Kirklees Council

WYCA TCF KIRKLEES - HECKMONDWIKE BUS STATION

Transport Assessment

V2.0
JULY 2022

PUBLIC

Kirklees Council

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Transport Assessment

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CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

1.1 OVERVIEW

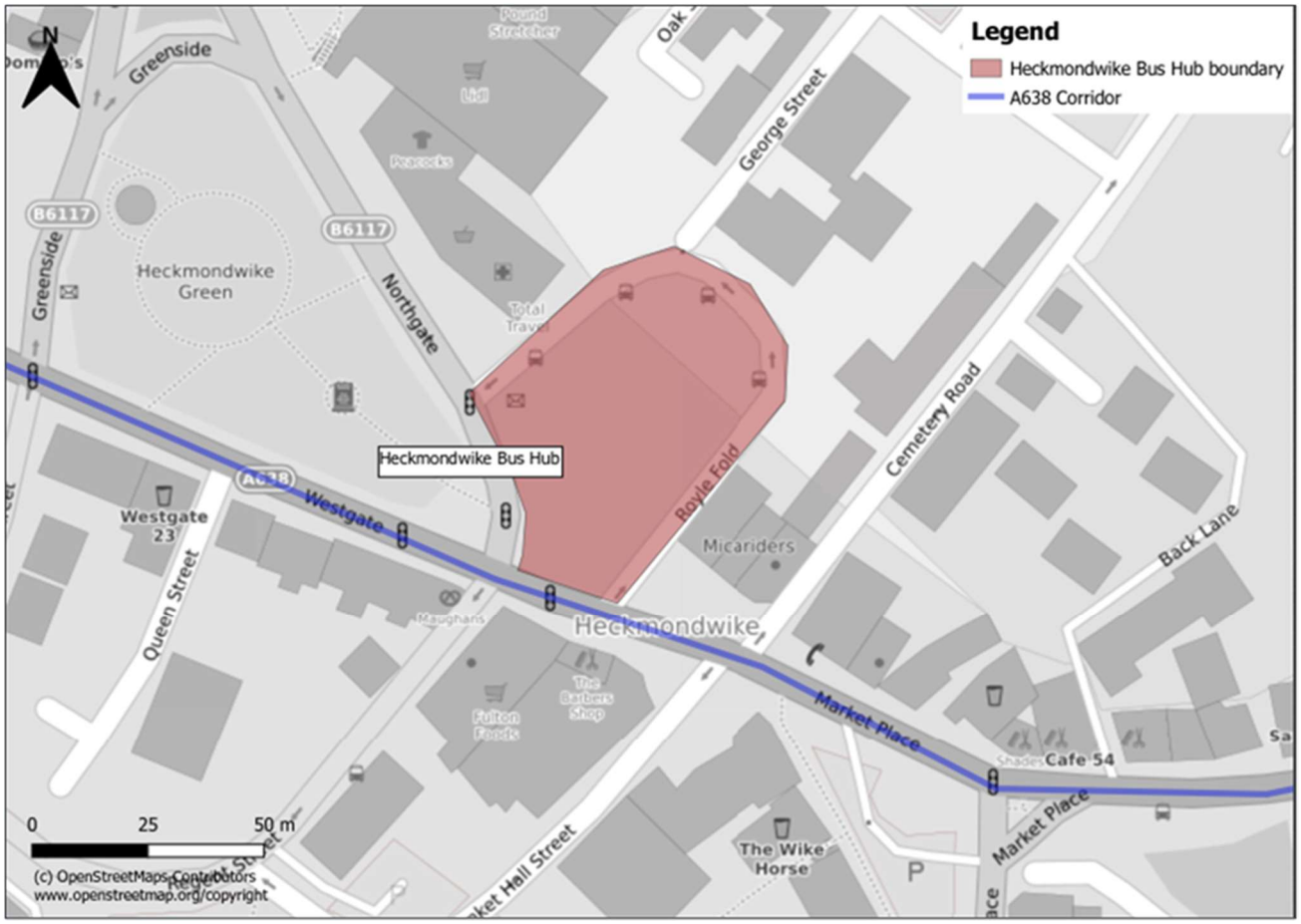
1.1.1. This Transport Assessment (TA) has been prepared by WSP UK Ltd on behalf of Kirklees Council (KC) for the proposed redevelopment of Heckmondwike Bus Hub into Heckmondwike Bus Station as part of the Transforming Cities Fund (TCF).

1.1.2. Heckmondwike Bus Hub is located within Heckmondwike town centre and primarily caters to services which navigate the A638 corridor, which is located immediately to the south of the Hub.

1.1.3. In a wider context, Heckmondwike is located approximately 2 miles southeast of Cleckheaton, 2 miles southwest of Batley and 3 miles northwest of Dewsbury. The town is centrally located in relation to the surrounding area, including Huddersfield, Halifax, Bradford, Leeds, and Wakefield, which are approximately 6 - 8 miles away.

1.1.4. The location of the Bus Hub in context of the local area is shown on Figure 1-1.

Figure 1-1 - Site Location



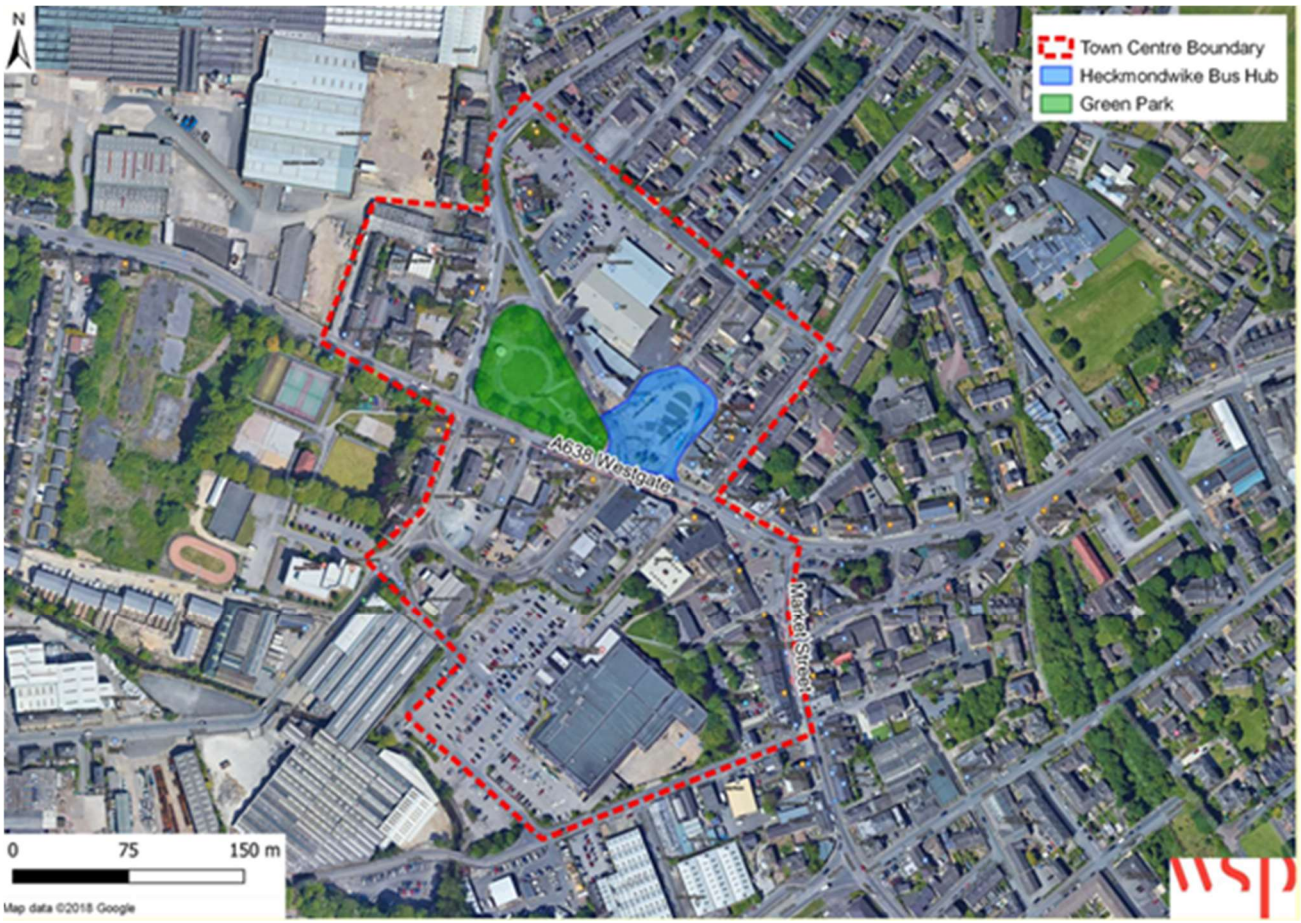
1.1.5. Heckmondwike town centre plays an important role in serving the town and surrounding areas, providing the food shopping needs for many residents. The local centre has a strong retail presence, and is defined as a Primary Shopping Area in the Local Plan. The town is heavily used by local people accessing goods and services. Market Street and Westgate in particular, have a high concentration of Class E – Commercial, Business and Service based business, including shops, sandwich bars, as well as a number of restaurants, cafes and banks and other local amenities.

1.1.6. Due to Heckmondwike's strong commercial and retail offering, the town centre experiences high footfall. Excellent transport connectivity to the area is therefore pivotal in supporting the local economy and enabling the town centre to grow and prosper.

1.1.7. Green Park is also located in the town centre, directly accessible from Westgate. Green Park includes a circular grassed area with bandstand and war memorial. The space is used to host a number of public events throughout the year, further contributing to high footfall levels in and around the town centre and the Hub. This combined with the town centre offer presents an opportunity to encourage a modal shift towards bus for those accessing Heckmondwike.

1.1.8. An aerial view of the town centre and location of the Bus Hub has been included in Figure 1-2.

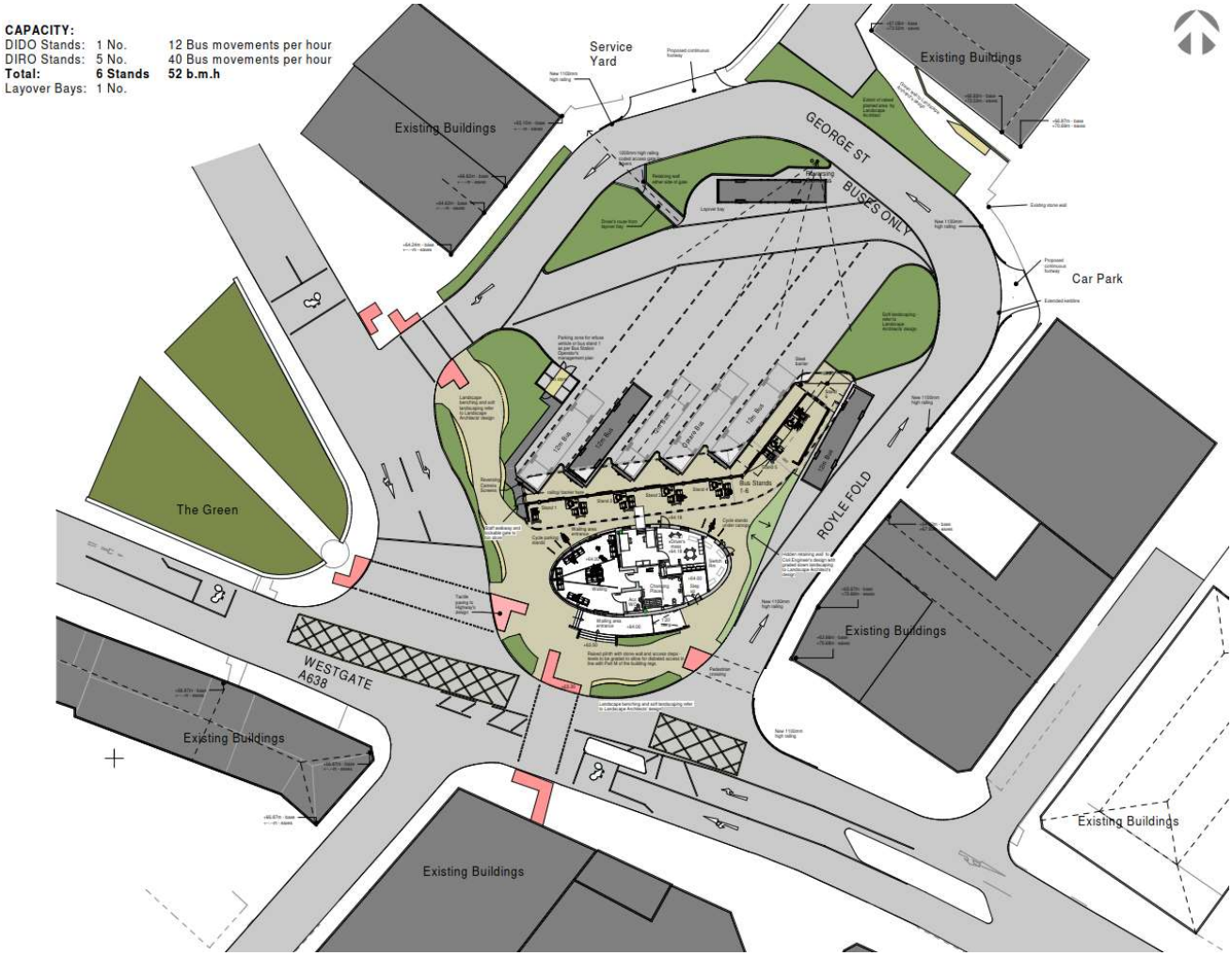
Figure 1-2 - Heckmondwike Town Centre



1.1.9. An overview of the Site Plan is shown on Figure 1-3 with the full drawing attached as Appendix A and the proposals briefly comprise:

- An increase in operational bus stands from 4 to 6, and the provision of 1 new layover bay;
- A new station building comprising:
  - Indoor waiting facilities for passengers, real time travel information, seating, WC and a Changing Places Facility;
  - Bus operator office space, driver toilet, and drivers mess room; and
  - 6 no. cycle parking spaces incorporated as part of the enhanced landscape plan.
- New functional landscaping features and improved public space for passengers and town centre visitors;
- Sustainable Urban Drainage System (SUDS);
- A green roof, and;
- A green wall.

Figure 1-3 – Proposed Site Plan



1.2 TRANSFORMING CITIES FUND

1.2.1. The TCF is a £1.7bn fund announced by the Department for Transport (DfT), with the aim of driving up productivity and spreading prosperity through investment in public and sustainable transport in some of the largest English city regions. The fund is focused on intra-city connectivity, making it quicker and easier for people to get around and access jobs in.

1.2.2. The Heckmondwike Bus Station scheme forms part of the TCF Big Bid, which was submitted to the DfT in November 2019. The West Yorkshire Combined Authority's Vision for the Big Bid is "to support delivery of Inclusive Growth across the Leeds City Region, through an innovative and coordinated walking, cycling and bus package, which provides genuine sustainable and healthy travel options for our communities along our corridors of greatest economic need, and transforms accessibility from new development sites and accommodates growth at key public transport Hubs."

1.2.3. Within the TCF submission, four packages were developed based upon themes of the TCF:

- **Theme 1**: Transforming access for our communities of persistent poverty to employment opportunities and skills centres;
- **Theme 2**: Creating smart, clean and liveable places which make cycling and walking the obvious choice for accessing town and city centres;
- **Theme 3**: Transforming the public transport and active travel offer from housing and employment sites; and
- **Theme 4**: Making travel by bus an attractive and more reliable offer for commuters through spreading the benefits of 'Connecting Leeds'.

1.2.4. The Heckmondwike Bus Station scheme was included under Theme 4.

1.2.5. The Package 12 A638 Dewsbury-Cleckheaton Sustainable Travel Corridor Strategic Outline Case was submitted to the Combined Authority in June 2020. It was made up of four sub-packages of interventions, as follows:

- Bus Priority;
- Cycle Facilities;
- District Hubs; and
- Pedestrian & Bus Access.

1.2.6. Since then, the methodology of how the proposed development will be rolled out, has changed. Going forward, the A638 TCF package will be sub-divided into two schemes, which will be progressed separately to Outline Business Case (OBC) stage as stand-alone projects, as follows:

- A638 Cleckheaton to Dewsbury Sustainable Travel Corridor; and
- Heckmondwike Bus Station.

1.3 PLANNING HISTORY

1.3.1. The site benefits from an extant planning permission for use as a bus station (Ref: 2009/48/91883/E1 approved on 8th September 2009) and a later application for an extension to the time to the previous permission (Ref: 2012/48/92547/E approved on 26th October 2012). The Hub was constructed in 2014/15 to improve waiting facilities, interchange, reliability and bus use, along with reducing congestion within the town centre. The applicant is now looking to further improve the Hub through the TCF programme.

1.4 REPORT STRUCTURE

1.4.1. Based upon the scheme details, as proposed, the TA includes the following:

- Chapter 2 - Policy Context - A review of national and local planning policy;
- Chapter 3 - Baseline Condition - Details of the baseline conditions and site accessibility;
- Chapter 4 - Proposed Development - Details of the proposed development;
- Chapter 5 - Trip Generation, Distribution and Assignment - A trip generation, distribution and assignment assessment;
- Chapter 6 - Capacity Assessments - A capacity assessment of the A638 / B6117 linked junctions adjacent to Heckmondwike Bus Hub; and
- Chapter 7 - Summary and conclusions.

2 POLICY CONTEXT

2.1 NATIONAL PLANNING PRACTICE GUIDANCE

2.1.1. The National Planning Practice Guidance (NPPG) web-based resource was first published on 6th March 2014 by the Department for Communities and Local Government (DCLG), with certain categories subsequently revised and updated. This resource collates relevant planning practice guidance, providing links between the NPPF and relevant legislation.

2.1.2. The guidance on 'Travel Plans, Transport Assessments and Statements in Decision-Taking' (which has superseded the DfT published 'Guidance on Transport Assessment') states at Paragraph 005 that:

"Transport Assessments and Transport Statements primarily focus on evaluating the potential transport impacts of a development proposal."

2.1.3. Paragraph 005 goes on to state that:

"The Transport Assessment or Transport Statement may propose mitigation measures where these are necessary to avoid unacceptable or "severe" impacts."

2.1.4. Paragraph 005 summaries by stating that:

"Transport Assessments and Statements can be used to establish whether the residual transport impacts of a proposed development are likely to be "severe", which may be a reason for refusal, in accordance with the National Planning Policy Framework."

2.1.5. This TA goes on to demonstrate that the proposed development sustainably encourage a modal shift towards bus for those travelling to and from Heckmondwike. As such, it is considered that the methodology set out within this report pays due regard and conforms to the principles outlined in the NPPG.

2.2 NATIONAL PLANNING POLICY FRAMEWORK

2.2.1. The National Planning Policy Framework (NPPF) was revised on 20 July 2021 and sets out the government's planning policies for England and how these are expected to be applied. The NPPF notes the purpose of the planning system is to contribute to the achievement of sustainable development.

2.2.2. The NPPF identifies achieving sustainable development means that the planning system has three overarching objectives; economic, social, and environmental. The three objectives are viewed as being interdependent and need to be pursued in mutually supportive ways.

2.2.3. In achieving the objectives, the NPPF acknowledges the importance of promoting sustainable with Paragraph 104 going on to state that transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a) the potential impacts of development on transport networks can be addressed;
- b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
- c) opportunities to promote walking, cycling and public transport use are identified and pursued;

- d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.

2.2.4. Paragraph 110 of the NPPF acknowledges 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; and
- 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.

2.2.1. Based on the above, Paragraph 111 states that:

"*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.*"

2.2.2. In this context, Paragraph 112 of the NPPF places an emphasis on applications for development to:

- 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.

2.2.3. This TA has been prepared in accordance with the NPPF and will demonstrate:

- The internal highway network is designed to safely accommodate all transport movements that are expected to visit the site;
- The proposed development increases the number of bus stands from 4 to 6, plus a layover stand, to allow for growth in bus services, encouraging modal shift and improving journey times; and
- An increase in the number of bus movements that could use the Bus Station in future can be safely accommodated on the surrounding highway network without any severe impacts.

2.3 KIRKLEES LOCAL PLAN

2.3.1. Kirklees' Local Plan as adopted in February 2019. The statement vision for Kirklees is to "be a great place to live, work and invest in", with development taking place in a sustainable way (balancing economic, social and environmental priorities).

2.3.2. Strategic Objective 3 of the Plan is centred around improving transport links within and between Kirklees towns, and with neighbouring towns and cities, giving priority to public transport, and to cycling and walking.

2.3.3. Strategic Objective 4 is centred around the provision of new housing and supporting existing communities and access to employment, public transport, shops and services.

2.3.4. Policy LP19 is titled 'Strategic transport infrastructure' which aims to achieve a balanced and integrated transport network which makes the most efficient and effective use of road, rail and public transport.

2.3.5. The aims of Policy LP19 can be achieved by:

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

2.3.6. Policy LP20 is titled 'Sustainable travel' with the council supporting development proposals that can be served by alternative modes of transport such as public transport, cycling and walking.

2.3.7. The aims of Policy LP20 can be achieved by:

- Including 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 that 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;
- Proposals for new developments that are designed to encourage sustainable modes of travel and demonstrate how links have been utilised to encourage connectivity; and
- Proposals which facilitate the needs of the following user hierarchy:
  - Pedestrians.
  - Cyclists.
  - Public Transport.
  - Private Vehicles.

2.3.8. Policy LP21 is titled 'Highways and access' where proposals are required to demonstrate that they can accommodate sustainable modes of transport and be accessed effectively and safely by all users.

2.3.9. Policy LP21 goes on to state that:

- 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; and
- 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.

2.3.10. Policy LP21 concludes that all proposals shall:

- Ensure the safe and efficient flow of traffic within the development and on the surrounding highway network;
- 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;
- 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;
- 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;
- Take into account the features of surrounding roads and footpaths and provide adequate layout and visibility to allow the development to be accessed safely;
- Take into account access for emergency, service and refuse collection vehicles;
- Provide on-site safe, secure and convenient cycle parking/storage facilities to encourage sustainable travel modes.

2.3.11. The proposed development will increase the capacity of the Hub and improve the attractiveness of the bus network. As such, this will contribute to improving wider transport links between towns and new housing through improving sustainable access by bus. This will ensure the planned growth can take place sustainably and increase Heckmondwike's resilience to any future increases in travel demand, meeting Strategic Objectives 4 and 5 of Kirklees' Local Plan and Policies LP19, LP20 and LP21.

2.4 WEST YORKSHIRE COMBINED AUTHORITY TRANSPORT STRATEGY 2040

2.4.1. This Transport Strategy was adopted by the West Yorkshire Combined Authority on 3 August 2017.

2.4.2. The overall vision for the Transport Strategy is:

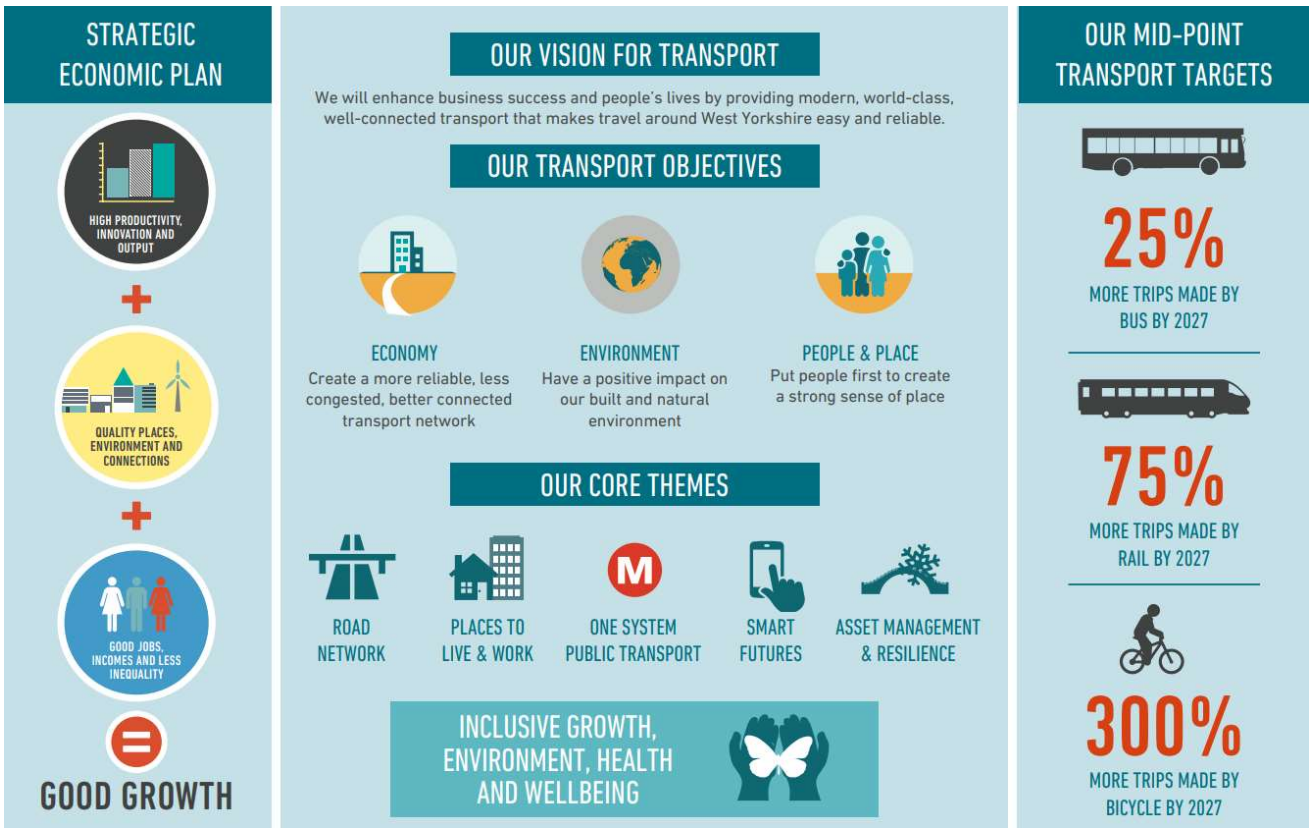
"*to be a globally recognised economy where good growth delivers high levels of prosperity, jobs and quality of life for everyone*"

2.4.3. To deliver the vision the strategy states that:

- We need a transport network that connects businesses to customers and suppliers, that links people to education, training and fulfilling employment opportunities, that supports the building of much needed, affordable new homes and makes possible the regeneration and development of industrial land and that minimises emissions that are harmful to our environment.

2.4.4. A high-level overview of the Transport Strategy is illustrated on Figure 2-1.

Figure 2-1 - Transport Strategy 2040 – Overview



2.4.5. The 'One System Public Transport' Core Theme is the Transport Strategy's ambition and aim for:

- Ambition - A world class public transport system that connects different modes of transport seamlessly into one comprehensive, easy to use network; and
- Aim - to transform the performance, image and experience of public transport to make it an attractive choice for all.

2.4.6. In relation to the proposed development, the main aspirations within the One System Public Transport theme is to:

- Deliver a bus system that reflects travel patterns and puts the customer first;
- To create the best bus system in Europe; and
- Deliver high quality Transport Hubs for improved interchange between all modes.

2.4.7. These aspirations are supposed by the following two policies within the Transport Strategy:

- Policy 46
    - We will provide consistent, excellent customer services across the bus system
    - We will provide modern, coherent and integrated bus services
    - We will provide integrated, simple and affordable bus fares for all
    - We will provide easily accessible and reliable travel information
    - We present the bus system as a single network
    - We will provide a modern bus system which improves air quality
    - We provide an inclusive and accessible bus system

- Policy 47
    - We will deliver improved transport hubs at our national and international gateways and regional and district centres to better link our local networks. We will provide more integrated payment options and travel information.

2.4.8. It is considered that the proposed development aligns with Policies 46, 47 and the One System Public Transport Core Theme by:

- The proposed development itself representing an improved transport hub;
- Providing improved travel information through real-time information boards which is easily accessible and reliable; and
- Providing an inclusive and accessible Bus Station with an Accessible WC and Changing Places facility and improved pedestrian and cycle circulation routes around the site.

3 BASELINE CONDITIONS & SITE ACCESSIBILITY

3.1 THE APPLICATION SITE

3.1.1. Heckmondwike Bus Hub primarily caters to services which navigate the A638 corridor, which is located immediately to the south of the Hub.

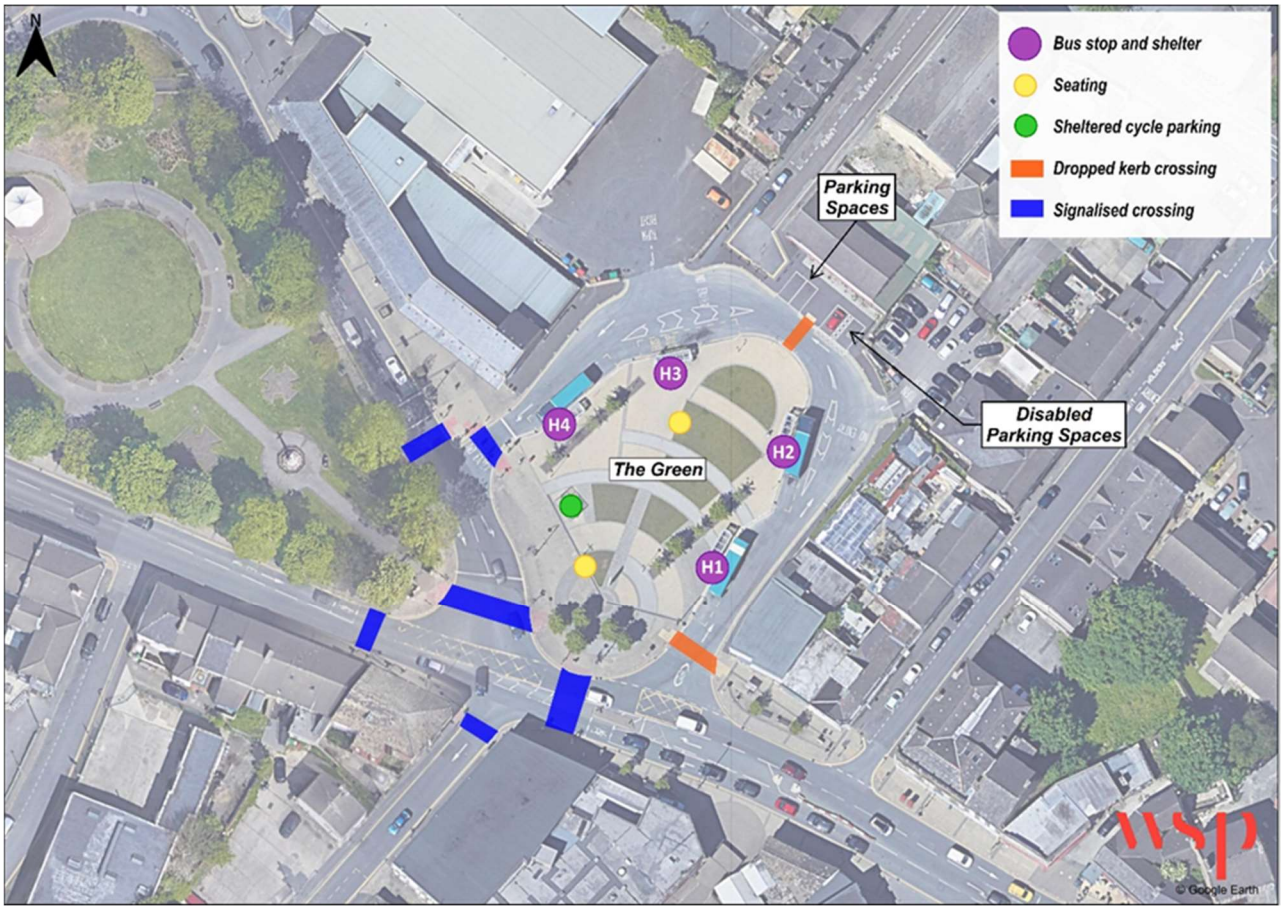
3.1.2. The Hub was constructed in 2014/15 to improve waiting facilities, improve interchange, improve reliability, increase bus use, and reduce congestion within the town centre. Prior to this, there was no formal Hub, and stops on the A638 corridor were used.

3.1.3. The Hub currently comprises a one-way system, comprising Royle Fold and South George Street, operating around a central island. The Hub is provided with 4 stands and the one-way system also provides access to a 4 short stay car parking spaces (2 accessible), access to a dentist car park, and a supermarket service area. There are no loading at any time restrictions on Royle Fold and George Street preventing adjacent businesses from using these streets.

3.1.4. In terms of facilities, the Hub is provided with bus shelters, benches, real time information, wayfinding signage and sheltered cycle parking (5 Sheffield Stands providing 10 spaces). Signalised pedestrian crossings are provided to the south, west and northwest of the Bus Hub island, with a formalised drop kerb crossing on the south-eastern corner.

3.1.5. Figure 3-1 shows the location of the Heckmondwike Bus Hub and indicates the current facilities.

Figure 3-1 - Heckmondwike Bus Hub Layout & Facilities



3.2 EXISTING OPERATIONS

EXISTING BUS PROVISION

3.2.1. The primary bus service using Heckmondwike Bus Station is Service 268 which travels between Wakefield Bus Station and Bradford Interchange, via Dewsbury, Heckmondwike and Cleckheaton, providing up to 5 services per hour in each direction.

3.2.2. Overall there are 10 services that utilise Heckmondwike Bus Hub, providing up to 26 buses per hour. A study undertaken as part of the A638 Corridor Scheme indicates that Heckmondwike Bus Hub has the highest bus frequency on the corridor.

3.2.3. An overview of the routes that each service uses within the vicinity of Heckmondwike Bus Hub is shown on Figure 3-2 and a summary of the services that utilise the Hub is provided in Table 3-1.

Figure 3-2 - Heckmondwike Bus Hub Service Map

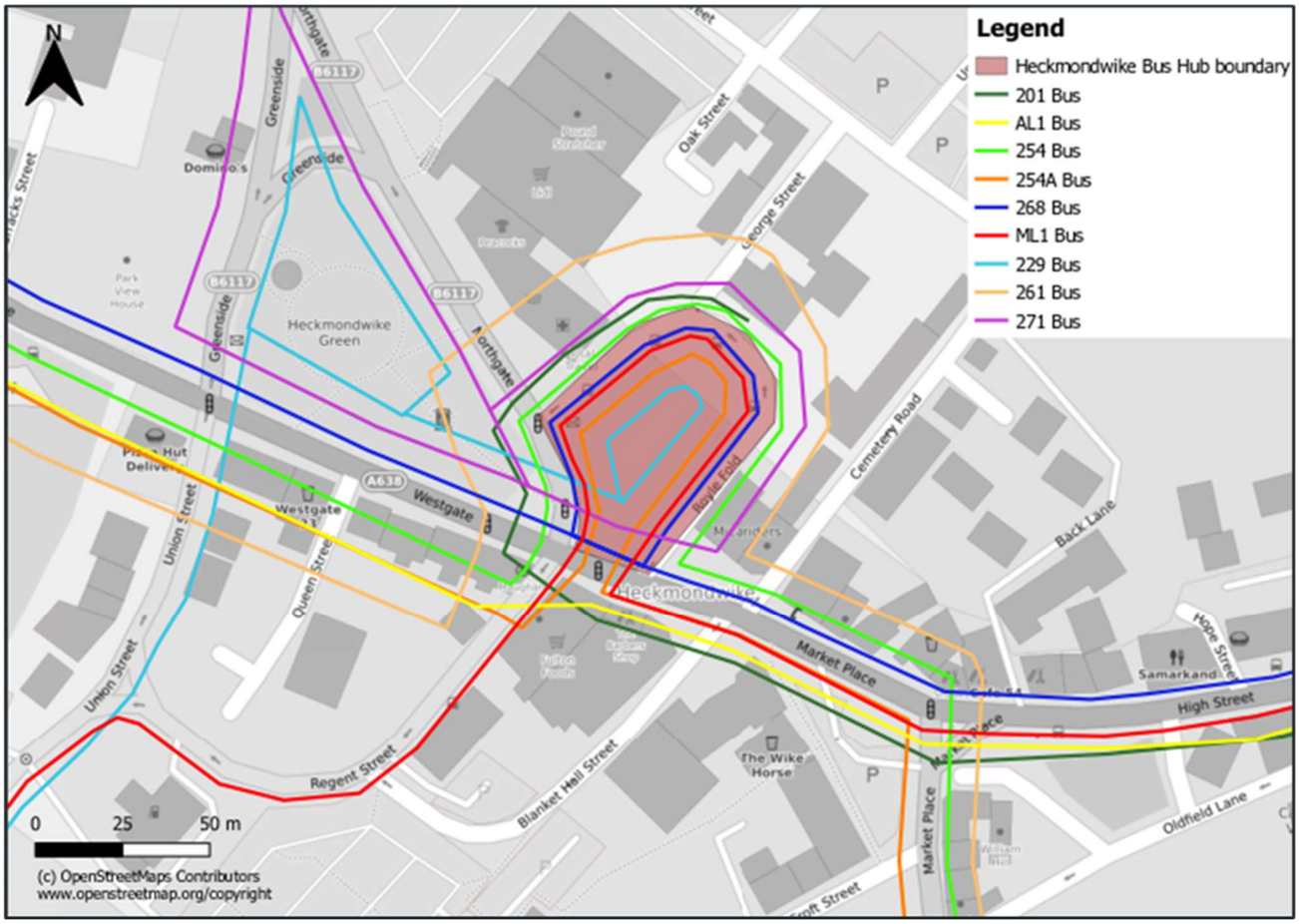


Table 3-1 – Summary of Bus Services

Route	Mon – Fri / N.o.S*	Saturday / N.o.S	Sunday / N.o.S	Route
201	05:05 – 20:06 / Up to 3	05:47 – 19:09 / Up to 1	08:09 – 19:09 / 1	Heckmondwike – Batley – Morley – White Rose - Leeds
201A	20:36 – 23:36 / 1 Additional service at 08:25 from Leeds to Heckmondwike.	19:14 – 23:36 / Up to 1	18:14 – 23:36 / Up to 1	Heckmondwike – Batley – Morley – White Rose - Leeds
229	04:59 – 23:52 / Up to 4	05:48 – 23:52 Up to 3	07:44 – 23:52 / Up to 2	Huddersfield – Heckmondwike – Leeds
254	06:09 – 23:16 / 2 per hour	06:26 – 18:36 / 1 per hour	08:31 – 18:31 / 1 per hour	Dewsbury – Heckmondwike – Cleckheaton - Leeds
254A	06:09 – 18:55 / 2 per hour	06:26 – 18:31 / 1 per hour	08:31 – 18:31 / 1 per hour	Dewsbury – Heckmondwike – Cleckheaton - Leeds
261	05:53 – 22:41 / 1 per hour	05:46 – 22:41 / 1 every 2 hours	09:46 – 18:43 / Up to 1 per hour	Huddersfield – Mirfield – Heckmondwike
268	04:53 – 23:53 / Up to 5 per hour	05:45 – 23:50 / Up to 2 per hour	05:55 – 23:50 / Up to 2 per hour	Heckmondwike – Cleckheaton - Bradford
271	05:26 – 23:44 / 1 per hour	No Service	No Service	Cleckheaton – Heckmondwike – Batley
AL1	08:36 and 15:44 – Only services to and from Westborough High School	No Service	No Service	Heckmondwike – Westborough High School
ML1	09:50 – 14:20 / 2 per hour	09:50 – 14:20 / 2 per hour	No Service	Heckmondwike – Liversedge
*N.o.S denotes Number of Services in each direction per hour between the specified times of operation.				

3.2.4. In summary, there is an excellent provision of services throughout the day and weekend which link Heckmondwike to a large number of areas within West Yorkshire, including Dewsbury, Cleckheaton, Huddersfield, Bradford and Leeds.

3.3 LOCAL HIGHWAY NETWORK

ACCESS INTO THE BUS STATION

3.3.1. Vehicular access into the Bus Hub is from the A638, immediately prior to the A638 / Regent Street / B6117 Northgate signalised junction. A ghost island right turn is provided for westbound traffic, which provides space for 1 bus to wait. Eastbound traffic entering the site is from the A638 and the B6117 Northgate.

3.3.2. Travelling out of the Bus Hub, all vehicles must turn right from South George Street onto the B6117 Northgate which is a one-way route (southbound), prior to right on the A638, ahead to Regent Street or left on to the A638 at the signal controlled junction.

BUS STATION

3.3.3. Vehicular access around the bus station is via Royle Fold and South George Street, which forms a one-way circulation route around the perimeter of the Bus Hub.

3.3.4. The route serves four drive in drive out bus stands, a dentist car park, a servicing area for a Lidl supermarket, along with two accessible spaces and two short stay car parking spaces situated to the north of the site.

3.3.5. The circulation route is subject to a 20mph speed limit, there are double yellows along the entirety of the route and there are footways with streetlighting on the outer perimeter of the route.

3.3.6. Within the circulation route, there is a large pedestrianised concourse and public realm area which forms the main walking routes between the Hub and the surrounding highway network.

A638

3.3.7. Locally, the A638 is the main route which connects the centres of Dewsbury, Heckmondwike and Cleckheaton. In the vicinity of the site, the route is subject to a 30mph speed limit, there are footways and streetlighting on both sides of the carriageway and the route is double yellow lined on both sides of the carriageway.

3.3.8. There are yellow box junctions on the A638 between the ghost island right turn on the A638 and Royle Fold and at the A638 / Regent Street / B6117 Northgate signalised junction to keep the junctions clear from through-traffic. This allows all right turn manoeuvres from the A638 into Royle Fold and all movements from the B6117 Northgate to take place.

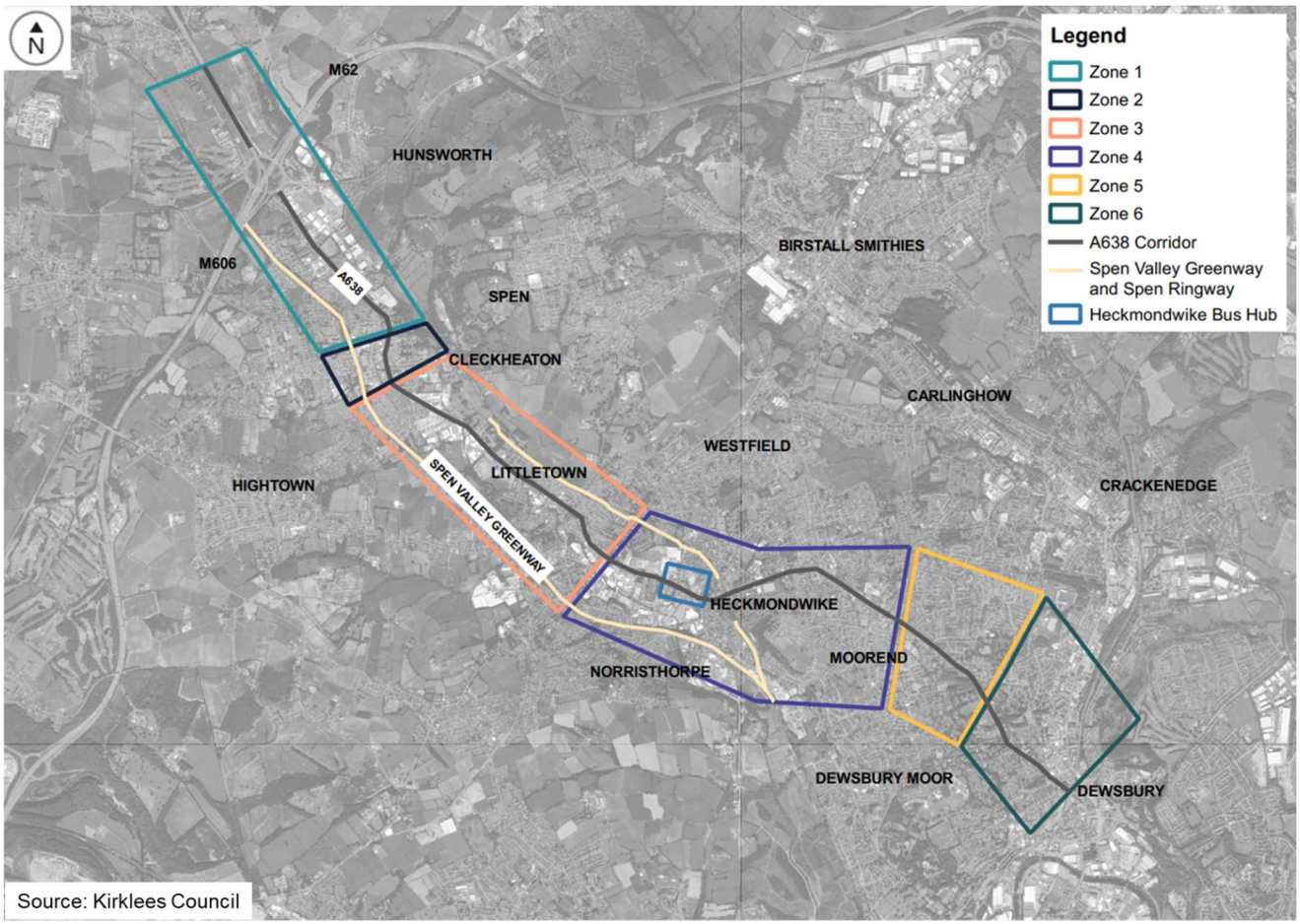
3.3.9. There are signal controlled crossing points on all arms of the A638 within the vicinity of the site, with the exception of the A638 / Royle Fold and A638 / Cemetery Road junctions which comprise dropped kerbs. These provide a number of crossing opportunities for pedestrians that follow the desire lines across both sides of the A638.

3.3.10. To the east of the access into the bus station, there is a staggered pedestrian crossing point comprising dropped kerbs and red surfacing at the crossing locations. This crossing point was introduced in 2021 as part of a road safety improvement scheme, which is discussed later in this chapter of the report.

A638 DEWSBURY – CLEKHEATON SUSTAINABLE TRAVEL CORRIDOR

3.3.11. There are longer term aspirations to introduce a series of travel improvements along the A638 between Dewsbury and Cleckheaton, as part of the A638 Dewsbury - Cleckheaton Sustainable Travel Corridor (STC). The extent of the corridor is illustrated on Figure 3-3.

Figure 3-3 - A638 Dewsbury - Cleckheaton Sustainable Travel Corridor



3.3.12. The main objective of the STC is to provide improvements to the bus, pedestrian and cycle offer along the A638 corridor, which extends from the outskirts of Dewsbury town centre, through Heckmondwike, to Chain Bar roundabout at Cleckheaton. Through the proposed improvements, it is anticipated that the scheme will encourage healthier and more sustainable modes of travel, to reduce reliance on cars, in turn, reducing congestion and improving air quality. This will contribute towards helping KC achieve their commitment to becoming net-zero carbon by 2038.

3.3.13. The STC is a separate TCF scheme to Heckmondwike Bus Station, however, dovetails with the principles of the proposed development which aims to support active and shared-mode transport choices for local communities and encourage modal shift away from private car to reduce carbon emissions and improve local air quality.

3.3.14. Proposals within the STC include:

- A new bus lane on the southbound approach of M62 Chain Bar Roundabout;
- A new cycle lane between Cleckheaton and Heckmondwike town centres;
- New signalised pedestrian crossings at key road junctions including Batley Road junction, and Wakefield Road junction;
- Widening and resurfacing of the Spen Valley Greenway and Spen Ringway;
- New and improved lighting along the Spen Valley Greenway; and
  Landscape improvements at key locations along the corridor.

3.3.15. As a result of the proposed interventions, the STC aims to deliver the following benefits:

- Improvements to the quality and safety of pedestrian and cycle journeys;
- Improvements to bus journey time reliability;
- Modal shift and increased uptake of shared and active mode travel options;
- Reductions in transport user carbon emissions;
- Improvements to local air quality; and
- Improvements to shared and active mode connectivity between local town centres and bus stations.

3.3.16. Heckmondwike Bus Hub is located on the A638 corridor, falling within the immediate vicinity of the proposals. As such, the proposed improvements to construct a new Bus Station at this location will directly complement, and be complemented by the A638 corridor scheme. Collectively, the two sets of proposals will transform opportunities for active and sustainable travel along the corridor between Dewsbury and Cleckheaton, as well as facilitating opportunities for onward travel across the wider region.

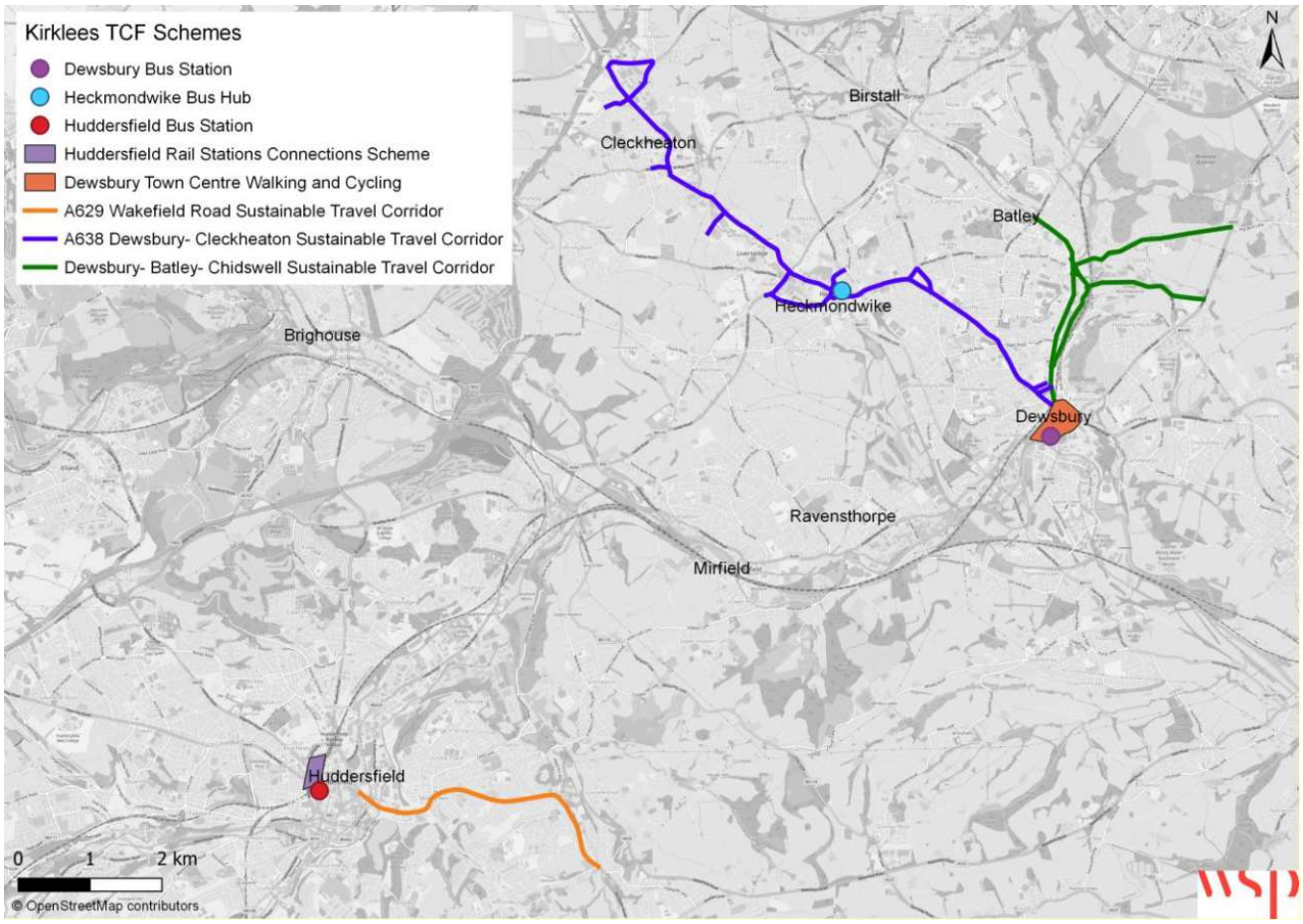
3.3.17. Overall, the A638 corridor scheme will help encourage reduced reliance on private vehicles, instead promoting walking, cycling and bus use as viable and convenient travel alternatives. Increased attractiveness and safety when walking and cycling will encourage shorter trips by active modes rather than private vehicle; while increased bus reliability and journey quality through bus priority will encourage both longer and shorter trips by sustainable modes, rather than private vehicle. Furthermore, by changing perceptions of sustainable transport there is likely to be a change in attitude, which would facilitate a further shift to cleaner modes. In this way, the A638 Corridor TCF could serve as a catalyst to greater change, beyond the scheme itself.

Wider TCF Schemes

3.3.18. It is worth noting that the STC forms one element of the TCF improvements that are to be delivered within the Kirklees borough. There are a total of eight TCF schemes to be delivered in the borough, as illustrated on Figure 3-4 , including:

- Heckmondwike Bus Station (the scheme assessed in this TA);
- A638 Dewsbury to Cleckheaton Sustainable Travel Corridor (this scheme);
- Dewsbury Town Centre Walking and Cycling;
- Dewsbury Bus Station (managed by the Combined Authority);
- A629 Wakefield Road Sustainable Travel Corridor (partially TCF funded);
- Huddersfield Bus Station (co-managed by the Combined Authority);
- Huddersfield Rail Station Connections; and
- Dewsbury – Batley - Chidswell Sustainable Travel Corridor.

Figure 3-4 - Kirklees Transforming Cities Fund Schemes



3.3.19. Collectively, the schemes will deliver a step change in transport connectivity across the borough, transforming opportunities for active and sustainable travel and helping connect more people with employment and training opportunities.

3.4 TRAFFIC FLOWS

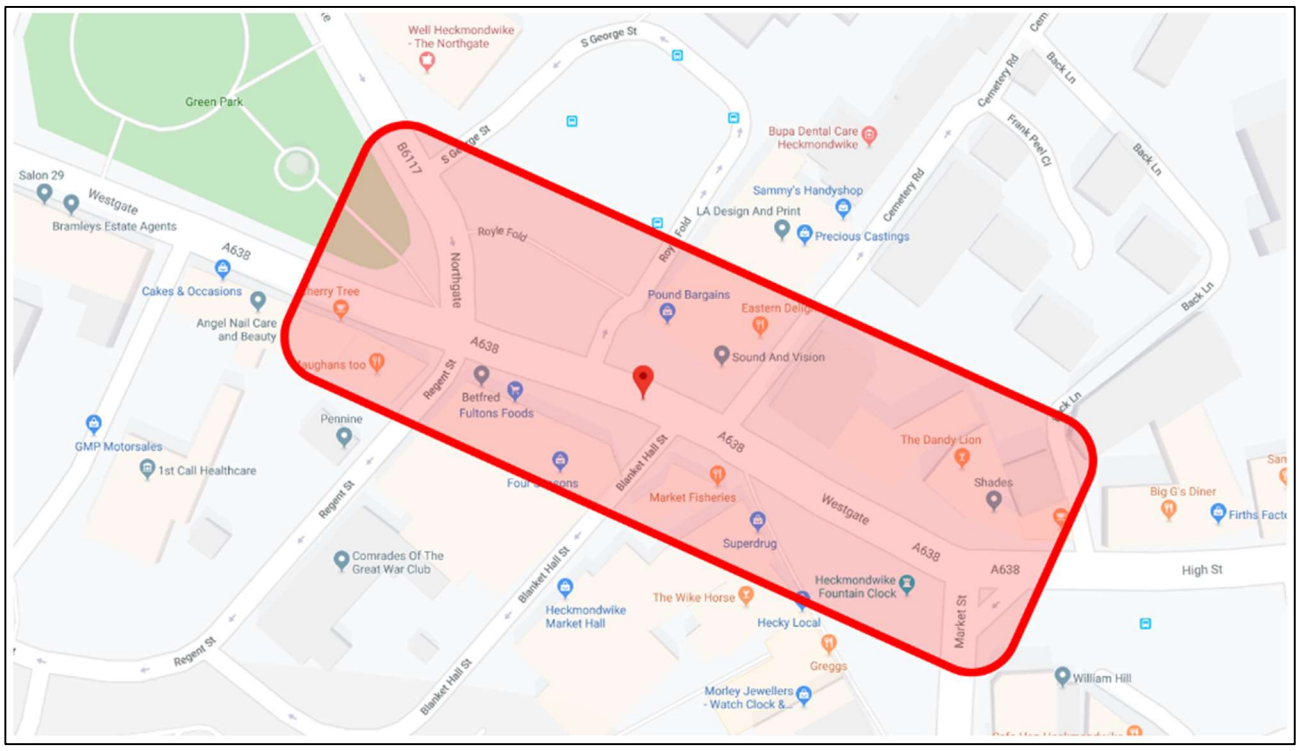
OVERVIEW

3.4.1. As part of the Strategic Outline Business Case (SOBC) process, KC gathered traffic count data along 8 junctions on the A638 corridor. The data was collected over two days, Wednesday 2nd October 2019 and Thursday 10th October 2019, over a 12 hour time period (07:00-19:00) on each day. This data includes junction turning counts, queue lengths, and pedestrian / cycle counts.

A638 / B6117 LINKED SIGNAL CONTROLLED JUNCTIONS

3.4.2. Through the centre of Heckmondwike, the junctions between the A638, B6117 Market Place, Northgate, and Royle Fold, Regent Street and Cemetery Road operate as linked junctions. An overview of this junction arrangement is shown on Figure 3-5.

Figure 3-5 - A638 / B6117 Linked Signal Controlled Junctions



3.4.3. The morning peak 07:30 to 08:30 has approximately 1,920 vehicles passing through the junctions, and the evening peak 16:45 to 17:45 has approximately 2,050. The A638 High Street arm and the A6117 Market Street arms experience the longest queues across all periods of the day.

HECKMONDWIKE BUS HUB PSV MOVEMENTS

3.4.4. An overview of the Public Service Vehicle (PSV) trips in and out of the bus station for each hour between 07:00 and 19:00 is presented in Table 3-2.

Table 3-2 – Bus trips at Heckmondwike Bus Hub

From	To	PSV Flows into Bus Station	PSV Flows out of Bus Station	Two-way Movements
07:00	08:00	24	22	45
08:00	09:00	20	18	38
09:00	10:00	25	26	51
10:00	11:00	24	27	51
11:00	12:00	24	26	50
12:00	13:00	26	26	51
13:00	14:00	25	26	51
14:00	15:00	24	26	49

From	To	PSV Flows into Bus Station	PSV Flows out of Bus Station	Two-way Movements
15:00	16:00	22	23	44
16:00	17:00	22	24	46
17:00	18:00	21	21	41
18:00	19:00	28	25	53

3.4.5. The traffic surveys indicate an average of 24 PSVs per hour use the bus station, with the number of PSV's arriving ranging between 20-28 PSVs per hour and number of PSV's departing ranging from 18-27 PSVs per hour. A maximum of 53 two way movements was recorded between 18:00 and 19:00.

PEDESTRIAN AND CYCLE CROSSING MOVEMENTS

3.4.6. A summary of AM and PM peak hour (07:30 – 08:30 and 16:45 – 17:45) and daily (07:00 – 19:00) pedestrian and cycle movements at each crossing point at the A638 / B6117 Linked Signal Controlled Junctions is summarised on Table 3-3 and the location of each crossing point counted is illustrated on Figure 3-6.

Figure 3-6 - Pedestrian and Cycle Count Locations

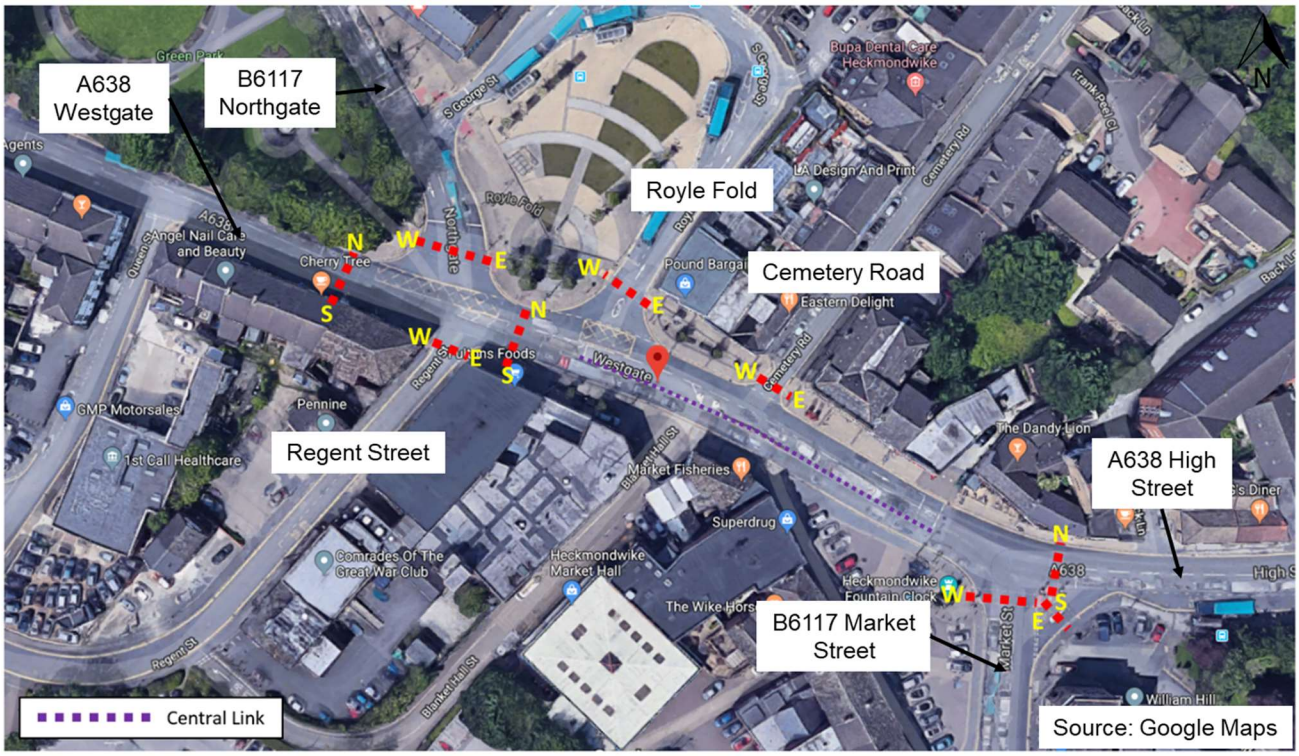


Table 3-3 - Pedestrian and Cycle counts at A638 / B6117 Linked Signal Controlled Junctions

Movement	AM Peak		PM Peak		12 - Hour	
	Peds	Cyclists	Peds	Cyclists	Peds	Cyclists
A638 High St - North Side to South Side	10	0	21	0	200	0
A638 High St - South Side to North Side	13	0	17	0	246	2
B6117 Market St - East Side to West Side	28	1	17	0	357	2
Central Link - North Side to South Side	74	2	194	2	2,072	17
Central Link - South Side to North Side	64	1	184	3	1,963	11
Regent St - East Side to West Side	25	1	19	1	366	5
Regent St - West Side to East Side	12	0	19	4	341	7
A638 Westgate - North Side to South Side	6	0	9	1	95	1
A638 Westgate - South Side to North Side	2	0	3	1	68	1
B6117 Northgate - East Side to West Side	3	0	11	1	64	1
B6117 Northgate - West Side to East Side	6	0	5	1	80	1
Royle Fold - East Side to West Side	55	2	75	0	1,033	10
Royle Fold - West Side to East Side	51	0	51	1	651	6
Cemetery Rd - East Side to West Side	25	0	26	0	543	3
Cemetery Rd - West Side to East Side	70	0	36	1	353	2

3.4.7. Overall, pedestrian movements are high especially across the A638, Royle Fold and Cemetery Road, reflecting the linkage between attractors in the town centre environment. Cycle demand is low on all movements, a maximum of 4 cyclists per movement during any given hour.

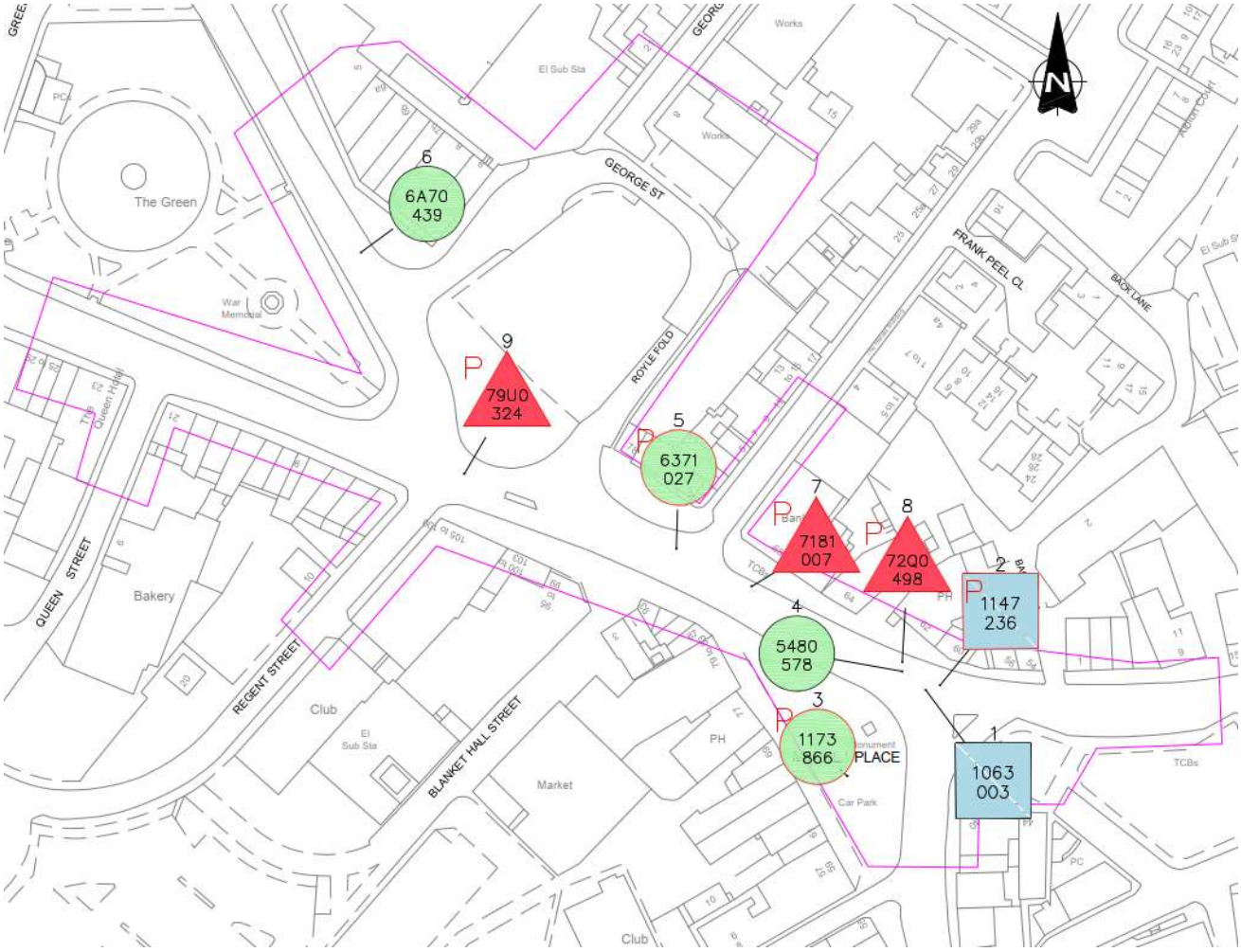
3.5 HIGHWAY SAFETY ANALYSIS

3.5.1. Personal Injury Collision (PIC) data has been assessed based on data from KC for the period 01/01/17 – 12/05/22, the most recent period that data was available at the time of preparing this TA.

3.5.2. The study area chosen for the road safety analysis is illustrated on Figure 3-7 and covers the A638 / B6117 Linked Signal Controlled Junctions, along with the key pedestrian desire lines between the Bus Hub and amenities surrounding the A638 corridor.

3.5.3. The full PIC data is attached as Appendix B.

Figure 3-7 - Personal Injury Collision Study Area



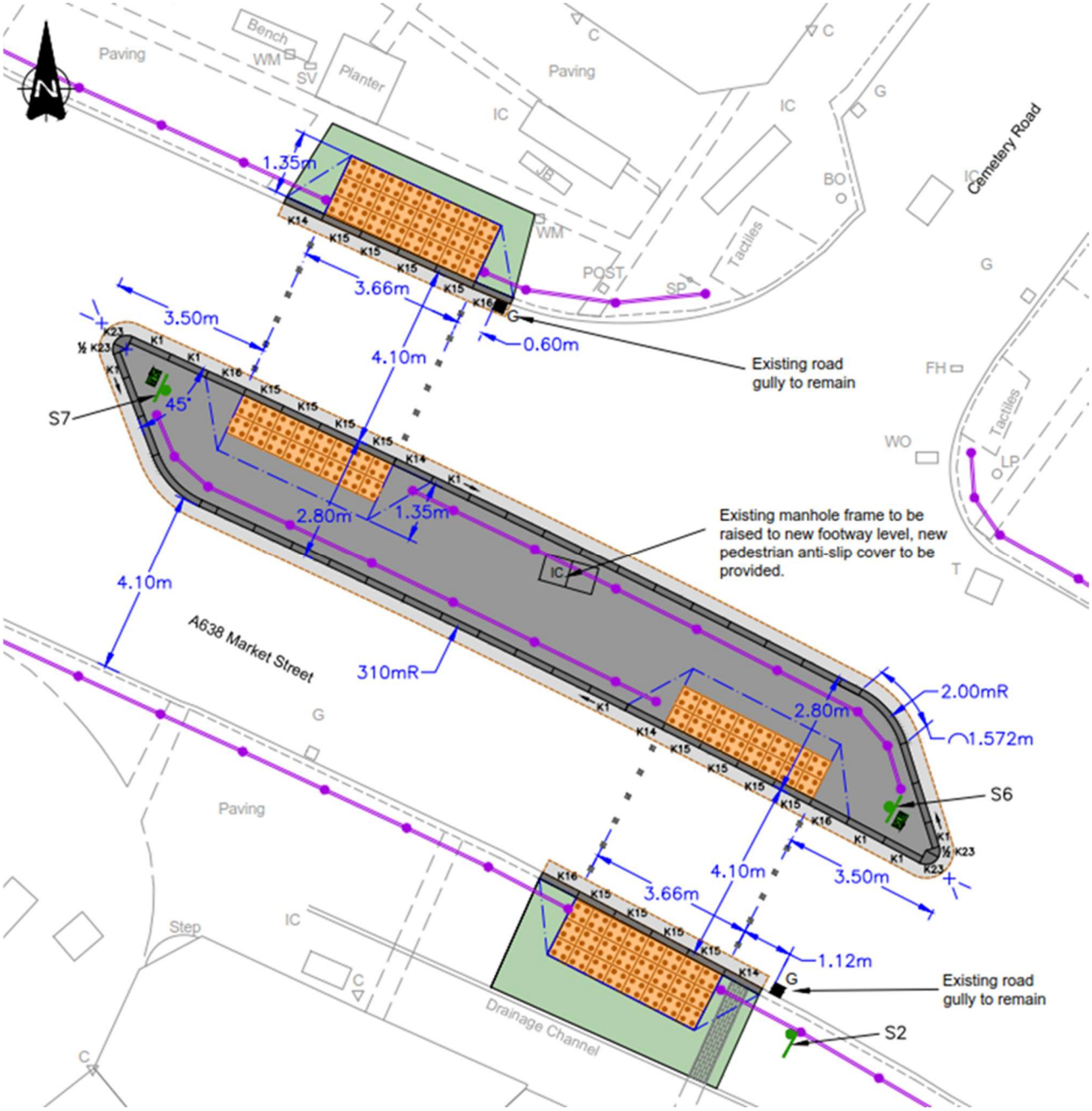
3.5.4. In total, 9 collisions were recorded within the study area, of which 4 were categorised as 'slight', 2 as 'serious' and 3 as 'fatal'.

3.5.5. Three fatal accidents occurred east of the Bus Hub on Market Place, on approach to the Market Place/High Street junction. All three of these fatalities occurred as a result of pedestrians trying to cross the road and being struck by vehicles. The STATS19 accident descriptions are as follows:

- **08/01/2020 A638 Westgate (REF: 7181007)** - "*This is a fatal road traffic collision involving one vehicle and one pedestrian. The collision occurred on the A638 Westgate in the centre of Heckmondwike. The road is a single carriageway through a town centre and is the main route between Cleckheaton and Dewsbury. At the time the weather was fine and dry and traffic was busy. Vehicle 1 is a rigid back LGV which is stopped in queuing traffic heading towards Dewsbury. The pedestrian is an 82 year old male. The pedestrian has crossed from vehicle 1's offside crossing one side of the carriageway and reaching an island in the centre of the road. The pedestrian has crossed the further carriageway under the front of vehicle 1. Vehicle 1 has set off as the traffic in front travelled through a set of traffic lights. Vehicle 1 has struck the pedestrian to its nearside. The pedestrian has suffered fatal injuries as a result of being struck by vehicle 1*."
- **26/02/2020 Junction of A638 Westgate and B6177 Market Street (REF: 72Q0498)** - "*This is a fatal collision involving a LGV articulated vehicle and a pedestrian. The collision occurred on a busy road in the centre of Heckmondwike. The location is the junction Westgate and Market Street which is a T junction controlled by automatic traffic lights which include a pedestrian phase. On approach to the junction from Cleckheaton there are 3 lanes, left lane for straight on, middle lane for right turn only and the right lane for traffic travelling in the opposite direction. The vehicle was in the middle lane intending to turn right in market street, the pedestrian has crossed from the drivers nearside whilst the vehicle was stationary/waiting in traffic. The pedestrian walked in front of the vehicle just as it set off and has been knocked over and the vehicle has travelled over her in its entirety before mop's were able to alert the driver. The pedestrian has been left in lane two where she was pronounced dead at the scene. The traffic light phase was green for the vehicle*".
- **30/09/2020 Junction of West Gate and Market Street (REF: 79U0324)** – "*V001 has been stationary in queued traffic on West Gate, Heckmondwike generally heading towards Dewsbury. C001 has crossed the road from V001left to right, passing directly in front of V001. V001 has set off as traffic began to move forwards, running down C001 and dragging him approx. 30 metres along West Gate road surface causing fatal injuries*".

3.5.6. As a result of the fatal accidents, a safety scheme has now been implemented which comprises a staggered crossing in the vicinity of Cemetery Road. A plan of the scheme, which is now on the ground is shown on Figure 3-6.

Figure 3-8 - Heckmondwike Town Centre Pedestrian Safety Improvements



3.5.7. It should also be noted that one of the serous collisions (REF: 1147236) also occurred as a result of a pedestrian trying to cross the A638 and being struck by a vehicle. The collision occurred on the Thursday 24th February 2022 at 18:24.

3.5.8. The collision involved a pedestrian stepping out into the carriageway from a refuge island and was struck by a passing vehicle.

3.5.9. Based on the description available, it is considered that the collision can be attributed to poor pedestrian and / or driver behaviour. As such, it is considered that the collision didn't occur due to an issue with the local highway and therefore, no mitigation would be necessary.

3.5.10. A further serious collision (REF: 1063003) also occurred in at the A638 / B6117 Market Street junction, as indicated on Figure 3-7. This collision involved Vehicle 1 waiting to turn right with Vehicle 2 overtaking on the offside of Vehicle 1, resulting in Vehicle 2 colliding with Vehicle 1. Vehicle 2 continued along the road, leaving the carriageway to the nearside, colliding with a shop window, injuring the driver and passenger of Vehicle 2.

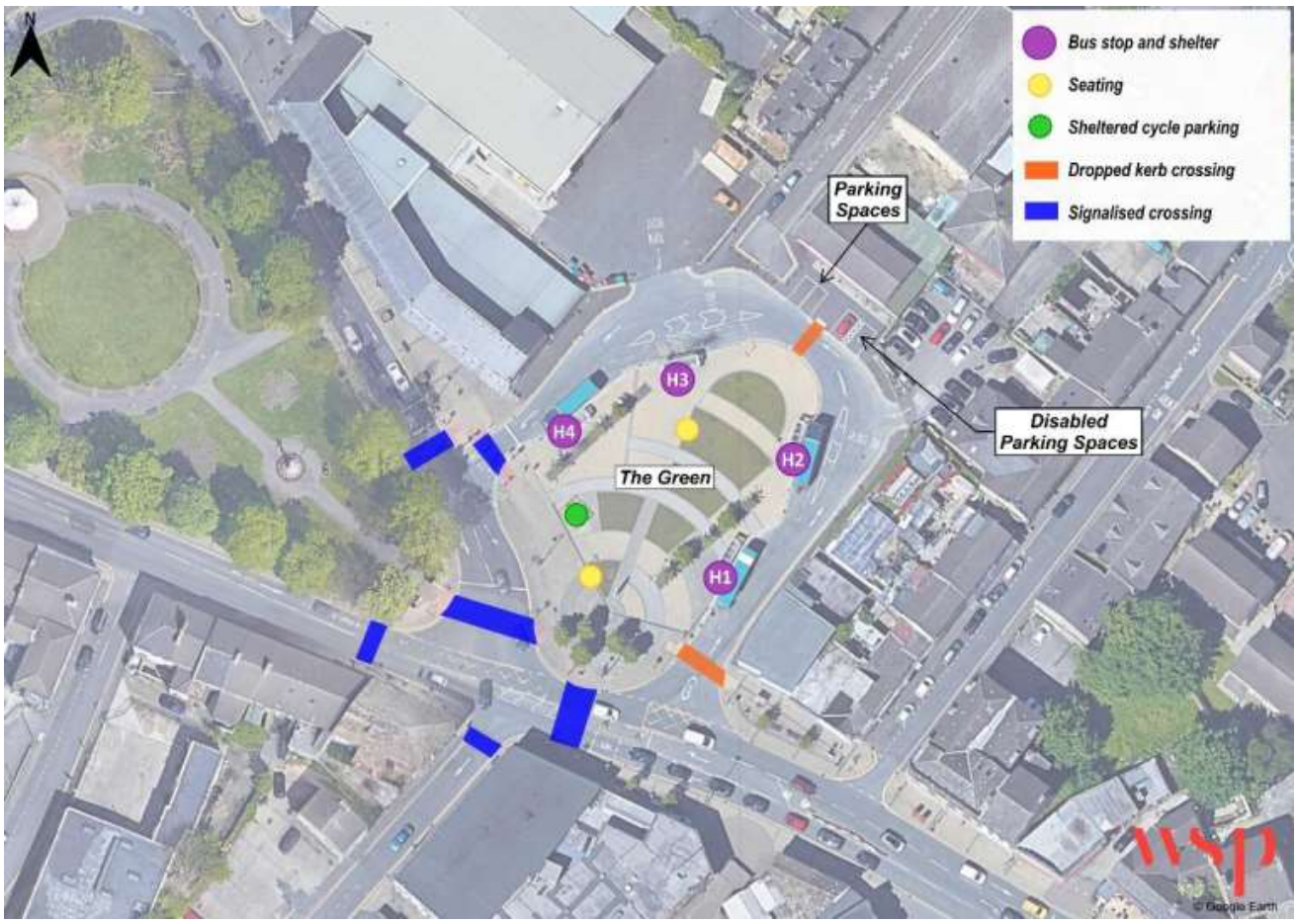
3.5.11. Based on the description available, it is considered that this collision can be attributed to poor driver behaviour rather than an issue with the local highway network and therefore, no mitigation would be necessary.

3.6 PEDESTRIAN AND CYCLE ACCESSIBILITY

3.6.1. Heckmondwike Bus Hub is situated in Heckmondwike town centre, where there is significant pedestrian activity. Pedestrian crossings surrounding the Bus Hub include a dropped kerb crossing at the entrance to the Bus Hub on Westgate, and a signalised crossing at the Bus Hub exit onto Northgate. Signalised crossings are also located at the Northgate/Westgate signalised junction. Dropped kerbs with tactile paving are located on the desire line from the paved Bus Hub area to the 4 short stay car parking spaces within the Bus Hub.

3.6.2. An overview of the current facilities at the Bus Hub is indicated on Figure 3-9.

Figure 3-9 - Heckmondwike Bus Hub Layout & Facilities



3.6.3. In terms of cycling infrastructure, there are no cycle lanes in the vicinity of the Hub, however advanced cycle stop lines are provided on the A638 at its junction with Regent Street and B6117 Northgate and between South George Street (exit to the Hub) and the B6117 Northgate. In addition, the Bus Hub includes a small area of covered cycle parking (5 Sheffield Stands providing 10 spaces).

3.6.4. Heckmondwike is traversed by the Spen Valley Greenway; a 7-mile off-road cycle route from Dewsbury to Oakenshaw, with further connections into Bradford using signposted cycle lanes and paths. The route runs south of Heckmondwike town centre, while the Spen Ringway runs north of the town centre. The Ringway is part of a disused railway line from Ravensthorpe to Leeds; it is an off-road, tarmacked path suitable for walkers and cyclists, finishing right in the centre of Heckmondwike town centre.

3.6.5. As part of the separate complementary TCF A638 STC scheme, there are plans to improve connectivity to the Greenway and Ringway from Heckmondwike town centre. This includes the provision of cycle facilities along Station Lane and St James Street, with access points from the main A638 corridor, 250m east of the Bus Hub.

3.6.6. Figure 3-10 below illustrates the location of the route in relation to the Heckmondwike Bus Hub, and highlights the proposed connectivity improvements to be delivered through the TCF A638 corridor scheme.

Figure 3-10 - Heckmondwike Town Centre Cycle Provision

3.6.7. Improvements to Heckmondwike Bus Hub will complement the proposed A638 STC improvements, and will help provide a holistic, multi-modal transport network within the town. In particular, the provision of cycle parking facilities at the site will facilitate multi-modal trips, as people are able to safely and conveniently access the Bus Station on foot or by bike, resulting in a reduction in private vehicle trips and improved journey quality for bus users and wider town centre visitors. Modal shift from car to bus will also facilitate with the reallocation of carriageway space to active modes.

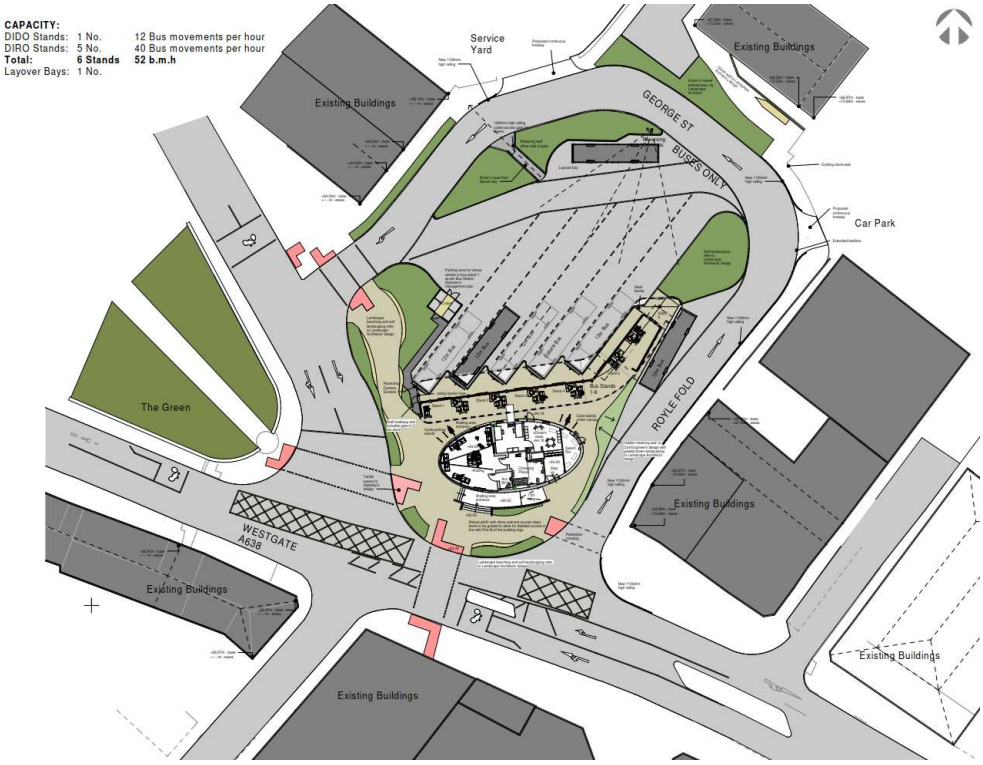
4 PROPOSED DEVELOPMENT

4.1 THE DEVELOPMENT

4.1.1. An outline of the Proposed Site Plan is shown on Figure 4-1 and the full drawing is attached as Appendix A. The proposals briefly comprise:

- A new covered concourse with new bus stands, seating and real time information boards;
- Five new Drive-in-Reverse-Out (DIRO) bus stands, one Drive-in-Drive-Out (DIDO) layover stand and one layover resting bus bay located off the carriageway on a new hard landscaped bus apron, replacing the existing 4 No. bus layover stands to increase bus capacity;
- A new fully enclosed waiting area with an Accessible WC and Changing Places facility. This will also provide enclosed staff office space, rest areas and plant rooms;
- A harmonious modern building design that integrates well into the surrounding heritage assets and public realm but also provides a unique design identity;
- Enhanced soft and hard landscaping to create a more inviting and usable public realm that also promotes art, culture and biodiversity;
- New reversing camera facilities to allow for safe bus reversing activity so the drivers can view what's behind them at bus stands 1;
- An environmentally friendly bus station design which will incorporate energy efficiency, local energy generation such as a roof-mounted solar photovoltaic (PV) panels, and green features that complements the surrounding heritage and public realm;
- 6 No. cycle stands (accommodating 12 No. cycles);
- Bin store; and
- Improved pedestrian circulation routes around the bus station site.

Figure 4-1 – Proposed Site Plan



4.1.2. It is worth noting that the published benefits of the proposed development on KC website are:

- Encourage bus use through providing a safer, more reliable journey;
- Encourage bus use through safer sheltered waiting facilities;
- Reduce congestion on the A638 for general traffic, improving driving experience and air quality through the area;
- Improve access to bus facilities by easier accessibility of bus route information;
- Facilitating new bus services and / or frequency increases of existing services; and
- New station building and landscaping to improve local spaces for people, and the use of Heckmondwike as a local centre.

4.1.3. The proposed development, together with the complementary proposals as part of the A638 STC scheme, offer a significant opportunity to work towards ambitious targets of bus growth across the region, by increasing capacity and improving existing facilities in the aim of encouraging a shift away from private car usage.

4.2 VEHICLE ACCESS ARRANGMENTS

GENERAL

4.2.1. The principle vehicular access arrangements comprising Royle Fold and South George Street forming a circulation route around the bus station remain the same as existing, including access to dentist car park and Lidl service yard. However, there are a number of minor highway improvements proposed as part of the application which include:

- Narrowing of the A638 / Royle Fold junction to reduce the pedestrian crossing width and to reduce vehicle turning speeds;
- Realigned kerb lines along Royle Fold and South George Street;
- New kerb lines and a landscaped area to separate the bus apron from South George Street; and
- Replacing the existing parking spaces to the north with a landscaped area.

PARKING ARRANGEMENTS

4.2.2. It is considered that the displacement caused by the loss of two standard spaces can be accommodated within other town centre car parks. The removal of two accessible parking spaces will be considered further as part of wider improvements in the town centre.

SWEPT PATH ANALYSIS

4.2.3. A number of swept paths have been undertaken to confirm that:

- Buses can satisfactorily enter / egress the site and all proposed bus stops, including busses entering stand 5 in a forward gear with a bus parked in stand 4;
- Service vehicles can continue to enter and egress the Lidl service yard;
- All vehicles using the dental surgery car park can continue to enter and egress the car park; and
- A bus using the bus stand on Royle Fold does not block the circulation route to other busses / service vehicles on the circulation route.

4.2.4. All appropriate swept path drawings are attached as Appendix C.

VISIBLITY ARRANGEMENTS

4.2.5. All required visibility splays are shown on drawings which demonstrates that adequate visibility can be achieved. This includes a forward visibility drawing of busses around the circulation route and to and from each stand.

4.2.6. All appropriate visibility drawings are attached as Appendix D.

REVERSING CAMERA SYSTEM

4.2.7. A new reversing camera system to allow for safe bus reversing activity will be installed at all DIRO stands so drivers can view what's behind them as they reverse. The location reversing cameras and reversing camera screens is shown on the Proposed Site Plan in Appendix A.

4.2.8. In the event of the reversing camera system failing, drivers will follow operating procedures set out in 'Guidance for the safe design and operation of bus stations and interchanges' 2011. The key operating procedures set out in guidance are summarised as follows:

- General Safety Guidance

  - Drivers are responsible for their own actions and the safety of persons who may be affected by their manoeuvring;
  - Drivers must look out for, and give priority to, pedestrians in all areas especially at the designated pedestrian crossings. They should be aware bus station staff, duty managers, Vehicle and Operator Services Agency and unauthorized members of the public who could be on the carriageway;
  - At all times, the driver of any vehicle must adhere to the maximum speed restriction which applies within the bus station;
  - Where specified in the Bus Station Users Agreement, drivers should turn off their vehicle's engine upon halting. The park brake must be fully applied and the transmission returned to neutral;
  - Drivers on arrival and prior to departing from a stand should check the park brake is applied and the transmission is in neutral. When departing select the correct gear to depart the stand before releasing the park brake applying delicate use of the accelerator sufficient manoeuvring away from the bay;
  - Drivers must never operate other equipment while driving in a bus station; (e.g. setting destination indicators or counting cash);
  - It is important drivers receive training in procedures relevant to the bus stations they operate in, and operators should provide confirmation that this is the case;
  - When emergency situations arise in a bus station, drivers must follow any instruction given by persons controlling the emergency;
  - Drivers must always use designated walkways if needing to traverse the bus station carriageway and ensure passengers do the same if necessary; and
  - Passengers must only be set down in designated places. Where the driver is unable to use the allocated bay, the driver should wait for it to become vacant if this will not cause obstruction; or follow the laid down operating procedure for the bus station.

- DIRO Operating Procedures
  - Drivers of vehicles reversing from any part of the bus station, other than a stand, should give way to drivers of those vehicles reversing from a stand. When moving in a straight line and two buses attempt to reverse simultaneously the vehicle on the right is given priority to avoid simultaneous movements;
  - Where conflict may arise between vehicles, the driver of the vehicle at the rear should yield and leave sufficient space for the vehicle in front;
  - Drivers should look for vehicles which are about to, or have started moving and give them priority. Similarly any person on the bus station carriageway should also be given priority;
  - When approaching the required stand, check it is clear and proceed via the drive through lane. Do not cut across the rear of other stands. Remain in the drive through lane until you reach the turning point for the stand, whilst watching for pedestrians and reversing vehicles. Turn into the stand. Approach the stand slowing to avoid late braking and align the vehicle tight and square to the kerb;
  - Reversing the bus when clear, should be reversed straight from the departure stands, the vehicle wheels be positioned so reversing movement can only be in a straight line. Scan both rear view mirrors and any reversing camera monitor and any reversing aid. The driver should reverse until the rear of the vehicle is at the edge of the line marking the running lane if available. The forward manoeuvre can then be commenced, so that the bus can proceed and immediately rejoin the drive through lane; and
  - Reversing aids and audio alarms should be used.
- DIDO Operating Procedures
  - When approaching the required stand, check it is clear and proceed via the drive through lane. Do not cut across the rear of other stands and stay in the drive through lane until you reach the turn point for the stand. Some bus stations may form part of a highway so drivers must be vigilant for vehicles, cycles and pedestrians;
  - Turn into the bay approaching it at an appropriate speed to avoid the need for late braking and align the vehicle tight and parallel to the kerb;
  - When departing the stand check the vehicle mirrors and use all aids available;
  - Ensure no pedestrians are between the bus and any barrier;
  - Drivers must be mindful that the rear of their vehicle will swing outwards, and avoid turning too sharply to avoid impacting the rear of the bus with any barriers, potentially trapping any pedestrians; and
  - Be particularly vigilant for motorcycles and cycles in bus stations that are part of the main highway.

LAYOVER BAY

4.2.9. The layover bay will be used at appropriate times where there are driver change overs, driver rest periods and long layover times where a bus is not required to be used for extended period of time.

4.2.10. Drivers will be able to access the bay through a footpath that links the layover bay to the existing footway adjacent to the service yard, across an area of landscaping, as shown on the Proposed Site Plan which is attached as Appendix A.

4.2.11. There will be appropriate signage to discourage pedestrian use of this footway.

4.2.12. It is worth noting that the location of the footway also does not follow any pedestrian desire lines, which further discourages pedestrian use of the footway.

4.3 PEDESTRIAN / CYCLE ARRANGEMENTS

4.3.1. It is considered that the provision of the following will significantly improve the passenger experience and make bus a more attractive travel mode, helping to reduce reliance on private vehicles and contribute to slowing increasing traffic growth:

- A new covered concourse with seating and real time information boards;
- Improved pedestrian circulation routes around the bus station site;
- A new fully enclosed waiting area with an Accessible WC and Changing Places facility;
- 6 No. cycle stands (accommodating 12 No. cycles); and
- An enhanced soft and hard landscaping to create a more inviting and usable public realm.

4.3.2. Improved facilities for bus drivers will also enhance conditions at a time professional drivers are in high demand.

4.3.3. There will be a number of minor highway improvements that will also improve accessibility for pedestrians and cyclists, including:

- Narrowing of the A638 / Royle Fold junction to reduce the pedestrian crossing width and to reduce vehicle turning speeds;
- Providing uncontrolled tactile paving between the South George Street / Service Yard access; and
- Extending the dropped kerb at the controlled crossing point at the A638 / B6117 junction to allow cyclists to exit carriageway.

4.3.4. All footways have a minimum width of 2m, which is the minimum unobstructed width for pedestrians in accordance with Manual for Streets (2007). It is worth noting that most of the pedestrian areas form part of a new concourse and therefore, are far in excess of the 2m requirement, which significantly improves pedestrian permeability.

5 TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

5.1 TRIP GENERATION

EXISTING TRIP RATES

5.1.1. Existing peak hour trip rates (08:00 – 09:00 and 17:00 – 18:00) at the bus station have been calculated from the latest available timetable information at the time of preparing this report, which is summarised in Table 5-1.

Table 5-1 – Existing Trip Rates (Timetable)

From	To	PSV Flows into Bus Station	PSV Flows out of Bus Station	Two-way Trip Movements
08:00	09:00	22	22	44
17:00	18:00	19	18	37

5.1.2. Based on the latest available timetable information, the bus station currently generates approximately 44 two-way PSV movements in the AM peak and 37 two-way PSV movements in the PM peak.

5.1.3. This is comparable to the PSV trips established from traffic surveys collected by KC as part of the preparation of the SOBC as summarised within Table 3-2 which illustrated the following PSV movements:

- AM Peak Hour (08:00 – 09:00) – 20 Arrivals / 18 Departures / 38 two-way movements; and
- PM Peak Hour (17:00 – 18:00) – 21 Arrivals / 21 Departures / 41 two-way movements.

5.1.4. For reference, the most recent timetable information available indicates that there are approximately 6 additional two-way movements in the AM peak hour and 4 two-way trips less in the PM Peak Hour when compared to the traffic surveys.

BUS STATION CAPACITY

5.1.5. The best practice document “Good Practice Guide for Bus Station Design”, Martin Robertson Bursary (2007) provides the guidance on the capacity of each bus stand in Table 5-2.

Table 5-2 – Guidelines on Bus Stand Capacities

Bus Stand Capacity by Type	Bus Per Hour Capacity	
	Desirable	Maximum
Drive In Drive Out Stands (DIDO)	8	12
Drive In Reverse Out Stands (DIRO)	6	8

5.1.6. Based on the guidelines within Table 5-2, the desirable and maximum capacities for the existing and proposed arrangement to the bus station is summarised as follows:

- Existing Hub Layout Capacity
  - 4 x Drive in Drive Out 'DIDO' Stand
    - Desirable = 32 bus movements per hour.
    - Maximum = 48 bus movements per hour.
  - Total = 32 – 48 bus movements per hour.
- Proposed Station Layout Capacity
  - 1 x DIDO Stand
    - Desirable = 8 bus movements per hour.
    - Maximum = 12 bus movements per hour.
  - 5 x Drive In Reverse Out 'DIRO' Stand
    - Desirable = 30 bus movements per hour.
    - Maximum = 40 bus movements per hour.
  - Total = 38 - 52 bus movements per hour.

5.1.7. The replacement of the existing 4 DIDO stands with the proposed configuration of 1 DIDO stand and 5 DIRO stands, increases the overall bus capacity between 4 (desirable) and 6 (maximum) bus movements per hour, equating to 1 additional bus movement every 10-15 minutes, on average.

5.1.8. The above vehicle bus movements reflect the number of buses which complete their route through the station, but for the purposes of capacity assessments, the movement is doubled to reflect an arrival and departure. The following section reviews the proposed trip rates and generation.

PROPOSED TRIP RATES AND GENERATION

5.1.9. Bus movements were recorded at their highest level between 18:00 – 19:00 at 53 (two-way) movements per hour, as shown in the daily profile of vehicle movements across the day in Table 3-2.

5.1.10. The difference between the peak level of recorded bus movements (53 two-way bus movements per hour between 18:00 and 19:00) and the maximum theoretical capacity of the proposed Bus Station (104 two-way bus movements per hour) equates to a 96% increase. This factor has been used as a constraint on future growth at the Bus Station across the day, and has been applied as an uplift to the number of daily bus movements including during the AM (08:00 – 09:00) and PM peak hour (17:00 – 18:00).

5.1.11. An increase in existing timetabled bus movements by 96% during the AM and PM peak hours is considered appropriate to provide a robust assessment of likely bus movements at the Bus Station that balances future increases in bus movements by bus operators in the context of the theoretical desirable and maximum capacity at the Bus Station.

5.1.12. This also reflects that the actual capacity can be affected by a number of operational issues including layover time, scheduling of local and regional services, driver change overs, and driver rest periods amongst other operational pressures. Further discussions are required with the bus operator to confirm their long term aspirations and forecast increases in bus services planned to be operated from the station.

5.1.13. Applying this percentage uplift to the existing bus movements, the proposed bus movements are summarised in Table 5-3 for the AM and PM peak hour.

Table 5-3 – Proposed PSV Trips

From	To	PSV Flows into Bus Station	PSV Flows out of Bus Station	Two-way Trip Movements
Timetabled PSV trips				
08:00	09:00	22	22	44
17:00	18:00	19	18	37
Uplift in PSV trips by 96%				
08:00	09:00	43	43	86
17:00	18:00	37	35	73
Additional PSV trips (Development Flows)				
08:00	09:00	21	21	42
17:00	18:00	18	17	35

5.1.14. For reference, the additional PSV trips were used in the capacity assessment summarised in Section 6, as existing PSV flows are already included in the surveyed flows.

5.1.15. It is worth noting that the existing PSV flows contained within the surveyed flows have also been growthed using appropriate growth factors, as outlined in Section 6 of this report. This is considered to be robust as there will be an element of double counting existing PSV flows which have not been removed from the analysis.

5.2 TRIP DISTRIBUTION

5.2.1. The existing trip distribution for buses has been established from the existing timetable information available at the time of preparing this TA.

5.2.2. The existing trip distribution is shown on the traffic flow diagrams within Appendix E and summarised as follows:

- AM Peak
  - Arrivals = 18% from B6117 Northgate / 9% from Union Street / 36% from A648 Westgate / 14% from B6117 Market Street / 23% from A638 High Street.
  - Departures = 32% to A638 Westgate / 18% to Greenside / 9% to Regent Street / 18% to B6117 Market Street / 23% to A638 High Street.
- PM Peak
  - Arrivals = 26% from B6117 Northgate / 11% from Union Street / 21% from A648 Westgate / 11% from B6117 Market Street / 32% from A638 High Street.

- Departures = 28% to A638 Westgate / 22% to Greenside / 11% to Regent Street / 28% to B6117 Market Street / 11% to A638 High Street.

5.2.3. It is not known which services frequencies could increase in future; therefore it is considered appropriate to use the existing trip distribution as a proxy for the additional PSV trips.

5.3 TRIP ASSIGNMENT

5.3.1. Based on the trip distribution set above, the resultant additional PSV trips in the AM peak hour and PM peak hour shown in Table 5-3 and on the traffic flow diagrams in Appendix E and are summarised as follows:

- AM Peak
  - Arrivals = 4 from B6117 Northgate / 2 from Union Street / 8 from A648 Westgate / 3 from B6117 Market Street / 5 from A638 High Street.
  - Departures = 7 to A638 Westgate / 4 to Greenside / 2 to Regent Street / 4 to B6117 Market Street / 5 to A638 High Street.
- PM Peak
  - Arrivals = 5 from B6117 Northgate / 2 from Union Street / 4 from A648 Westgate / 2 from B6117 Market Street / 6 from A638 High Street.
  - Departures = 5 to A638 Westgate / 4 to Greenside / 2 to Regent Street / 5 to B6117 Market Street / 2 to A638 High Street.

5.3.2. The increase in additional bus movements is greater than 30 two-way movements across the junction in both peak hours, but less than 1 bus service arriving / departing every two minutes. A capacity assessment of the junction has been undertaken which is summarised in Section 6 of this TA.

6 CAPACITY ASSESSMENTS

6.1 OVERVIEW

6.1.1. A capacity analysis of the three signal-controlled junctions near to the Heckmondwike Bus Station, comprising:

- A638 / B6117 Market Street;
- A638 Westgate / Regent Street / Northgate; and
- A638 Westgate / Union Street / Greenside.

6.1.2. Existing traffic flows and queues have been established from traffic surveys collected by KC.

6.1.3. A 2023 Opening Year and 2027 Horizon Year was adopted for assessment purposes. This represents the year the Bus Station will be fully operational and 5-years post application, respectively. Pro-rated growth factors used within the Cleckheaton Kirklees Strategic Transport Model (CKSTM) were adopted to convert surveyed flows to 2023 and 2027 baseline flows. This is considered reasonable in the context of long term impacts of the Covid-19 pandemic and associated changes in working patters that may affect the longer term situation since the collection of the surveyed flows in 2019.

6.1.4. Traffic flow diagrams for the local highway network are included in full as Appendix E.

6.2 GROWTH RATES

CKSTM

6.2.1. Traffic growth predictions for 2019 – 2023 and 2019 – 2027 were prorated from the 2019 – 2038 growth rates used in the CKSTM. For reference, the 2019 – 2038 growth rates for the AM and PM Peak period are summarised in Table 6-1.

Table 6-1 – Growth Rates – From CKSTM

Period	2019 - 2038
AM Peak	1.1194
PM Peak	1.1269

6.2.2. Pro-rated growth rates for the years 2019 – 2023 and 2019 - 2027 was based on the following methodology:

- The difference in years between 2019 and 2038 is:
  - 19 years.
- The average increase in the peak hour growth rates per year between 2019 and 2038, assuming linear growth are:
  - AM Peak – (0.1194 / 19) = 0.0063
  - PM Peak – (0.1269 / 19) = 0.0067

- The difference in years between 2019 – 2023 and 2019 – 2027 are:
  - 4 years.
  - 8 years.
- Based on the above, the growth rates were calculated to be:
  - 2019 – 2023
    - AM Peak – (0.0063 * 4) + 1 = 1.0251
    - PM Peak – (0.0067 * 4) + 1 = 1.0267
  - 2019 - 2027
    - AM Peak – (0.0063 * 8) + 1 = 1.0503
    - PM Peak – (0.0067 * 8) + 1 = 1.0534

TEMPRO

6.2.3. To ensure the use of growth rates from the CKSTM are the most appropriate to use, a comparison with TEMPro v7.2c has been undertaken for the years 2019 – 2023 and 2019 – 2027, which are summarised in Table 6-2 and based on the following parameters:

- Dataset – Road Traffic Forecasts (RTF) 2018 Scenario 1 – Reference;
- Result type – Trip ends by time period;
- Transport mode – Car driver;
- Trip end type – Origin / Destination;
- Area – Kirklees;
- Road type – Principal; and
- Area it serves: Region.

Table 6-2 – TEMPro v7.2c Growth Rates

Period	2019 - 2023	2019 - 2027
AM Peak	1.0280	1.0576
PM Peak	1.0277	1.0579

DIFFERENCE IN GROWTH RATES

6.2.4. The difference in growth rates derived from prorating growth rates in CKSTM and the growth rates obtained from TEMPro v7.2c is summarised in Table 6-3.

Table 6-3 – Difference between CKSTM and TEMPro v7.2c growth rates

Period	2019 - 2023	2019 - 2027	2019 - 2023	2019 - 2027	2019 - 2023	2019 - 2027
	CKSTM		TEMPro v7.2c		Difference	
AM Peak	1.0251	1.0503	1.0280	1.0576	0.0029 (0.29%)	0.0073 (0.73%)
PM Peak	1.0267	1.0534	1.0277	1.0579	0.001 (0.1%)	0.0045 (0.45%)

6.2.5. It is considered that the marginal differences between the two growth rates would have a negligible impact on the results of the junction network capacity analysis, particularly in the context of

- The difference between all the TEMPro growth rates and the CKSTM growth rates is under 1%;
- The growth rates from the CKSTM were used in the OBC stage;
- The CKSTM is an approved model and therefore, it is considered acceptable to use the growth rates from the model for the purposes of this assessment;
- It assumes that future increases in car ownership and traffic patterns would be unaffected by the COVID-19 outbreak, and;
- Future working patterns would return to pre COVID-19 outbreak conditions without change.

6.3 ASSESSMENT SCENARIOS

6.3.1. As a result of the above, the weekday AM and PM peak hourly periods have been assessed under the following scenarios:

- 2019 Base Year;
- 2023 Opening Year;
- 2023 Opening Year + Development;
- 2027 Future Year; and
- 2027 Future Year + Development.

6.4 JUNCTION NETWORK CAPACITY ANALYSIS

OVERVIEW

6.4.1. A capacity analysis of the three signal-controlled junctions near Heckmondwike Bus Hub was carried out using TRANSYT v16 software.

6.4.2. A single TRANSYT network model was used for the assessment. The assessment modelled the AM and PM peak periods in the 2019 Base Year, 2023 Opening Year and 2027 Future Year scenarios, for the 'without development' and 'with development' flow scenarios.

6.4.3. A full set of the TRANSYT 16 output file for the assessment is attached in Appendix F.

6.4.4. Table 6-4 contains the TRANSYT model results for the 2019 Base Year. This table, and the subsequent tables, include the following results:

- Degrees of saturation (DoS[1]) values for each modelled lane, expressed in percentages. DoS values above 90% indicate over Practical Reserve Capacity (PRC) operation and are shown in red text;
- Mean maximum queues (MMQ) for each modelled lane (in PCUs[2]);

[1] DoS. Ratio of traffic demand to lane capacity, expressed in percentage value. A value of 90% indicates that the lane has reached practical reserve capacity. Above this level, queues and delays will tend to increase exponentially.
[2] PCU. Passenger car unit. Equivalent to 5.75 metres of road space.

- Cycle time (in seconds);
- Practical reserve capacity (PRC[3]);
- Total delay for all vehicles passing through the network during the modelled hour (PCU-hrs/hr); and
- Average delay per vehicle (s/PCU).

Table 6-4 – Heckmondwike Network Junction Capacity Results (2019 Base Year)

Junction	Arm & Lane	2019 AM Peak		2019 PM Peak	
		DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)
A638 / Market Street	A638 WB Ln 1	65	10	65	11
	Market St Ln 1	74	8	83	9
	Market St Ln 2	75	5	70	4
	Westgate EB Ln 1	35	3	35	3
	Westgate EB Ln 2	57	6	62	6
Regent Street	Westgate WB Ln 1	75	10	85	12
	Westgate WB Ln 2	5	0	4	0
	A638 Westgate EB Ln 1	69	10	68	5
	Northgate Ln 1	79	4	84	4
	Northgate Ln 2	67	2	94	7
Bus Station Exit (Northgate)	Northgate Ln 1	83	10	89	12
	Northgate Ln 2	56	5	92	12
	Bus Station Exit	5	1	6	1
Union Street	Westgate WB Ln 1	46	6	56	7
	Westgate WB Ln 2	24	2	36	2
	Union St Ln 1	38	4	55	7
	Union St Ln 2	14	2	20	2
	Westgate EB Ln 1	61	10	75	14
Network Cycle Time (s)		**88**			
PRC (%)		**8**		**-4**	
Total Delay (PCU-hrs/hr)		**42.03**		**60.57**	
Average Delay (s/PCU)		**10**		**12**	

[3] PRC. An estimate additional traffic flow which could be accommodated by the junction before it reaches practical capacity.

6.4.5. The 2019 Base Year AM peak period results for the existing network (without the proposed development) indicate that the network operates with spare capacity, as shown by the positive PRC value.

6.4.6. During the PM peak period, the network operates over its PRC, as indicated by the negative PRC value, but it is not oversaturated (i.e. it is operating at a degree of saturation of less than 100% on all links). Northgate Lane 2 (at the Regent Street junction) has a DoS above 90%. The queue in this lane is longer than during the AM peak period and was observed, in the model, to reach back to the upstream stop line, causing temporary blocking back (as shown by the 92% degree of saturation value). However, the queue is observed to clear by the end of the green period.

6.4.7. Table 6-5 contains the model results for the 2023 opening year. The table includes results for scenarios without, and with, the forecast development flows.

Table 6-5 – Heckmondwike Network Junction Capacity Results (2023 Opening Year)

Junction	Arm & Lane	2023 AM Peak				2023 PM Peak			
		No Development		With Development		No Development		With Development	
		DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)
Market Street	A638 WB Ln 1	67	11	72	11	74	12	76	13
	Market St Ln 1	65	8	67	8	70	8	71	8
	Market St Ln 2	63	4	63	4	56	3	56	3
	Westgate EB Ln 1	37	3	38	4	38	4	39	5
	Westgate EB Ln 2	67	13	68	13	69	13	72	13
Regent Street	Westgate WB Ln 1	81	16	83	16	92	19	92	19
	Westgate WB Ln 2	5	0	9	0	4	0	7	0
	A638 Westgate EB Ln 1	66	9	70	11	76	6	77	7
	Northgate Ln 1	77	3	80	4	80	4	85	4
	Northgate Ln 2	65	2	69	3	89	5	94	7
Bus Station Exit (Northgate)	Northgate Ln 1	81	8	84	10	83	10	90	12
	Northgate Ln 2	55	5	56	5	85	10	92	12
	Bus Station Exit	5	1	10	1	6	1	11	1
Union Street	Westgate WB Ln 1	43	1	44	2	53	2	54	2
	Westgate WB Ln 2	12	0	13	1	13	0	15	1
	Union St Ln 1	50	5	50	5	64	7	64	7
	Union St Ln 2	18	2	19	2	24	3	24	3
	Westgate EB Ln 1	49	8	50	9	64	12	65	12
Cycle Time (s)		**88**							
PRC (%)		**12**		**1**		**-3**		**-5**	
Total Delay (PCU-hrs/hr)		**36.97**		**40.82**		**54.01**		**63.05**	
Average Delay (s/PCU)		**8**		**9**		**11**		**12**	

6.4.8. The 2023 AM peak results indicate that the network will operate with spare capacity, both without and with development flows. The additional bus flows do have a slight impact on the network, as indicated by the reduced PRC value, and slightly increases in the total and average vehicle delays. However, no congestion or queue blocking back is observed in the model.

6.4.9. The 2023 PM peak results predict that the network operates over its PRC with or without the development flows, however the junction is not oversaturated. Westgate westbound lane 1 is slightly over saturated in both flow scenarios, although no blocking back to the Market Street junction is observed in the model. Northgate lane 2 (at the regent Street junction) is over its PCR in the development flow scenario, with an increase in the MMQ of 2 PCU's. This was observed to cause temporary blocking back, in the model, at the upstream Northgate lane 2. However, the queues are expected to clear during the green period.

6.4.10. Table 6-6 contains the model results for year 2027.

Table 6-6 – Heckmondwike Network Junction Capacity Results (2027 Future Year)

Junction	Arm & Lane	2027 AM Peak				2027 PM Peak			
		No Development		With Development		No Development		With Development	
		DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)	DoS (%)	MMQ (PCUs)
Market Street	A638 WB Ln 1	67	11	69	11	72	13	88	17
	Market St Ln 1	67	8	68	8	71	8	75	9
	Market St Ln 2	64	4	64	4	57	3	57	3
	Westgate EB Ln 1	38	4	39	5	39	6	39	6
	Westgate EB Ln 2	68	13	70	13	71	12	73	12
Regent Street	Westgate WB Ln 1	83	16	85	12	95	22	95	25
	Westgate WB Ln 2	6	0	9	0	4	0	7	0
	A638 Westgate EB Ln 1	68	10	70	11	68	11	67	3
	Northgate Ln 1	79	3	82	4	81	4	87	5
	Northgate Ln 2	67	2	70	3	92	6	97	9
Bus Station Exit (Northgate)	Northgate Ln 1	83	9	85	9	86	11	92	13
	Northgate Ln 2	57	5	57	5	90	12	96	14
	Bus Station Exit	5	1	10	1	7	1	11	1
Union Street	Westgate WB Ln 1	44	1	45	2	55	4	55	2
	Westgate WB Ln 2	13	0	14	1	14	1	16	1
	Union St Ln 1	51	5	51	5	66	8	66	8
	Union St Ln 2	19	2	19	2	24	3	25	3
	Westgate EB Ln 1	50	9	52	9	66	12	66	13
Cycle Time (s)		**88**							
PRC (%)		**8**		**3**		**-5**		**-11**	
Total Delay (PCU-hrs/hr)		**39.47**		**44.93**		**62.47**		**99.37**	
Average Delay (s/PCU)		**9**		**10**		**12**		**19**	

6.4.11. The 2027 AM peak results indicate that the network will still operate with spare capacity, both without and with development flows. The additional bus flows have very little impact on the network, as indicated by the slight reduction in the PRC value, and slight increases in the total delay and delay per PCU.

6.4.12. The 2027 PM peak results predicts that the network will be over its PRC both without and with the development flows, but not oversaturated. Northgate Lane 2, at the Regent Street junction, is over PRC, whilst, with the development flows, the longer queues in lanes 1 and 2, cause temporary blocking back in both lanes at the upstream Northgate stop line. However, queues are observed to clear during the subsequent green period.

6.4.13. Also, during the PM peak period, the development impact causes a 3 PCU queue increase in Westgate westbound lane 1, which is its PCR without the development (95% degree of saturation). This slight queue increase is sufficient to cause temporary blocking back to the A638 westbound lane 1 at the Market Street junction, as indicated by the increase in degree of saturation from 72% to 88%. Once again, however, queues are observed to clear during the subsequent green period. Overall, as in the case of the 2023 PM peak period, the impact of the development flows tends to exacerbate existing link capacity issues rather than cause them.

6.4.14. It is worth noting that even in the 2027 With Development Scenario, the DoS does not exceed 100%, therefore, the network is not oversaturated. As such, all trips are completed within the network within the hour.

6.4.15. The results from the model also demonstrate that in all scenarios, the right turn manoeuvre from A638 Westgate to Royle experiences a MMQ of 0. As such, an additional 5 bus movements in the AM peak and 6 bus movements in the PM peak, which equates to one additional movement every 5 minutes and 3.5 minutes, respectively, does not have an impact on the operational performance of this manoeuvre.

SUMMARY

6.4.16. In summary, the network operates with spare capacity in the 2023 and 2027 AM peak scenarios. The impact of the additional buses is not severe, and the network continues to operate with spare capacity.

6.4.17. In the PM peak scenarios, the network is over its PRC with or without the development flows, at the A638 / Regent Street junction, both on Westgate westbound and Northgate, however, the junction is not oversaturated.

6.4.18. The resultant increase in trips shows that the junction will operate with a slight increase in delay but the junctions on the network do not become oversaturated. Therefore, as a result of the above assessment it is shown that the proposals do not directly cause network congestion, but a subtle increase in vehicle flows on the network which does have a slight impact on queues on routes that the PSV lines take.

6.4.19. It is worth noting that the proposed development aims to support active and shared-mode travel choices and encouraging modal shift away from the private car by providing safer, more reliability journeys and safer waiting facilities which intern will help to reduce congestion along the A638.

6.4.20. This scheme dovetails with the principles of the wider A638 Dewsbury – Cleckheaton STC which aims to provide improvements to the quality and safety of pedestrian and cycle journeys, reduce

congestion, improve bus journey reliability and allow for modal shift and increased uptake of shared and active travel options.

6.4.21. Within the modelling that has been undertaken, there has been no account for any reduction in vehicle trips and increases in multi-modal trips as a result of the proposed development and the wider A638 STC scheme, with background traffic, including existing bus movements being scaled using growth factors. As such, it is considered the results of the modelling provides a robust assessment of the impact of the proposed development on the local highway network.

6.4.22. In conclusion, the proposed development forms one aspect of the solution to reducing congestion and increasing multi-modal trips on the A638 corridor, along with the wider A638 Dewsbury – Cleckheaton STC. As such, the proposed development will not have a severe impact on the operational performance or impact on road safety of the highway network.

7 SUMMARY AND CONCLUSIONS

7.1.1. The purpose of this Transport Assessment has been to consider the highway and transport implications of proposed redevelopment of Heckmondwike Bus Hub into Heckmondwike Bus Station. From the results of the report, the following can be concluded:

- The site comprises the existing Heckmondwike Bus Hub, which is located immediately north of the A638 within Heckmondwike town centre;
- The site is accessed from the A638 which forms a circulation route around the Bus Hub via Royle Fold and South George Street and connects to the B6117 Northgate. The A648 and the B6117 are the main highway routes in the vicinity of the site that provide excellent links to the surrounding areas;
- The Transport Assessment has been prepared in accordance with national and local planning policy which demonstrates that the proposed development encourages a modal shift towards bus for those travelling to and from Heckmondwike and will help to reduce congestion along the A638;
- Pedestrian movements are relatively high, with the highest movements across the A638, Royle Fold and Cemetery Road junctions (1684 two-way movements across Royle Fold and 896 two-way movements across Cemetery Road between 07:00 - 19:00), reflecting the linkage between attractors in the town centre environment;
- Cycle movements were observed to be low on the highway network surrounding the site, at a maximum of 4 cyclists per movement during any given hour;
- There have been three fatal Personal Injury Collisions recorded in the study area. As a result of these incidents, Kirklees Council have implemented a staggered pedestrian crossing arrangement on the A638 in the vicinity of the A638 / Cemetery Road junction;
- The redevelopment of the Bus Hub forms part of the Transforming Cities Fund Big Bid, which was submitted to the Department for Transport in November 2019, which included Heckmondwike Bus Station and the A638 Dewsbury-Cleckheaton Sustainable Travel Corridor. However, going forward, both schemes are being progressed separately as standalone projects;
- The A638 Sustainable Travel Corridor scheme will help to reduce the reliance on private vehicles and instead, promote walking, cycling and bus use as viable and convenient travel alternatives;
- The proposed improvements to construct a new Bus Station at this location will directly complement, and be complemented by the A638 corridor scheme. Collectively, the two sets of proposals will transform opportunities for active and sustainable travel along the corridor between Dewsbury and Cleckheaton, as well as facilitating opportunities for onward travel across the wider region;
- The proposed development and the A638 corridor scheme form two of eight Transforming Cities Fund schemes being progressed in the Kirklees borough. Collectively, these schemes will deliver a step change in transport connectivity across the borough, transforming opportunities for active and sustainable travel and helping connect more people with employment and training opportunities;
- The proposed development comprises five new drive-in-reverse-out bus stands, one drive-in-drive-out layover stand and one layover resting bus bay located off the carriageway on a new hard landscaped bus apron, replacing the existing 4 bus stands to increase bus capacity;

- The proposed development will facilitate multi-modal trips, as people are able to safely and conveniently access the Hub on foot or by bike, resulting in a reduction in private vehicle trips and improved journey quality for bus users and wider town centre visitors;
- Based on the latest available timetabled information, the bus hub currently generates approximately 44 two-way bus movements in the AM peak hour and 37 two-way movements in the PM peak hour;
- Based on guidance contained within Good Practice Guide for Bus Station Design", Martin Robertson Bursary (2007):
    - The desirable and maximum capacity of the existing bus hub is between 32 bus movements (64 two-way trips) and 48 movements (96 two-way trips).
    - The desirable and maximum capacity of the proposed station is between 38 bus movements (76 two-way trips) and 52 movements (104 two-way trips).
- The difference between the maximum capacity of the Bus Station at 104 two-way bus movements per hour and the highest level of recorded bus movements at 53 two-way bus movements per hour is 96%;
- Further discussions are required with the bus operator to confirm their long term aspirations and forecast increases in bus services planned to be operated from the station. As such, for the purposes of this assessment, an increase in existing timetabled bus movements by 96% during the AM and PM peak hours is considered appropriate to provide a robust assessment of likely bus movements at the Bus Station;
- An uplift in trips of 96% equates to an additional 42 two-way bus movements in the AM peak hour and 35 two-way bus movements in the PM peak hour. These additional trips were used in the capacity assessment as existing bus movements area already included in the baseline flows;
- A capacity analysis the three signal-controlled junctions near Heckmondwike Bus Hub was carried out using TRANSYT v16 software;
- The results indicate that during all AM scenarios, the network will still operate within its Practical Reserve Capacity, both without and with development flows;
- In the 2019 PM peak, the network is over its Practical Reserve Capacity with a Practical Reserve Capacity value of -4%, with Northgate Lane 2 having a degree of saturation above 90%. However, the queue is observed to clear by the end of the green period;
- In the 2023 PM peak, an increase in background traffic and development flows increases the Practical Reserve Capacity value from -4% to -5%. Westgate Westbound Lane 1 and Northgate Lane 2 have a degree of saturation above 90%. However, the queue is observed to clear by the end of the green period;
- In the 2027 PM peak, the Practical Reserve Capacity value increased from -5% to -11% with Westgate Westbound Lane 1, Northgate Lane 1 and Northgate Lane 2 being oversaturated;
- In all scenarios, with and without development flows, the degree of saturation does not exceed 10%. As such, all trips are completed within the network within the hour;
- The resultant increase in trips shows that the junction will operate with a slight increase in delay but the junctions on the network do not become over-saturated. The assessment illustrates that the proposals do not directly cause network congestion, but a subtle increase in vehicle flows on the network which does have a slight impact on queues on routes that the buses lines take; and
- Within the modelling that has been undertaken, there has been no account for any reduction in vehicle trips and increase in multi-modal trips provided by the proposed development or the wider A638 Sustainable Travel Corridor scheme. This includes background traffic, including existing

bus movements within the traffic surveys which have been scaled using growth factors. As such, it is considered the results of the modelling provides a robust assessment of the impact of the proposed development on the local highway network.

7.1.2. In summary, the proposed redevelopment of the Bus Hub into the Bus Station would significantly contribute to promoting modal shift along the A638 corridor, improve public realm within Heckmondwike town centre and improve the quality of multi-modal trips.

7.1.3. On the basis of the findings within this TA and in the context of para. 111 of the NPPF, it is considered that there are no residual cumulative impacts in terms of highway safety or the operational capacity of the surrounding transport network and therefore planning permission should not be withheld on transport grounds.

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