of the development, and hence to increase the use of sustainable transport modes.

5.3.2 Mode split targets will be set that will seek to reflect or improve on the predicted traffic generation figures set out in Chapter 6 of this report.

5.4 ROLES AND RESPONSIBILITIES

5.4.1 An important aspect of a successful Travel Plan is the allocation of sufficient resources to enable it to happen. This can in part be achieved by the recognition from the outset of the roles and responsibilities of those who will be involved. This will ensure the appropriate allocation of time and resources to those charged with managing the process.

5.4.2 An appointed site management company will act as the Travel Plan Co-ordinator (TPC) for the development. The anticipated duties of the Travel Plan Co-ordinator will include:

- Acting as a single point of contact for all transport, access and travel related issues for the development;
- Obtaining and providing site occupants with up to date details of information relating to access to the site via sustainable modes; and



- Liaison with BMBC and other key stakeholders.

5.5 TRAVEL PLAN MEASURES

5.5.1 In addition to the internal Site infrastructure proposed, the following measures will be included in the TP:

Walking and Cycling

- A plan showing the key pedestrian routes to the site including any crossing facilities;
- A plan showing the key cycling routes to the site including any crossing facilities and details/locations of cycle parking (this information may be combined with the pedestrian plan);
- Details of nearby cycle shops including location, contact information and those that may offer discounts on cycles and repairs/maintenance;
- Provide details of third party walking and cycling organisations such as 'bikebudi' (www.bikebudi.com), 'walkbudi' (www.walkbudi.com) and 'walkit' (www.walkit.com);
- Provide details of cycling events throughout the year;
- Promote and encourage walking and cycling to work, through events such as 'Bike to Work Day' and 'Bike Week', to heighten awareness; and
- Provide details of the DfT Cycle to Work scheme available at <http://www.dft.gov.uk/pgr/sustainable/cycling/cycletoworkschemeimplementat5732>.

Public Transport

- Provision of up to date information relating to bus services, routes, destinations, times/frequencies;
- Details of bus stop locations close to the site;
- Details of all school bus services close to the site;
- Details of any AccessBus scheme for disabled users;
- Details of personalised public transport journey planner information;
- Any bus promotional offers including details of concessionary travel; and
- Contact details of taxi operators and locations of nearby taxi ranks.

School Travel

5.5.2 The responsibility for obtaining the most up to date information regarding local schools rests with the Travel Plan Co-ordinator. This package of information will include school location, distance from the Site, appropriate pedestrian/cycle routes to the school and details of public transport services. This information will be made available to residents in the welcome packs.

5.5.3 The Travel Plan Co-ordinator will also investigate (by talking to schools and/or parents) which local schools operate a School Travel Plan, what measures are already in place, and whether a Walk to School Campaign is promoted.



Home Delivery Services

5.5.4 The Travel Plan Co-ordinator will promote the use of home delivery services including providing details of local grocery stores and information on stores which provide home delivery services.

5.6 COMMUNICATION

5.6.1 The public transport authority should be contacted regarding the provision of leaflets, timetable and promotions/offers.

5.6.2 All prospective residents will be made aware of the implementation of the Travel Plan at the Site and the sustainable travel options available potentially via a marketing website.

5.6.3 The TPC should consider membership of any local authority Travel Plan Network which may be established during the lifetime of the Travel Plan.



6 Trip Generations and Distributions

6.1 INTRODUCTION

6.1.1 This chapter sets out the trip generations and distribution methodologies associated with the proposed development Site.

6.2 VEHICULAR TRIP GENERATIONS

6.2.1 To determine appropriate residential trip rates reference has been made to the TRICS database (2013b version 6.12.2) to establish total vehicular trip rates. The time periods selected are the weekday morning (08:00-09:00) and evening (17:00-18:00) peak hour periods. Survey sites within the database have been chosen using the following parameters:

- Land use Residential/Houses Privately Owned selected;
- Vehicular trip rates selected;
- Surveys undertaken in the last five full calendar years;
- Sites with comparable access to similar public transport facilities;
- London & Irish sites excluded;
- Suburban and Edge of Town Sites included; and
- Range of households between 50 and 300 selected.

6.2.2 This selection process yields 22 surveys completed at representative sites and the TRICS outputs for these have been attached at Appendix F for information. The resulting weekday peak hour total vehicular trip rates are shown in Table 6.1.

6.2.3 Based on the characteristics of the sites that have been selected being representative of the development site it is appropriate to apply average trip rates. This methodology is in accordance with the Department for Transport (DfT) document Guidance on Transport Assessment (GTA) which states that 85th percentile trip rates should only be used when appropriate, comparable sites cannot be found. The selected sites are comparable.

Table 6.1 – Proposed Total Vehicular Average Weekday Trip Rates

Time Period	Total Vehicular Trip Rates (per unit)		
	Arrivals	Departures	Total
AM 08:00 - 09:00	0.156	0.409	0.565
PM 17:00 – 18:00	0.380	0.240	0.620

6.2.4 The total vehicular trip rates shown in Table 6.1 have been multiplied by 125 (the proposed number of dwellings) to give the total vehicular trip generations as shown in Tables 6.2 and 6.3 for the AM and PM peaks respectively.



Table 6.2 – Proposed AM Total Vehicular Weekday Trip Rates and Generations

	Arrivals	Departures	Total
Trip Rate	0.156	0.409	0.565
Trip Generation	20	51	71

Table 6.3 – Proposed PM Total Vehicular Weekday Trip Rates and Generations

	Arrivals	Departures	Total
Trip Rate	0.380	0.240	0.620
Trip Generation	48	30	78

6.3 TRIP DISTRIBUTION AND ASSIGNMENT

6.3.1 The traffic distribution of the proposed development has been assessed based on local travel patterns contained within the 2001 census data, this information has been obtained from www.nomisweb.co.uk. The raw data collected covers the whole of the United Kingdom and as such it has not been appended to this report.

6.3.2 Application of the journey to work data from the census is considered to be an appropriate base for determining the peak hour distribution, on the basis that the majority of residential morning and evening peak hour trips will be journeys to and from work.

6.3.3 The proposed development is located within the Dearne South ward boundary, which encompasses the South of Goldthorpe and Bolton upon Dearne.

6.3.4 The travel to work data for all of the residents who travel to work by car has been summarised on the Spreadsheet attached at Appendix G. The travel to work by car information (raw data) that was originally interrogated included destinations across the United Kingdom i.e. the raw data had multiple destinations that had no recording of trips between Dearne South and that particular destination. Therefore the Spreadsheet has been amended to only include wards in the UK that served as a journey to work destination for residents of South Dearne as recorded in the 2001 Census.

6.3.5 The origins/destinations for the resident population living within the existing ward area have been interrogated in order to establish the geographic distribution of all journey to work by car driver trips. It is then necessary to assign the distributions to the surrounding local highway network utilising one of the following seven routes to/from the Site:

- A635 (East);
- B6098 (South);
- A635 (West);
- B6411 Lidget Lane;
- Barrowfield Road;
- Nicolas Lane; and



- Commercial Road.

6.3.6 The assignment process as detailed on the Spreadsheet contained in Appendix G and produces the proposed vehicular distributions summarised in Table 6.4. These distributions are to be applied to both the AM and PM peak hour development generated trips.

Table 6.4 – Proposed Residential Vehicular Distribution - Route Assignment Summary

A635 (East)	B6098 (South)	A635 (West)	B6411 Lidget Lane	Barrowfield Road	Nicolas Lane	Commercial Road	Total
26.01%	29.59%	29.95%	1.86%	1.82%	1.82%	8.95%	100%

6.3.7 The distribution of trips as shown in Table 6.4 can then be assigned onto the local highway network and a visual representation is shown on Figure 12. To illustrate the specific distribution and routing of traffic to and from the development site, the values shown on Figure 12 have been applied to the trip generations in Tables 6.2 and 6.3 to produce the following residential trip generation diagrams:

- Figure 13 - Proposed Weekday AM Peak Development Flows
- Figure 14 - Proposed Weekday PM Peak Development Flows

6.3.8 The distributions as detailed above validate well against existing traffic movements at the three junctions counted and as such the proposed routing of traffic through the network is deemed to represent a realistic scenario.



7 Identification of Impacts and Mitigation

7.1 INTRODUCTION

7.1.1 A preliminary scope/extent of the highway network to be tested has been sent to Highway officers at BC prior to submission of the TA. This scope was based on existing distributions as set out in Chapter 5. At the point of writing this TA, no comments have been received from BMBC on the scope of assessment and therefore the scope has not been altered.

7.1.2 The scope of junctions to be assessed was based on the number of development trips routing through adjacent junctions and these are shown in Figures 13 and 14. These figures show that the development has an impact on the following junctions:

- Kingsmark Way/Doncaster Road; and
- High Street/Doncaster Road.

7.1.3 This chapter describes the impact of the development trips on the above junctions and identifies any potential mitigation works required. The junctions have been tested for the following assessment scenarios:

- 2013 AM and PM Counts i.e. existing scenario;
- 2018 AM and PM Base Scenario (growthed traffic flows and committed development flows); and
- 2018 AM and PM Design Scenario (Base scenario plus development trips)

7.1.4 The assessments as identified do not include for an assessment including the effect of the Travel Plan on vehicular trip generations from the Site and therefore provide a robust assessment of the highway network.

7.2 PEAK HOUR TRAFFIC COUNT

7.2.1 As referred to in Chapter 2, the traffic surveys identified the following existing weekday peak hour periods:

- Weekday AM Peak – 07:45 to 08:45; and
- Weekday PM Peak - 16:45 to 17:45.

7.2.2 The traffic count flows for these periods are shown on Figures 10 and 11 for the morning and evening peak hours respectively and will be used to validate the junction models against the recorded queue lengths.

7.3 BASE TRAFFIC FLOWS

Consented Development Flows

7.3.1 BMBC have not advised of any consented development Sites which should be taken into account in the assessments. Notwithstanding this, the adjacent Phase 1 Site has only been half built out and therefore the flows associated with the remainder of the Site will be taken into account.

7.3.2 A total of 146 out of 321 units were built out when the traffic surveys were undertaken. As such the remaining units have been taken into account using the trip generations and distributions identified in Chapter 6. The flows associated with the consented Phase 1 Site are shown on Figures 15 and 16.



Future Assessment Year and Traffic Growth

7.3.3 In accordance with the DfT guidelines on the preparation of Transport Assessments it is necessary to test the capacity of the highway network for 'a minimum of 5 years post registration of the application'. However, in consideration of a future year assessment it is also important to recognise the likely future build out of the scheme. A design year of 2018 has therefore been proposed as this would provide an appropriate timescale in which the development would be built out and occupied.

7.3.4 Background traffic growth rates, between 2013 and 2018, have been obtained from TEMPRO v6.2 and these values are as follows:

- AM peak hour growth rates of 7.25%; and
- PM peak hour growth rates of 7.59%.

7.3.5 It should be noted that no discount has been applied to the TEMPRO growth rate calculation to allow for the 125 residential units proposed in this development and for the Phase 1 housing Site. This is despite the Site being allocated in Barnsley's current LDF and therefore an element of double counting will take place as the growth rate already takes account of proposed housing development.

7.3.6 Applying the identified growth rates to the 2013 traffic counts shown in Figures 10 and 11 produces the 2018 growthed count traffic flows shown on Figures 17 and 18 for the morning and evening peak hours respectively.

7.3.7 Adding the consented phase 1 committed development trips shown in Figures 15 and 16 to the 2018 growthed traffic flows (Figures 17 and 18) produces the 2018 Base traffic flows and these are shown diagrammatically on Figures 19 and 20 for the morning and evening peak hours respectively.

7.4 DESIGN TRAFFIC FLOWS

7.4.1 Adding the proposed development trips shown in Figures 13 and 14 to the 2018 Base traffic flows (Figures 19 and 20) produces the design traffic flows and these are shown diagrammatically on Figures 21 and 22 for the morning and evening peak hours respectively.

7.4.2 It should be noted that these design traffic flows are considered to be robust for the following reasons:

- The TEMPRO traffic growth calculations did not take account of any discount associated with the proposed and consented development and therefore an element of double counting may occur; and
- No discount has been applied to the development trip generations to allow for the effect of the proposed Travel Plan.

7.5 OPERATIONAL ASSESSMENT OF HIGHWAY NETWORK

7.5.1 This section describes the junction capacity assessments which have been undertaken for the proposed residential scheme. Full software output data can be found at Appendix H.

Existing Doncaster Road/Kingsmark Way/Nora Street priority junction

7.5.2 The existing layout of the Doncaster Road/Kingsmark Way/Nora Street priority junction is shown on the drawing contained in Appendix A and has been modelled as a 4 arm RL staggered junction using the TRL computer program JUNCTIONS 8, PICADY software. The junction has initially been modelled for the AM and PM peak hours with surveyed traffic flows and the results are summarised in Table 7.1.



Table 7.1 Doncaster Road/Kingsmark Way/Nora Street AM and PM 2013 Count (Existing Junction)

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Doncaster Road east (Arm A)	0.00	0	0.01	0
Kingsmark Way (Arm B)	0.15	0	0.10	0
Doncaster Road west (Arm C)	0.03	0	0.07	0
Nora Street (Arm D)	0.01	0	0.03	0

All Queue values are in PCUs

7.5.3 The results in Table 7.1 show that the existing junction with the count flows is operating well within capacity in both the AM and PM peak periods. The above results reflect the queue survey data (Appendix I) and on site observations. It is considered that the model is representative of existing conditions.

7.5.4 The junction has then been modelled for the 2018 base situation i.e. the count information has been grown to represent the levels of traffic that is predicted would be on the network without the proposed development being constructed with the addition of the committed development detailed at section 7.3. The results of the assessment for the AM and PM base peak hour periods are summarised in Table 7.2.

Table 7.2 Doncaster Road/Kingsmark Way/Nora Street AM and PM 2018 Base (Existing Junction)

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Doncaster Road east (Arm A)	0.00	0	0.01	0
Kingsmark Way (Arm B)	0.30	0	0.19	0
Doncaster Road west (Arm C)	0.06	0	0.16	0
Nora Street (Arm D)	0.01	0	0.03	0

All Queue values are in PCUs

7.5.5 The results in Table 7.2 demonstrate that the junction when modelled in the 2018 base situation will continue to operate well within capacity with traffic growth and committed developments. All of the predicted RFC values at the junction are significantly below the desired threshold of 0.85.

7.5.6 The final assessment of the junction is completed for the design scenario i.e. the 2018 base traffic added to the predicted development traffic. The results are given in Table 7.3.



Table 7.3 Doncaster Road/Kingsmark Way/Nora Street AM and PM 2018 Design (Existing Junction)

Movement	AM		PM	
	RFC	Mean Q	RFC	Mean Q
Doncaster Road east (Arm A)	0.00	0	0.01	0
Kingsmark Way (Arm B)	0.40	1	0.25	0
Doncaster Road west (Arm C)	0.09	0	0.22	0
Nora Street (Arm D)	0.01	0	0.03	0

All Queue values are in PCUs

7.5.7 The results in Table 7.3 show that the existing junction is predicted to continue to operate well below the desired RFC threshold of 0.85 with the addition of the proposed development trips. The junction assessment has confirmed that the existing junction arrangement can comfortably accommodate the additional traffic resulting from the development.

High Street/Doncaster Road Signalised Crossroads

7.5.8 The existing signalised junction arrangements are shown on the drawing attached in Appendix J and has been modelled as a 4 arm signalised crossroads using the LINSIG V3 software. The junction currently operates under VA control and has a short cycle time which is extended through vehicular and pedestrian demand. The junction operates a demand dependent pedestrian only phase which has been modelled as being demanded every second cycle in the AM and PM peaks. It was recorded on Site as occurring twenty one times in the AM peak and nineteen times in the PM peak which equates to less than one every two cycles. The pub access was demanded once in the AM peak and 4 times in the PM peak and as such the model has not run this stage as the time lost to this stage has been more than covered with the time lost in running the pedestrian stage every other cycle. The junction has been modelled using the signal information provided by Barnsley Council, on site observations, RR67 saturation flows and validated against recorded queue lengths.

7.5.9 The operation of the junction with the existing AM and PM 2013 peak hour counts has been modelled and the results are summarised in Table 7.4.

Table 7.4 – High Street/Doncaster Road Signals 2013 Count Flows

Traffic Stream No.	Traffic Stream Description	AM			PM		
		DoS (%)	Q (PCU's)	Recorded MMQ	DoS (%)	Q (PCU's)	Recorded MMQ
1/1	Barnsley Road	62.7	7	9	78.5	9	11
2/1	Doncaster Road	62.0	5	4	77.5	7	7
3/1	High Street	60.6	4	3	78.6	8	7

7.5.10 It can be seen from the summary results contained in Table 7.4 that the junction operates below the desired practical capacity (90% DoS) on all arms of the junction.

7.5.11 The modelled queues are reflective of those recorded on site by an independent survey company and therefore the model is deemed to be representative of the existing situation.

7.5.12 The junction has then been modelled using the 2018 base traffic and the results are shown in Table 7.5.



Table 7.5 – High Street/Doncaster Road Signals 2018 Base Flows

Traffic Stream No.	Traffic Stream Description	AM		PM	
		DoS (%)	Q (PCU's)	DoS (%)	Q (PCU's)
1/1	Barnsley Road	72.1	9	89.8	13
2/1	Doncaster Road	73.2	6	91.4	11
3/1	High Street	71.4	5	90.1	11

7.5.13 The addition of the traffic growth and consented phase 1 development causes the operation of the junction to worsen with the PM peak operating slightly above the desired capacity. However all approaches continue to operate within the desired practical capacity in the AM peak.

7.5.14 The final assessment of the capacity of the junction is for the 2018 (with development) design scenario. The development traffic has been predicted in the preceding sections of this report and has been added to the 2018 base traffic to give the total design traffic. The results for the 2018 Design scenario are shown in Table 7.6.

Table 7.6 – High Street/Doncaster Road Signals 2018 Design Flows

Traffic Stream No.	Traffic Stream Description	AM		PM	
		DoS (%)	Q (PCU's)	DoS (%)	Q (PCU's)
1/1	Barnsley Road	76.9	10	96.1	17
2/1	Doncaster Road	75.1	7	93.5	13
3/1	High Street	76.9	6	94.0	13

7.5.15 Table 7.6 summarises the results of the 2018 design scenario assessments for the AM and PM peaks. When compared with the 2018 base scenario the results show a slight increase in DoS and queuing at the junction. The junction continues to operate within the desired capacity in the AM peak, whilst still operates within absolute capacity in the PM peak.

7.5.16 As the junction operates under VA control, the green time on critical approaches can be extended to account for the increased demand on the junction. This could extend the cycle time to a maximum of 180 seconds (over 2 cycles – i.e. 2 X 90 second cycles modelled) with the pedestrian phase demanded every other second cycle. The results of the PM peak have been remodelled with the extended cycle time and the results are shown in Table 7.7.

Table 7.7 – High Street/Doncaster Road Signals 2018 PM Design Flows with extended cycle time

Traffic Stream No.	Traffic Stream Description	PM	
		DoS (%)	Q (PCU's)
1/1	Barnsley Road	86.5	15
2/1	Doncaster Road	85.5	12
3/1	High Street	84.4	11

7.5.17 The extension of the green time on the critical approaches has the effect of bringing the junction within the desired capacity in the PM peak as well as the AM peak as such the results demonstrate that the proposed development will have a negligible effect on the operation of the junction and that no mitigation at this junction is required.



7.5.18 Furthermore the local highway network assessments have been undertaken for a worst case scenario. These assessments are considered to be a worst case for the following reasons;

- No discount has been applied to allow for the effect of the proposed measures to influence travel behaviour (for new as well as existing trips);
- No discount has been applied to the development trip generations to allow for the effect of the proposed Travel Plan in the assessments; and
- No discount has been applied to the TEMPRO growth rate calculation to allow for either the proposed or phase 1 development and therefore an element of double counting will take place as the growth rate already takes account of proposed housing development which has been dealt with separately.



8 Summary and Conclusions

8.1.1 This report has addressed the highways and transport issues raised by the proposed development of up to 125 dwellings on brownfield land formerly occupied by the Goldthorpe Colliery.

8.1.2 The report has identified what measures will be taken to deal with the anticipated impacts of the scheme proposals and has defined what improvements and initiatives will be implemented to improve accessibility to the Site by all modes of travel.

8.1.3 Vehicular access into the Site is proposed from an existing roundabout junction at the southern extent of Kingsmark Way. Kingsmark Way connects with Doncaster Road and forms a priority T junction. It has been demonstrated that the existing Kingsmark Way/Doncaster Road junction is able to accommodate the proposed level of consented and proposed development traffic through an analysis of the capacity of the junction and through an overview of the geometric standards and a review of accident data.

8.1.4 Pedestrian access to the proposed development would also take place via the proposed Site access. Additional pedestrian access into the Site will be provided via Beever Street to the west of the Site. This would provide a link between the Site and Goldthorpe Centre.

8.1.5 It has been demonstrated that the Site has excellent accessibility to local facilities and good access to public transport. Goldthorpe Centre has numerous shops, facilities and schools which are all within a short walk distance of the Site. There are bus services on Doncaster Road and Goldthorpe rail station is also within close proximity. Future residents of the Site will therefore have various options to access the Site sustainably.

8.1.6 A review of the personal injury accident data has been undertaken for the study area, which has shown that there are no specific accident concerns. This conclusion is based on the infrequency and random nature/location of accidents over the most recently available five year period.

8.1.7 The proposed development trip generations have been established through an interrogation of the TRICS database, whilst the distributions have been established through a census analysis.

8.1.8 Junction assessments have been undertaken across the network using industry standard software. These capacity assessments have demonstrated that all junctions within the study network are able to accommodate the proposed development.

8.1.9 From the work undertaken it is concluded that there are no reasons on highways or transport grounds why the development Site should not be granted planning permission for residential purposes.

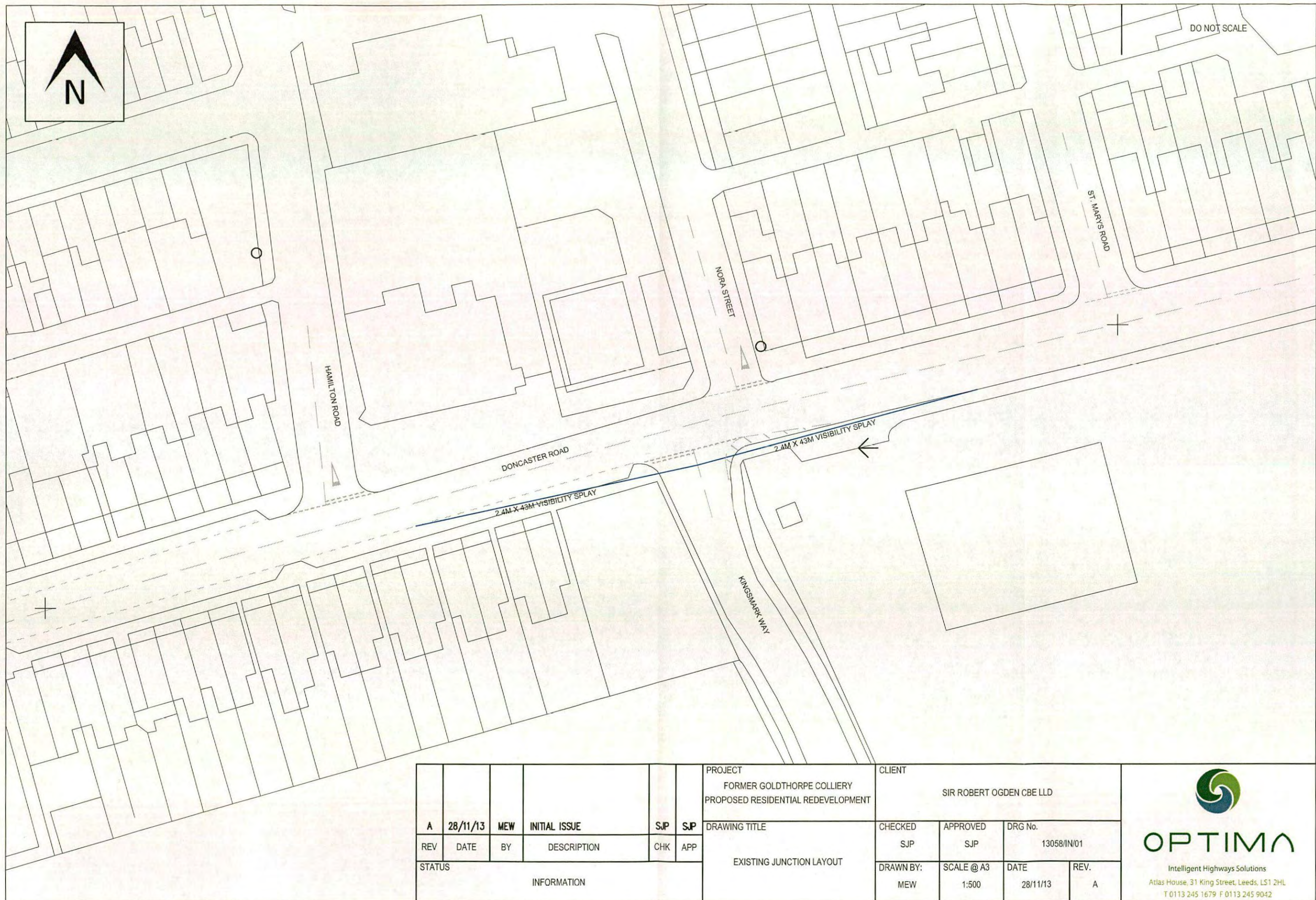


Appendices



Appendix A Kingsmark Way/Doncaster Road Existing Highway Layout





						PROJECT FORMER GOLDTHORPE COLLIERY PROPOSED RESIDENTIAL REDEVELOPMENT	CLIENT SIR ROBERT OGDEN CBE LLD			
A	28/11/13	MEW	INITIAL ISSUE	SJP	SJP	DRAWING TITLE	CHECKED SJP	APPROVED SJP	DRG No. 13058/1N/01	
REV	DATE	BY	DESCRIPTION	CHK	APP	EXISTING JUNCTION LAYOUT	DRAWN BY: MEW	SCALE @ A3 1:500	DATE 28/11/13	REV. A
STATUS										
INFORMATION										



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