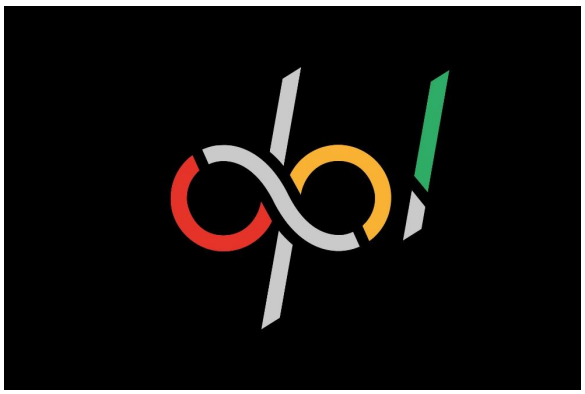

TRANSPORT ASSESSMENT

DEWSBURY RIVERSIDE

KMBC

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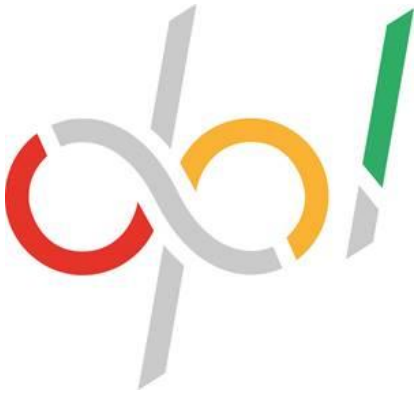

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

1.1.1 The planning application submission relates to the first phase of the Dewsbury Riverside. The Dewsbury Riverside site is allocated within the Kirklees Local Plan Allocations and Designations, Adopted 27th February 2019. The site forms Local Plan ID HS61, Land to the south of Ravensthorpe Road/ Lees Hall Road, Dewsbury.

1.1.2 The hybrid planning application comprises:

a) Application for full planning permission for engineering works, drainage and utilities connection for the provision of site access from Forge Lane and Ravensthorpe Road and associated works; and,

b) Application for outline planning permission for the erection of up to 350 dwellings and mixed use development (including community facilities) with associated works including the provision of internal estate roads and parking, landscape works (including provision of public open space, tree clearance/replacement/woodland management and ecological management) and sustainable urban drainage works drainage principles.

1.1.3 The overall site area for Dewsbury Riverside is stated to be 161.37 hectares with a Net site area of 142.9 hectares. The Local Plan envisages 1,869 dwellings during the Local Plan period with a potential for a further 2,131 dwellings beyond the plan period.

1.1.4 This first phase of the Dewsbury Riverside site consists of up to 350 residential properties and ancillary land uses. This equates to 8.75% of the total development of Dewsbury Riverside, and a much smaller percentage of the overall Local Plan delivery.

1.1.5 When considering the potential for mitigation measures, national planning policy sets out in Paragraph 57 of the Framework that:

Planning obligations must only be sought where they meet all of the following tests:

a) necessary to make the development acceptable in planning terms;

b) directly related to the development; and

c) fairly and reasonably related in scale and kind to the development.

1.1.6 These are the tests that must be applied to the residual impacts of all phases of development, including the first phase. As future phases of the development will bring additional transport measures and opportunities, there could be some short-term impacts of development which need to be considered against the bigger picture of delivering the wider Local Plan.

1.2 EXISTING ACCESSIBILITY

1.2.1 Census data has been reviewed and shows that, locally, between 38% and 43% of journeys to work are currently made by sustainable travel modes, with travel as a car driver accounting for around 60% of trips to and from work.

1.2.2 A review of the existing active travel networks has been undertaken and shows that the site is well located to access the existing footway networks across the local and wider area.

1.2.3 The nearest cycle routes to the site are to the north, with cyclists being required to utilise the carriageway.

1.2.4 The nearest bus stops are located immediately to the east of the site, with Ravensthorpe rail station located to the west of the site. The combined access to bus and rail provides a minimum of an hourly daytime public transport service between the site and Dewsbury, with rail providing additional opportunities to access Huddersfield, Leeds and other regional destinations throughout the day and evening.

1.2.5 The site is well located to benefit from existing sustainable travel networks. It is reasonable to conclude that sustainable travel is a viable and attractive mode of transport for future residents of the site.

1.3 SUSTAINABLE ACCESS

1.3.1 When considering the development implications of a site the first test set out in Paragraph 110 of the Framework is that:

…appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

1.3.2 The key purposes for residents of a housing development to need to travel fall into five general categories, these are education, employment, healthcare, leisure and shopping.

1.3.3 A review of the sustainable access options to the site show that all the needs of residents within these five categories can be met either on the site, adjacent to the site, within the local area or within Dewsbury, Huddersfield or Leeds. All can be accessed within a reasonable walking, cycling or public transport journey.

1.4 TRAVEL PLAN

1.4.1 A Travel Plan forms part of the planning application package and its delivery firmly committed to by the developer. The Travel Plan includes the provision of a Travel Plan Co-ordinator and sets out a number of SMART objectives which will seek to minimise single-occupancy car use, resulting in an initial target of 45% of travel to and from the site by sustainable travel modes within a five-year period.

1.4.2 Importantly, the target will include travel by ultra-low and zero emission vehicles.

1.4.3 An extension of the Travel Plan by 2 years will be triggered if the target is to be met.

1.4.4 A stretch target of 47% will be set, should the initial target be met within the period.

1.5 HIGHWAY SAFETY REVIEW

1.5.1 A review of the most recent five-year accident data for the local highway network has been undertaken. The results of the accident data show that there are no accident clusters which could result in a material highway safety concern based upon the geometry or use of the carriageway.

1.5.2 It is noted that a serious and a fatal accident occurred on Forge Lane. These accidents do not appear to be related to each other or any other accident clusters.

1.5.3 The intensification of use of Forge Lane as a result of the development proposals will increase traffic and could help to reduce and modify traffic speeds and behaviour. Notably, all new cars from 2022 onwards would be fitted with mandatory speeds limiters and, consequently, reduced vehicle speeds should occur into the future.

1.6 PROPOSED ACCESS

1.6.1 The development proposals incorporate a phased approach to site access, with the initial/ secondary access point accommodating up to 150 dwellings via Ravensthorpe Road (S).

1.6.2 The primary access point would be a redesigned roundabout access at the junction of Ravensthorpe Road/ Forge Lane/ Lees Hall Road. The roundabout access would form the Forge Lane access, which would be the central gateway to the Dewsbury Riverside development.

1.6.3 In addition to the vehicular access points to the site, additional active travel access points are to be provided directly onto Ravensthorpe Road via the new allotment access and a new pedestrian access located between number 139 and 143 Ravensthorpe Road.

1.6.4 The internal spine road has been submitted in detail for approval as part of this planning application. The internal spine road has been designed to accommodate pedestrians, cyclists, future bus routes and the existing core walking and cycling network and rights of ways.

1.6.5 The internal spine road also includes signalised crossing points for pedestrians, cyclists and equestrians.

1.6.6 The development proposals are considered to provide safe and suitable access for all appropriate modes of transport, in line with planning policy.

1.7 HIGHWAY STUDY AREA

1.7.1 Based upon a review of traffic data provided from the council's wide-area traffic model the following junctions are proposed for detailed traffic modelling within the Transport Assessment:

- Forge Lane Access (Central Gateway);
- Ravensthorpe Road Access (Temporary residential access);
- Thornhill (double mini-roundabout);
- Brewery (mini-roundabout); and
- Ingham (priority T-junction).

1.7.2 Whilst detailed traffic models are proposed for the above junctions, a mitigation strategy (without detailed traffic modelling at this time) is also proposed for the forecast Phase 1 impacts at Gyratory.

1.8 LOCAL JUNCTION ASSESSMENT

1.8.1 Detailed junction analysis has been undertaken at the junctions within the study area on the local highway network.

1.8.2 The initial and primary site access points have been assessed at appropriate periods during the build-out to confirm that the access layouts are forecast to operate with suitable traffic capacity, including in 2048 for the initial (Forge Lane roundabout) access.

1.8.3 The junctions on the local highway network are forecast to operate with significant spare traffic capacity with and without development, with the exception of Thornhill.

1.8.4 The Thornhill junction is forecast to have queues on the southern and northern approaches in the AM and PM peak hours, even prior to the Phase 1 development being implemented. The forecast impacts of the Phase 1 development are minimal, with the forecasts RFC similar in the with and without development scenarios.

1.8.5 A scheme of relining is proposed at the junction prior to the occupation of the 150th dwelling to maintain peak performance of the junction. Further consideration of junction improvement at this location is likely to be required as the full Dewsbury Riverside scheme progresses and/ or as part of the wider Local Plan strategic highway improvement schemes.

1.9 GYRATORY

1.9.1 The gyratory junction is not forecast to be materially impacted by the development proposals during the proposed Phase 1 delivery of Dewsbury Riverside. Even so, as a critical junction on the network, specific consideration has been given to the gyratory.

1.9.2 The gyratory has been the subject of a recent study by the highway authority as part of the M2D2L scheme and the junction itself is forecast to operate with spare traffic capacity, despite the queues observed on the approaches to the junction from the north and south.

1.9.3 The technical note relating to the junction operation concludes that:

Initial onsite observations suggest that additional queueing occurs on approaches to the junction as a result of:

- *The proximity of the pedestrian crossings which are not synchronised to the main junction controller timings;*
- *Prescence of bus stop facilities located within the main traffic streams; and*
- *General friction of traffic flow based on frontage activity.*

1.9.4 The M2D2L project aims to deliver improvements to junctions within the Local Plan period and, as such, it is reasonable to rely upon these future improvement works to the junction to aid with the delivery of the wider Dewsbury Riverside scheme and, indeed, Phase 1.

1.9.5 Even so, provision is to be made to improve the operation of the junction following the 210th dwelling on the site.

1.10 CONCLUSION

1.10.1 The overall site area for Dewsbury Riverside is stated to be 161.37 hectares with a Net site area of 142.9 hectares. The Local Plan envisages 1,869 dwellings during the Local Plan period with a potential for a further 2,131 dwellings beyond the plan period.

1.10.2 This first phase of the Dewsbury Riverside site consists of around 350 residential properties and ancillary land uses. This equates to 8.75% of the total development of Dewsbury Riverside, and a much smaller percentage of the overall Local Plan delivery.

1.10.3 When considering the potential for mitigation measures, national planning policy sets out in Paragraph 57 of the Framework that:

Planning obligations must only be sought where they meet all of the following tests:

a) necessary to make the development acceptable in planning terms;

b) directly related to the development; and

c) fairly and reasonably related in scale and kind to the development.

1.10.4 These are the tests that must be applied to the residual impacts of all phases of development, including the first phase.

1.10.5 As future phases of the development will bring additional transport measures and opportunities, there could be some short-term impacts of development which need to be considered against the bigger picture of delivering the Local Plan allocation.

1.10.6 The development proposals provide access by all appropriate transport modes and deliver essential infrastructure towards the wider Dewsbury Riverside proposals.

1.10.7 Mitigation measures are proposed at off-site junction, related to the scale of development. Consequently, there are considered to be no reasonable highway reasons for refusal of the planning application.

2. INTRODUCTION

2.1 BACKGROUND

2.1.1 Development Planning Limited have been commissioned by KMBC to provide a Transport Assessment for the proposed Phase 1 of Dewsbury Riverside.

2.1.2 This Transport Assessment provides a detailed assessment of access to the development site by appropriate modes of transport and considers the implications on the wider transport network in relation to appropriate planning policies.

2.1.3 It is intended that this Transport Assessment should be read in conjunction with the documents and plans which have been submitted as part of that package, including the Travel Plan.

2.1.4 This Transport Assessment has been prepared in accordance with the principles set out within the Government's Revised National Planning Policy Framework (2021) (the Framework).

2.1.5 The conclusions and recommendations contained herein have been drawn based on information available and obtained in advance of any planning submission for the proposed use on the site.

2.2 CORONAVIRUS

2.2.1 At the time of writing this report the UK Government has released lockdowns, however a risk to public health of transmission of the disease remains. As such, transport information may be unusual with traffic levels supressed and some information on regular public transport routes not being available.

2.2.2 The 'new normal' cannot be quantified at the current time and could include significant changes in travel patterns, including increased use of more sustainable transport modes, increased flexibility in daily working patterns, including home working and travel time choices being made to reduce travel during peak times.

2.2.3 Further Government measures relating to the encouragement of walking, cycling and e-scooters are discussed in Chapter 4.

2.2.4 Best endeavours have been taken to provide accurate information within this report based upon historic and currently available information, where available. As the Government are taking all steps that they can to help to secure the economy, it is considered necessary that planning applications continue to be determined based upon the best information that is currently available to allow development and investment to continue.

2.3 SITE LOCATION

2.3.1 The site is located towards the southern extent of Dewsbury, with the detailed site location plan and description included within the Design and Access Statement.

2.3.2 The site location is shown in Figure 2.1, Appendix A.

2.3.3 In transport terms, the site is located to the south of Ravensthorpe Road. Ravensthorpe Road runs east/ west, connecting Calder Road (to the west) with Lees Hall Road (to the east).

2.3.4 Further west/ northwest, Calder Road meets Huddersfield Road at a part-signalised gyratory, connecting Huddersfield Road to North Road, Queen Street and the Ravensthorpe Shopping Park.

2.3.5 Ravensthorpe Road meets Lees Hall Road at a mini-roundabout junction with Forge Lane.

2.3.6 Forge Lane provides access towards the north of the site, towards Dewsbury town centre.

2.3.7 Lees Hall Road provides access towards the east.

2.3.8 The site sits within the wider Dewsbury Riverside Local Plan allocation and would form the first phase of the larger development.

2.4 EXISTING LAND USE

2.4.1 The existing land use is predominantly agricultural fields, however some properties are impacted by the proposals. The full description of the development proposals is set out within the application package.

2.5 DEVELOPMENT PROPOSAL

2.5.1 Planning permission is being sought for the site, as follows:

Hybrid Application comprising:

a) Application for full planning permission for engineering works, drainage and utilities connection for the provision of site access from Forge Lane and Ravensthorpe Road and associated works; and,

b) Application for outline planning permission for the erection of up to 350 dwellings and mixed use development (including community facilities) with associated works including the provision of internal estate roads and parking, landscape works (including provision of public open space, tree clearance/replacement/woodland management and ecological management) and sustainable urban drainage works drainage principles.

3. DEWSBURY RIVERSIDE

3.1 INTRODUCTION

3.1.1 This chapter provides a summary background to the wider Dewsbury Riverside project and nearby major highway schemes for the purposes of context for the transport implications of the development proposals.

3.2 LOCAL PLAN

3.2.1 The Dewsbury Riverside site is allocated within the Kirklees Local Plan Allocations and Designations, Adopted 27th February 2019. The site forms Local Plan ID HS61, Land to the south of Ravensthorpe Road/ Lees Hall Road, Dewsbury.

3.2.2 The overall site area for Dewsbury Riverside is stated to be 161.37 hectares with a Net site area of 142.9 hectares. The Local Plan envisages 1,869 dwellings during the Local Plan period with a potential for a further 2,131 dwellings beyond the plan period.

3.2.3 The constraints relating to transport for the whole Dewsbury Riverside scheme, set out within the Local Plan allocations document, are as follows:

- Major impact on a priority junction;
- Multiple access points required along with significant improvements to Sands Lane, the bridge over the railway line, Steanard Lane and its junction with A644 and the upgrade of the bridge over River Calder;
- Third party land may be required for access;
- Additional mitigation on the wider highway network may be required; and
- Public right of way crosses the site.

3.2.4 With regard to site specific considerations, the requirements for transport are stated as follows

- The site requires the provision of multiple access points and will need to be carefully phased to ensure it complies with other policies in the Local Plan regarding transport;
- Proposals for this site should also contribute towards:
    - Improved rail, road, pedestrian and cycle connections; and
    - Improvements to Ravensthorpe Station and surrounding area.
- Additional mitigation on the wider highway network will be required.

3.2.5 These are the requirements for the wider site, with the proposed development forming the first phase. As such, later phases of the development will bring with them additional and wider-reaching transport benefits than the application site in isolation.

3.3 DEWSBIRY RIVERSIDE WIDE AREA MITIGATION

3.3.1 KMBC are currently undertaking a wide-area transport study relating to the forecast Local Plan transport impacts, which are ongoing. The wide-area transport study will identify the strategic transport improvements required to deliver the Local Plan.

3.3.2 The wide-area transport study will make recommendations for suitably mitigating the whole of the Local Plan development proposals, including off-site highway works at strategic locations on the highway network.

3.3.3 This first phase of the Dewsbury Riverside site consists of around 350 residential properties and ancillary land uses. This equates to 8.75% of the total development of Dewsbury Riverside, and a much smaller percentage of the overall Local Plan delivery.

3.3.4 When considering the potential for mitigation measures, national planning policy sets out in Paragraph 57 of the Framework that:

Planning obligations must only be sought where they meet all of the following tests:

a) necessary to make the development acceptable in planning terms;

b) directly related to the development; and

c) fairly and reasonably related in scale and kind to the development.

3.3.5 These are the tests that must be applied to the residual impacts of all phases of development, including the first phase. As future phases of the development will bring additional transport measures and opportunities, there could be some short-term impacts of development which need to be considered against the bigger picture of delivering the wider Local Plan.

3.4 RAIL IMPROVEMENTS

3.4.1 Dewsbury railway station sits to the north of the Dewsbury Riverside development, within Dewsbury. The stations sits on the mainline between Huddersfield and Manchester. Dewsbury railway station could be the destination of a number of future residents to the scheme.

3.4.2 TransPennine Express are developing major improvements at Dewsbury Station in partnership with KMBC and the West Yorkshire Combined Authority. The combined investments in the station is £350k and will see improvements to passenger facilities. The works are due to be complete in September 2021.

3.4.3 In addition to the works to the station facilities, Network Rail are proposing works to Dewsbury train station and associated lines as part of the £1.4bn Transpennine Route Upgrade.

3.4.4 The wider works include the replacement or improvement of eight bridges between Huddersfield and Dewsbury and improvements to the layout of tracks as part of the Transpennine Route Upgrade.

3.4.5 Local to the site it is understood that Network Rail are proposing a new access, car parking and bus drop-off facilities to the Ravensthorpe station as part of these wider works.

3.4.6 The works to the rail station result in an improvement to the facilities, funded to help improve facilities for existing residents and to deliver wider-area growth in the local area, including Dewsbury Riverside.

3.5 M2D2L

3.5.1 The Manchester to Dewsbury to Leeds route runs through the heart of West Yorkshire and serves a direct catchment of 600,000 residents as well as several existing and planned major employment, retail and housing sites. The objectives of the scheme are:

- To better manage congestion on the M2D2L corridor within the Leeds City Region;
- To enhance public transport operations and infrastructure along the M2D2L corridor;
- To facilitate and support the growth in employment, housing and economy along the M2D2L corridor within the current SEP and Kirklees and Leeds Local Plan periods;
- To improve the quality of the local environment and public realm to help support regeneration in Dewsbury Town Centre; and
- To reduce adverse impacts of transport on the environment and public health.

3.5.2 The M2D2L project includes significant works to the A644 (Huddersfield Road), with the relevant consultation material for Huddersfield Road close to the site attached at Appendix B.

3.5.3 The Phase 1 proposals of the M2D2L project have recently undergone consultation, with the consultation document stating that:

The route travels through areas of north Kirklees and south Leeds that are a focus of significant planned housing and economic growth over the next 10-15 years. Proposals for a number of major development sites are being worked-up and will be brough forward/ built at different speeds. It is important to recognise that the proposals being consulted on now for the Mirfield- Dewsbury-Leeds (phase 1) project represent one stage of a longer-term programme of transport investment into the area that will include:

- *Alterations to road junctions to provide access to new development sites, often in phases;*
- *Investment into the Transpennine rail network and stations…;*
- *Transforming Cities Fund project, particularly in and around Dewsbury (projects for Dewsbury Bus Station…will be publicly consulted on…);*
- *Future phases of the Mirfield-Dewsbury-Leeds scheme, subject to new funding;*
- *Exploration and assessment of strategic highway scheme options in North Kirklees to relieve pressure on existing roads and communities to facilitate growth.*

3.5.4 The planning application for the first phase of Dewsbury Riverside forms one of the development sites discussed within the M2D2L wider project objectives. As such, the Dewsbury Riverside scheme will benefit from the proposals being brough forward by M2D2L.

3.6 SUMMARY

3.6.1 The Dewsbury Riverside scheme forms part of the wider strategic development delivery set out within the Local Plan, with the development proposals forming the first phase of Dewsbury Riverside itself.

3.6.2 A number of strategic and pertinent schemes are currently ongoing which will help to mitigate the wider Dewsbury Riverside proposals and, in addition, the Local Plan delivery strategy.

3.6.3 The schemes include:

- Dewsbury rail station improvements;
- Transpennine Route Upgrade;
- Strategic improvement works relating to the Local Plan (currently being assessed by KMBC); and
- M2D2L works which include improvements to Huddersfield Road and Dewsbury town centre.

3.6.4 This first phase of the Dewsbury Riverside site consists of around 350 residential properties and ancillary land uses. This equates to 8.75% of the total development of Dewsbury Riverside, and a much smaller percentage of the overall Local Plan delivery.

3.6.5 As future phases of the development will bring additional transport measures and opportunities, there could be some short-term impacts of development which need to be considered against the bigger picture of delivering the wider Local Plan and strategic investments schemes.

4. THE CHANGING FACE OF TRANSPORT

4.1 INTRODUCTION

4.1.1 The way we travel and impact upon the world is now seen as the Government's highest priority by many and features at the top of the political agenda on a daily basis.

4.1.2 The way we travel can significantly impact the environment and respecting the transport hierarchies is an essential part of helping towards reducing the impact of the development and helping to foster a more environmentally responsible culture.

4.1.3 This chapter considers the changing face of transport to allow consideration of the way in which travel is forecast to change in the short to medium term and, as such, allow consideration of emerging technologies to be given, when interpreting future traffic forecasts.

4.2 THE IMPACT OF TRAVEL

4.2.1 With regard to transport, the changing use of vehicles began decades ago with government interventions including the implementation of Travel Plans for all major new development from the early 2000's and a significant policy shift to reducing car emissions, beginning in major cities such as London through their congestion charge from 2003 onwards.

4.2.2 In recent years, there has been a significant focus on reducing the emissions of road-going vehicles through reduced tax tariffs on those that pollute the least and the increasing standards of vehicle emissions through the Euro emission standards which has seen allowable emissions dropping significantly since first implemented in 1992.

4.2.3 Government policies have been the start of the reduction of emissions, due to the global environmental movement and environmental standards across the world being continually reviewed and made more stringent.

4.2.4 One major initiative is the C40 Cities, which includes London and others across the UK. Each of the cities in the declaration have committed to procuring only zero emission buses from 2025 and working towards zero emission before then.

4.2.5 Under the same C40 cities programme, in the UK, London, Liverpool, Birmingham, Oxford and Greater Manchester have all pledged to transition to Fossil-Fuel-Free-Streets by 2030.

4.2.6 In response to this, it now appears to be industry who are using their research and development budgets to come up with more and more innovative ways of reducing the impacts of travel, whether it be electric buses, hybrid or zero-emission technologies or through the delivery of computer-based communication and work platforms.

4.2.7 Through education, information and encouragement a more connected world with a more sustainable travel culture can be created.

4.3 HISTORY OF CLIMATE CHANGE EMERGENCY

4.3.1 On the 1st May 2019 the UK Parliament passed a national declaration of an Environment and Climate Emergency, following independent declarations on the 28th and 29th May by Scotland and Wales, respectively. The UK Parliament was the first to do so in the world.

4.3.2 There are now over 1,000 declarations across the world and the climate change agenda is quickly resulting in new and emerging policies to help the world work towards a zero carbon position within the coming decades.

4.3.3 Quickly following the UK declaration, the UK Government became the first major economy in the world to pass laws to end its contribution to global warming by 2050 (Climate Change Act 2008 (2050 Target Amendment) Order 2019), which is significantly more stringent that its previous commitments to reduce greenhouse gas emissions by 80% (compared to 1990 levels).

4.3.4 The Climate Change Emergency was pre-ceded by the Government's 'The Road to Zero Strategy' that sees the end of conventional fossil fuel vehicles by 2040, with the Committee on Climate Change seeking only pure battery electric vehicles and long range plug in hybrids to be sold by 2035.

4.3.5 Current planning policy clearly supports sustainable development and the sustainable transport hierarchy and should be read and considered against the ever-changing political background surrounding the environment.

4.3.6 We are entering a new period of change in transport and should ensure that the policies which are applied are relevant and deliverable.

4.4 ACCESS BY ULTRA LOW AND ZERO EMISSION VEHICLE

4.4.1 Everyone who can drive a car can also drive an ultra-low or zero emission vehicle. Ultra-low and zero emission vehicles have all the benefits of personalised transportation, whilst significantly reducing the overall impact of travel.

4.4.2 HM Government have set out their emissions strategy in the July 2018 report 'The Road to Zero'. The policies set out the long term ambitions of Government as:

Our mission is to put the UK at the forefront of the design and manufacturing of zero emission vehicles, and for all new cars and vans to be effectively zero emission by 2040. As set out in the NO2 plan, we will end the sale of new conventional petrol and diesel cars and vans by 2040. By then, we expect the majority of new cars and vans sold to be 100% zero emission and all new cars and vans to have significant zero emission capability. By 2050 we want almost every car and van to be zero emission.

We want to see at least 50%, and as many as 70%, of new car sales and up to 40% of new van sales being ultra low emission by 2030.

We expect this transition to be industry and consumer led, supported in the coming years by the measures set out in this strategy. We will review progress towards our ambitions by 2025. Against a rapidly evolving international context, we will seek to maintain the UK's leadership position and meet our ambitions, and will consider what interventions are required if not enough progress is being made.

4.4.3 Even more stringently, the Committee on Climate Change, who advise government and other bodies, are seeking only pure battery electric vehicles and long range plug in hybrids to be sold by 2035.

4.4.4 In response to these policies and similar national policies around the world, all major vehicle manufacturers either already sell, or are developing, ultra-low emission vehicles. The most notable commitment at the time of writing is from Honda who have stated:

Honda is the world's largest engine manufacturer, and from what we have announced today we are committing to ending all mainstream non-electrified petrol and diesel production for Europe by the end of 2022.

4.4.5 With vehicle manufacturing being a highly competitive market, it is almost certain that all major vehicle manufacturers will be following suit over the coming years, with research and development budgets being focussed on these technologies.

4.4.6 As such, within the lifetime of this development, it is expected that all cars and vans will, ultimately, be zero emission.

4.4.7 The technologies to arrive at a 100% zero emission road network are not currently in place and are likely to alter over time and become standardised, as such it is unlikely that the same technologies which are available today will be the ones which achieve this significant shift in the type of vehicles we drive.

4.4.8 One example of the new technologies which are being tested and are becoming increasingly successful is Battery Swapping Stations. These act in a similar way to a petrol filling station, however swap used and part-used batteries for full ones.

4.4.9 The operational time for the current units is around three minutes, which is quicker than filling a fossil fuel vehicle. At the forefront of the technology is the G4 Expressway in China, which has 18 such stations promoted by the company NIO, founded in November 2014.

4.4.10 Also in China, company BJEV is working on the construction of 3,000 battery swapping stations and aims to supply half a million electric vehicles by 2022.

4.4.11 In Europe, the technology is being heavily invested in by Shell, Repsol and others through the company Ample, whose aim is for 'Electric Cars for Everyone'. Battery Swapping Stations is one of the technologies that is expected to result from their research.

4.4.12 In terms of purchasing a car, manufacturers are now bringing in options to rent the battery pack, as oppose to buy them. This can reduce purchase prices by around £5,000 and a monthly payment is made for battery rental, depending upon the mileage driven. Some packages include free recharging within the rental price.

4.4.13 It is clear that these technologies will result in a major change to the way electric vehicles are seen and purchased by the public and that current research and development will significantly impact the way in which private vehicles are used in the future.

4.5 EMERGING IN-VEHICLE TECHNOLOGIES

4.5.1 All new cars sold in the UK and Europe from 2022 are to be fitted with devices to automatically stop drivers exceeding the speed limit under planned changes to vehicle safety rules that the EU has provisionally agreed.

4.5.2 Although Britain will no longer be part of the EU when the rules come into effect, the UK regulator, the Vehicle Certification Agency, has said it will mirror safety standards for vehicles in the UK.

4.5.3 The speed limiter is one of a range of safety features to be made mandatory from 2022, along with automated emergency braking, electronic data recorders and improved visibility built into lorries for drivers to see vulnerable cyclists and pedestrians around the vehicle.

4.5.4 The mandatory data recorders will help investigate vehicle crashes and assist research into increased safety. Another feature already standard in many new cars, a lane departure warning system, will become obligatory.

4.5.5 In 2015 UK government established the Centre for Connected and Autonomous Vehicles (C-CAV), a joint policy and strategy unit. C-CAV provides a single point of contact for industry and academia for CAV technologies and will coordinate and enhance government activity in the sector.

4.5.6 Testing of driverless cars is already taking place on British roads, with Bristol, Milton Keynes and South-East London selected as test cities. The Bristol Venturer consortium aims to investigate whether driverless cars can reduce congestion, while the GATEway scheme in Greenwich is testing automated passenger shuttles and valet parking and Milton Keynes tests its LUTZ Pathfinder Pods in pedestrianised areas.

4.5.7 In February 2016, £17 million of funding was awarded to eight collaborative research and development projects as well as additional funding for 14 feasibility studies. The projects will stimulate development in key areas of autonomous vehicles and connected transport systems.

4.5.8 Beyond connected and autonomous vehicles, Intelligent Transport Systems is a wider cross sector area of development.

4.5.9 Intelligent Transport Systems allow communication not just between vehicles themselves, but also vehicles and infrastructure. Utilising these communication systems will help to reduce road accidents, relieve congestion and reduce emissions.

4.5.10 Intelligent Transport Systems are already in use on UK roads – for example urban and motorway traffic management and control systems, electronic toll collection and route navigation systems. Another safety technology in development is Intelligent Speed Adaptation. Intelligent Speed Adaption systems inform the driver of the speed limit for the road they are travelling on, automatically reducing the speed of the vehicle if necessary.

4.5.11 Within the lifetime of the development, it is highly likely that Connected and Autonomous Vehicles, as well as Intelligent Transport Systems will be increasingly used on UK road networks and, as such, the way in which traffic interacts could be increasingly managed automatically. As a result, future traffic flow forecasts using traditional techniques could overstate the potential impacts of development.

4.6 SUMMARY

4.6.1 The way we travel and impact upon the world is now seen as the Government's highest priority by many and features at the top of the political agenda on a daily basis.

4.6.2 Government policies have been the start of the reduction of emissions, due to the global environmental movement and environmental standards across the world being continually reviewed and made more stringent.

4.6.3 In response to this, it now appears to be industry who are using their research and development budgets to come up with more and more innovative ways of reducing the impacts of travel.

4.6.4 These changes include investment in Battery Swapping Stations and electric vehicle battery rental, both of which help to overcome two of the current barriers to electric vehicle ownership of battery range and initial purchase cost.

4.6.5 The way we travel can significantly impact on the environment and respecting the transport hierarchies is an essential part of helping towards reducing the impact of the development and helping to foster a more environmentally responsible culture.

4.6.6 Current planning policy clearly supports sustainable development and the sustainable transport hierarchy and should be read and considered against the ever-changing political background surrounded the environment.

4.6.7 Within the lifetime of the development, it is highly likely that Connected and Autonomous Vehicles, as well as Intelligent Transport Systems will be increasingly be used on UK road networks and, as such, the way in which traffic interacts could be increasingly managed automatically. As a result, future traffic flow forecasts using traditional techniques could overstate the potential impacts of development.

4.6.8 We are entering a new period of change in transport and should ensure that the policies which are applied are relevant and deliverable.

5. PLANNING POLICY

5.1 INTRODUCTION

5.1.1 Taking into account the information provided in Chapter 3, a review of pertinent current local and national planning policy has been undertaken to provide the context within which the proposals should be assessed. The review is summarised below.

5.2 NATIONAL PLANNING POLICY FRAMEWORK

5.2.1 The Revised National Planning Policy Framework was published in July 2021 and sets out the Government's purpose of the planning system in Paragraph 7 as:

The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs…

5.2.2 In Paragraph 10 it goes on to state that:

So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.

5.2.3 It is clear that the Government's aims are to encourage economic growth and, indeed, state that there is a presumption in favour of sustainable development.

5.2.4 There are three dimensions to sustainable development, economic, social and environmental.

a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

5.2.5 With regard to transport, Chapter 9 of the Framework sets out the Government's aims of "Promoting Sustainable Transport". In relation to development proposals, the Framework requires that:

110. In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users;

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

111 Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

5.2.6 In reviewing planning applications, the Framework sets out the hierarchy for consideration of transport issues, which prioritise sustainable travel modes over the private fossil fuel powered car.

112. Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

5.2.7 When considering access by sustainable travel modes, Paragraph 105 of the Framework requires that the nature and location of development is taken in to account:

…However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

5.2.8 In defining how larger developments should protect and exploit opportunities for the use of sustainable transport modes it considers that:

113. All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

5.2.9 The planning application for this site includes a Travel Plan, in line with Government policy.

5.2.10 When considering the potential for mitigation measures, the Framework sets out in Paragraph 57 that:

Planning obligations must only be sought where they meet all of the following tests:

d) necessary to make the development acceptable in planning terms;

e) directly related to the development; and

f) fairly and reasonably related in scale and kind to the development.

5.2.11 These are the tests that must be applied to the residual impacts of development.

5.3 PLANNING PRACTICE GUIDANCE

5.3.1 The theme of sustainable development runs throughout Planning Practice Guidance, with the detailed elements regarding transport being focussed in the following sections:

- Transport evidence bases in plan making and decision taking; and
- Travel plans, transport assessments and statements in decision-taking.

5.3.2 Both sections of the Guidance provide significant amounts of detail on the information types and sources that are appropriate for helping Local Planning Authorities to take forward their Local Plan with an appropriate evidence base. The Guidance is also a useful reference for assessing schemes such as the Development.

5.3.3 The core components of the requirements for assessment, as set out in the Guidance, can be summarised as:

The key issues, which should be considered in developing a transport evidence base, include the need to:

- *assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms*
- *assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport*
- *highlight and promote opportunities to reduce the need for travel where appropriate*
- *identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate*
- *consider the cumulative impacts of existing and proposed development on transport networks*
- *assess the quality and capacity of transport infrastructure and its ability to meet forecast demands*
- *identify the short, medium and long-term transport proposals across all modes*

5.4 KIRKLEES

5.4.1 Kirklees Local Plan was adopted on the 27th February 2019. Chapter 3 discusses the transport-related policy requirements of the Dewsbury Riverside allocation. Chapter 10 of the Strategy and Policies document relates to transport and is summarised below.

5.4.2 Policy LP19 relates to Strategic Transport Infrastructure:

The ability to move goods and people is particularly important given the district's strategic position on the national motorway and rail networks, its links with regional facilities such as airports/ports and its central position between the Leeds, Sheffield and Manchester City regions. This gives the district a distinct locational advantage. Efficient access for goods and services is also a key factor in supporting the vitality of urban areas. The aim is to achieve a balanced and integrated transport network which makes the most efficient and effective use of road, rail and public transport.

1. The Council is committed to ensuring that new developments have safe and convenient access to the West Yorkshire Key Route Network where possible, the main arterial routes and the West Yorkshire Core Bus Network that connect the region. Development will be strategically placed along core networks where available and the developing core cycle network, all of which will be improved and maintained where possible to reduce congestion and reliance on the private car;

2. Proposals will be encouraged where they assist to bring forward strategic transport infrastructure where possible, particularly where they would directly benefit from these schemes;

3. Proposals that may prejudice the future development of the following will not be permitted:

- *strategic transport infrastructure;*
- *identified highway improvements;*
- *traffic management schemes;*
- *proposed public transport facilities, including the improvement of existing rail stations and rail corridors and walking and cycling infrastructure; and*
- *strategic cross boundary schemes.*

4. National, regional and local transport schemes are identified on the Policies Map and listed below:

- *TS1 A62/A644 Huddersfield to M62 J25*
- *TS2 New Motorway junction 24a on M62*
- *TS3 Huddersfield Southern Gateways*
- *TS4 A629 Halifax Road (Huddersfield to Halifax Corridor)*
- *TS5 Mirfield to Dewsbury to Leeds and North Kirklees Growth Zone*
- *TS6 Highway Network Efficiency Programme*
- *TS7 Public Transport Improvement Schemes*
- *TS8 Walking and Cycling Improvement Schemes*
- *TS9 Strategic Road Network Improvements*
- *94 Kirklees Local Plan - Strategy and Policies*

5. The Council will safeguard land to ensure these schemes can be delivered. Detailed transport schemes that require planning permission will have regard to the constraints and considerations as set out in Local Plan such as impact on designated heritage assets and any other environmental impacts

5.4.3 Specifically with regard to new development, Policy LP20 states that:

New development will be located in accordance with the spatial development strategy to ensure the need to travel is reduced and that essential travel needs can be met by forms of sustainable transport other than the private car. The council will support development proposals that can be served by alternative modes of transport such as public transport, cycling and walking and in the case of new residential development is located close to local facilities or incorporates opportunities for day to day activities on site and will accept that variations in opportunity for this will vary between larger and smaller settlements in the area.

The council will support demand management measures which discourage single occupancy car travel within new development and encourage the use of low emission vehicles to improve areas with low levels of air quality. Proposals should include measures to encourage the use of sustainable travel options, including public transport, the promotion of personal journey planning, walking, cycling, car sharing, electronic communication and home working.

Travel plans will normally be required for all major planning applications in accordance with current guidance and should set targets and monitoring arrangements to ensure sustainable travel patterns are maintained. Travel plans should include agreed and defined outcomes related to a package of specified measures to be implemented including an approach to lower carbon emissions where applicable.

The requirement of a travel plan will also be considered on case by case basis where the proposed development falls below the major application category where it has the

potential to generate significant transport movements and/or has insufficient off-street parking within the vicinity of a stressed part of the highway network

Proposals for new development shall be designed to encourage sustainable modes of travel and demonstrate how links have been utilised to encourage connectivity. Proposals will be required to facilitate the needs of the following user hierarchy:

a. pedestrians
b. cyclists
c. public transport
d. private vehicles

5.4.4 With regard to highways and access, Policy LP21 states:

Proposals shall demonstrate that they can accommodate sustainable modes of transport and be accessed effectively and safely by all users.

New development will normally be permitted where safe and suitable access to the site can be achieved for all people and where the residual cumulative impacts of development are not severe.

Proposals shall demonstrate adequate information and mitigation measures to avoid a detrimental impact on highway safety and the local highway network. Proposals shall also consider any impacts on the Strategic Road Network.

All proposals shall:

a. ensure the safe and efficient flow of traffic within the development and on the surrounding highway network;

b. where needed, provide new infrastructure or improvements on or off site to ensure safe access from the highway network for pedestrians, cyclists, public transport users and private vehicles;

c. be accompanied by a supporting Transport Assessment or Transport Statement where the development would generate significant trip generation, providing detail as to the impact on highway safety, air quality, noise and light restrictions;

d. take into account changes in site levels and topography to ensure the development can be accessed easily and safely by all sections of the community and by different modes of transport;

e. take into account the features of surrounding roads and footpaths and provide adequate layout and visibility to allow the development to be accessed safely;

f. take into account access for emergency, service and refuse collection vehicles;

g. provide on-site safe, secure and convenient cycle parking/storage facilities to encourage sustainable travel modes.

5.4.5 Policy LP22 relates to parking and Policy LP23 relates to walking and cycling networks. Those policies are discussed within the relevant chapters within this Transport Assessment.

5.5 SUMMARY

5.5.1 The Government sets out the criteria for assessing all developments which generate significant amounts of movement. This broader guidance is set out in Paragraph 110 as:

110. In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users;

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

5.5.2 And importantly sets out the key test with regard to transport in Paragraph 111 as:

111. Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

6. EXISTING ACCESSIBILITY

6.1 INTRODUCTION

6.1.1 Studies show that transportation accounts for one third of CO_2 emissions in major cities and is the fastest growing source of greenhouse gases. Whilst this is being tackled through initiatives including C40 Cities, the transport hierarchy remains that active and public travel modes are to be encouraged.

6.1.2 When considering the development implications of a site the first test set out in Paragraph 110 of the Framework is that:

…appropriate opportunities to promote sustainable transport modes can be – or have been - taken up, given the type of development and its location;

6.1.3 Paragraph 105 clarifies that the Government consider:

…However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

6.1.4 This chapter reviews access by non-car modes of transport with regard to the guidance provided within the Framework.

6.1.5 Changing technologies are likely to reflect the ways in which people travel and, as such, consideration has been given to working and shopping opportunities using the internet, as well as by travelling.

6.2 MODE SHARE

6.2.1 In order to provide a context to the transport modes currently utilised within the local area to the site, Census statistics have been reviewed. The Dewsbury Riverside development sits adjacent to the existing communities within Kirklees output areas 023A, 024C and 024E, as such the combined mode share for these areas has been utilised to assess the existing mode share to the site.

6.2.2 The mode share statistics have been taken from the Method of Travel to Work question relating to travel. It is important to note that the Method of Travel to work question relates solely to that purpose, with many other travel purposes likely to be over a shorter distance (such as local leisure travel, school journeys and local shopping) and have a greater tendency to be undertaken by sustainable travel modes. Even so, the data provides a helpful reference when considering sustainable transport options.

Table 6.1 Mode Share (Travel to Work Census)

Mode	Percent (inc Homeworker)	Percent (exc Homeworker)
Homeworker	8%	-
Rail	3%	4%
Bus	9%	10%
Taxi/ Car Share	10%	10%
Powered Two-wheeler	0%	0%

Mode	Percent (inc Homeworker)	Percent (exc Homeworker)
Cycle	2%	2%
On Foot	11%	12%
Driving	57%	62%

6.2.3 It can be seen that between 38% and 43% of journeys to work are currently made by sustainable travel modes, with travel as a car driver accounting for around 60% of trips to and from work.

6.3 HOME WORKING

6.3.1 The most sustainable way of accessing work is through homeworking. Homeworking would not involve travelling away from the home and, for some, there may be no travel at all.

6.3.2 The Covid-19 pandemic resulted in the majority of the population working from home and changes to people's working patterns and ability to work from home are likely to be a longer-term result on the pandemic. As such, sustainable mode share through reduced work-related travel is likely to form part of future working patterns.

6.3.3 A key element of home working will be the provision of appropriate internet connection being provided to the site. With an appropriate internet connection to the site there is an opportunity for home working to be encouraged.

6.3.4 The higher the proportion of home worker trips, the lower the overall offsite travel implications there are in relation to this site.

6.3.5 For some, access to employment is considered feasible by home working.

6.4 INTERNET SHOPPING

6.4.1 As with home working, access to the internet provides the opportunity for shopping to be undertaken from home. There are increasingly more efficient services for shopping online, which include:

- Some catalogue companies offering same day delivery on some products;
- Many national/ international sales sites offering next day delivery on the full range of products;
- Food shopping can be undertaken online and delivered to the home;
- Shopping can be reserved online and picked up at the shopper's convenience; and
- Fast food products can be ordered online and delivered to the door.

6.4.2 Access to the internet provides the opportunity for reduced numbers of shopping trips through these services, however even where shopping is undertaken on the high street there is opportunity to browse products in person and order them online. As such, when shopping isn't undertaken wholly online, the use of sustainable modes to access shopping (particularly where no products are required to be carried back to the house) is becoming increasingly more viable.

6.4.3 Even the availability of being able to stock check online reduces the number of wasted trips as people can check that a product is available before leaving the house.

6.5 ACCESS BY ULTRA LOW AND ZERO EMISSION VEHICLE

6.5.1 As discussed in Chapter 4, anyone who can drive a car can drive and ultra-low or zero emission vehicle. Within the lifetime of the development these vehicle types will become increasingly utilised, until the Government phase out the sales of all polluting vehicles by 2040, or before.

6.5.2 There is a government grant available for 75% of the cost of a charging point, up to a maximum of £375, available to homeowners with a suitable car. There are a number of nationwide companies that charge £279 for a full installation. That means that the government would cover £209.25 of the cost and the homeowner just £69.75. It is reasonable to conclude that all residents who require an electric vehicle charging point can obtain one at minimal cost.

6.6 LOCAL PLAN POLICY LP23

6.6.1 Local Plan Policy LP23 relates to the core walking and cycling network and states that:

The core walking and cycling network as shown on the Policies Map will provide an integrated system of cycle routes, public footpaths and bridleways that provide opportunity for alternative sustainable means of travel throughout the district and provide efficient links to urban centres and sites allocated for development in the Local Plan.

The core cycling and walking network will be safeguarded and extended to provide opportunities to reduce the number of car journeys and to link settlements, employment sites and transport hubs. The safeguarding of the network will also provide further opportunities for leisure uses, cycling, walking and riding in the countryside by linking to existing bridleways and national trails where appropriate.

Disused railway lines and waterways throughout the district shall be protected from other forms of development to safeguard their potential to be reinstated to their former use for commercial or leisure purposes or to extend the cycling or footpath networks.

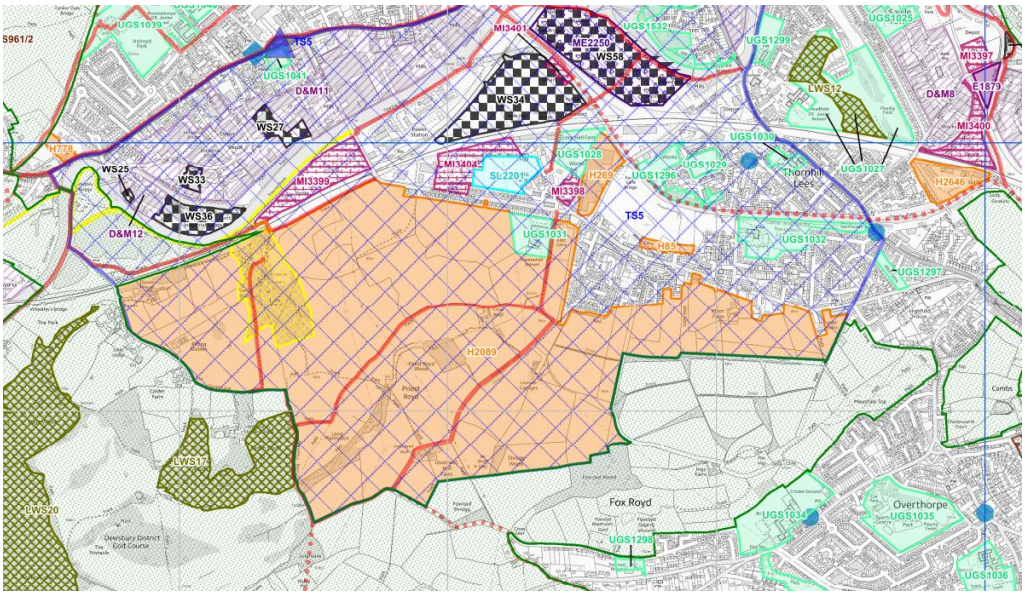
Proposals that may prejudice the function, continuity or implementation of the core walking and cycling network will not be permitted. Existing public rights of way that form part of the core walking and cycling network or elsewhere will be protected and enhanced.

Proposals shall seek to integrate into existing and proposed cycling and walking routes as identified in the core walking and cycling network by providing connecting links where appropriate; and regard shall also be had to linking to Strategic Green Infrastructure networks as identified on the Policies Map.

Where there is an identified need, extensions or enhancements to the existing network can be secured through scheme design, planning conditions and planning obligations if this does not prejudice the overall viability of the development.

6.6.2 Local to the site, the Kirklees Policy map shows the following:

Extract 6.1 Local Plan Policy Map Extract



6.6.3 It can be seen that there are existing core walking and cycling routes within the site (denoted by red lines). These core walking and cycling routes form existing facilities which are protected by Policy LP23 and have been taken into account in the production of the masterplan for the Dewsbury Riverside Phase 1 development proposals.

6.7 ACCESS ON FOOT

6.7.1 Walking and cycling are affordable and safe transportation options that do not generate emissions, traffic noise or traffic congestion, and instead boost mental and physical health.

6.7.2 Local to the site, Ravensthorpe Road benefits from continuous lit footways. The footways connect to the wider footway networks, providing continuous footway linkages across the local area.

6.7.3 Within the site there are existing core walking and cycling routes, as discussed in Section 6.6. These routes provide leisure access across the wider area and connect to Ravensthorpe Road.

6.7.4 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution of Highways and Transportation (CIHT) document entitled Providing for Journeys on Foot (2000) suggests walking distances which are relevant to this application. These distances are shown in Table 6.1.

Table 6.1 Suggested Acceptable Walking Distances

Criteria	Town Centres (m)	Commuting/ School/ Sightseeing (m)	Elsewhere/ Local Services (m)
Desirable	200	500	400
Acceptable	400	1,000	800

Criteria	Town Centres (m)	Commuting/ School/ Sightseeing (m)	Elsewhere/ Local Services (m)
Preferred Maximum	800	2,000	1,200

6.7.5 Whilst Table 6.1 provides useful guidance on walking distances, Manual for Streets provides a context for interpreting them. Manual for Streets states that:

The propensity to walk is influenced not only by distance, but also by the quality of the walking experience. A 20-minute walk alongside a busy highway can seem endless, yet in a rich and stimulating street, such as in a town centre, it can pass without noticing. Residential areas can offer a pleasant walking experience if good quality landscaping, gardens or interesting architecture are present.

6.7.6 The local area is generally defined by residential and employment land uses, with the railway and River Calder forming strategic corridors to the west of the site. The local area can reasonable be described as suitable for pedestrians.

6.7.7 It is reasonable to conclude that there is appropriate provision for pedestrians within the local area.

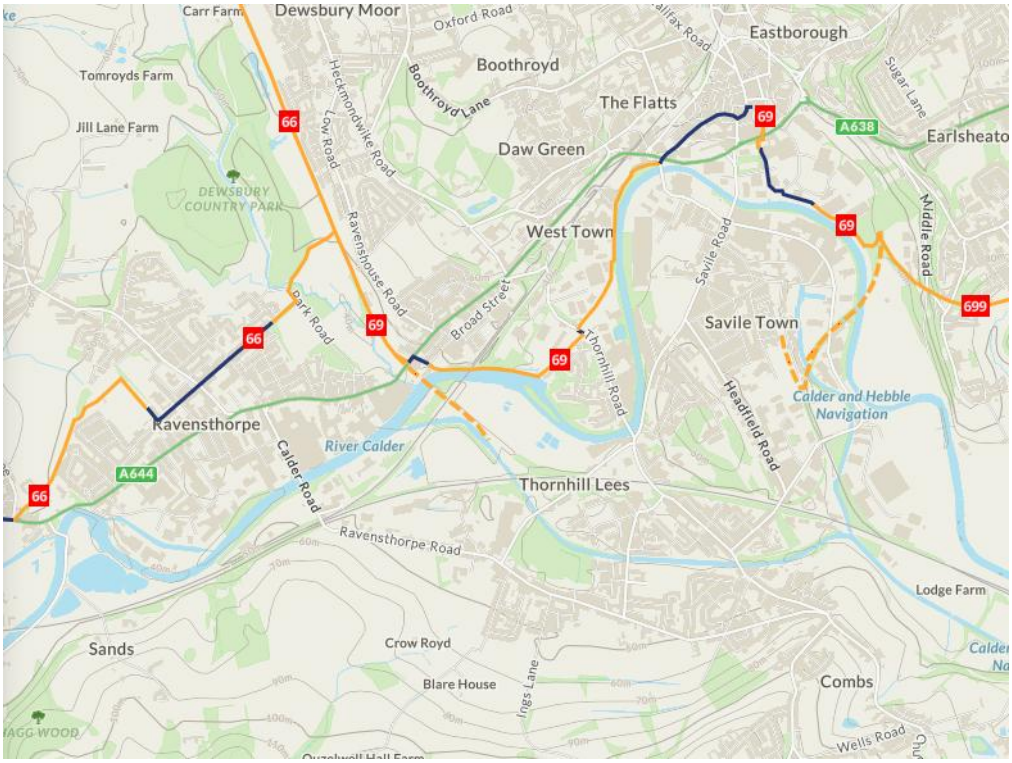
6.8 ACCESS BY CYCLE

6.8.1 It is widely recognised that cycling offers an attractive alternative to short car trips, particularly those under 5km, but also as part of longer journeys by public transport. Figure 6.2, Appendix A, shows the 3km, 4km and 5km cycle isochrones.

6.8.2 All destinations within a reasonable walking distance of the site are also within a reasonable cycling distance.

6.8.3 The nearest strategic cycle route to the site is Route 69, shown on the Sustrans map as follows:

Extract 6.2 Sustrans Map



6.8.4 It can be seen that Route 69 provides routes towards Dewsbury, however does not connect directly to the site or Ravensthorpe Road.

6.8.5 As such, cyclists within the local area are generally required to utilise the carriageway.

6.8.6 It is reasonable to conclude that cycling is a viable and attractive mode of transport for future residents of the site.

6.9 ACCESS BY BUS

6.9.1 The nearest bus stops to the site are located on Ouzelwell Lane and Ouzelwell Road, both to the east of the development. The bus stops are served by routes 230/ 230A. The bus timetables for these routes are attached at Appendix C. The routes provides direct links to Dewsbury and Grange Moor.

6.9.2 The travel time from Ouzelwell Road to Dewsbury is around 14 minutes. The travel time from Ouzelwell Road to Grange Moor is around 22 minutes.

6.9.3 Monday to Friday The first bus from Ouzelwell Road is at 06:32am (towards Grange Moor) and 07:20 (towards Dewsbury).

6.9.4 Route 230/ 230A provides an approximate daytime hourly service until 16:33 (towards Grange Moor) and 18:28 (towards Dewsbury).

6.9.5 The route also operates on a Saturday on an approximate hourly daytime service from 07:34 to 15:34 (towards Grange Moor) and 08:24 to 18:29 (towards Dewsbury).

6.9.6 The existing bus services provide access between the development site and Dewsbury on an approximate hourly daytime basis Monday to Saturday. The times that the buses cover include the typical working day, with the exception of a post 17:00 journey from Dewsbury towards Grange Moor.

6.9.7 There is potential for the existing bus service operating period to be extended as the wider Dewsbury Riverside scheme progresses to provide a later return journey between Dewsbury and the site to accommodate the needs of those working typical 09:00 to 17:00 working patterns.

6.9.8 Notwithstanding this, there appears to be suitable bus access between the site and Dewsbury/ Grange Moor as the initial phase of development is built out, given the access to the rail station discussed below.

6.9.9 In addition to route 230/ 230A, Service AL4 operates along Leeds Hall Road and Forge Lane, passing the site. The service connects local area to St Paulinus School and St John Fisher School/ Westborough High School. The travel time from Leeds Hall Road to St John Fisher School is around 15 minutes.

6.10 RAIL

6.10.1 The nearest railway station to the site is Ravensthorpe, located to the west of the railway lines, accessed from Calder Road. Most areas of the phase 1 development are located within 800m of the railway station, which could be seen as attractive for some.

6.10.2 Ravensthorpe train station provides direct services towards Leeds and Huddersfield on an approximate hourly daytime service. The first service operates at around 06:06am and the last service at 11:57pm.

6.10.3 The travel time from Ravensthorpe to Dewsbury is around three minutes. With services extending across the majority of the day and well into the evening, the rail station provides direct and quick connections into Dewsbury, supplementing the bus services which are also available close to the site.

6.10.4 The travel time to Leeds is around 28 minutes and to Huddersfield is around 15 minutes. The train station provides significant opportunity to access major conurbations by public transport within a short journey time.

6.10.5 An additional, less frequent, service is also available directly between Ravensthorpe and Manchester approximately twice per day in each direction. Using the direct service, Manchester can be accessed in around an hour. The typical daytime access time to Manchester with one change is between 51 minutes and 1 hour 1 minute.

6.10.6 There is significant opportunity to utilise the train to access Dewsbury, Huddersfield and Leeds, as well as regional destinations further afield including Manchester, from the Ravensthorpe train station.

6.10.7 The location of the train station to the site is such that the daytime and evening economy in Dewsbury, Huddersfield and Leeds can be accessed utilising public transport.

6.10.8 It is reasonable to conclude that public transport is a viable and attractive mode of transport for future residents of the site.

6.11 SUMMARY

6.11.1 Census data has been reviewed and shows that, locally, between 38% and 43% of journeys to work are currently made by sustainable travel modes, with travel as a car driver accounting for around 60% of trips to and from work.

6.11.2 A review of the existing active travel networks has been undertaken and shows that the site is well located to access the existing footway networks across the local and wider area.

6.11.3 The nearest cycle routes to the site are to the north, with cyclists being required to utilise the carriageway.

6.11.4 The nearest bus stops are located immediately to the east of the site, with Ravensthorpe rail station located to the west of the site. The combined access to bus and rail provides a minimum of an hourly daytime public transport service between the site and Dewsbury, with rail providing additional opportunities to access Huddersfield, Leeds and other regional destinations throughout the day and evening.

6.11.5 The site is well located to benefit from existing sustainable travel networks. It is reasonable to conclude that sustainable travel is a viable and attractive mode of transport for future residents of the site.

7. SUSTAINABLE ACCESS

7.1 INTRODUCTION

7.1.1 The key purposes for residents of a housing development to need to travel fall into five general categories, these are:

- Education;
- Employment;
- Healthcare;
- Leisure; and
- Shopping.

7.1.2 A review has been undertaken of the availability of these facilities and the range of transport modes which are available to be used to access.

7.2 DEWSBURY RIVERSIDE

7.2.1 The site-specific considerations of Dewsbury Riverside within the Local Plan require the following facilities to be delivered:

- Replacement allotment provision;
- Early Years and Childcare provision;
- A new two-form entry primary school;
- Provision of secondary school places to be monitored and delivery;
- New public open space, green infrastructure and habitats;
- Provision of a new local centre in accordance with Policy LP13; and
- Accordance with other Local Plan policies.

7.2.2 It can be seen that the Local Plan requirements for the wider Dewsbury Riverside include significant proposals for, primarily, education, open space and local facilities which would benefit residents of Phase 1 as the development progresses.

7.2.3 The first phase of development would be predominantly reliant upon existing facilities within the local area, prior to the future Dewsbury Riverside phases coming forwards. This chapter considers the existing provision off-site, prior to the on-site provision being brought forwards.

7.3 EDUCATION

7.3.1 The nearest school to the site is Ravenshall School, immediately adjacent to the site and accessed via Ravensthorpe Road. The school could be accessed on foot or cycle via the internal route networks within the site.

7.3.2 The site is well located to provide access to primary school education by sustainable travel modes, particularly on foot.

7.3.3 Secondary education, including St John Fisher and Westborough High School can be accessed by bus, utilising route AL4 which passes the site.

7.3.4 For tertiary education, bus and rail services provide access to Dewsbury, Leeds and Huddersfield within a short travel time and, also, Manchester (in around an hour).

7.3.5 The site is well-located for sustainable access to educational facilities, including on foot to the adjacent Ravenshall School and by public transport to secondary and tertiary education.

EMPLOYMENT

7.3.6 In addition to the employment opportunities discussed in this section, the destinations discussed throughout this chapter provide the opportunity for employment, such as schools.

7.3.7 The site is located close to major employment areas within Dewsbury, including the extensive employment land uses located between the railway line and Huddersfield Road (to the west of the site) and the extensive riverside employment developments of Dewsbury which are located to the north and south of the River Calder.

7.3.8 The majority of these locations are within 2km of the site, which is considered to be a reasonable walking distance.

7.3.9 Dewsbury town centre is located just in excess of 2km from the site, which could be considered to be walkable by some. The more common modes of transport to access Dewsbury and areas at around 2km, and beyond, is via cycle or public transport.

7.3.10 The site is well-located for sustainable access to employment facilities, including on foot within the local area and at major destinations including Dewsbury, Huddersfield and Leeds via a short public transport journey.

HEALTHCARE

7.3.11 The nearest health centre to the site is Ravensthorpe Health Centre, located around 1km to the west of the development along Calder Road. The health centre is within a reasonable walking distance for many and a reasonable cycle distance for most.

7.3.12 The nearest dental care to the site is Dewsbury Dental Care, located around 2km to the north of the site in Savile Town. The dentist is located on the route of bus service 230/ 230A and is accessible by bus from the site.

7.3.13 Additional primary health services are available within Dewsbury itself, accessible via bus or rail from the site.

7.3.14 The site is well-located for sustainable access to primary healthcare.

LEISURE

7.3.15 Leisure takes many forms, including both informal and formal activities. Within the proposed development site there are a number of areas of public open space proposed, which provide the opportunity for a wide range of informal leisure activities, including walking, jogging, running, games and outdoor exercising.

7.3.16 The site is also located within a rural setting towards the south, with the active travel networks discussed in Section 6.6 forming part of the site, providing access to these areas.

7.3.17 In addition, there will be a number of local interest groups available within the local area for specific hobbies and interests.

7.3.18 Dewsbury leisure centre is located in the centre of Dewsbury, opposite the bus station. The leisure centre provides access to formal leisure activities and can be accessed by public transport (with the Dewsbury station located within 400m of the leisure centre).

7.3.19 Dewsbury leisure centre benefit from around 70 classes per week, 3 dedicated studios, a gym, pool and cycle studio.

7.3.20 For evening-economy leisure, the bus and train station provide combined access throughout the day and evening to the full-range of activities that are available in major towns and cities including Dewsbury, Huddersfield and Leeds.

7.3.21 The site is well- located for sustainable access to leisure facilities.

SHOPPING

7.3.22 The nearest major retail destination to the development is Ravensthorpe Shopping Park, located around 1.2km from the site along Calder Road. The shopping park is accessible on foot or by cycle from the site and includes, predominantly, comparison shopping goods.

7.3.23 The nearest major foodstore to the site is Asda, located on Mill Street West, around 2km north of the site. The foodstore is located on bus route 320/ 320A. Whilst the foodstore is located to the south of the river, the town centre is well-connected to the site via three bridges, making the foodstore also accessible from the town centre.

7.3.24 The town and city centres of Dewsbury, Huddersfield and Leeds are all within a reasonable public transport journey of the site.

7.3.25 The site is well-located for sustainable access to shopping facilities.

7.4 SUMMARY

7.4.1 When considering the development implications of a site the first test set out in Paragraph 110 of the Framework is that:

…appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

7.4.2 The key purposes for residents of a housing development to need to travel fall into five general categories, these are education, employment, healthcare, leisure and shopping.

7.4.3 A review of the sustainable access options to the site show that all the needs of residents within these five categories can be met either on the site, adjacent to the site, within the local area or within Dewsbury, Huddersfield or Leeds. All can be accessed within a reasonable walking, cycling or public transport journey.

8. TRAVEL PLAN

8.1 INTRODUCTION

8.1.1 A Travel Plan for the site has been submitted as a separate document within the overall planning application package. This chapter provides a summary of the commitments which will be contained within the Travel Plan, which are pertinent to the consideration of this Transport Assessment.

8.2 TRAVEL PLAN CO-ORDINATOR

8.2.1 A formal Travel Plan Co-ordinator will initially be in place for the period of the five-years to encourage the use of sustainable travel for residents.

8.2.2 Prior to the formal appointment of a Travel Plan Co-ordinator for the site, the following contact details can be used for the interim Travel Plan Co-ordinator:

David Sagstad
01924 684 000
info@devplanning.co.uk

8.2.3 Should the sales office remain open post the initial five-year period the role of the Travel Plan Co-ordinator could be extended until the sales office closes.

8.2.4 Once the role of formal Travel Plan Co-ordinator expires, residents will be provided the opportunity to carry the role forwards. A suitable handover would be provided to allow residents to efficiently take forwards the role.

8.3 TARGET

8.3.1 Travel to work Census statistics show that around 38 to 43%% of residents within the area of currently travel by sustainable travel modes.

8.3.2 Whilst an initial travel survey would be undertaken following the occupation of the first 100 units (circa a two-year build-out) to allow detailed consideration of a five-year (from opening) target, the initial five-year target will be for an increase in sustainable travel of 5% from the Census data. This equates to 45% of access to work by sustainable travel modes.

8.3.3 Should the target not be met, the formal role of the Travel Plan Co-ordinator could be extended by two years, resulting in the target being a seven-year target.

8.3.4 A stretch target will also be set of an increase in sustainable travel of 10% from the Census data. This equates to 47% of access to work by sustainable travel modes.

8.3.5 Should the initial target of 5% be met prior to five years, the Travel Plan Co-ordinator will seek to deliver the stretch target within the residual period of their formal role.

8.3.6 Importantly, the targets must be flexible to account for changing technologies and the targets will include travel by ultra-low or zero emission vehicles.

8.4 TRAVEL WEBSITE

8.4.1 A Travel Website will be set up to disseminate information and allow residents easy access to up to date travel information and weblinks. This is a more efficient way of communication as links to external websites (such as bus companies) should be maintained by their owners and avoid residents having out of date printed media.

8.4.2 Should there be a wider-area Travel Website, which could be delivered for the whole Special Policy Area, as discussed below, that site would be promoted as oppose to the development-specific website.

8.5 THE BENEFITS OF WORKING TOGETHER

8.5.1 The work of each Travel Plan Co-ordinator across the wider area will bring benefits to their individual sites. However, benefits will be maximised if information is shared and actions are co-ordinated across Dewsbury Riverside. For example. there could be greater opportunities to car share, provide pool cars provided and the annual monitoring of travel could be simplified.

8.6 WIDER OPPORTUNITY – TRAVEL PLAN NETWORK

8.6.1 With the number of developments proposed locally, there is significant opportunity for Travel Planning to help influence the way in which the community travel on a scale much larger than the proposed site in isolation. These opportunities and the potential for a Wide Area Travel Plan Network could be considered by the council as part of the delivery of the Local Plan.

8.6.2 Further benefits could be brought to the existing community if the Travel Plan Network were to be opened up to the existing, as well as the future communities, within the area potentially by way of a community website. The website could be of greatest benefit and more likely to be used if it was an overall community resource, as opposed to simply a travel website, however travel could be an important feature of such a website. The website should be considered by the council and seek to include community aspirations, if feasible.

8.6.3 If the wider area were included in the Travel Plan Network then there is potential for increased sustainable travel across the area, reducing road traffic at a much wider scale than just the proposed sites alone.

8.6.4 Whilst the current development proposals do not propose such a network, there is opportunity to discuss options for such a wider solution, as this and other schemes, come forward. The Travel Co-ordinator will be responsible for liaising with the council to seek their consideration for the setting up of a Travel Plan Network.

8.7 TRAVEL PLAN COMMITMENTS

8.7.1 In order to achieve the target, the following SMART measures are proposed.

Table 7.1 SMART Action Plan

Measures	Objective	Timescales	Responsibility
Appoint Travel Plan Coordinator	Oversee and manage the Travel Plan	3 months prior to first occupation	Developer
Undertake initial travel surveys	To refine/ inform the Travel Plan targets	At 100 dwellings	Travel Plan Co-ordinator
Provide a long-term cycle parking space within the curtilage of each dwelling	To encourage cycling as a long-term travel choice	Prior to occupation of each dwelling	Developer

Measures	Objective	Timescales	Responsibility
Offer each dwelling a bus taster ticket	To encourage the uptake of bus use	From first occupation until the formal role of the Travel Plan Co-ordinator ends	Travel Plan Co-ordinator
Agree Mode Split Targets	Ensure SMART objective is realistic	Within 6 weeks of initial travel surveys	Travel Plan Co-ordinator
Carry out travel plan monitoring	Establish residents travel patterns and monitor performance	Annually for the life of the Travel Plan	Travel Plan Co-ordinator
Provision of local cycle map and public transport information/ weblinks	To encourage cyclists and public transport users by raising awareness of travel options	On occupation	Travel Plan Co-ordinator
Promote health and financial benefits of walking and cycling within Travel Leaflet	To encourage walking and cycling	On occupation	Travel Plan Co-ordinator
Produce Travel Leaflet and display/ distribute in sales office	To raise awareness of travel options	Prior to first occupation and for the duration that the sales office operates	Travel Plan Co-ordinator
Promote walk and cycle initiatives such as ‘The Big Pedal’	To encourage school children to cycle to school	As appropriate	Travel Plan Co-ordinator
Promote Walkit.com	To encourage pedestrians	On occupation	Travel Plan Co-ordinator
Promote car share database	To encourage the use of car sharing	On occupation	Travel Plan Co-ordinator
Promote travel websites within the Travel Leaflet	To encourage travel by all sustainable travel modes, including access to the most up to date public transport timetables	On occupation	Travel Plan Co-ordinator
Promote Personalised Travel Planning	Influence sustainable journey planning prior to occupation, eg bus	Prior to occupation	Travel Plan Co-ordinator

Measures	Objective	Timescales	Responsibility
	usage instead of car ownership		
Provide contact details of local licensed taxi operators	Influence journey planning prior to habit being established when moving in	On occupation	Travel Plan Co-ordinator
Extend Travel Plan Co-ordinator role by 2 years if targets not met	To deliver additional measures towards the targets	Following initial formal role of Travel Plan Co-ordinator	Travel Plan Co-ordinator

8.7.2 A successful Travel Plan must have an appropriate monitoring programme that measures success (and opportunities for improvement) and reinvigorates the process where necessary.

8.7.3 Monitoring and reporting of the Travel plan will be undertaken annually by the developer's Travel Plan Co-ordinator for the initial 5 years, or the sales office closes. Should the role be extended due to the initial target not being met, the monitoring will continue for the further 2 years.

8.7.4 Reporting will be made available on the website.

8.7.5 The Travel Plan Co-ordinator will offer an annual and less formal meetings with the council's Travel Plan officer.

8.8 SUMMARY

8.8.1 A Travel Plan forms part of the planning application package and its delivery firmly committed to by the developer. The Travel Plan includes the provision of a Travel Plan Co-ordinator and sets out a number of SMART objectives which will seek to minimise single-occupancy car use, resulting in an initial target of 45% of travel to and from the site by sustainable travel modes within a five-year period.

8.8.2 Importantly, the target will include travel by ultra-low and zero emission vehicles.

8.8.3 An extension of the Travel Plan by 2 years will be triggered if the target is to be met.

8.8.4 A stretch target of 47% will be set, should the initial target be met within the period.

9. HIGHWAY SAFETY REVIEW

9.1 INTRODUCTION

9.1.1 In order to consider whether there are any existing issues relating to road safety which are relevant to this site, a review of the five-year road traffic accident data on the local highway network has been undertaken for the key routes between the site, key local destinations and the wider transport networks.

9.1.2 The assessment considers the quantum and severity of recorded accidents.

9.2 SCOPE OF ASSESSMENT

9.2.1 The scope of highway safety assessment is the same as that for the detailed traffic analysis. The area is shown in Figure 9.1 and includes:

- Ravensthorpe Road/ Calder Road;
- Lees Hall Road; and
- Forge Lane.

9.2.2 Each of these areas is discussed below.

9.2.3 The most recent five-year personal injury accident data has been reviewed. In reviewing the accident data, it should be noted that travel patterns during 2020/ 2021 have been unusual due to the pandemic.

9.3 RAVENSTHORPE ROAD

9.3.1 There have been three slight accidents recorded on the approximate 750m length of Ravensthorpe Road between Calder Road and Forge Lane.

9.3.2 The slight accidents occurred in 2017, 2019 and 2020.

9.3.3 The slight accident in 2017 occurred as a vehicle slowing down was struck from the rear by a second vehicle. There were no other accidents recorded at the same location which could lead to a potential accident cluster.

9.3.4 The slight accident in 2019 occurred as three cars struck, with two being head-on. There were no other accidents recorded at the same location which could lead to a potential accident cluster.

9.3.5 The slight accident is 2020 occurred as two vehicles struck. There were no other accidents recorded at the same location which could lead to a potential accident cluster.

9.3.6 There were no accidents at all recorded in 2016 or 2018. There were approximately 16 consecutive months at the start of the study period and 23 consecutive months in the middle of the study period where no accidents at all were recorded on this length of road.

9.3.7 There are considered to be no material highway safety issues along this length of road.

9.4 CALDER ROAD

9.4.1 There have been three slight accidents recorded on the approximate 550m length of Calder Road between Huddersfield Road and Ravensthorpe Road.

9.4.2 The slight accidents occurred in 2016, 2017 and 2019.

9.4.3 The slight accident in 2016 occurred as two vehicles struck head-on towards the approach to Huddersfield Road. There were no other accidents recorded at the same location which could lead to a potential accident cluster.

9.4.4 The 2017 slight accident occurred as a car turned left across a second car, at the junction of Calder Road/ Netherfield Road. There were no other accidents recorded at the same location which could lead to a potential accident cluster.

9.4.5 The 2019 slight accident occurred on the southbound approach to the Calder Road bridge. The accident occurred as a car was turning right and two other cars struck head-on. There were no other accidents recorded at the same location which could lead to a potential accident cluster.

9.4.6 There were no accidents at all recorded in 2018 or 2020. There were approximately 23 consecutive months in the middle of the study period and 17 consecutive months at the end of the study period where no accidents at all were recorded on this length of road.

9.4.7 There are considered to be no material highway safety issues along this length of road.

9.5 LEES HALL ROAD

9.5.1 There have been five slight accidents recorded on the approximate 1km length of Leeds Hall Road between Forge Lane and Ingham Road.

9.5.2 Two of the slight accidents occurred close to the junction of Lees Hall Road/ Ingham Road, one occurred at the junction of Lees Hall Road/ Brewery Lane and two slight accidents occurred on Lees Hall Road between Brewery Lane and Forge Lane.

9.5.3 The two slight accidents at the junction of Lees Hall Road/ Ingham Road occurred in 2017 and 2020. The 2017 slight accident occurred as two passing vehicles struck two parked cars. The accident does not appear to relate to the operation of the junction itself.

9.5.4 The 2020 slight accident involved two vehicles. There were no other recorded accidents at or close to the junction in the five-year study period, with no accidents at all recorded in 2016, 2017 or 2019. There were 12 consecutive months at the start and 35 consecutive months in the middle of the study period where no accidents at all were recorded at this location.

9.5.5 The slight accident at Lees Hall Road/ Brewery Lane occurred in 2016. The accident occurred as a right turning vehicle and a straight-on vehicle collided. There were no other accidents at all recorded in this location in 2017, 2018, 2019 or 2020. There were 50 consecutive months at the end of the study period were no accidents at all were recorded at this location.

9.5.6 The two slight accidents to the west of Brewery Lane both occurred in 2018. The first of the accidents occurred as a small-engine motorcycle struck a car head-on. The second of the accidents occurred as a car struck a pedestrian who was crossing the road. There were no other accidents at all recorded in 2016, 2017, 2019 or 2020. There were 32 months at the start and 27 consecutive months at the end of the study period where no accidents at all were recorded in this location.

9.5.7 There are considered to be no material highway safety issues along this length of road.

9.6 FORGE LANE

9.6.1 There have been three accidents recorded within the five-year study period along the approximate 800m length Forge Lane, between Ravensthorpe Road and Thornhill. The accidents were slight, serious and fatal.

9.6.2 The fatal accident occurred in 2019 and involved two vehicles. The accident occurred to the south of the Calder and Hebble navigation. The accident occurred as two vehicles

proceeding along the carriageway had a near-miss, resulting in one car leaving the carriageway and striking a lamp post. All fatalities are tragic and impact those involved and those who know them. There were no other accidents recorded at or close to this location in the five-year study period.

9.6.3 The serious accident occurred in 2016 at an industrial unit access point. The accident occurred as an HGV, slowing to turn right, was struck from behind by a car resulting in the serious injury. There were no other accidents recorded at or close to this location in the five-year study period.

9.6.4 The slight accident occurred in 2016 on the northbound approach to the railway overbridge. The accident occurred as two vehicles were slowing, with a goods vehicle striking the rear of a car. There were no other accidents recorded at or close to this location in the five-year study period.

9.6.5 There has been a serious and a fatal accident along this length of road during the five-year study period. The accidents are at remote locations for different reasons, however a contributory factor could be speed.

9.6.6 The intensification of use of Forge Lane as a result of the development proposals will increase traffic and could help to reduce and modify traffic speeds and behaviour. Notably, all new cars from 2022 onwards would be fitted with mandatory speeds limiters and, consequently, reduced vehicle speeds should occur into the future.

9.6.7 Further details relating to improved vehicle safety standards are set out in Chapter 4.

9.7 FORGE LANE/ STATION ROAD JUNCTION

9.7.1 There have been three slight accidents recorded at this junction within the five-year study period. Of the accidents, two occurred in 2018 and one in 2019.

9.7.2 The first accident in 2018 occurred as a vehicle turning left struck a vehicle travelling straight on, on the southern arm of the junction. No other accidents at all have been recorded on the southern arm of the junction within the five-year study period.

9.7.3 The second accident in 2018 occurred as a car approaching the central area between the two mini-roundabouts slowed down and was struck from the rear by a goods vehicle.

9.7.4 The accident in 2019 occurred as a car turning right was struck by a second car head-on.

9.7.5 There were no accidents at all recorded at the junction in 2016, 2017 or 2020. There were 24 consecutive months at the start of the study period and 21 consecutive months at the end of the study period where no accidents at all were recorded at this junction.

9.7.6 There are considered to be no material highway safety issues at this junction.

9.8 SUMMARY

9.8.1 A review of the most recent five-year accident data for the local highway network has been undertaken. The results of the accident data show that there are no accident clusters which could result in a material highway safety concern based upon the geometry or use of the carriageway.

9.8.2 It is noted that a serious and a fatal accident occurred on Forge Lane. These accidents do not appear to be related.

9.8.3 The intensification of use of Forge Lane as a result of the development proposals will increase traffic and could help to reduce and modify traffic speeds and behaviour. Notably, all new cars from 2022 onwards would be fitted with mandatory speeds limiters and, consequently, reduced vehicle speeds should occur into the future.

10. PROPOSED ACCESS

10.1 INTRODUCTION

10.1.1 The transport hierarchy requires sustainable modes of transport to be afforded the highest priority in terms of access. This is clear from the national and local planning polices, which have been discussed in the Chapter 4, including the Framework, which requires development to:

…give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use.

10.1.2 As such, the primary consideration for the site is access by sustainable modes.

10.1.3 Chapters 6, 7 and 8 have demonstrated that the proposed development site meets with the sustainable access criteria, as set out in Paragraph 110 of the Framework.

10.1.4 This chapter considers the access proposals for the site, with the residual highway impacts considered within Chapters 11 and 12.

10.2 PHASED ACCESS

10.2.1 The development proposals incorporate a two-phase approach to the access to the site. The initial access point to the initial 150 dwellings is proposed via Ravensthorpe Road (south), which is the junction located around 120m to the west of Forge Lane, currently utilised for access to Ravenshall School, the allotments and rear access to a limited number of terraced properties.

10.2.2 The initial access point would be provided with footways on both sides of the carriageway, connecting to the existing footway networks on Ravensthorpe Road.

10.2.3 The primary access point would be a remodelled roundabout access, forming a four-way roundabout between the site, Ravensthorpe Road, Forge Lane and Lees Hall Road. The primary access point would be implemented following the 150th dwelling and form one of several main access points to the wider Dewsbury Riverside development, as it is built out.

10.2.4 Connecting the Forge Lane roundabout to the development site would be a spine road, which forms the detailed element of the planning application. The proposed layout of the Forge Lane access points is attached at Appendix D.

10.3 PEDESTRIANS

10.3.1 Pedestrians have been provided with the highest priority within the masterplan proposals for the site. The site layout includes a spine road connecting the site to Ravensthorpe Road with shared cycleway/ footways provided along the edge of carriageway. The footways would be surfaced and lit and provided to modern design standards.

10.3.2 Prior to the spine road being delivered, pedestrian access would be via the preliminary access point along Ravensthorpe Road (S), as discussed in Section 10.2. During this preliminary phase of development, pedestrians would benefit from continuous lit footways between the site and Ravensthorpe Road.

10.3.3 In addition, a new access point onto Ravensthorpe Road is being delivered as part of the allotment relocation. The allotment access provides an additional pedestrian access to Ravensthorpe Road, reducing walking distances towards the west.

10.3.4 A further pedestrian access point would also be provided towards the west of the site, between numbers 139 and 143 Ravensthorpe Road. This access point would be even further west, providing additional pedestrian connectivity opportunities, particularly to and from that direction.

10.3.5 The site masterplan also respects the existing core walking and cycling network, accommodating the existing alignment of the strategic walking and cycling routes which cross the site. The full details of the proposals for the existing core network would be provided as part of future Reserved Matters planning submissions.

10.3.6 Along the link road, the existing core walking and cycling network has been considered and a Pegasus crossing point is proposed around 150m to the south of the Forge Lane roundabout. The Pegasus crossing has been located to allow the continued use of the core network.

10.3.7 The proposed Forge Lane roundabout site access incorporates new pedestrian crossing points across all arms, with the provision of pedestrian refuge islands with associated dropped kerbs and tactile paving.

10.3.8 Within the site a second roundabout is proposed on the link road. The second roundabout would also benefit from pedestrian refuge islands, dropped kerbs and associated tactile paving. The second roundabout would also provide a Toucan/ Pegasus crossing over the southern arm and signalised crossing points of the western, northern and eastern arm.

10.3.9 Full details of the layout are shown in Appendix D.

10.4 REDUCED MOBILITY

10.4.1 The design width requirements for people who are mobility impaired and/ or visually impaired are set out in the Government document Inclusive Mobility. The width requirements are states to be:

Someone who does not use a walking aid can manage to walk along a passage way less than 700mm wide, but just using a walking stick requires greater width than this; a minimum of 750mm. A person who uses two sticks or crutches, or a walking frame needs a minimum of 900mm, a blind person using a long cane or with an assistance dog needs 1100mm. A visually impaired person who is being guided needs a width of 1200mm. A wheelchair user and an ambulant person side-by-side need 1500mm width.

10.4.2 Generally, footpaths will be provided across the development site at 2m wide, which is wider than required for a wheelchair user and an ambulant person to pass. The 2m design width is in line with current good practice guidance.

10.4.3 The development proposals for those with reduced mobility could accommodate the needs of disabled users, with the full details being provided as part of future Reserved Matters planning submissions.

10.5 CYCLISTS

10.5.1 The spine road would accommodate shared pedestrian/ cycle routes along the higher trafficked sections, with the details of the Phase 1 access road provided in detail as part of this planning application.

10.5.2 Pegasus and/ or Toucan crossing points are proposed across the spine road to provide safe crossing points for cyclists.

10.5.3 Cycle storage for the properties across the site would meet with the relevant cycle parking standards at the time of submission for Reserved Matters.

10.5.4 The proposed cycle routes within the site connect to Ravensthorpe Road, where cyclists would be required to cycle on the carriageway.

10.5.5 Offsite the M2D2L project aims to improve local facilities for cyclists, to aid with the delivery of strategic growth across the area. Cyclists would benefit from the future M2D2L proposals as they are progressed, within the Local Plan period.

10.5.6 The development proposals can appropriately accommodate the needs of cyclists.

10.6 PUBLIC TRANSPORT

10.6.1 The development proposals for Phase 1 of Dewsbury Riverside is adjacent to existing bus routes and the majority of the scheme is within 800m of the train station.

10.6.2 The proposed pedestrian access points provide direct linkages to the existing bus stops.

10.6.3 The existing bus stops close to the site do not benefit from shelters. The development proposals will include the upgrading of the two (one bus stop in each direction) existing bus stops to include shelters, lighting and information.

10.6.4 Should the supporting infrastructure be available, Real Time Passenger Information screens would be implemented at the new bus stops.

10.6.5 As the scheme progresses and houses are occupied, there will be an increased demand for public transport. Discussions will be held with operators to discuss an extension to the operating period of the existing bus routes adjacent to the site (routes 230/ 230A) to cover a post-17:00pm service from Dewsbury to the site.

10.6.6 As future phases of the site are progressed, incorporating additional site access points, a suitable bus route would be created. The spine road design incorporates suitable carriageway widths to accommodate bus routes and it is expected that future bus routes could enter the site once a critical mass of residents has formed.

10.6.7 The development proposals can appropriately accommodate the needs of public transport users.

10.7 PRIVATE VEHICLES

10.7.1 Whilst private vehicles are the lowest mode of transport on the road user hierarchy, for the purposes of this Transport Assessment, it is important to discuss these as traffic volumes to and within the site could have an influence on the way that the vulnerable road users and vehicles interact.

10.7.2 In terms of appropriate guidance for pedestrians and vehicles sharing a space, Government guidance recommends that shared use spaces can work well with vehicle flows of up to 100 vehicles per hour. The guidance is provided within Manual for Streets (Department for Transport, 2007) which states on Page 83 that:

A study of public transport in London Borough Pedestrian Priority Areas (PPAs) undertaken by TRL for the Bus Priority Team at Transport for London concluded that there is a self-limiting factor on pedestrians sharing space with motorists, of around 100 vph. Above this, pedestrians treat the general path taken by motor vehicles as a 'road' to be crossed rather than as a space to occupy. The speed of vehicles also had a strong influence on how pedestrians used the shared area. Although this research project concentrated on PPAs, it is reasonable to assume that these factors are relevant to other shared space schemes.

10.7.3 As such, if vehicle flows are forecast to be up to 100 vehicles per hour or less, pedestrians have the opportunity to view the site roads as a shared space and have greater ownership of the space.

10.7.4 For the proposed development, the forecast traffic flows within the site are above 100 two-way vehicle movements on the spine road, however would be below it on many internal routes.

10.7.5 Appropriate dropped crossing will be provided within the development to cross the internal roads, with adequate visibility for pedestrians and drivers at crossing points to ensure a safe design is delivered. The internal road network will also be subject to the Road Safety Audit process.

10.7.6 Internal road speeds will be managed through appropriate passive design, which aligns with Manual for Streets best practice.

10.7.7 There are considered to be no material highway safety issues relating to the interaction of vehicles and vulnerable users as part of the site's future street network proposals.

10.8 SERVICING AND DELIVERIES

10.8.1 The development proposals will be designed to appropriate standards to ensure that refuse vehicles and large rigid removals vehicles can access all properties.

10.8.2 Turning heads are incorporated into the layout design to allow for the manoeuvring of delivery and refuse vehicles in cul-de-sacs.

10.8.3 The provision for servicing and deliveries is considered to be appropriate to meet with the needs of those users.

10.8.4 The details of internal layouts, with the exception of the spine road, would form the detail of future Reserved Matters planning submissions.

10.9 RESIDENTIAL PARKING

10.9.1 Local Plan Policy LP22 relates to parking the policy states:

The provision of parking will be based on the following principles:

…d. provision of residential parking scheme within town centres for private vehicles/ motorcycles/ and cycles will be permitted where appropriate and where schemes can be shown to enhance residential development in the town centre;

e. car parking provision in new developments will be determined by the availability of public transport, the accessibility of the site, location of the development, local car ownership levels and the type, mix and use of the development;

f. new development will incorporate flexibly design minimum parking spaces for private cars, considering a range of solutions, to provide the most efficient arrangement of safe, secure, convenient and visually unobtrusive car parking within the site including a mix of on and off street parking in accordance with the current guidance;

g. provision will be made to meet the needs of cyclists for cycling parking in new development;

h. provision will be made to accommodate the needs of disabled people for the parking of vehicles.

All proposals shall provide full details of the design and levels of proposed parking provision. They should demonstrate how the design and amount of parking proposed is the most efficient use of land within the development as part of encouraging sustainable travel.

10.9.2 Residential properties across the site are likely to be provided with a mixture of parking spaces, single garages, integral garages and double garages.

10.9.3 An appropriate number of visitor parking spaces would be allowed for within the overall design of the proposals.

10.9.4 The details relating to parking would form part of future Reserved Matters planning submissions.

10.10 ULTRA-LOW AND ZERO EMISSION VEHICLES

10.10.1 Future Reserved Matters planning applications will contain details of the provision for ultra-low and zero emission vehicle charging for the properties across the site.

10.10.2 It is expected that the proposals would align with the pertinent vehicle charging standards at that time.

10.11 SUMMARY

10.11.1 The development proposals incorporate a phased approach to site access, with the initial access point accommodating up to 150 dwellings via Ravensthorpe Road (S).

10.11.2 The primary access point would be a redesigned roundabout access at the junction of Ravensthorpe Road/ Forge Lane/ Lees Hall Road. The roundabout access would form the Forge Lane access, which would be the central gateway to the Dewsbury Riverside development.

10.11.3 In addition to the vehicular access points to the site, additional pedestrian access points are to be provided directly onto Ravensthorpe Road via the new allotment access and a new pedestrian access located between number 139 and 143 Ravensthorpe Road.

10.11.4 The internal spine road has been submitted in detail for approval as part of this planning application. The internal spine road has been designed to accommodate pedestrians, cyclists, future bus routes and the existing core walking and cycling network and rights of ways.

10.11.5 The internal spine road also includes signalised crossing points for pedestrians, cyclists and equestrians.

10.11.6 The development proposals are considered to provide safe and suitable access for all appropriate modes of transport, in line with planning policy.

11. HIGHWAY STUDY AREA

11.1 INTRODUCTION

11.1.1 Chapter 9 has demonstrated that the proposed development site meets with the sustainable access criteria, as set out in Paragraph 110 of the Framework.

11.1.2 As there is a presumption in favour of sustainable development, the residual transport-related test is that set out in Paragraph 111 of the Framework, as follows:

111. Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

11.1.3 This chapter considers the residual access by vehicles to the site.

11.1.4 As discussed in Chapter 4, within the lifetime of the development, it is highly likely that emerging technologies will be increasingly be used on UK road networks, with traffic interactions managed automatically. As a result, future traffic flow forecasts using traditional techniques could overstate the potential impacts of development.

11.2 PRELIMINARY MITIGATION

11.2.1 Prior to consideration of potential requirements for mitigation on the wider highway network, consideration must be given to the enabling role that Phase 1 makes to the wider masterplan for 4,000 homes. The development of 350 units in Phase 1 equates to 8.75% of the full 4,000 units proposed and any contribution should be proportionate to this.

11.2.2 Phase 1 is to include the delivery of the Central Gateway access via a new roundabout with Forge Lane and, in addition, the initial length of around 350m of internal link road.

11.2.3 In addition, Phase 1 is to deliver a temporary residential access on to Ravensthorpe Road and connections to the eastern and western boundaries of Phase 1 to provide connections to the wider Dewsbury Riverside proposals.

11.2.4 Consequently, the Phase 1 proposals would deliver essential infrastructure to allow Dewsbury Riverside to progress, which amount to significant expenditure on the new access points, internal link road and link road connections to the eastern and western boundary of the phase.

11.2.5 These works are in addition to any off-site mitigation which may be proposed following further assessment of the off-site forecast traffic impacts discussed within this chapter.

11.3 ANTICIPATED BUILD-OUT PERIOD

11.3.1 The development proposals consist of up to 350 residential properties as part of the phase 1 proposals.

11.3.2 The current planning application is being made in 2021, with Reserved Matters planning applications assumed to be submitted in 2022. A start on site date of 2023 has been agreed with the highway authority as an appropriate opening year for assessment.

11.3.3 Based upon a build-out of around 50 properties per year across the Phase 1 site, the agreed future year assessment (following completion of development) is 2030, i.e. a seven-year build out.

11.4 TRAFFIC GENERATION AND DISTRIBUTION

11.4.1 Traffic generation and distribution for the development proposals has been undertaken within the highway authority's wide-area traffic model. The wide-area traffic model utilises a macro-simulation traffic model to assess the changes in junction flows across the whole Dewsbury road network.

11.4.2 The wide-area traffic model has been prepared and is operated by Systra. The wide-area traffic model is being utilised to assess the impacts of the whole of the Local Plan scheme allocations. As such, the wide-area traffic model is the only source of future traffic flow data which aligns with the Local Plan, of which Dewsbury Riverside is a major scheme.

11.4.3 The use of a wide-area traffic model ensures that the traffic impacts of the Phase 1 development proposals are undertaken on the same basis as all Local Plan development schemes being assessed by the highway authority and is considered to be suitable for use in assessing the development-generated impacts.

11.4.4 For reference, the overall traffic generation rates and resultant traffic flows associated with 350 dwellings are set out in Table 11.1. The traffic generation rates from the wide-area traffic model Technical Notes have been utilised for the purposes of Table 11.1.

Table 11.1 Traffic Generation

	AM			PM		
	In	Out	Total	In	Out	Total
Rate	0.118	0.324	0.442	0.279	0.192	0.471
Generation	41	113	155	98	67	165

11.4.5 It can be seen from Table 11.1 that the forecast traffic generation relating to the proposed 350 residential units is in the range of 155 to 165 two-way peak hour vehicle movements.

11.4.6 Notably the Systra traffic model has been prepared based upon an assumed 500 residential units within Phase 1, consequently the impacts discussed within this chapter are based upon 350/500ths of the forecast impacts to reflect the currently proposed 350 units.

11.4.7 Even so, the assessments undertaken in Chapter 12 include the forecast traffic generation based upon 500 units, as per the Systra wide-area traffic modelling to provide a robust assessment of junction impacts.

11.4.8 The Systra-provided traffic flows and associated calculations which inform the summaries within this chapter are attached at Appendix E.

11.5 IMPACT CRITERIA

11.5.1 This chapter sets out the forecast traffic impact by junction within the Study Area. The impact is assessing in quantitative terms and, in addition, percentage impact.

11.5.2 To provide a context to the percentage impacts, the day to day fluctuations in traffic flows can be around 10%, therefore an impact materially less than 10% could reasonably be determined to be below the thresholds for further assessment.

11.5.3 Where the forecast development generated traffic is less than 5% of the total junction flows then it is reasonable to consider that the impact is minimal.

11.5.4 Where the forecast development generated traffic is less than 2.5% of the total junction flows then it is reasonable to consider that the impact is negligible.

11.5.5 Even so, the approach arms of each junction are also considered against the 30 two-way vehicle trip threshold.

11.5.6 The following junctions are assumed to require detailed traffic assessment in any event and, as such, are excluded from the assessment criteria set out above:

- Initial Access (Veolia) – Initial residential access onto Ravensthorpe Road; and
- Primary Access (Forge Lane) – The Central Gateway to the Dewsbury Riverside site.

11.5.7 Other junctions are assessed against the criteria discussed above.

11.6 THORNHILL

11.6.1 The Thornhill junction is a double mini-roundabout which is formed between Forge Lane, Thornhill Road, B6409 and B6117.

11.6.2 The forecast traffic impacts are set out below.

Table 11.2 Thornhill Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	43	62	-6	-9	47	67	20	28
B	-48	-68	-25	-36	-76	-109	-85	-121
C	118	169	132	188	137	196	122	174
D	2	3	19	27	18	26	-46	-65
Total	116	166	119	170	126	180	11	16
% Impact (Junction)	2.3%	3.3%	2.2%	3.2%	2.6%	3.7%	0.2%	0.3%

11.6.3 It can be seen from Table 11.2 that the forecast impacts of the 350 units is in the range 0.2% to 2.6% across all development scenarios. The forecast impacts for 500 units is in the range 0.3% to 3.7% across all development scenarios.

11.6.4 The forecast impact is in the negligible to minimal impact. Due to the forecast increases in traffic flow at the junction exceeding 30 two-way vehicle movements due to the increases on Arm C, it is proposed to undertake detailed traffic assessment of this junction.

11.7 HEADFIELD

11.7.1 The Headfield junction is a three-arm ghost-island priority T-junction, accompanied by physical island to the north and south of the junction. The junction has the B6409 as the main road arm and Headfield Road as the minor road arm.

11.7.2 The forecast impacts are set out below.

Table 11.3 Headfield Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	33	47	5	7	56	80	26	37
B	-1	-1	13	19	33	47	-20	-29
C	45	64	0	0	48	69	31	44
Total	77	110	18	26	137	196	36	52
% Impact (Junction)	2.3%	3.4%	0.5%	0.7%	4.1%	5.9%	1.0%	1.5%

11.7.3 It can be seen from Table 11.3that the percentage impacts in 2023 are in the region of 2.3% to 5.9%. These percentage impacts reduce to 0.5% to 1.5% by 2030.

11.7.4 It is important to note that the 2023 AM peak hour traffic flows do not reflect the reality of the incremental build-out of the development proposals, with the first houses being built in 2023 and the full 350 units not forecast to be completed until the 2030 assessment scenario.

11.7.5 The forecast development-generated impact is in the negligible range by 2030, with the forecast impacts on the major road arm. Traffic flow increases on the major road arm have significantly less impact at a priority T-junction than on the minor road arm, therefore the development-generated traffic is not considered to materially affect the operation of the junction as the development and Local Plan allocations progress towards 2030.

11.7.6 Detailed traffic assessment of this junction is not considered to be required, with forecast traffic impact in 2030 of 0.5% to 1.0% for the proposed 350 units.

11.8 PARK ROAD

11.8.1 The Park Road junction is a four-arm signalised junction with the B6409 as the north/south main route and Mill Street East and Mill Street West forming the side-road arms.

11.8.2 The junction incorporates signalised pedestrian crossing points within the junction on the south, west and eastern arms. Remote pedestrian crossing facilities are provided to the northern arm.

11.8.3 The forecast traffic impacts are as follows:

Table 11.4 Park Road Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	6	9	10	14	19	27	26	37
B	49	70	30	43	1	1	8	11
C	28	40	7	10	49	70	37	53
D	54	77	27	39	18	26	-34	-49
Total	137	196	74	106	87	124	36	52
% Impact (Junction)	2.7%	3.8%	1.4%	1.9%	1.8%	2.6%	0.7%	1.0%

11.8.4 It can be seen from Table 11.4 that the forecast development-generated traffic impact by 2030 is between 1.0% and 1.4% for the proposed 350 units, which is a negligible impact.

11.8.5 In 2023, the forecast development-generated traffic impact is between 1.8% and 2.7%, also a negligible impact.

11.8.6 The forecast development-generated traffic impact for 500 units is between 1.9% and 2.6% by 2030. In 2023, the forecast development-generated traffic impact is between 2.6% and 3.8%, which is between a negligible and minimal impact.

11.8.7 It is important to note that the 2023 AM peak hour traffic flows do not reflect the reality of the incremental build-out of the development proposals, with the first houses being built in 2023 and the full 350 units not forecast to be completed until the 2030 assessment scenario.

11.8.8 As the forecast development-generated traffic impact by 2030 for the proposed 350 units (of between 1.0% and 1.4%), no detailed traffic assessment of this junction is proposed.

11.9 ALDMANS

11.9.1 The Aldmans junction is a four-arm signalised crossroads, consisting of Aldmans Road (A638) as the main road (east/west), the B6409 as the southern arm and the bus station as the northern arm.

11.9.2 Signalised pedestrian crossing facilities are provided across all arms, with staggered crossing provided on the south, east and western arms.

11.9.3 Traffic flows for the northern arm (bus station) have not been provided by Systra. The northern arm is buses only and the traffic flows relating to the bus station would not be affected by the development proposals.

11.9.4 The forecast traffic impacts are as follows.

Table 11.5 Aldmans Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	66	94	15	22	12	17	22	32
B	9	13	6	8	3	4	-57	-82
C	65	93	11	16	8	11	80	114
Total	140	200	32	46	22	32	45	64
% Impact (Junction)	2.9%	4.1%	0.6%	0.8%	0.4%	0.6%	0.8%	1.2%

11.9.5 It can be seen from Table 11.5 that the percentage impacts by 2030, with the proposed 350 units is in the region of 0.6% to 0.8%, which is a negligible impact.

11.9.6 By 2030, the forecast impact for 500 units is in the region of 0.8% to 1.2%, which is also a negligible impact.

11.9.7 The forecast development-generated impact in 2023 for the proposed 350 units is in the region of 0.4% (PM peak hour) to 2.9% (AM peak hour). This is in the region of negligible or between negligible and minimal.

11.9.8 The forecast traffic flows in 2030 are higher than those for 2023, with the development-generated traffic being forecast to be negligible by 2030.

11.9.9 There is forecast to be an impact of between 0.4% and 0.8% in the 2023 and 2030 PM scenarios, respectively for the proposed 350 units.

11.9.10 For the AM peak hour, the forecast impact by 2030 is 0.6% for the proposed 350 units.

11.9.11 It is important to note that the 2023 AM peak hour traffic flows do not reflect the reality of the incremental build-out of the development proposals, with the first houses being built in 2023 and the full 350 units not forecast to be completed until the 2030 assessment scenario.

11.9.12 As the forecast development-generated impact by 2030 is below 1.0% for the proposed 350 units, detailed traffic assessment of this junction is not proposed.

11.10 VICARAGE

11.10.1 The Vicarage junction is a three-arm signalised T-junction, which forms part of a larger signalised off-set crossroads. The main road arm is the A638, with the northern minor road arm being Longcauseway.

11.10.2 The southern minor road arm of the off-set crossroads is formed by Railway Street.

11.10.3 Signalised pedestrian crossing points are provided across the western arm of the junction, with a remote signalised pedestrian crossing provided across the northern minor road arm.

11.10.4 The forecast traffic impacts are as follows.

Table 11.6 Vicarage Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	27	38	1	1	7	10	-5	-7
B	41	58	19	27	6	9	20	29
C	62	88	15	22	11	15	20	28
Total	129	184	35	50	24	34	35	50
% Impact (Junction)	2.6%	3.7%	0.6%	0.8%	0.4%	0.6%	0.6%	0.8%

11.10.5 It can be seen from Table 11.6 that the forecast development-generated traffic on all arms of the junction is below the 30 two-way vehicle trip threshold for the 2030 scenario and, also, the 2023 PM scenario.

11.10.6 The development-generated traffic is forecast to result in an impact of 0.6% for 350 units in the AM and PM peak hours in 2030.

11.10.7 The forecast development-generated traffic impact in the 2023 AM peak hour is forecast to be negligible to minimal in the 2023 AM peak hour, with the impacts below the assessment threshold by 2030 and, also, in the 2023 PM peak hour.

11.10.8 It is important to note that the 2023 AM peak hour traffic flows do not reflect the reality of the incremental build-out of the development proposals, with the first houses being built in 2023 and the full 350 units not forecast to be completed until the 2030 assessment scenario.

11.10.9 It is not proposed to undertake detailed traffic assessment of this junction due to the low forecast impact by 2030.

11.11 WAKEFIELD

11.11.1 No junction flows were provided by Systra for this junction. Due to the negligible forecast traffic impacts at this junction by 2030 at the Vicarage junction (of 0.6% for the AM and PM peak hours) it is not proposed to undertake detailed traffic assessment of this junction.

11.12 BREWERY

11.12.1 The Brewery junction is a three-arm mini-roundabout junction formed by Lees Hall Road (east and west) and Brewery Lane (north).

11.12.2 The forecast traffic impacts are as follows:

Table 11.7 Brewery Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	14	20	36	51	-4	-6	-1	-2
B	-62	-89	-84	-120	29	41	49	70
C	26	37	13	19	41	59	59	84
Total	-22	-32	-35	-50	66	94	106	152
% Impact (Junction)	-1.5%	-2.2%	-2.2%	-3.1%	5.5%	7.8%	6.5%	9.3%

11.12.3 It can be seen from Table 11.7 that the forecast development-generated impact in the AM peak hour is negative for the 2023 and 2030 scenarios.

11.12.4 For the PM peak hour, the forecast development-generated impact is between 5.5% and 6.5% for the proposed 350 units. The forecast impact is between minimal and material and, as such, detailed traffic assessment of the junction is proposed.

11.13 INGHAM

11.13.1 The Ingham junction is a three-arm ghost-island priority junction with Lees Hall Road forming the western major arm and the minor arm. Ingham Road forms the northern major arm.

11.13.2 There are two minor access points immediately to the east of Lees Hall Road, however these carry minimal traffic as there is only limited development accessed via these routes.

11.13.3 The forecast traffic impacts are as follows.

Table 11.8 Ingham Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	6	8	7	10	25	36	35	50
B	4	6	4	5	19	27	21	30
C	7	10	6	9	46	65	57	82
Total	17	24	17	24	90	128	113	162

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
% Impact (Junction)	1.9%	2.8%	1.5%	2.2%	12.3%	17.6%	11.7%	16.7%

11.13.4 It can be seen from Table 11.8 that the forecast development-generated impact in the AM peak hour is below the assessment threshold.

11.13.5 For the PM peak hour, the forecast development-generated traffic exceeds 30 two-way vehicle movements on Arms A and C (the main road arms). Traffic on the main road arms has materially less impact than minor road arms. Even so, it is proposed to undertake detailed traffic assessment of this junction as the forecast development-generated traffic flows for the proposed 350 units is above the 10% threshold.

11.14 SLAITHWAITE

11.14.1 The Slathwaite junction is a three-arm priority ghost-island priority junction. Slaithwaite Road forms the major arm and Ingham Road the minor arm. A small access is located to the north of the junction and Parker Road is located around 32m to the west (measured centreline to centreline).

11.14.2 The forecast traffic impacts are as follows.

Table 11.9 Slaithwaite Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	-20	-28	-37	-53	-11	-16	-43	-61
B	-6	-8	26	37	-9	-13	-24	-34
C	3	4	3	4	26	37	34	49
Total	-22	-32	-8	-12	6	8	-32	-46
% Impact (Junction)	-0.7%	-1.0%	-0.2%	-0.3%	0.2%	0.2%	-0.8%	-1.2%

11.14.3 It can be seen from Table 11.9 that the forecast development-generated impact is between -1.2% and 0.2%, which is a negligible impact. Traffic assessment of this junction is not proposed.

11.15 COMMON

11.15.1 The Common junction is a one-way slip route from The Common/ Slaithwaite Road towards Lees Hall Road. There is no outbound movements from Lees Hall Road. There is no inbound movements from the Slaithwaite Road (north/ west of the junction) into Lees Hall Road.

11.15.2 The forecast traffic impacts are as follows.

Table 11.10 Common Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	-6	-8	25	36	-10	-14	-23	-33
B	-1	-2	28	40	10	14	-1	-2
C	4	6	3	4	20	28	22	31
Total	-3	-4	56	80	20	28	-3	-4
% Impact (Junction)	-0.1%	-0.1%	1.6%	2.3%	0.5%	0.7%	-0.1%	-0.1%

11.15.3 The forecast development-generated impact at the junction is between -0.1% to 1.6% for the AM peak hour for the proposed 350 units and between -0.1% and 0.5% for the PM peak hour.

11.15.4 The forecast increase in development generated traffic which could affect the operation of the junction is the movements from The Common/ Slaithwaite Road into Lees Hall Road, which is free-flowing. Due to the negative/ negligible impact forecast at the junction across all time-periods and the free-flowing nature of the only movements which could be impacted by the development proposals it is not proposed to undertake detailed traffic assessment of this junction.

11.16 GYRATORY

11.16.1 Gyratory is formed by the gyratory consisting of North Road, A644 W and the Ravensthorpe Shopping Park, as well as the signalised junction of A644/ Calder Road/ Queen Street.

11.16.2 Signalised pedestrian crossing facilities are provided across the southern and eastern arms of the signal junction.

11.16.3 The forecast traffic impacts are as follows.

Table 11.11 Gyratory Forecast Impacts – (Two-Way Flows)

Hour	AM Peak Hour				PM Peak Hour			
Year	2023		2030		2023		2030	
Units	350	500	350	500	350	500	350	500
A	0	0	0	0	0	0	0	0
B	15	22	11	16	7	10	46	65
C	18	26	-12	-17	10	14	50	72
D	16	23	-12	-17	4	5	28	40
E	11	15	11	15	10	14	22	31
F	0	0	1	1	1	1	1	2
Total	60	86	-1	-2	31	44	147	210
% Impact (Junction)	1.2%	1.8%	0.0%	0.0%	0.7%	1.1%	3.0%	4.2%

11.16.4 It can be seen from Table 11.11 that the forecast impact in the AM peak hour is between 0.0% and 1.2% for the proposed 350 units. The forecast traffic on all arms is less than 30 two-way vehicle movements.

11.16.5 For the 2023 PM peak hour scenario the forecast development-generated traffic impact is 0.7% for the proposed 350 units.

11.16.6 For the 2030 PM peak hour scenario the forecast development-generated traffic impact is 3.0% for the proposed 350 units, which is between the negligible and minimal impact criteria.

11.16.7 Due to the size of the junction, it is important to consider these forecast impacts in more detail.

11.16.8 The forecast exceedance of 30 two-way peak hour vehicle trips occurs only on Arms B and C for the 2030 PM peak hour scenario. The forecast development-generated impact is between 46 and 50 two-way peak hour vehicle movements on these two arms, respectively, for the proposed 350 units.

11.16.9 Arm B is the A644 eastern arm of the signalised junction. Of the increase of 46 two-way vehicle movements, 20 vehicles are forecast to arrive at the stopline from the east and 26 vehicles forecast tot travel eastbound from other directions within the junction. The forecast development-generated impact on the A644 westbound stopline is less around one vehicle every three minutes and less than one vehicle every two minutes eastbound. The forecast traffic flows on Arm B would have a minimal impact on the operation of the junction.

11.16.10 Arm C is the Calder Road arm of the junction. The development-generated impact on Calder Road is relates to 25 additional vehicles on the Calder Road stopline (between one vehicle every two to three minutes). The residual 25 two-way vehicle trips are considered above relating to Arm B eastbound (these are stated as 26 for Arm B, with the difference of 1 vehicle being explained as a rounding error).

11.16.11 Of the 25 (or 26), 17 are forecast to turn from Huddersfield Road into Calder Road, which equates to less than one vehicle every three minutes.

11.16.12 The development-generated impact across the gyratory of 3.0% in the PM peak hour would be a minimal impact and would occur incrementally between 2023 (0.0% impact) and 2030 (3.0% impact), with the impact tending towards 2030, as the development would be built-out over time.

11.16.13 The gyratory junction is a complex combination of junctions which is landlocked by existing properties around its edges and the gyratory turning area within the central area. Further details relating to the gyratory junction are discussed in Chapter 13.

11.17 SUMMARY

11.17.1 Prior to consideration of potential requirements for mitigation on the wider highway network, consideration must be given to the enabling role that Phase 1 makes to the wider masterplan for 4,000 homes. The development of 350 units in Phase 1 equates to 8.75% of the full 4,000 units proposed and any contribution should be proportionate to this.

11.17.2 The Phase 1 proposals would deliver essential infrastructure to allow Dewsbury Riverside to progress, which amount to significant expenditure on the new access points, internal link road and link road connections to the eastern and western boundary of the phase.

11.17.3 These works are in addition to any off-site mitigation which may be proposed following further assessment of the off-site forecast traffic impacts.

11.17.4 Based upon a review of traffic data provided from the council's wide-area traffic model the following junctions are proposed for detailed traffic modelling within the Transport Assessment:

- Forge Lane Access (Central Gateway);
- Ravensthorpe Road Access (Temporary residential access);
- Thornhill (double mini-roundabout);
- Brewery (mini-roundabout); and
- Ingham (priority T-junction).

11.17.5 Whilst detailed traffic models are proposed for the above junctions, a mitigation strategy (without detailed traffic modelling at this time) is also proposed for the forecast Phase 1 impacts at Gyratory, discussed in more detail in Chapter 13.

12. LOCAL JUNCTION ASSESSMENT

12.1 INTRODUCTION

12.1.1 The highway study area has been agreed with the highway authority as appropriate for assessing the impact of the Phase 1 development proposals.

12.2 FORECAST TRAFFIC IMPACTS

12.2.1 When interpreting results from traffic models, one of the key outputs for considering traffic capacity is the Ration of Flow to Capacity (RFC). A value of up to 85% is forecast to be operating with spare traffic capacity.

12.2.2 Where the value is between 85% and 100% increasing amounts of queuing and delay are forecast. For RFC values in this range, a secondary review of the forecast queues and delays is often useful for understanding the impacts that are being forecast.

12.2.3 Where the value is in excess of 100%, this suggests that the junction is forecast to be operating at or over capacity. Similarly with the range 85% to 100%, a secondary review of the forecast queues and delays is often useful for understanding the impacts that are being forecast.

12.3 INITIAL SITE ACCESS

12.3.1 The initial site access has been modelled utilising the Junctions suite of software as a three-arm priority T-junction.

12.3.2 The initial site access has been assessed based upon the forecast traffic flows from the wide-area traffic model.

12.3.3 In addition, the junction has been assessed based upon the full traffic generation from 150 units (for the initial phase of Phase 1) for the PM peak hour, which is the point at which the primary (Forge Lane) access is proposed to be delivered. Only the PM period has been modelled for the 150 units, as the wide-area traffic model already includes traffic flows at the junction equivalent to 150 units in the AM peak hour.

12.3.4 The initial site access detailed traffic modelling is attached at Appendix F and summarised below.

Table 12.1 Initial Site Access Junction Summary

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
2023	B	0.09	0	8	0.03	0	7
	C	0.03	0	6	0.09	0	6
2030	B	0.17	0	12	0.04	0	8
	C	0.03	0	5	0.14	0	5
	B	-	-	-	0.08	0	10

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
2030 (150 Units)	C	-	-	-	0.09	0	6

12.3.5 It can be seen from the traffic modelling that the initial site access point is forecast to operate with significant spare traffic capacity in all scenarios. The initial site access is considered suitable for accommodating the initial 150 units of Phase 1, prior to delivery of the Forge Lane access.

12.4 FORGE LANE ACCESS (PRIMARY ACCESS)

12.4.1 The Forge Lane access is proposed to be a four-arm priority roundabout. The junction would be delivered at around the 150th dwelling on Phase 1.

12.4.2 The Forge Lane access is proposed to form the central gateway to the wider Dewsbury Riverside development proposals and, consequently, is required to operate with suitable traffic capacity once the full development is built out.

12.4.3 As such, the wide-area traffic modelling undertaken by Systra has been reviewed to provide the forecast traffic flows at the junction in 2048, with the full Local Plan development delivered. The 2048 traffic flow scenarios is considered to be robust and demonstrate that the junction is suitable for accommodating both current and future traffic flows.

12.4.4 The operation of the Forge Lane access has been undertaken for the future year of 2048, based upon the wide-area traffic model, as well as in 2023 and 2030. The detailed assessment is attached at Appendix G and summarised below.

Table 12.2 Forge Lane Access (2048 Local Plan Development)

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
2023	A	0.27	0	5	0.53	1	7
	B	0.59	1	7	0.51	1	6
	C	0.66	2	13	0.38	1	7
	D	0.27	0	8	0.11	0	5
2030	A	0.43	1	6	0.75	3	12
	B	0.71	2	10	0.58	1	8
	C	0.65	2	14	0.50	1	8

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
	D	0.26	0	9	0.12	0	5
2048	A	0.42	1	7	0.64	2	9
	B	0.86	6	21	0.65	2	9
	C	0.62	2	15	0.13	0	5
	D	0.46	1	7	0.13	0	4

12.4.5 It can be seen from Table 112.2 that the proposed Forge Lane access roundabout is forecast to operate with spare traffic capacity in all scenarios, including the 2048 full Local Plan scenario.

12.4.6 Notably, the traffic assessment has been undertaken utilising the one-hour traffic flow profile, which incorporates an artificial peak within the peak hour, resulting in less traffic capacity than the alternative flat traffic flow profile which is prevalent in most towns and cities. As such, the junction model includes a material element of robustness.

12.5 BREWERY

12.5.1 The Brewery junction is the mini-roundabout junction of Lees Hall Road/ Brewery Lane. The junction has been assessed for the 2023 and 2030 traffic flow scenarios, with and without development. The detailed junction analysis is attached at Appendix H and summarised below.

Table 12.3 Brewery

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
2023 (No Dev)	A	0.20	0	5	0.21	0	5
	B	0.52	1	8	0.24	0	5
	C	0.11	0	5	0.25	0	6
2030 (No Dev)	A	0.22	0	5	0.26	0	5
	B	0.51	1	7	0.32	1	5
	C	0.19	0	5	0.40	1	7
2023 (With Dev)	A	0.19	0	4	0.20	0	5
	B	0.42	1	6	0.28	0	5

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
	C	0.21	0	5	0.28	0	6
2030 (With Dev)	A	0.23	0	5	0.26	0	5
	B	0.36	1	6	0.36	1	6
	C	0.31	1	6	0.46	1	8

12.5.2 It can be seen from Table 12.3 that the Brewery junction is forecast to operate with spare traffic capacity in all scenarios. The forecast development-generated traffic is shown to be accommodated at this junction.

12.6 INGHAM

12.6.1 The Ingham junction is the priority T-junction of Lees Hall Road/ Ingham Road. The junction has been assessed for the 2023 and 2030 traffic flow scenarios, with and without development. The detailed junction analysis is attached at Appendix I and summarised below.

Table 12.4 Ingham

	Arm	AM			PM		
		RFC	Queue (vehs)	Delay (seconds)	RFC	Queue (vehs)	Delay (seconds)
2023 (No Dev)	B	0.50	1	14	0.32	1	10
	C	0.00	0	0	0.00	0	0
2030 (No Dev)	B	0.50	1	14	0.44	1	12
	C	0.00	0	0	0.00	0	0
2023 (With Dev)	B	0.51	1	14	0.38	1	11
	C	0.00	0	0	0.00	0	0
2030 (With Dev)	B	0.50	1	14	0.50	1	13
	C	0.00	0	0	0.00	0	0

12.6.2 It can be seen from Table 12.4 that the Ingham junction is forecast to operate with spare traffic capacity in all scenarios. The forecast development-generated traffic is shown to be accommodated at this junction.

12.7 THORNHILL

12.7.1 The Thornhill junction is the double mini-roundabout at Thornhill Road/ Forge Lane/ Station Road. The junction has been assessed for the 2023 and 2030 traffic flow scenarios, with and without development. The detailed junction analysis is attached at Appendix J.

12.7.2 In the base traffic flow scenarios the junction is forecast to be operating at capacity, with a residual network capacity of -25% during the 2023 base period and -27% to -28% during the 2030 base period. That is to say that the traffic flows exceed the forecast traffic capacity.

12.7.3 Traffic queues are forecast during the AM and PM peak hours during the base traffic flow period. The traffic queues are forecast on the southern and northern approaches to the junction.

12.7.4 For the with-development scenario, the forecast operation of the junction is -27% to -30% in the AM peak hour and -29% to -30% in the PM peak hour.

12.7.5 Importantly, the 2023 with development traffic flow scenario is considered to be unrealistic as it represents 100% development build-out in the opening year. This would not be the case in reality, with housing being built out gradually over the forecast seven-year construction programme.

12.7.6 As such, the forecast impacts at the junction would be minimal in the short-term (initial 2 to 3 years), increasing towards the full construction is completed in 2030.

12.7.7 By 2030 the forecast development-generated traffic impact is minimal, as set out below.

Table 12.5 Thornhill (RFC Only)

Junction	Arm	RFC			
		AM 2030 No Dev	AM 2030 With Dev	PM 2030 No Dev	PM 2030 With Dev
1	1	0.64	0.65	0.61	0.62
	2	0.79	0.77	0.82	0.80
	3	1.00	0.99	1.61	1.61
2	1	1.25	1.26	0.97	0.96
	2	1.13	1.21	1.46	1.51
	3	0.56	0.57	0.55	0.57

12.7.8 The no development scenario is that forecast to occur if the Phase 1 development is not implemented, i.e. it would occur in any event. The forecast traffic flows prior to the development result in queues forecast, predominantly on the arms with an RFC at, approaching or above 1.0.

12.7.9 The with development scenario represents the forecast impacts of the Phase 1 development in the 2030 traffic flow scenario. Notably, whilst the impacts are forecast to be minimal, these are based upon 500 units being assessed, as oppose to the currently proposed 350, as such the forecast impacts are greater than those proposed.

12.7.10 It can be seen from Table 12.5 that the forecast operation of the junction with and without development is materially similar and, consequently, it is considered that there is ether minimal no material impact forecast at this junction.

12.7.11 Refreshed white linings at the junction are likely to maintain the optimum traffic capacity and it is proposed to reline the junction prior to the occupation of the 150th dwelling to ensure that the junction operates at peak efficiency through to the 2030 assessment year.

12.7.12 Further consideration of junction improvement at this location is likely to be required as the full Dewsbury Riverside scheme progresses and/ or as part of the wider Local Plan strategic highway improvement schemes.

12.8 SUMMARY

12.8.1 Detailed junction analysis has been undertaken at the junctions within the study area on the local highway network.

12.8.2 The initial and primary site access points have been assessed at appropriate periods during the build-out to confirm that the access layouts are forecast to operate with suitable traffic capacity, including in 2048 for the primary (Forge Lane roundabout) access.

12.8.3 The junctions on the local highway network are forecast to operate with significant spare traffic capacity with and without development, with the exception of Thornhill.

12.8.4 The Thornhill junction is forecast to have queues on the southern and northern approaches in the AM and PM peak hours, even prior to the Phase 1 development being implemented. The forecast impacts of the Phase 1 development are minimal, with the forecasts RFC similar in the with and without development scenarios.

12.8.5 A scheme of relining is proposed at the junction prior to the occupation of the 150th dwelling to maintain peak performance of the junction. Further consideration of junction improvement at this location is likely to be required as the full Dewsbury Riverside scheme progresses and/ or as part of the wider Local Plan strategic highway improvement schemes.

13. GYRATORY

13.1 INTRODUCTION

13.1.1 As discussed in Chapter 11, the gyratory is not forecast to be materially impacted by the Phase 1 development proposals and would ordinarily fall outside the scope of further consideration. Even so, as a key junction on the local highway network, this chapter considers the operation of the gyratory.

13.2 M2D2L

13.2.1 In the preparation of the M2D2L scheme, SWECO were commissioned to undertake a detailed study of the operation of the gyratory. The SWECO traffic modelling is summarised within a Technical Note, provided by the highway authority as part of the pre-application discussions on Dewsbury Riverside.

13.2.2 The SWECO traffic modelling of the gyratory is summarised in the below extract.

Extract 13.1 SWECO Traffic Modelling Summary of Gyratory

Arm / Lane	2019 Background Assessment			
	AM Peak Hour		PM Peak Hour	
	DegSat	Queue	DegSat	Queue
A644 (E)	71	15	65	13
Calder Road	61	7	59	7
A644 (W)	72	14	58	11
North Road *	68	21	56	14
Car Park	23	0	41	0
Western Internal GW	34	0	36	2
Eastern Internal GW	18	0	27	2
Eastbound Internal Stop Line *	68	15	59	14
Westbound Internal Stop Line *	44	10	58	14
Delay (PCU-hr/hr)	22.44		21.47	

Note:

DegSat: Degree of Saturation (%)

Queue: Mean Max Queue Length Passenger Car Units (PCU's)

88 second cycle time, with pedestrian phases running every cycle

** results combined over a number of lanes*

13.2.3 It can be seen from the SWECO traffic model that the junction is forecast to operate within traffic capacity with minimal queues. The SWECO assessment concludes that the junction layout itself should theoretically operate satisfactorily, however external factors influence the queues which can be observed on the approaches to the junction.

13.2.4 The SWECO report concludes that:

Initial onsite observations suggest that additional queueing occurs on approaches to the junction as a result of:

- *The proximity of the pedestrian crossings which are not synchronised to the main junction controller timings;*

- *Prescence of bus stop facilities located within the main traffic streams; and*
- *General friction of traffic flow based on frontage activity.*

13.2.5 As a key junction on the Dewsbury and inter-urban route network, the gyratory is located on the A644 and forms part of the M2D2L study. The M2D2L project includes significant works to the A644 (Huddersfield Road), with the relevant consultation material for Huddersfield Road close to the site attached at Appendix B.

13.2.6 Those relevant works relate to the gyratory (Huddersfield Road/ North Road/ Calder Road), which is to be the subject of improvement as part of the M2D2L scheme.

13.2.7 Parallel studies are being undertaken by the highway authority relating to the delivery of the wider Local Plan, which would also feed into these schemes.

13.2.8 The M2D2L project aims to deliver improvements to junctions within the Local Plan period and, as such, it is reasonable to rely upon these future improvement works to the junction to aid with the delivery of the wider Dewsbury Riverside scheme and, indeed, Phase 1.

13.3 PRELIMINARY MITIGATION

13.3.1 There would be no cost-effective physical mitigation relating to this junction which could be implemented and be proportional to the proposed development, especially given the contributions being made through the delivery of the central access and associated internal link road.

13.3.2 In addition, any physical works could conflict with future M2D2L proposals as they are progressed. As such, non-physical works have been considered.

13.3.3 A reasonable and proportionate contribution towards the improved operation of the existing junction layout would appear to be an appropriate mitigation for the junction. The development of 350 units in Phase 1 equates to 8.75% of the full 4,000 units proposed and any contribution should be proportionate to this.

13.3.4 The maximum forecast traffic impact on any arm is 50 two-way vehicle movements, based upon the proposed 350 dwellings. Proportionally, 210 dwellings could relate to around 30 two-way vehicle movements on any arm.

13.3.5 The appropriate scale of mitigation at this junction would be to undertake a detailed assessment and reoptimisation of the junction at or around the 210th dwelling. The detailed assessment (to be undertaken at that time) would include new traffic and queue counts at the junction, with engineer time to undertake a detailed review of the traffic signal timings to ensure that they are reoptimized for the observed traffic flows.

13.3.6 It is envisaged that the study could include the following:

- New traffic counts at the junction over a period of 3 days on consecutive weeks, covering a 12 hour period 7am to 7pm;
- Saturation flow measurements to be undertaken simultaneously with the traffic counts;
- Queue counts noting the minimum and maximum traffic queue per traffic signal cycle to be undertaken simultaneously with the traffic counts;
- Engineer time (third party or internal within KMDC) to undertake a detailed assessment of the traffic flows current at the time of the traffic counts;
- Engineer time to make recommendations relating to the altering of signal timings;
- The engineer's review to confirm whether a new traffic signal controller and associated signal heads may be required to effectively reoptimize the traffic signals;
- Replacement of the traffic signal controller and signal heads, should the engineer's report recommend it; and
- Site engineer time to undertake the reoptimizing and make further observations to confirm the reassigned traffic signal timings.

13.3.7 Notably, as 2030 approaches, traffic signal controllers are likely to have gone through an evolution with vehicle to vehicle and vehicle to infrastructure technologies (via the 5G or later networks) becoming increasingly likely to be prevalent. As such, a change of traffic signal controller could result in the delivery of new technologies and benefits which are currently unavailable.

13.3.8 With the forecast 3.0% impact being negligible to minimal, the reoptimisation could result in either a full mitigation, or a partial mitigation. Given the relatively low traffic impact forecast on each arm (against the high background traffic flows), even a small percentage benefit to overall traffic could outweigh the minimal impact which is forecast.

13.3.9 Should there be any residual impact following the above works then this would be the temporary situation prior to any wider improvements works required to deliver the much larger Dewsbury Riverside allocation across the site.

13.3.10 Allowance could be made in any planning condition to allow the signal improvement works to be co-ordinated with any wider improvements required to deliver the future homes at Dewsbery Riverside and/ or the M2D2L proposals, with the works contributing towards the ultimate improvement scheme.

13.4 SUMMARY

13.4.1 The gyratory junction is not forecast to be materially impacted by the development proposals during the proposed Phase 1 delivery of Dewsbury Riverside. Even so, as a critical junction on the network, specific consideration has been given to the gyratory.

13.4.2 The gyratory has been the subject of a recent study by the highway authority as part of the M2D2L scheme and the junction itself is forecast to operate with spare traffic capacity, despite the queues observed on the approaches to the junction from the north and south.

13.4.3 The technical note relating to the junction operation concludes that:

Initial onsite observations suggest that additional queueing occurs on approaches to the junction as a result of:

- *The proximity of the pedestrian crossings which are not synchronised to the main junction controller timings;*
- *Prescence of bus stop facilities located within the main traffic streams; and*
- *General friction of traffic flow based on frontage activity.*

13.4.4 The M2D2L project aims to deliver improvements to junctions within the Local Plan period and, as such, it is reasonable to rely upon these future improvement works to the junction to aid with the delivery of the wider Dewsbury Riverside scheme and, indeed, Phase 1.

13.4.5 Even so, provision is to be made to improve the operation of the junction following the 210th dwelling on the site.

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