Sharpness Vale

Transport Report in Response to Questions Raised by Gloucestershire County Council

On behalf of **Sharpness Development LLP**

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Registered Office: Buckingham Court Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU
Office Address: Waterloo House, Victoria Square, Birmingham B2 5TB
T: +44 (0)121 633 2900 E: birmingham.uk@stantec.com

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	Name	Position	Signature	Date
Prepared by:	Rob Pawson Leigh Stolworthy	Senior Transport Planner Senior Associate Transport Planner		15.12.2022 30.01.2023
Reviewed by:	Leigh Stolworthy	Senior Associate Transport Planner		07.02.2023
Approved by:	Dan Griffiths	Director: Transport		09.02.2023
For and on behalf of Stantec UK Limited				

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1 Background

1.1 Introduction

1.1.1 In a letter dated the 21st of July 2021 Gloucestershire County Council (GCC) provided a formal response to the Draft Stroud District Local Plan Review. This letter is included as **Appendix A**. This letter sets out specific transport comments and concerns related to Draft Local Plan policy PS36 related to the proposed Sharpness Vale site. The GCC comments regarding the Sharpness Vale site allocation are based primarily on an assessment of the Sharpness Restoring Your Railway bid documents and do not refer substantively to other transport evidence documents submitted as part of the proposed site allocation.

1.1.2 The GCC transport comments are summarised as follows:

- Cost – GCC consider that the passenger demand for the Sharpness Passenger Rail Service had been over estimated and that this would affect the operational viability of the service. GCC also consider that the capital infrastructure cost of upgrading the branch line to accommodate passenger trains would be high leading to a weak economic case for the service. Concerns were also raised with regard to the ability of a passenger rail service from Sharpness to Gloucester fitting within the mainline service timetable.

- Strategic Fit and Purpose – GCC raised concerns over the strategic fit of the branch line passenger service for Sharpness and that it would only benefit the residents of the Sharpness Vale development with the potential to take up valuable capacity on the main line between Bristol and Birmingham. In terms of strategic purpose GCC raised concerns that the Sharpness passenger rail service proposals do not clearly identify the solution which they are intended to address. If the intention is to enable a sustainable car minimal development, there is risk that there would not be local buy-in to this approach and that demand for the passenger rail services would not be realised and the service rendered unviable.

- Operational Issues – GCC note that there are not yet commitments from train operating companies, Network Rail or the Department for Transport regarding the re-use of the branch line for passenger services. The GCC letter further indicates that the Sharpness rail proposals would introduce conflict points on the mainline near Gloucester as well as where the branch line meets the main line.

- Express Coach – GCC raised concerns regarding the assumed journey time for the proposed coach services towards Bristol and that it may not be competitive with the equivalent journey by car. GCC are of the opinion that the coach services would provide little benefit other than for the residents of Sharpness Vale and that the demand projections seem unrealistic.

1.2 Purpose of this Report

1.2.1 The site promoter, Sharpness Development LLP, have undertaken supplementary work in order to address the comments and concerns of GCC relating to some of the transport aspects of the proposed site development which forms the basis for this report.

1.2.2 This report seeks to address the responses and concerns raised by GCC as summarised in section 1.1 above.

1.2.3 The concerns of GCC as summarised above relate primarily to the viability of the proposed re-introduction of the passenger rail service on the Sharpness Branch line. There are concerns regarding the estimated patronage of the service which could lead to operational viability challenges coupled with the perceived high cost of infrastructure upgrades required to re-

introduce passenger trains onto the branch line. The site promoter has undertaken additional specialist studies which address these concerns which are set out later in this report. First, it is useful to consider the future transport context within which the Sharpness Vale community will exist as well as future travel characteristics of the people who are likely to choose to live there.

2 Changing Policy and Travel Patterns

2.1 Introduction

2.1.1 This section reviews the existing national and local policy and guidance and summarises how it relates to the proposed Sharpness development. Around the time of the comments received from GCC there were significant national policy changes relating to the transport approach to new settlements which may not have been fully considered when drawing up responses to the Draft Local Plan. It is clear that a paradigm shift is required with regard to how the transport response is conceived and delivered to support the sustainable growth of future communities.

2.1.2 It will be imperative to provide communities and associated transport systems that enable a better, more efficient and carbon neutral travel demand profile rather than providing for a perpetuated car dominant scenario for fear of not being able to achieve a desired sustainable outcome. Furthermore, these are issues that we must tackle, as a society, if we are simultaneously to continue to deliver much-needed new housing and not allow growth to stall.

2.2 National Planning Context

National Planning Policy Framework (July 2021)

2.2.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied. The presumption in favour of sustainable development is the core objective of the NPPF (paragraph 10 states 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").

2.2.2 In Section 9 'Promoting sustainable transport', paragraph 104

2.2.3 To promote sustainable transport, paragraph 110

2.2.4 Paragraph 111 of the NPPF states "*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*."

2.2.5 Additionally, paragraph 113 of the NPPF states "*All developments that 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*."

2.2.6 In accordance with the NPPF, the Sharpness Vale development seeks to maximise travel by sustainable modes by providing proportionate and relevant means to promote and accommodate travel by walking, cycling and public transport, whilst at the same time demonstrating that any residual highway impacts would not be severe. Adopting a positive approach to planning for non-car-based travel and proposing reliance on and investment in alternative modes may be challenging, and outside of what has been the traditional norm, but it must be grasped by public and private sectors if we are to meet the Government's carbon management objectives.

Decarbonising Transport: A Better, Greener Britain (2021)

2.2.7 The Department for Transport (DfT) published this guidance in 2021 that sets out a post-pandemic programme that will reduce carbon production by transport systems and promote

sustainable transport use. DfT aim to fulfil this vision through two key actions: '*Decarbonising all forms of transport,'* '*Multi-modal decarbonisation and key enablers' and 'Delivering Decarbonisation through Places.'*

2.2.8 The land use and transport approach for the Sharpness Vale development has been developed to maximise opportunities for modal shift away from the private car, enable sustainable travel choices by providing attractive and efficient alternatives that work together in an integrated multi-modal system, focus on active mobility by designing a high quality and dedicated system of routes as well as achieving greater carbon emissions reductions.

Taking charge: the electric vehicle infrastructure strategy (March 2022)

2.2.9 In line with the Government's aims for a full decarbonisation of road transport across the UK, this Government Strategy sets out how the UK will encourage and implement electric vehicle usage until the vehicle fleet is fully electric.

2.2.10 The Sharpness Vale development will fully embrace this objective, with a combination of both individual chargers for particular homes and bushiness, and a public charging provision that is available to visitors. The proposals will recognise the different approaches to charging that are required, with a recognition that the right combination of rapid and ultra-rapid chargers, with slower, longer duration chargers is important.

2.2.11 The provision of some rapid charging, for example, for longer distance visitors, will be appropriate, but this requires heavy infrastructure to ensure a suitable supply. Whereas slower, lower kilowatt hour chargers can be incorporated almost anywhere – even in normal street furniture (lamp columns and bollards) and have a much lower infrastructure requirement whilst being able to meet the majority of local needs.

Gear Change: A bold vision for cycling and walking (July 2020)

2.2.12 This Government Strategy also aligns with The Government's decarbonisation targets. Active travel will be encouraged to reduce dependency on single-occupancy vehicles particularly for local trips or to facilitate multi-modal trips. It sets out how infrastructure throughout the UK will be well adapted to support an increase in active travel, for example, through higher standards of cycle lanes.

2.2.13 This strategy emphasises the benefits of active travel from a carbon perspective, however it also draws attention to wider health benefits of active travel, for example from providing exercise opportunities and reducing air pollution.

2.2.14 The Sharpness proposals have preceded this guidance, as the proposals set out clear expectations and masterplan details that incorporated direct, safe, secure and dedicated walking and cycling routes throughout the development. These will be more direct and easier to navigate than making the equivalent journey by car and will be designed to ensure that more vulnerable users have a "safe space" within the corridor where they will not be threatened by faster moving bikes or other personal transport modes.

2.2.15 The dedicated infrastructure is threaded through the site, using the green corridors that radiate from the central hub, and which therefore provide connectivity to every part of the development from every other part, and beyond to the open space and wider settlements in the area. These routes will therefore be helpful not only to Sharpness Vale residents, but also to the wider community, who can use them to access new facilities and amenities, as well as employment and education facilities and opportunities.

2.2.16 These routes will be lit, and it is proposed that these could use innovative new forms of lighting. There are increasing products available that can incorporate movement sensors, to save energy, and some which can be powered by people and personal transport vehicles passing

along the route. Lighting need not be intrusive, but can be embedded in the surface, or place at low levels, and with improving LED technologies, can still provide a wide and clear field of vision.

2.3 Local Planning Context

Gloucestershire's Local Transport Plan 2020-2041 (Revised March 2021)

2.3.1 This sets out the approach to transport implementation throughout Gloucestershire. Gloucestershire aims for "A resilient transport network that enables sustainable economic growth by providing travel choices for all, making Gloucestershire a better place to live, work and visit." A further aim is to have a net zero transport system by 2045.

2.3.2 Key relevant policies from this document and how the Sharpness Vale development proposals align to these is described below:

2.3.3 "Policy LTP PD 0.1 – *Reducing Transport Carbon Emissions and Adapting to Climate Change.* The sustainable transport approach for Sharpness Vale as articulated in the various evidence documents seeks to promote modal choice in favour of public transport and active mobility by providing dedicated walking and cycling routes as well as road-based demand responsive local public transport that converge at a strategic mobility interchange where commuters can transfer to either passenger rail services or express coach bus service for longer external journeys. The integrated and multi-modal nature of the transport options to be provided at Sharpness Vale enable car alternative travel choices by not only the future residents of Sharpness Vale but also those living or working in existing neighbouring communities who will also benefit from these services. The potential vehicle emissions related carbon savings associated with the sustainable transport approach are calculated in section 7 of this report.

2.3.4 Policy LTP PD 0.4 – *Integration with Land Use Planning and New Development – …GCC will support development that enables sustainable travel choices.* The integrated land use and transport approach to the Sharpness Vale development incorporating a mix of residential and employment land uses that both generate and attract trips helps to reduce travel need and distance by providing for a higher proportion of trip internalisation and localisation than purely residential or purely employment related developments. Trips that still need to travel outside of the area are catered for by the provision of public transport options in the form of rail or express coach services. Sections 3,4 and 5 of this report provide detailed calculations of the generation, mode choice and distribution of trip in relation to Sharpness Vale and the wider functional transport area.

2.3.5 Policy LTP PD 0.5 *Community Health and Wellbeing*. Central to the sustainable transport approach to Sharpness Vale is the internal movement system of dedicated walking and cycling routes that link parts of the community together as well as direct active routes to the central hub at the heart of the community. This hub provides interchange opportunities with various forms of public transport. The dedicated walking and cycling routes provide a car free and human oriented movement system that enhances the public realm promotes healthy travel choices for shorter journeys and an enhanced sense of community and place.

2.3.6 Policy LTP PD 0.6 – *ThinkTravel – Influencing Travel Behaviour Change*. A mobility as a Service (MaaS) integrated transport platform is proposed as a mechanism to provide a single and easy to use, smart phone based user interface for commuters which can provide real time journey planning and ticket booking services. This platform also enables the use of push notifications to provide users with information regarding current services or upcoming changes or enhancements. The use of MaaS as it relates to Sharpness Vale is described in detail in the evidence document *Sharpness Vale – Mobility-as-a-Service and Express Coach Services*. Further information is provided in section 4 below which provides details of MaaS services currently in operation in the UK. Providing a simple user interface to enable access to integrated

and seamless transport options is an important enabler of smart travel choices and behaviour change.

2.3.7 Policy LTP PD 1.1 - *Gloucestershire's Bus Network*. A key element of the longer journey public transport solutions for Sharpness Vale is the introduction of express coach services to link Sharpness Vale with Gloucester until sufficient demand is reached to support the introduction of the rail service as well as permanent express coach services serving key destinations towards Bristol. Details of these services are provided in more detail the evidence document *Sharpness Vale – Mobility-as-a-Service and Express Coach Services*. Following refinements in the trip generation for Sharpness Vale in section 3 below, additional information relating to the proposed express coach services is provided in section 4 and 5 below which quantifies the estimated patronage for trips external to Sharpness Vale and the wider functional transport area.

2.3.8 Policy LTP PD 1.2 – *Improving the Quality of Road Based Public Transport*. As part of the multi-modal sustainable transport approach for Sharpness, demand responsive transport (DRT) in the form of local bus services plays a vital role. This innovative approach to bus operations matches supply to demand making a more efficient and financially viable service compared to traditional bus operating models. Section 4 of this report provides more information and evidence relating to proposed DRT services planned for Sharpness Vale.

2.3.9 Policy LTP PD 1.4 – *Coach Travel*. Refer to 2.3.7 above.

2.3.10 Policy LTP PD 1.5– *Community Transport including Voluntary Car Schemes*. A strategic mobility/interchange hub is a key element of the multi-modal transport systems that form the sustainable transport approach for Sharpness Vale. It provides the interface between active mobility routes, local public transport and the longer distance public transport offerings. It will also provide access to bike and other micro mobility hire schemes, transport information and ticketing systems, electric vehicle charging, car clubs and can incorporate a range of other community and social uses. Car clubs enable users to hire a car for occasional use for trips where one is necessary. As most trips will be catered for through active mobility and local and longer distance public transport car hire schemes reduce the need to own a car that would only be needed for occasional or leisure trips. Car clubs are discussed in section 4 below.

2.3.11 Policy LTP PD 1.6 – *Transport Interchange Hubs*. As mentioned in 2.3.10 above, mobility hubs are a key element of the transport approach to Sharpness Vale. A strategic mobility/interchange hub will be provided central to the development and adjacent to the new Sharpness rail station as well as local mobility hubs within the residential component of the development. These will operate as a hub and spoke system for active travel options by providing access to personal mobility modes and linked by dedicated walking and cycling routes throughout the site.

2.3.12 Policy LTP PD 1.7 –*Communicating Travel Information*. As mentioned in 2.3.6 above the MaaS platform proposed for Sharpness Vale is an ideal communications platform for travel information. Additional travel information will be available at the strategic mobility/interchange hub.

2.3.13 Policy LTP PD 2.1 – *Gloucestershire's Cycle Network*. It will be important that the strong active mobility offerings at Sharpness Vale connect with wider initiatives such as the cycle route improvements on the A38.

2.3.14 Policy LTP PD5.1 - *Rail Infrastructure Improvements*. The reintroduction of passenger rail services on the Sharpness Branch Line is an important element of the sustainable transport approach to Sharpness Vale. The Sharpness Development LLP has undertaken additional work to address demand, operational and cost concerns relating to the proposed rail serves to Gloucester. This is detailed section 8 below.

2.3.15 Policy LTP PD5.2 - *Rail Service Capacity Improvements*. An update to the timetable study for the Sharpness Vale has been undertaken to assess the implications of the reintroduction of a new Station at Stonehouse, Bristol Road on the Bristol to Birmingham mainline. This study also

considers the full MetroWest timetable and the interaction with the Sharpness service. This is covered in more detail in section 8 below.

2.3.16 Policy LTP PD 5.3 – *Railway Stations Improvements*. The Sharpness Development LLP commissioned a detailed costing study to assess the infrastructure costs associated with different options for the reintroduction of passenger rail services on the branch line. This study also considers options for station configuration and infrastructure cost for a new station at Sharpness. Details of this are provided in section 8 below.

Gloucestershire Decarbonising Transport Forum – 2022

2.3.17 In July 2022, Gloucestershire County Council held a Gloucestershire Decarbonising Transport Forum in partnership with UK100, bringing together key stakeholders and experts to share and discuss the work that GCC have commenced. UK100 is a network of UK local government leaders which seeks to devise and implement plans for the transition to clean energy that are ambitious, cost effective and take the public and business with them. Gloucestershire County Council is an active member of UK100 and the opening and welcome for the forum was given by Cllr David Gray, GCC Cabinet Member for Environment & Planning.

2.3.18 The engagement feedback report from the forum held in July 2022 as well as the journey to net zero presentation material are included as **Appendix B.**

2.3.19 The Gloucestershire Transport Carbon Reduction Pathway highlights that the transport sector has shown the least reduction in greenhouse gas emissions since 1990 and that nearly 60% of transport emissions are from cars and less than 10% from buses and trains combined. The primary focus of the **Sustainable Transport Approach** for Sharpness Vale is the significant mode share for active travel options, rail and bus travel. This is enabled through the provision of a dedicated walking and cycling network for Sharpness Vale, passenger rail services on the Sharpness branch line, express coach services for longer trips not served by rail as well as local demand responsive transport.

2.3.20 The emissions analysis in the Carbon Reduction Pathway further shows that buses and trains have the highest potential to replace the most emitting trips and that increasing the active mobility mode share would play a significant role in carbon reduction. The **Sustainable Transport Approach** for Sharpness Vale prioritises rail and bus travel over the private car by providing these services as part of an integrated multimodal transport system that is designed to de-prioritise private car travel.

2.3.21 The Gloucestershire Transport Carbon Reduction Pathway approach to rural development is to create *vibrant communities through innovation and connectivity*. The Rural Vision for transport is given as is: ***Highly connected rural communities with accessible active travel and public transport links.*** As described in 2.3.19 above, the **Sustainable Transport Approach** for Sharpness Vale is evidently strongly aligned to the GCC Rural Vision for transport. Further to this it is the intention for Sharpness Vale that all transport options for a diverse range of journey lengths and purposes are integrated and co-ordinated through a single user interface using innovative Mobility as a Service (MaaS) technology to enable multimodal journey planning, ticketing and travel information communication. Providing a simple user interface to enable access to integrated and seamless transport options is an important enabler of smart travel choices and behaviour change.

2.3.22 The Gloucestershire Transport Carbon Reduction Pathway highlights the following opportunities which can be realised through carefully considered rural development:

- Greatest CO_2 saving potential
- High levels of home working in some areas

- Good broadband access
- E-bikes
- Demand responsive transport
- Connectivity through hub and spoke system

2.3.23 GCC highlights that transport behaviour change is key to achieving net zero carbon for the sector and that the following are key enablers to this:

- Efficient use of existing infrastructure
- More sustainable travel opportunities
- 20-minute neighbourhoods
- Digital connectivity and new technologies

2.3.24 The integrated land use and transport approach to the Sharpness Vale development incorporating a mix of residential and employment land uses that both generate and attract trips helps to reduce travel need and distance by providing for a higher proportion of trip internalisation and localisation than purely residential or purely employment related developments. Trips that still need to travel outside of the area are catered for by the provision of public transport options in the form of rail or express coach services. Sections 3,4 and 5 of this report provide detailed calculations of the generation, mode choice and distribution of trip in relation to Sharpness Vale and the wider functional transport area.

2.3.25 Sweating existing transport assets to reduce the need to build more roads which ultimately attract more cars is an important aspect of transport demand management and ultimately carbon reduction. This is especially significant in the case of Sharpness Vale where an existing underutilised transport asset in the form of the Sharpness branch line presents an opportunity to provide for car alternative travel needs of not only the future Sharpness Vale community but also those who live and work in the surrounding communities and employment nodes.

2.3.26 The **Sustainable Transport Approach** for Sharpness Vale provides for a dedicated movement system for walking and cycling. A key element of this is the creation of local mobility hubs within the development which will provide access to shared mobility options such as cycle hire and e-scooter hire. Central to the Sharpness community will be a Strategic Mobility Hub which will be provided at the new Sharpness rail station and will form the convergence point of sustainable mobility and road based public transport routes and forms the interface between these modes and the passenger rail service on the Sharpness Branch line as well as longer journey express coach services. The strategic/interchange hub and the local mobility hubs will operate as a hub and spoke system for active travel options by providing access to micro-mobility mobility modes and linked by dedicated walking and cycling routes throughout the site. It will be possible to hire a bike or scooter at the Local Mobility Hub and dock it at the Strategic/Interchange Mobility Hub for outbound journeys via rail or express coach and vice versa for inbound journeys.

2.3.27 As part of the multi-modal sustainable transport approach for Sharpness, demand responsive transport (DRT) in the form of local bus services plays a vital role. This innovative approach to bus operations matches supply to demand making a more efficient and financially viable service compared to traditional bus operating models. Section 4 of this report provides more information and evidence relating to proposed DRT services planned for Sharpness Vale.

Stroud Sustainable Transport Strategy (STS) (November 2019)

2.3.28 This strategy was developed to form part of the evidence base for Stroud District Council's Local Plan Review. It aims to address the gap in current public transport provision and improve accessibility and connectivity across Stroud District via sustainable mode choices.

2.3.29 It supports the strategic objectives outlined in Stroud's Local Plan. Specifically Strategic Objective SO4 in promoting alternatives to use of private car and seeking to reduce CO_2 emissions by using new technologies, active travel and more integrated transport systems. It gives increased weight to sustainable travel when making planning application decisions.

2.3.30 The transport approach developed for Sharpness Vale was first published and shared with the Council in mid-2018, and it set out all of the principles that have subsequently been incorporated in the Stroud STS. Therefore, the Sharpness proposals have always been strongly aligned to the principles and objectives of the Stroud Sustainable Transport Strategy.

2.3.31 The Sharpness Vale proposals recognise that if sustainable transport objectives and carbon reduction aspirations are to be met, it will be vital for developments to take every opportunity to positively plan for the outcomes that we want to see, and to actively avoid investing in perpetuating undesirable behaviours. In order to achieve this, the proposals emphasise and prioritise investment and intervention in the most sustainable behaviours and modes. The land use planning and disposition of the site is intended to encourage local living – based around the local transport sub-area and treating the existing settlements as part of a holistic new community. This is the way that people live their lives – people from Sharpness Vale will enjoy the existing amenities and facilities, and the existing community will take advantage of the new provision made at Sharpness Vale.

2.3.32 The need for more distant trips to be made is also recognised, but, again, the emphasis and priority is put on investing in and intervening in the provision of the most sustainable modes of transport, not perpetuating old and harmful behaviours. The provision of better public transport, tuned to the particular core movement demands of the community, by train, coach and bus, coupled with the ability to easily access and book these services, entirely flexibly with MaaS technology provides the best opportunity for people to switch to these modes,

2.3.33 The aspiration is to provide a seamless and accessible transport network that is especially attractive to people who want to make this shift. The systems available at Sharpness Vale will make substantially reducing reliance on the car, and even no longer having to make any journeys by car, a practical possibility.

2.3.34 The DfT published the "Young people's travel – what's changed and why?" report in 2018, showing a continuing decline in the 17–29-year-old cohort who are learning to drive. This showed that applications for licences peaked in 1992/4, with 48% of 17–20-year-olds and 75% of 21–29-year-olds holding a driving licence. By 2014 those with a licence had fallen to 29% of 17- 20-year-olds and 63% of 21–29-year-olds. Between 1995-99 and 2010-14 there was a 36% drop in the number of car driver trips per person made by people aged 17-29, with a fall of 44% for men and 26% for women. Therefore, there is a logic to seeking to create places that are genuinely accessible without the need for a car.

2.4 Changing Travel Patterns

2.4.1 When considering how travel patterns are likely to change in the future and how this could affect the travel demand profile of future settlements like Sharpness Vale it is useful to understand how changes in travel behaviour and transport choices have been affected and accelerated by the global Covid-19 pandemic. This section looks at these effects.

2.4.2 Covid-19 has had significant impacts on travel behaviour. A key impact was the normalisation of working from home which, although it is no longer mandated, has now become a common practice for many employers post pandemic. For example, in Bristol, before the pandemic there were an average of 0.6 days per week worked from home which went up to 3.36 during lockdown and only back down to 2.5 post lockdown (see figure 2.1 below). This increase in working from home caused impacts such as a reduced number of journeys undertaken in peak hours. Research suggests that the external shock of Covid-19 has presented a unique standpoint whereby motivations, barriers and beliefs towards travelling have changed. This provides opportunity for more active and sustainable focus towards commuting modes as well as choice regarding the need to travel if alternative working arrangements are available or to make different locational decisions to shorten travel distance.

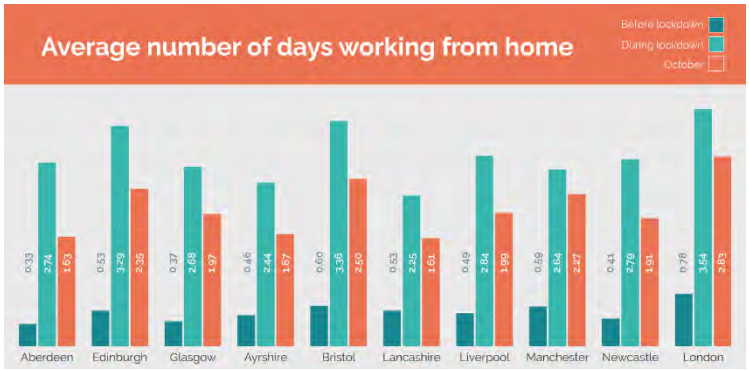

Figure 2.1 - Graph from: Increased working from home will affect commuting patterns – COVID-19 TRANSAS (covid19transas.org)

2.4.3 A further impact of Covid-19 on travel behaviour is a societal shift to shopping being carried out online. Online shopping dramatically increased during the onset of Covid-19 but has continued to increase after peak pandemic levels. For example, in March 2020, 40% of UK shoppers reported doing more of their shopping online compared to before the pandemic, which increased to 75% in February 2021. Whilst this has resulted in an increase in delivery vehicles it has reduced individual journeys to and from shops which has decreased journey numbers overall. Therefore, people are travelling less for shopping now than they were during pre-pandemic times.

2.4.4 The DfT Official Statistics, Domestic Transport Usage by Mode as updated 11 January 2023 show that road transport has increased on average to 90% of pre-pandemic levels. In the current publishing, period weekly average usage figures (January 2023) for rail are between 50% to 91%, compared to 73% to 99% in the previous publishing period.

2.4.5 Whilst the Covid-19 pandemic has affected travel patterns and may never be the same as before the pandemic, rail patronage has increased considerably since the end of lockdown restrictions. In light of this the proposed sustainable transport approach for Sharpness Vale is considered to be appropriate and passenger demand is likely to be in line with those predicted by the time the site is built out.

3 Trip Generation

3.1 Introduction

3.1.1 Further to the previous reports which form part of the Local Plan Evidence base, Stantec has undertaken a detailed review of the potential trip generation, mode share, distribution and assignment of trips from the Sharpness Vale development.

3.1.2 The *Transport Technical Appraisal (June 2020)* considered the full development of 5,000 homes and included a range of off-site public transport measures to limit the number of car trips generated by the development; this was referred to as the 'Sustainable Approach'. The *Highways Capacity Assessment (October 2020)* considered the development expected to be brough forward within the Local Plan period (2,400 homes) and tested what might happen if the 'Sustainable Approach' could not be delivered or is not as successful as envisaged.

3.1.3 The analysis in the following sections does not supersede the information set out in these previous reports. Instead, the previous information has been refined and expanded on to derive the following:

- Previous assessments included a simple split between 'internal' and 'external' trips. The 'internal' trips have been split to provide a better indication of those trips which will stay within the Sharpness Vale red line boundary (Internalisation) and those which will leave the site but stay within the local area (Localisation) as it is acknowledged that Sharpness Vale is not a remote site and that there is, quite rightly, likely to be a level of transport interaction between Sharpness Vale and surrounding local communities and employment nodes. This interaction is encouraged within the transport approach to Sharpness Vale so that the wider area can make use of and benefit from the transport offerings provided by Sharpness Vale.
- Provide a direct comparison between the **Sustainable Approach** and the **Fallback Assessment** for the Local Plan development of 2,400 homes in order to compare the number of internal/local and external trips in each scenario
- Using this data for the number of external trips, a high-level carbon assessment has been undertaken (**Section 7**) to calculate the potential carbon savings of the **Sustainable Approach** compared to the **Fallback Assessment**

3.2 Person Trip Generation

3.2.1 The total person trip generation for the 2,400 homes and 10ha of employment (assumed to be 50% Business Park/ 50% industrial Estate) using the trip rates from the previous reports is shown in **Table 3.1**.

Table 3.1 – Total Person Trip Generation (2,400 homes and 10ha Employment)

Journey Purpose		Morning Peak (8am to 9am)				Evening Peak (5pm to 6pm)			
		%	Arr.	Dep.	Tot	%	Arr.	Dep.	Tot
Residential	Work	41%	175	729	904	35%	470	207	677
	School	32%	135	560	695	9%	117	51	168
	Shopping and PB	20%	84	349	433	27%	361	159	520
	Leisure	7%	29	119	147	30%	405	178	583
	Total	**100%**	**422**	**1,757**	**2,179**	**100%**	**1,354**	**595**	**1,949**
Employment		-	435	91	526	-	52	348	400
Residential + Employment			**857**	**1,848**	**2,706**		**1,405**	**943**	**2,348**

3.2.2 These person trip numbers will be used for both the **Sustainable Approach** and the **Fallback Assessment**.

3.3 Internal, Local and External Trips

3.3.1 Although the previous internalisation did include consideration of those trips which may stay within the local area, this did not provide sufficient detail to allow for consideration of how residents at Sharpness will access the existing settlements and employment destinations or how existing residents in Berkeley and the surrounding area will be able to access the proposed facilities at Sharpness Vale. Therefore, the person trips presented in **Table 3.1** have been split into the following three categories:

- **Internal**: trips which stay within the Sharpness Vale red line (e.g., residents who travel to the proposed schools, employment opportunities and amenities within Sharpness Vale)
- **Local:** trips between Sharpness Vale and the wider Functional Transport Area (e.g., residents who travel to the existing amenities in Berkeley or SGS Berkeley Green UTC)
- **External:** trips between Sharpness Vale and external destinations (e.g., residents who travel to Bristol or Gloucester for work).

3.3.2 **Figure 3.1** shows the Sharpness Vale red line boundary and the Functional Transport Area in blue; the external trips are considered to be any trips travelling outside of this blue line.

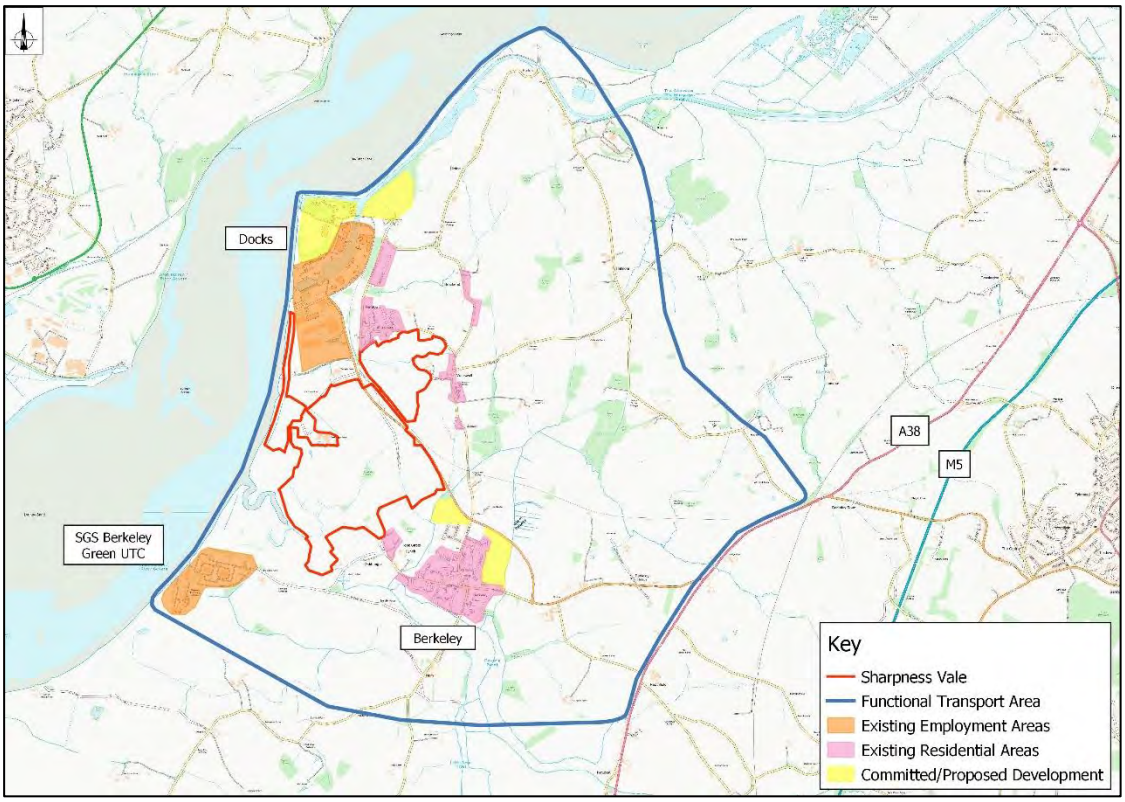

Figure 3.1 – Functional Transport Area

3.3.3 The person trip generation values from **Table 3.1** have been split into internal, local and external trips for both the **Sustainable Approach** and the **Fallback Assessment**, shown in **Tables 3.2** and **3.3,** respectively.

3.3.4 The assumptions relating to internal, local and external trips are based on the previous work undertaken for the *Transport Technical Appraisal* and the *Highways Capacity Assessment* with some adjustments made to reflect the more detailed review of destinations within the Functional Transport Area. These assumptions are summarised below.

- Work and Employment
  - **Sustainable Approach**: 18% internal/ 7% local, based on 2011 Census data with a 7% increase to reflect changing commuting patterns
  - **Fallback Assessment**: 13% internal/ 5% local, based on 2011 Census data with no adjustments
- Education
  - **Sustainable Approach**: 78% internal based on National Travel Survey data and the provision of primary and secondary schools
  - **Fallback Assessment**: 50%
- Shopping and Personal Business
  - **Sustainable Approach**: 30% internal/30% local based on provision of on-site facilities and pedestrian, cycle and public transport links between Sharpness Vale and Berkeley

- **Fallback Assessment**: 15% internal/ 15% local based on fewer on-site facilities and links to existing facilities in Functional Transport Area

- Leisure

  - **Sustainable Approach**: 25% internal/ 25% local based on provision of on-site facilities and pedestrian, cycle and public transport links between Sharpness Vale and Berkeley

  - **Fallback Assessment**: 13% internal/ 12% local based on fewer on-site facilities and links to existing facilities in Functional Transport Area

Table 3.2 – Internal, Local and External Person Trips (Sustainable Approach)

	%	Morning Peak (8am to 9am)			Evening Peak (5pm to 6pm)		
		Arr.	Dep.	Tot	Arr.	Dep.	Tot
Work							
Internal	18%	0	131	131	85	0	85
Local	7%	0	51	51	33	0	33
External	75%	175	547	722	353	207	559
Total	**100%**	**175**	**729**	**904**	**470**	**207**	**677**
Employment							
Internal	18%	47	0	47	0	30	30
Local	7%	7	0	7	0	5	5
External	75%	381	91	472	52	313	365
Total	**100%**	**435**	**91**	**526**	**52**	**348**	**400**
Education							
Internal	78%	105	437	542	91	40	131
Local	0%	0	0	0	0	0	0
External	22%	30	123	153	26	11	37
Total	**100%**	**135**	**560**	**695**	**117**	**51**	**168**
Shopping and Personal Business							
Internal	30%	25	105	130	108	48	156
Local	30%	25	105	130	108	48	156
External	40%	34	139	173	144	64	208
Total	**100%**	**84**	**349**	**433**	**361**	**159**	**520**
Leisure							
Internal	25%	7	30	37	101	45	146
Local	25%	7	30	37	101	45	146
External	50%	14	59	74	203	89	292
Total	**100%**	**29**	**119**	**147**	**405**	**178**	**583**
All Journey Purposes							
Internal	-	185	703	887	385	163	548
Local	-	39	185	225	243	97	339
External	-	633	960	1,594	777	684	1,461
Total	**-**	**857**	**1,848**	**2,706**	**1,405**	**943**	**2,348**

Table 3.3 – Internal, Local and External Person Trips (Fallback Assessment)

	%	Morning Peak (8am to 9am)			Evening Peak (5pm to 6pm)		
		Arr.	Dep.	Tot	Arr.	Dep.	Tot
Work							
Internal	13%	0	95	95	61	0	61
Local	5%	0	36	36	24	0	24
External	82%	175	598	773	386	207	592
Total	**100%**	**175**	**729**	**904**	**470**	**207**	**677**
Employment							
Internal	18%	34	0	34	0	22	22
Local	0%	0	0	0	0	0	0
External	82%	401	91	492	52	326	378
Total	**100%**	**435**	**91**	**526**	**52**	**348**	**400**
Education							
Internal	50%	67	280	348	58	26	84
Local	0%	0	0	0	0	0	0
External	50%	67	280	348	58	26	84
Total	**100%**	**135**	**560**	**695**	**117**	**51**	**168**
Shopping and Personal Business							
Internal	15%	13	52	65	54	24	78
Local	15%	13	52	65	54	24	78
External	70%	59	244	303	253	111	364
Total	**100%**	**84**	**349**	**433**	**361**	**159**	**520**
Leisure							
Internal	13%	4	15	19	53	23	76
Local	12%	3	14	18	49	21	70
External	75%	21	89	111	304	134	438
Total	**100%**	**29**	**119**	**147**	**405**	**178**	**583**
All Journey Purposes							
Internal		118	443	561	226	95	321
Local		16	103	119	126	45	172
External		724	1,302	2,026	1,052	803	1,856
Total		**857**	**1,848**	**2,706**	**1,405**	**943**	**2,348**

Table 3.4 – Internal, Local and External Person Trips; Comparison of Sustainable Approach and Fallback Assessment

	Morning Peak (8am to 9am)			Evening Peak (5pm to 6pm)		
	Arr.	**Dep.**	**Tot**	**Arr.**	**Dep.**	**Tot**
Sustainable Approach						
Internal	185	703	887	385	163	548
Local	39	185	225	243	97	339
External	633	960	1,594	777	684	1,461
Total	**857**	**1,848**	**2,706**	**1,405**	**943**	**2,348**
Fallback Assessment						
Internal	118	443	561	226	95	321
Local	16	103	119	126	45	172
External	724	1,302	2,026	1,052	803	1,856
Total	**857**	**1,848**	**2,706**	**1,405**	**943**	**2,348**
Difference						
Internal	67	260	327	159	68	227
Local	23	82	106	116	52	168
External	-90	-342	-433	-275	-120	-395

3.3.5 **Table 3.4** shows that there are 433 more external trips in the morning peak hour and 395 more external trips in the evening peak hour in the **Fallback Assessment** when compared to the **Sustainable Approach**. Therefore, if the Sustainable Approach were successfully implemented at Sharpness Vale, approximately 25% fewer trips would be added to the wider highway and public transport networks.

4 Modal Choice

4.1 Introduction

4.1.1 The fallback transport scenario is dealt with in detail in the *Highways Capacity Assessment* previously submitted as part of the transport evidence in support of the Sharpness Vale site allocation. This describes the highways mitigation required should the sustainable approach not be realised as envisaged.

4.1.2 It demonstrates that Sharpness Vale can be delivered regardless of whether the sustainable approach is realised although, to be clear, this is not the aspiration and would result in the development not being so easily aligned to national and local policy positions on future transport provision for new settlements. This section provides a refinement of the modal choice associated with the sustainable transport approach following from the revised trip generation from the previous section.

4.2 Within the Functional Transport Area

4.2.1 Within the site, non-car green ways will be provided to maximise every opportunity to use every possible sustainable mobility mode for getting around safely – walking, jogging, bikes and scooters, electric bikes and electric scooters, segways, motorised skateboards – any method that makes it easy to get around. Some of these are currently not legal to use on highways – so we will keep these routes threaded across and around the development unadopted so that people can use the latest and easiest technology to get around. They will be designed to ensure segregation between faster, more agile modes and slower, more pedestrian modes so that they remain safe and accessible to everyone.

4.2.2 Improvements to off-site pedestrian and cycle infrastructure to provide links between Sharpness Vale and the existing facilities in Berkeley, SGS Berkeley Green UTC at the disused power station and Sharpness Docks

- Electric scooters are a growing transport option which have grown in recognition in recent years. It comes with multiple benefits such as being affordable, easy to ride, easy to recharge and portable. One of the largest operators is Voi who operate an app-based scooter hire scheme in 18 locations in the UK. It is intended that for these types of services cover the wider functional transport area and provide linkages between the strategic mobility hub at Sharpness Station and the neighbouring communities and employment nodes.

- A key element of the Sharpness Vale transport approach is the creation of local mobility hubs within the development which will provide access to shared mobility options such as cycle hire and e-scooter hire. Central to the Sharpness community will be a Strategic Mobility Hub which will be provided at the new Sharpness rail station and will form the convergence point of sustainable mobility and road based public transport routes and forms the interface between these modes and the passenger rail service on the Sharpness Branch line as well as longer journey express coach services. It will be possible to hire a bike or scooter at the Local Mobility Hub and dock it at the Strategic Mobility Hub for outbound journeys via rail or express coach and vice versa for inbound journeys.

4.2.3 Local demand responsive bus services will be provided within the functional transport area linking local communities with the Sharpness Strategic Mobility Hub to enable transfers to the longer journey transport options of either rail or express coach services. These will be accessible via the MaaS system that will cover the site and is intended to be available in the wider functional transport area.

4.3 Outside the Functional Transport Area

Rail

4.3.1 Re-using the Sharpness railway line for passenger services, with a new service to Gloucester will require a new station at Sharpness, some changes to the station at Gloucester (which is likely to be incorporated into re-signalling works that it is understood Network Rail may well have delivered before they are needed by the second hourly Sharpness services) and the need to procure a suitable operator – which may mean trains operate over a longer journey, as they are incorporated into a wider service pattern. Refer to section 8 below regarding additional work undertaken with regard to operational and infrastructure considerations for the proposed passenger rail service on the branch line.

Bus/ Coach

4.3.2 Operating a high quality, express coach service to Bristol, and key employment nodes around the city. This would use the "Zeelo" model, or similar, to utilise chartered coach resources on routes designed to unashamedly maximise the commuter patronage. This is described in more detail in the previously submitted evidence document *Sharpness Vale – Mobility-as-a-Service and Express Coach Services – Non-car Movement Strategy, Viability & Funding Appraisal*.

4.3.3 The provision of bus services is inherently flexible, as they are relatively easily procured and changed. The plan for the express coach services is that they would provide a high quality, tailored service that would get people where they need to go in a way that competes directly with the private car. It should also be noted that neither the services themselves nor the MaaS subscription services will be limited to residents of the development. The greater the potential catchment for these facilities the better, and so the existing communities in the area will be able to access them from their inception as well.

4.3.4 The service will be designed to be demand flexible by assigning vehicle types and sizes to meet the demand that exists in real time. This may mean that the service starts with smaller vehicles and the vehicle size or frequency increases with demand. This significantly improves the operational viability over traditional operating models. The journey times used in the calculations are based on peak journey times to key destinations and do not include stops as the services are designed as express services and do not stop along the way as would be the case with traditional bus services.

Technology and Innovation

4.3.5 "MaaS" and subscription-based transport – Mobility-as-a-Service managed systems allow people to dispense with car ownership, relying on the ability to plan and book the myriad personal transport, public transport and ride hailing and taxi services in the area (and , if absolutely necessary on occasion, to gain occasional access to a hire car when they need to through linked car hire schemes). Previous transport evidence on this has been submitted in the form of the document *Sharpness Vale – Mobility-as-a-Service and Express Coach Services*. Since then, MaaS trials have been initiated and are up and running in several locations in the UK. At Sharpness Vale, a MaaS App would likely include:

- Rail tickets to Sharpness Branch Line services as soon as they are up and running;
- Bookings for the tailored, express coach services;
- Tickets for the local bus services;
- Booking with local taxi providers, Uber and other on demand services;
- Cycle hire facilities probably provided by others on site, but available through MaaS;

- Access to personal modes of transport; and
- Car hire and pooling for Battery Electric Vehicles

4.3.6 MaaS has successfully been implemented in other places such as The Solent area which offers users a smart phone application (App) as a single-point of access for rail, ferry, bus, bike, e-scooter and car rental services. Details of the Solent Maas offering can be found in **Appendix C**. Maas has made it easier for people to access information about alternatives to single-occupancy vehicles. The digital element of it enables insights into improving existing services and offering new ones to make travel easier and greener. This still-emerging technology represents the future of transport planning and bookings.

Car clubs

4.3.7 Mobile phone applications (Apps) and subscription services are reducing the need to own a car by providing convenient alternatives for occasional car use. For example, Enterprise Car Club is a car membership club where a user pays an annual or monthly membership fee and then hourly rate to hire vehicles. In Bristol it operates at £7 per month or £60 per year and starts at £5.20 to hire a vehicle. Similarly, Arriva Click is an App based service where users can be collected via minibus which it will combine with the collection of other passengers.

4.3.8 There are similar advances in technology improving the ease of journeys and reducing the need to own a car. For example, Whim is an app that assists with journey planning and allows the purchase of bus, rail, light rail tickets, booking taxis and hiring of cars and bikes. This app improves the convenience of journey planning for more active modes of transport.

Demand Responsive Transport (DRT)

4.3.9 DRT Is a flexible service that provides for shared transport users to specify their desired location and time of pick-up and drop-off at desired destinations. The system itself can align vehicle supply to demand in near real time based on back-end analytics of usage and trend analysis. As part of the transport approach to Sharpness Vale, demand responsive transport will take the form of local services connecting people with local destinations as well as transfers to longer journey public transport options available at the strategic mobility hub. The express coach services proposed to serve further destinations to the south will also be demand linked.

4.3.10 DRT services are gaining traction as a flexible solution to dynamic demand and improved viability over more traditional operating models for bus services. This is because traditional timetable-based bus services incur operating costs by travelling on a fixed timetable even when there are low levels of occupancy and the resultant low levels of ticket revenue.

4.3.11 There has been much publicity surrounding the operational challenges experienced by Stagecoach in Gloucestershire with many routes cancelled and passengers left stranded. A summary of this is provided in **Appendix D**. GCC has recently ended its contract with Stagecoach and are now also piloting DRT services in the County in the form of the App based Robin service. There are a growing number of other examples in the UK where DRT services are being run on pilot schemes or are in continuous operation. Clearly, there is a strong case for DRT in the future of road based public transport provision as it can be designed and offered to meet demand and be operationally viable almost from day one whilst at the same time offering a car competitive, convenient and reliable service for users.

5 Travel Outside the Functional Transport Area

5.1 Introduction

5.1.1 Following from the trip generation described in section 3 above this section considers the quantification and distribution of trips generated by Sharpness Vale that are likely to be travelling to destinations beyond Sharpness Vale and the functional transport area described previously. The mode share calculations are based on the choices available for journeys beyond the functional transport area as described in section 4 above and are differentiated between the Sustainable Transport approach and the Fallback Assessment.

5.2 Distribution

5.2.1 The distribution of trips generated by Sharpness Vale has been calculated using the methodology presented in Section 6.0 of the *Transport Technical Appraisal* (for the **Sustainable Approach**) and Section 7.0 of the *Highway Capacity Assessment* (for the **Fallback Assessment)**. The only exception to this relates to the distribution values for leisure trips which have been updated following discussions with SDC to better reflect the larger destinations (such as Bristol and South Gloucestershire) which provide a better leisure offer.

5.2.2 The resultant person trips are shown in **Table 5.1**. For the education, shopping & personal business and leisure trips, the same distribution percentages are used for the **Sustainable Approach** and the **Fallback Assessment**. For the work and employment trips, the **Sustainable Approach** assumes that the rail link to Gloucester and coach link to Bristol are in place which will make these two destinations more attractive for residents from Sharpness Vale; therefore, adjustments have been applied to these values, as described in more detail in Section 6.3 of the *Transport Technical Appraisal*.

Table 5.1 – Person Trips by Destination (2-way)

Destination	Morning Peak Hour (8am to 9am)		Evening Peak Hour (5pm to 6pm)	
	Sustainable Approach	Fallback Assessment	Sustainable Approach	Fallback Assessment
Cam & Dursley	256	416	217	326
Bristol	211	193	226	244
South Gloucestershire	385	527	360	501
Gloucester	284	241	269	263
Stroud/Stonehouse	167	243	163	240
Cheltenham	46	51	54	68
Tewkesbury	48	52	44	50
Wotton Under Edge	144	246	79	111
Frampton on Severn	53	57	48	54
Total	**1,594**	**2,026**	**1,461**	**1,856**

5.3 Mode Share

5.3.1 The mode share of trips generated by Sharpness Vale has been calculated using the methodology presented in Section 7.0 of the *Transport Technical Appraisal* (for the **Sustainable Approach**) and Section 8.0 of the *Highway Capacity Assessment* (for the **Fallback Assessment)**.

5.3.2 The trips by destination and mode are shown in **Tables 5.2** and **5.3** for the **Sustainable Approach** and the **Fallback Assessment,** respectively. Note that these are calculated on the basis of 2400 homes and that rail provision at this time horizon as previously estimated will be at 1 train per hour.

Table 5.2 – Trips by Destination and Mode (Sustainable Approach) – 2-Way

Destination	Morning Peak Hour (8am to 9am)					Evening Peak Hour (5pm to 6pm)				
	Car Driver	Car Passenger	Bus	Train	Total	Car Driver	Car Passenger	Bus	Train	Total
Cam & Dursley	59	39	158	0	**256**	52	32	133	0	**217**
Bristol	50	26	131	3	**211**	54	30	133	9	**226**
South Gloucestershire	114	59	207	5	**385**	103	56	191	10	**360**
Gloucester	47	25	0	213	**284**	48	27	0	194	**269**
Stroud/Stonehouse	43	23	101	0	**167**	42	23	99	0	**163**
Cheltenham	11	6	0	29	**46**	13	7	0	34	**54**
Tewkesbury	13	6	0	29	**48**	11	6	0	26	**44**
Wotton Under Edge	33	23	88	0	**144**	19	12	48	0	**79**
Frampton on Severn	14	7	31	0	**53**	13	7	28	0	**48**
Total	**383**	**215**	**716**	**279**	**1,594**	**354**	**200**	**633**	**273**	**1,461**

Table 5.3 – Trips by Destination and Mode (Fallback Assessment) – 2-Way

Destination	Morning Peak Hour (8am to 9am)					Evening Peak Hour (5pm to 6pm)				
	Car Driver	Car Passenger	Bus	Train	Total	Car Driver	Car Passenger	Bus	Train	Total
Cam & Dursley	239	129	48	0	**416**	201	94	31	0	**326**
Bristol	135	33	10	14	**193**	154	66	11	14	**244**
South Gloucestershire	384	70	29	44	**527**	347	92	26	36	**501**
Gloucester	171	40	0	30	**241**	174	61	0	28	**263**

Stroud/Stonehouse	176	33	33	0	**243**	164	47	29	0	**239**
Cheltenham	36	8	0	7	**51**	42	19	0	7	**68**
Tewkesbury	38	6	0	8	**52**	34	9	0	6	**50**
Wotton Under Edge	127	86	34	0	**246**	65	31	15	0	**111**
Frampton on Severn	42	7	8	0	**57**	37	10	7	0	**54**
Total	**1,348**	**412**	**162**	**103**	**2,026**	**1,217**	**428**	**119**	**92**	**1,855**

5.3.3 Car Driver Trips by Destination

Table 5.4 – Car Driver Trips by Destination (Sustainable vs. Fallback) – 2-Way

Destination	**Morning Peak (8am to 9am)**		**Evening Peak (5pm to 6pm)**	
	Sustainable Approach	**Fallback Assessment**	**Sustainable Approach**	**Fallback Assessment**
Cam & Dursley	59	239	52	201
Bristol	50	135	54	154
South Gloucestershire	114	384	103	347
Gloucester	47	171	48	174
Stroud/Stonehouse	43	176	42	164
Cheltenham	11	36	13	42
Tewkesbury	13	38	11	34
Wotton Under Edge	33	127	19	65
Frampton on Severn	14	42	13	37
Total	**383**	**1,348**	**354**	**1,217**

5.4 Form of public transport offerings for External Trips

5.4.1 As described in section 4 above there will be two forms of public transport provision for Sharpness Vale trips to external destinations, namely:

- Express coach services
  - For trips towards Gloucester until between 1000 and 1200 homes are built to provide sufficient demand for passenger rail services
  - For trips towards Bristol from earlier in the development buildout and flexibly rolled out to meet demand
- Passenger Rail Service from Sharpness to Gloucester via Cam and Dursley

6 Highway Considerations

6.1 Introduction

6.1.1 The car driver trips for each destination set out in **Table 5.4** have been assigned onto the highway network using Google Maps. A total of eleven junctions have been considered; nine junctions on the A38 which are on GCCs network and two junctions on the M5 which are on the National Highways Strategic Road Network. These junctions are shown in **Figure 6.1** below.

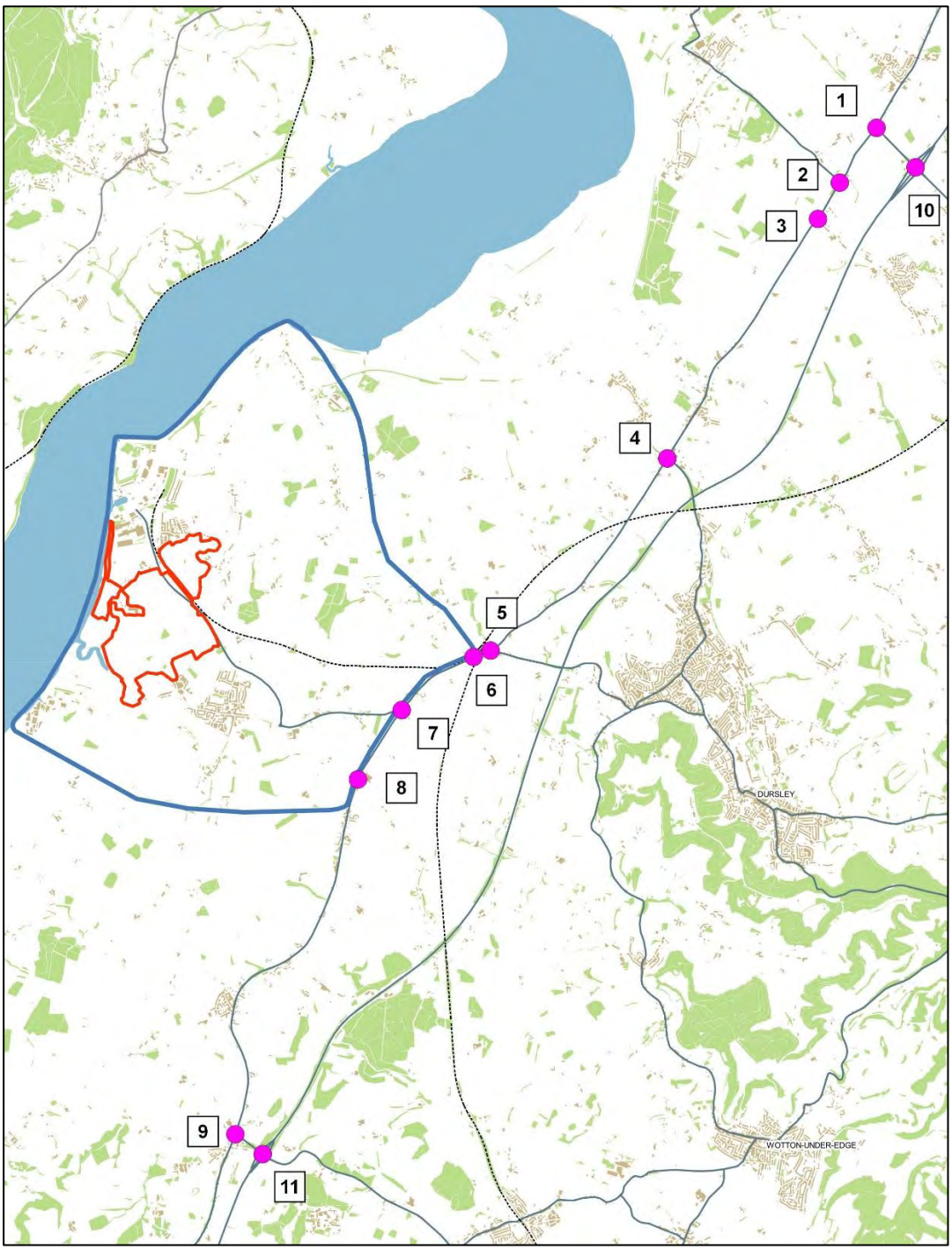

Figure 6.1 – A38 and M5 Junctions

6.1.2 The morning and evening peak two-way flows for the **Sustainable Approach** and **Fallback Assessment** scenarios at the eleven junctions are shown in **Table 6.1**.

Table 6.1 – Development Flows at A38 and M5 Junctions

Fig. 7.1 Ref	Junction	Morning Peak (8am to 9am)		Evening Peak (5pm to 6pm)	
		Sustainable Approach	Fallback Assessment	Sustainable Approach	Fallback Assessment
Gloucestershire County Council					
1	A38/ A419	113	421	114	413
2	A48/ B4071 Perry Way	127	463	126	451
3	A38/ Claypits	127	463	126	451
4	A38/ St John's Road/ A4135	127	463	126	451
5	A38/ B4066 Berkeley Road	219	829	197	717
6	A38/ Breadstone	219	829	197	717
7	A38/ B4066	219	829	197	717
8	A38/ Alkington Lane	164	519	157	500
9	A38/ B4509	164	519	157	500
National Highways					
10	M5 Junction 13	90	326	90	327
11	M5 Junction 14	164	519	157	500

6.1.3 By considering that the Sharpness Vale new community will not exist in isolation and that it's transport provision and land use mix will enable a degree of interaction with existing local communities and employment nodes within the functional transport area the external traffic that is expected to be leaving the functional transport area will likely be less than calculated in the Highway Capacity Assessment document. The highway mitigation requirements identified in the Highway Capacity Assessment under the Fallback Assessment are therefore considered to be robust.

7 Carbon Savings

7.1 Introduction

7.1.1 Due to transport systems being heavily reliant on fossil fuels, they are a main contributor towards carbon emissions. In 2017, Green House Gas (GHG) emissions from road transport made up around a fifth of the UK's total GHG emissions (20%). Similarly, in 2019, an estimated 34% of carbon dioxide emissions were from the transport sector. As can be seen in the extract from the Department for Transport Decarbonising Transport Strategy of 2021 in **Figure 7.1** below, cars and taxis contribute 67.7% of the carbon emission for the transport sector whilst rail transport contributes only 1.7%.

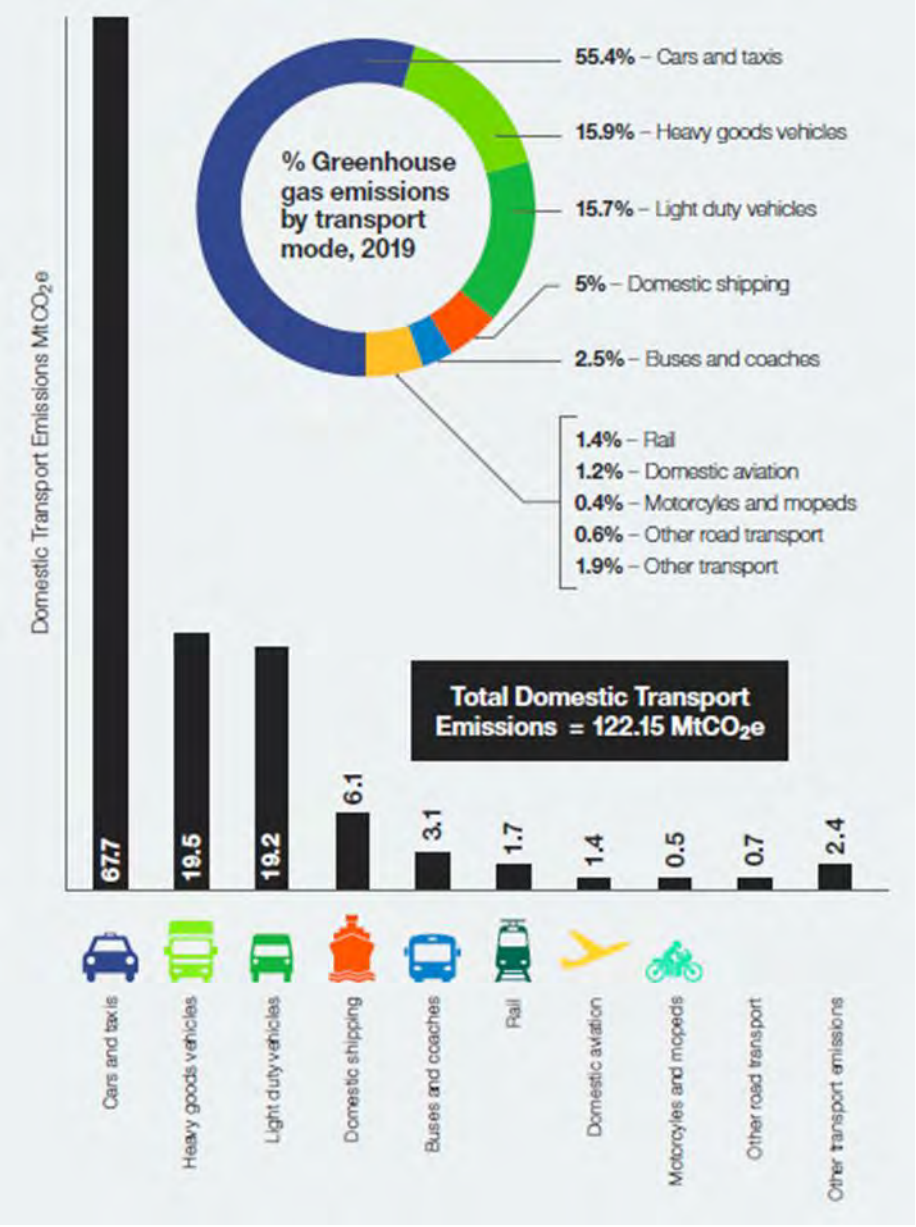

Figure 7.1 - DfT Transport Carbon Contributions

7.2 Planning Context

7.2.1 In 2019, the UK government declared a climate emergency and set a target to reduce the UK's carbon emissions by 80% compared to those of 1990 by 2050. There is growing concern around the negative impact transport is having towards the UK's carbon emissions. Transport specifically is being targeted in national policy with the UK aiming to have a net zero carbon transport system by 2050 and ban the sale of petrol and diesel cars by 2030.

7.2.2 Stroud District Council (SDC) declared a climate emergency in 2018 and have set environment and climate change priorities in the draft Local Plan. The overarching aim for the SDC Local Strategy is for the district to achieve carbon neutrality by 2030. Due to the high carbon emissions contribution of the transport sector, SDC have taken action to reduce the need for fossil fuels across Stroud. For example, through upgrading cars used by Neighbourhood Wardens to electric vehicles and encouraging staff to lift share and use public transport.

7.3 Carbon Emissions and Transport Scenarios for Sharpness

7.3.1 As set out nationally and locally, addressing carbon emissions is a priority. The transport strategy of the Sharpness Vale development plays an important role in its transport sustainability. Sharpness Vale contributes towards meeting these national and local goals by creating a settlement with a balanced approach to land use provision by type and proximity that enables a high proportion of internalised and localised trips with an overall reduced travel demand profile. Further to this those trips that are destined for destinations outside the functional transport area will be catered for by the provision of passenger rail services and high-quality demand responsive express coach services.

7.3.2 Whilst the UK Government has aimed to stop the sale of new petrol and diesel cars by 2030, the vehicle mix will continue to include internal combustion engines for some time after these dates. It is therefore critical that future developments do not progress on the incorrect assumption that CO_2 implications will be obsolete by 2030. Moreover, the less opportunity people have to use sustainable modes of transport, such as public transport or active travel, the longer they will continue to use their petrol and diesel cars beyond the target of 2030. The same applies to electric vehicles as the less alternatives there are to single-occupancy vehicles, such as buses, the greater the carbon impact electric cars will have, even if it is lower than petrol or diesel. This is largely due to the embedded carbon in the manufacture of these vehicles as well as the road infrastructure required to accommodate them.

7.3.3 Through the provision of sustainable transport options, the residents of Sharpness Vale will have a reduced need to use single-occupancy vehicles altogether over traditional car centric development. This will significantly reduce transport related carbon emissions and contribute towards national and local goals of carbon neutrality, which will ultimately contribute to reducing the impacts of climate change.

7.4 Methodology for Calculating Carbon Emissions

7.4.1 Traffic emissions of CO_2 are calculated using the Emission Factor Toolkit (EFT) v11.0 as published by the Department for Environment Food and Rural Affairs (DEFRA). This utilises CO_2 emission factors based on TRL/DfT data. The two **Sustainable Approach** and **Fallback Assessment** scenarios have been considered in order to provide a comparison between expected carbon emissions in the two very different approaches.

7.4.2 Traffic data is entered into the EFT, along with speed and distance data to provide annual emissions for operational phase traffic related to the development. This tool calculates the "tailpipe" emissions of these vehicles only so does not take into account emissions such as those produced during production of energy or fuel for these vehicles or non-transport related emissions as well as embedded carbon. The calculations are based on the proportion of internal combustions engine (ICE) vehicles today and does not take into account the transition to electric

private cars over time. As mentioned in 7.3.2 above there is likely to remain a large proportion of ICE vehicles on the road beyond 2030 and modal shift away from private car dominance remains critical to overall carbon reduction.

7.4.3 The data inputs are summarised below and shown in **Table 7.1**.

- **Traffic Flow**: morning and evening peak vehicle flows from **Table 6.4** have been growthed up to 24-hour flows using a growth factor of 6.91, calculated from an ATC survey on the A38.
- **% HDV**: TRICs has been used to generate % HDV for residential sites, using sites within England and Wales. For the purpose of this assessment, an HGV proportion of 0.263% is used for all the areas as calculated from TRICs for predominantly residential developments.
- **Speed**: link length divided by average time to travel from Sharpness to destinations in the morning peak hour (8am-9am)
- **Link Length**: distance between Sharpness Vale and the destinations via the road network

Table 7.1 - EFT Input Summary

Destination	Traffic Flow (vehicles per 24hrs)		Speed (kph)	Link Length (km)
	Sustainable Approach	Fallback Assessment		
Cam & Dursley	762	3042	49	10.7
Bristol	718	1994	43	35.9
South Gloucestershire	1499	5046	58	26.1
Gloucester	652	2379	55	36.4
Stroud/Stonehouse	586	2349	41	24.7
Cheltenham	165	540	52	41.2
Tewkesbury	167	500	67	50
Wotton Under Edge	360	1329	44	13.3
Frampton on Severn	185	546	60	16.1
Total	**5,094**	**17,726**	**-**	**-**

7.4.4 This data in **Table 7.1** has been used in the EFT with the resultant carbon emissions for each destination in the Sustainable Approach and Fallback Assessment are shown in **Table 7.2**.

Table 7.2 - Carbon Emissions Summary (Sustainable Approach vs. Fallback Assessment)

Destination	Total CO_2 Emissions (tonnes/ annum)		% Decrease Sustainable vs Fallback
	Sustainable Approach	Fallback Assessment	
Cam & Dursley	412	1,646	-75%

Bristol	1,356	3,766	-64%
South Gloucestershire	1,936	6,516	-70%
Gloucester	1,184	4,319	-73%
Stroud/Stonehouse	773	3,099	-75%
Cheltenham	342	1,122	-70%
Tewkesbury	411	1,233	-67%
Wotton Under Edge	250	921	-73%
Frampton on Severn	147	434	-66%
Total	**6,836**	**23,101**	**-70%**

7.4.5 As can be seen in **Table 7.2** above by following the **Sustainable Approach** to transport as proposed for Sharpness Vale this potentially saves **16,265 tonnes** of carbon dioxide per annum from vehicle emissions over a more traditional predict and provide approach to transport associated with the **Fallback Assessment** scenario.

8 Sharpness Passenger Rail

8.1 Operational Considerations

8.1.1 Having re-calculated the trip generation, distribution and modal share associated with the **Sustainable Approach** considering a level of internalisation as well as localisation it is still estimated that the Sharpness Passenger Rail Service could achieve a passenger demand in excess of 1million passenger journeys per annum.

8.1.2 A review of potential comparator stations has been undertaken, with a particular focus on those on a branch line and/or those which act as a commuter station for a larger destination (as Sharpness Vale will for Gloucester). The following parameters have been used:

- **Location**: rural and semi-rural locations near to a larger settlement which acts as an attractor for rail trips
- **Population**: between 5,000 and 40,000
- **Rail Services**: up to 5 trains per hour to a larger settlement
- **Patronage**: 500,000+ annual passengers (from 2018/19 ORR data – the most recent period before the Covid-19 pandemic)

8.1.3 This review found a number of existing stations that have very similar characteristics to those that would exist on the Sharpness branch line, once the growth point was completed, and which support a similar proposed level of passenger train services. Our own studies have identified thirteen stations that have similar characteristics to Sharpness.

8.1.4 **Table 8.1** below shows each of these stations, with key information related to population, station patronage and train services

Table 8.1 - Existing Stations Comparable to Sharpness Vale

Location	Population served	Rail mode share	Specific stations	Annual PAX (2018/19)	Train service provision
Seaford, Sussex	22,584	8.4%	Seaford	676,442	2tph to Brighton
Glossop/ Hadfield, Derbyshire	36,283	9.2%	Glossop Hadfield Dinting *Total*	1,114,454 400,912 171,004 *1,686,370*	2tph to Manchester
Exmouth, Devon	34,432	3.9%	Exmouth	946,880	2tph to Paignton via Exeter
Malvern, Worcestershire	36,770	3.5%	Great Malvern Malvern Link *Total*	531,124 355,256 *886,380*	2tph to Birmingham
Aberdare, Rhondda Cynon Taff	29,748	3.2%	Aberdare	555,780	2tph to Cardiff
Garforth, Leeds	14,838	11.4%	Garforth East Garforth *Total*	644,484 220,824 *865,308*	4tph to Leeds

Location	Population served	Rail mode share	Specific stations	Annual PAX (2018/19)	Train service provision
Dawlish, Devon	11,312	6.9%	Dawlish Dawlish Warren *Total*	536,152 189,756 *725,908*	2tph to Exeter 2tph to Newton Abbot
Ilkley, West Yorkshire	14,809	18.5%	Ilkley Ben Rhydding *Total*	1,341,652 221,492 *1,563,144*	4tph to Leeds
Bradford-on-Avon, Wiltshire	9,149	10.1%	Bradford-on-Avon	534,086	5tph to Bath/ Bristol
Trowbridge, Wiltshire	39,409	3.6%	Trowbridge	930,134	5tph to Bath/ Bristol
New Milton, Hampshire	19,969	4.0%	New Milton	627,946	2tph to Southampton 2tph to Christchurch/ Bournemouth
Teignmouth, Devon	15,129	5.3%	Teignmouth	705,732	2tph to Newton Abbot 2tph to Exeter
Totnes, Devon	8,076	5.3%	Totnes	696,226	2tph to Plymouth 2tph to Exeter

8.1.5 **Table 8.2** below provides the same information as forecast for the Sharpness Vale development provision of 5000 homes at full development, and including the allowances made for the existing surrounding communities that were identified and included in the Transport Technical Appraisal.

Table 8.2 - Sharpness Vale Population, Mode Share, Patronage and Service Provision

Location	Population served	Rail mode share	Specific stations	Annual PAX (2018/19)	Train service provision
Sharpness Vale	c.11,500	10%	Sharpness Vale & possible halt at Berkeley	1,000,000	2tph to Gloucester
Sharpness, Newtown, and Berkeley	7,372	3%			
Total:	18,871				

8.1.6 It is clear from a comparison of these tables that there are examples of stations around the UK that serve similar populations as will be available to the services serving Sharpness Vale and the existing communities around it, with a similar pattern of train services to similar ultimate destinations. These examples, whilst showing a variety of levels of usage (in terms of the ratio of station patronage to population) nevertheless show that the forecasts made for Sharpness, especially in the context of changing travel patterns, the necessary response to the climate emergency and the potential quality of the service to be provided, are not unrealistic.

8.1.7 Furthermore, four of the example stations are at the end of branch lines – just as Sharpness Vale would be, and they reinforce the idea that such a station could support the patronage that has been forecast. These stations are summarised in **Table 8.3**.

Table 8.3 - Branch Line Stations

Location	Population served	Rail mode share	Specific stations	Annual PAX (2018/19)	Train service provision
Seaford, Sussex	22,584	8.4%	Seaford	676,442	2tph to Brighton
Glossop/ Hadfield, Derbyshire	36,283	9.2%	Glossop	1,114,454	2tph to Manchester
			Hadfield	400,912	
			Dinting	171,004	
			Total	*1,686,370*	
Exmouth, Devon	34,432	3.9%	Exmouth	946,880	2tph to Paignton via Exeter
Ilkley, West Yorkshire	14,809	18.5%	Ilkley	1,341,652	4tph to Leeds
			Ben Rhydding	221,492	
			Total	*1,563,144*	

8.1.8 We do accept that there is additional work to be done around the railway – but the figures included in the forecast at this stage exclude any allowance related to leisure and tourism trips, which are likely, the delivery of new employment around the future repurposed Berkely Power Station site, the rejuvenation of significant areas of land allocated for employment around Sharpness Docks that remains undeveloped at present as well as further employment growth envisaged for the Berkley Vale area by the District and County Councils, would suggest additional potential patronage.

8.1.9 On this basis, even with the lowest level of mode share seen on a branch line station (3.9% at Exmouth), and projecting this onto the Sharpness population, this would suggest a low-end potential station patronage of 483,872 trips per year. This would certainly be sufficient to support a one train per hour service.

8.1.10 Further to the above Sharpness Development LLP has investigated the possibility of introducing passenger rail services that do not rely on heavy rail requirements. The site promoter has engaged with Revolution Very Light Rail (RVLR) and visited their test facility in Ironbridge, Shropshire. RVLR have developed very light rail technology that can be applied, for example, to serve smaller rural “branch line” communities. Revolution VLR is an innovative, first-of-a-kind project that utilises leading-edge technologies from the rail and other key sectors to provide a high-quality, affordable solution to facilitate growth of the UK railway, including line extensions and re-openings. Each rail carriage is individually powered by either fully electric or hybrid power technology. RVLR trains are approximately 30-40% lighter than heavy rail trains offering operating cost savings and are designed to operate on standard gauge track. Carriages are modern and designed with a 56-passenger seating capacity.

8.1.11 A key operational benefit of the RVLR system is that the service can be initiated with a single double-ended carriage and more can be coupled together as passenger demand increases. Further details of RVLR can be found in **Appendix E**.

8.1.12 A rail timetable study conducted by an industry expert was included as part of the evidence document, *Sharpness Branch Line Restoring Your Railway Outline Business Case* which showed that it was possible that trains from Sharpness could operate on the main rail between Sharpness and Gloucester without impacting the busy scheduled services operating on the main line. It showed that this would also be the case with 2 trains per hour as forecast to meet the demands of the entire 5,000 home future development of Sharpness Vale.

8.1.13 This study was subjected to an Analytical Assurance Assessment by Network Rail who found the timetable study to be sound and valid. A copy of the Network Rail correspondence confirming this dated 21 January 2021 is included as **Appendix F**.

8.1.14 Since the initial timetable study was undertaken Stroud District Council have progressed with the development of a Strategic Business Case for the implementation of a new main line station at Stonehouse, Bristol Road. In order to assess the implications of this on the proposed passenger rail service from Sharpness, an update to the timetable study was commissioned in June 2022.

8.1.15 The Timetable Study Update concludes that the provision of a new station at Stonehouse (Bristol Road) does not impact on the proposals for the re-introduction of passenger services on the Sharpness Branch. The Sharpness – Gloucester and Bristol – Gloucester services do not interact in a way that would impact on the operation of the Sharpness service and the two schemes are therefore compatible. The study further concludes that there is likely to be minimal impact on the full MetroWest timetable as there is a degree of flexibility provided by the operation of the Sharpness services. They are effectively 'fixed' at the Gloucester end only (by the platform interactions) and can therefore be 'flexed' as necessary to accommodate changes to the timetable elsewhere (provided the minimum turnround times are maintained at both ends). This Timetable Study Update is included as **Appendix G.**

8.1.16 The evidence document *Sharpness Branch Line Restoring Your Railway Outline Business Case* acknowledges that the Sharpness passenger rail service will need to co-exist on the branch line with the Vale of Berkeley Railway Trust (VoBR) heritage rail operations. During 2022 the Sharpness Development LLP technical team developed a strong collaborative working relationship with VoBR in order to establish common ground with regard to the shared aspiration of reintroduced passenger services on the Sharpness Branch Line. Sharpness Development LLP welcomes the introduction of heritage rail services on the branch line and facilities at Old Minister recognising the value of heritage rail and the leisure and tourist activity that it can stimulate. Sharpness Development LLP and VoBR have worked together to develop a Statement of Common Ground outlining agreements with regard the implementation and operational aspects of restored rail services on the Sharpness Branch Line by both parties. This statement of Common Ground has been finalised for signature by both parties and is included as **Appendix H**.

8.2 Rail Infrastructure Costs

8.2.1 In recognising the concerns raised regarding the perceived high infrastructure cost required to re-introduce passenger rail services on the Sharpness Branch Line, Sharpness Development LLP commissioned a specialist rail consultant to undertake an independent assessment of the capital costs to associated with a Sharpness rail service. This detailed study entitled *2022 Sharpness Rail Study - Estimating the cost of reinstating passenger rail services on the Sharpness Branch* is included as **Appendix I**. The study considers various options for the reintroduction of the service assessing a range of appropriate infrastructure and operational interventions that would enhance the commercial viability of the development proposals through improved and regular public transport links.

8.2.2 The study recommends that Option 2 be taken forward, as it offers similar benefits to the other options for the lowest cost outlay. It is also the most flexible option and can be incrementally enhanced by making use of increased frequencies, larger rolling stock and elements of the other options as demand for the service grows.

8.2.3 Option 2 would require a new station to be constructed at Sharpness Vale, though reduced platform lengths which will reduce the scale of works, to accommodate a single-unit Revolution VLR train, a 30m long and 2.5m wide platform would suffice. For the minimal viable product this could be of fibre-reinforced plastic (FRP) rapid assembly type, with the potential for later improvements as demand increases. Level access from the highway would be provided, with platforms set to the standard offsets to enable level boarding with the level access Revolution

VLR stock. A diagrammatic representation of option 2 is shown in **Figure 8.1** below. To start with, this station could be unstaffed, relying on ticket vending machines and passenger information displays in keeping with the local operator and Network Rail station guidelines. Shelters and canopies could be limited, with provision of a small shelter to house the ticket vending machines and seating. Improvements to facilities could be easily retrofitted to a simple station as demand increases. Provision should be made for an assumed level of car parking.

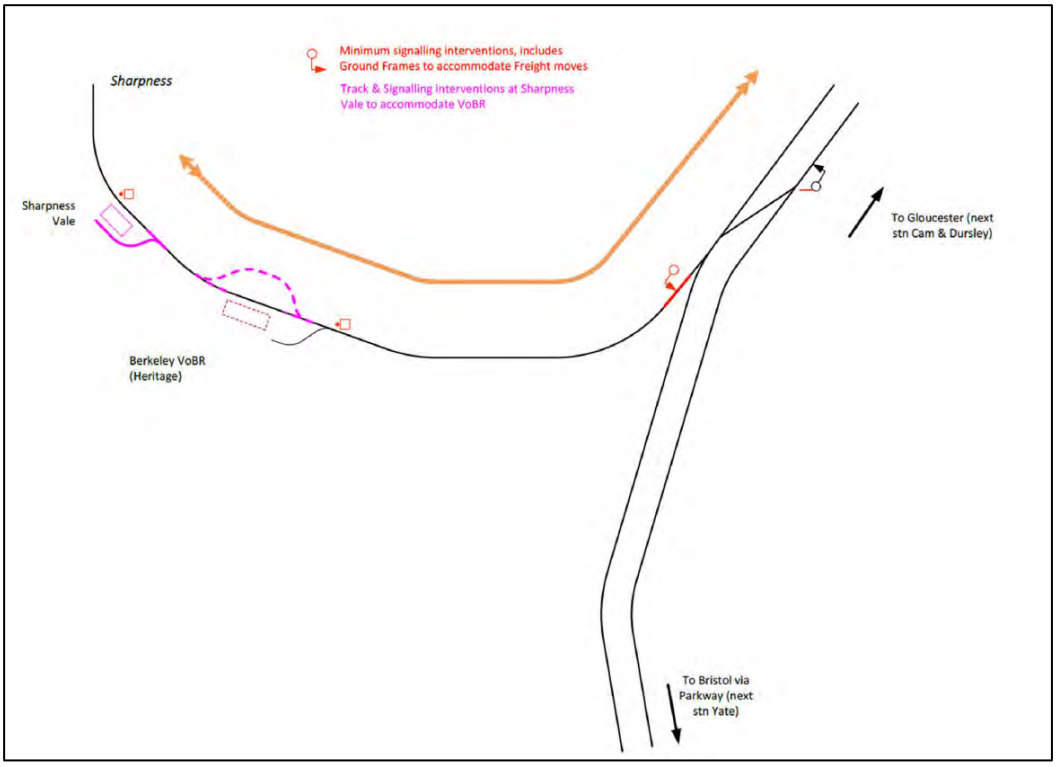

Figure 8.1 - Sharpness Passenger Rail - Option 2 (extract Appendix I)

8.2.4 Track alterations - To facilitate the proposed Option 2 passenger operations, the following track works are required:

- no bay is required at Sharpness Vale for this service option
- no passing loop at Berkeley is required in the initial iteration of this service option
- as specified by signalling and as with Option 1, removal of the trap points at Berkeley Road Junction requiring 56m of new plain line track

An option including passing loops to accommodate the VoBR services has been costed. Note that although the VLR vehicle is considerably shorter than the DMUs for Option 1, the loop at Berkeley Station assumes a 100m train length for VoBR.

8.2.5 Track renewals - An allowance has been made for 10% sleeper renewal and 25% rail renewal within the cost estimate as per option 1 which is based on use of a standard 3-car multiple unit. It should be noted that there will be greatly reduced axle loads for the VLR concept as part of option 2.

8.2.6 Signalling - To facilitate the proposed passenger service whilst retaining freight capability along the Sharpness Branch, some modification of the signalling system within the existing

interlocking is required, including the removal of the trap points at Berkeley Road Junction and replacement of the existing shunt signals with regular signals.

New or modified ground frames are required at two locations:

- the entry to the Magnox freight sidings at Berkeley
- Oldminster sidings, west of the new Sharpness Vale station

For comparison purposes in the study an estimate for a more complete signalling upgrade was included for full control along the spur.

8.2.7 Telecommunications - It has been assumed that GSM-R radio coverage is already acceptable for the proposed operations given the existing freight services that use the line. However, additional telecoms works will be required for the new station to provide passenger information and for help point telephony, as well as any required security systems.

8.2.8 Bridges - Three of the eleven bridges along the route require some form of limited refurbishment. The remaining eight bridges only require minor masonry repairs.

8.2.9 Track and Ballast Renewal - Network Rail's Visivi RouteView tool provides high resolution aerial photography, which enables an assessment of track condition to be made. Observationally, the track along the Sharpness Branch is in varied but acceptable condition for current freight operations, comprising jointed bullhead rails on timber sleepers in fair condition.

8.2.10 From this information, it appears that in 2014 there had been a recent ballast refresh, tamp and reprofile alongside some spot track renewals and marking of track geometry on sleepers. Since this date, it appears that there has been spot-reballasting indicating that tracks have been inspected and significant defects resolved.

8.2.11 Even with a combination of the heaviest passenger train and an intensive service pattern, only an additional 5 EMGTPA (equated million gross tonnes per annum) are added per year to the line, which would not warrant track renewals in accordance with Network Rail requirements. Given the current Network Rail track category (a function of speed and EMGTPA allowing an understanding of track material requirements) is likely to be 5 or 6, an additional 5 EMGTPA would be unlikely to increase this, meaning no requirement for materials renewal. Even an increase to track category 4 would not require materials renewal.

8.2.12 The estimated infrastructure cost for option 2 is £4.916m. Refer to **Appendix I** for full report.

9 Conclusions

9.1 Introduction

9.1.1 In a letter dated the 21st of July 2021 Gloucestershire County Council (GCC) provided a formal response to the Draft Stroud District Local Plan Review in which comments were directly related to the proposed site allocation of Sharpness Vale.

9.1.2 Sharpness Development LLP have undertaken additional work to address these comments which is set out in the sections of this report above.

9.2 Sharpness Rail Service Passenger Demand and Viability

9.2.1 Sections 3, 4 and 5 of this report re-consider the trip generation, mode share and distribution associated with the Sharpness Vale development. This considers not only the potential for the internalisation of trips but also localisation where there will be a degree of interaction between Sharpness Vale and the communities and employment nodes within the wider functional transport area. This shows that it is still estimated that there could be a rail passenger demand of more than 1 million passengers per annum. This is in line with earlier work undertaken as part of evidence previously submitted and is therefore considered to be robust. The reintroduction of passenger rail service will not only benefit future residents of Sharpness but also those who already reside within the wider functional transport area as well as those who may be attracted to the area in the future.

9.2.2 In relation to concerns raised by GCC in regarding proposed rail services fitting within the existing main line rail services, section 8.1 provides evidence of the rail timetable study undertaken for the Sharpness Service which shows that it can be accommodated on the main line with no impact on the services that run there. Included in this evidence is an Analytical Assurance Statement by Network Rail which confirms that the timetable study is sound and valid.

9.2.3 Further to this an update to the timetable study to assesses the implications of the introduction of a new rail station at Stonehouse, Bristol Road shows that this will have no effect on the ability of Sharpness trains fitting within the full main line service timetable.

9.2.4 Sharpness Development LLP has undertaken a comprehensive review of potential comparator stations, with a particular focus on those on a branch line and/or those which act as a commuter station for a larger destination (as Sharpness Vale will for Gloucester). This assessment is described in section 8.1 above and concludes that even with the lowest level of mode share seen on a branch line station (3.9% at Exmouth), and projecting this onto the Sharpness population, this would suggest a low-end potential station patronage of 483,872 trips per year. This would certainly be sufficient to support a one train per hour service, and most likely (as this would be the lowest level of trips that might be expected) would support two trains per hour with a higher level of patronage.

9.2.5 A detailed costing study has been undertaken to assess operational and infrastructure options for the Sharpness passenger rail service as well as the infrastructure costs associated with each option. This study recommends a preferred option (option 2) for the configuration of this service to meet demand that is flexible, and which can be incrementally applied to match increasing demand over time as the development is built out. The estimated capital cost of initiating this service option would be £4.916m. This is lower than the values used in the Restore Your Railway Outline Business case which showed the service is both operationally viable as well as achievable with relatively low initial capital outlay.

9.2.6 It is also important to note that the evidence provided to date as well as refinements as part of this report show that even if the aspirations of reintroducing passenger rail services on the

Sharpness Branch line are not achieved, all Sharpness Vale generated trips can be accommodated on the highway network by providing capacity improvements and impact mitigation as identified in the fallback approach in the *Highway Capacity Assessment.* The successful development of Sharpness Vale is therefore not dependant on successful the implementation of the Sharpness passenger rail service or express coach services.

9.3 Sharpness Rail Service Strategic Fit

9.3.1 GCC commented that the Sharpness passenger rail service would only benefit residents of Sharpness. As mentioned previously sections 3,4 and 5 of this report re-consider the trip generation, mode share and distribution of trips from Sharpness. These sections also consider the transport relationships within a wider functional transport area which includes existing communities and employment nodes surrounding Sharpness. It has always been the intention that the transport systems provided for Sharpness will be designed to benefit residents of the wider area. The local DRT service is intended to facilitate movement within this area and enable access to the Sharpness station via the Strategic Mobility Hub which will provide the interface between road based public transport (DRT), active mobility and the longer distance public transport services of rail and express coach.

9.3.2 It is beneficial to enable access to these longer distance services for a wider population as it helps to further increase patronage and viability. It should be noted that the local transport systems will also enable distribution of people who are coming to the wider functional transport area around Sharpness as it will provide onward journeys, for passengers arriving at Sharpness Station, to local destinations. This will enable bi-directional flow on the rail service where people who work in the Sharpness and Berkeley area who are travelling from areas such as Cam and Dursley will be able to make the journey by public transport. This creates revenue in both directions during peak times further improving the viability of the rail service as well as the local DRT.

9.3.3 GCC has recently ended its contract with Stagecoach and are now also piloting DRT services in the County in the form of the App based Robin service. There are a growing number of other examples in the UK where DRT services are being run on pilot schemes or are in continuous operation. Clearly, there is a strong case for DRT in the future of road based public transport provision as it can be designed and offered to meet demand and be operationally viable almost from day one whilst at the same time offering a car competitive, convenient and reliable service for users.

9.3.4 As described in section 2.3 above the Gloucestershire Local Transport Plan (2020 – 2041) sets clear transport policy objectives. Key aspects of this are summarised below.

- Reducing Transport Carbon Emissions
- Integrated land Use and Transport Planning - GCC will support development that enables sustainable travel choices
- Influencing travel behaviour
- Improve bus services to provide attractive and relevant transport choices
- Improving the quality of road based public transport
- Provide reliable and efficient coach networks
- Develop innovative responses to local transport needs
- Provide realistic opportunities for travel choice for residents, employers, and visitors through the delivery of Strategic Transport Interchange Hubs and Local Interchange facilities.

- Providing clear travel communication to passengers (this could be in the form of journey planning and booking through App based platforms such as MaaS)
- Deliver a high quality coherent, direct, safe, comfortable and attractive cycle network by improving cycle routes and reinforcing quiet highway connectivity.
- Take advantage of the wider rail infrastructure improvements
- Engage with delivery partners to maximise the desirability, demand and customer experience of using railway stations within Gloucestershire

9.3.5 It is clear that substantive evidence contained in this report as well as others provided previously shows that the Sharpness Vale transport approach strongly aligns with the strategic transport policy objectives of GCC.

9.3.6 The Gloucestershire Transport Carbon Reduction Pathway as part of the Gloucestershire Decarbonising Transport Forum Journey to Net Zero highlights the following opportunities which can be realised through carefully considered rural development:

- • Greatest CO_2 saving potential
- • High levels of home working in some areas
- • Good broadband access
- • E-bikes
- • Demand responsive transport
- • Connectivity through hub and spoke system

9.3.7 It is clear that the substantive evidence contained in this report as well as others provided previously shows that the **Sustainable Transport Approach** for Sharpness Vale strongly aligns to the transport vision for rural development as part of the Gloucestershire Transport Carbon Reduction Pathway.

9.4 Operational Issues

9.4.1 GCC commented that there are not yet commitments from train operator companies or Network Rail regarding the reopening of the Sharpness branch line. It must be noted that the blanch line is not closed and is currently used for regular freight rail services and is maintained for this purpose.

9.4.2 Sharpness Development LLP has had fruitful and collaborative engagements with Network Rail regarding the reintroduction of passenger rail services on the branch line. As described in section 8.1 above Network Rail have found that the Sharpness passenger rail service timetable study, which shows that the Sharpness services can fit in with the mainline services timetable, is sound and valid.

9.4.3 The update to the timetable study, which considers the impact of a new station on the main line at Stonehouse - Bristol Road, concludes that this does not impact on the proposals for the re-introduction of passenger services on the Sharpness Branch. The Sharpness – Gloucester and Bristol – Gloucester services do not interact in a way that would impact on the operation of the Sharpness service and the two schemes are therefore compatible. The study further concludes that there is likely to be minimal impact on the full MetroWest timetable as there is a degree of flexibility provided by the operation of the Sharpness services. They are effectively ‘fixed’ at the Gloucester end only (by the platform interactions) and can therefore be ‘flexed’ as necessary to

accommodate changes to the timetable elsewhere (provided the minimum turnround times are maintained at both ends).

9.4.4 As indicated in section 8.1 of this report Sharpness Development LLP have and continues to investigate options with regard to operations of the rail service and it is evident that there are innovative and low carbon rail options that do not rely on traditional heavy rail solutions.

9.4.5 During 2022 the Sharpness Developments LLP technical team developed a strong collaborative working relationship with VoBR in order to establish common ground with regard to the shared aspiration of reintroduced passenger services on the Sharpness Branch Line. Sharpness Development LLP and VoBR have worked together to develop a Statement of Common Ground outlining agreements with regard the implementation and operational aspects of restored rail services on the Sharpness Branch Line by both parties.

9.5 Express Coach Services

9.5.1 Sections 3, 4 and 5 of this report re-consider the trip generation, mode share and distribution associated with the Sharpness Vale development. This considers not only the potential for internalisation of trips but also localisation where there will be a degree of interaction between Sharpness Vale and the communities and employment nodes within the wider functional transport area. This considers the trip distribution to key destinations outside of the functional transport area and is calculated using Census Journey to Work data for the Stroud 012 MSOA and mode share is calculated using National Travel Survey journey purpose data which is checked against mode share data from the TEMPro database for the Stroud District. This shows that the mode share calculations for the proposed express coach services remain in line with those used in the evidence document *Sharpness Vale – Mobility-as-a-Service and Express Coach Services.*

9.5.2 It should be noted that current data sets available for the calculation of mode share are historic and do not consider changing travel behaviour and patterns which indicate a possible shift away from the private car ownership for future generations of commuters. It is therefore considered that the mode share calculations used are conservative and a greater demand for express coach and rail services may be realised in future.

9.6 General

9.6.1 Whilst there are clearly many variables which could affect the ability to achieve the desired sustainable transport approach for Sharpness Vale a bold approach is required to take steps towards achieving national and local policy objectives for the future transition of transport. The Fallback assessment undertaken for Sharpness Vale demonstrates that the development of this site is not dependant on the successful delivery of sustainable transport approach and the rail services. This, however, should not be the default position for land development as it will not enable meaningful travel behaviour change or save the nearly 17,000 tonnes of carbon dioxide per annum from vehicle emissions from Sharpness. History has shown that if we build more roads, we get more cars and then more roads are required. We need to break this cycle by providing transport systems that enable better travel choices. This cannot be achieved by looking at the past when trying to plan for a different future. Sustainable transport needs to be the obvious choice for travellers not the second choice.

Appendix A Gloucestershire County Council Letter in Response to Stroud District Council Draft Local Plan

Gloucestershire COUNTY COUNCIL

To: Planning Strategy Team
Stroud District Council
Ebley Mill
Westward Road
Stroud
GL5 4UB

[redacted] Senior Planning Officer
Economy, Environment and Infrastructure
Shire Hall
Westgate Street
Gloucester, GL1 2TG

email: [redacted]

Our Ref: [redacted] **Your Ref:**

Date: 21st July 2021

Dear Sir/Madam

Stroud Local Plan Review – Pre-submission Consultation Regulation 19

Thank you for consulting Gloucestershire County Council (GCC) on the above matter. I have the following officer comments to make.

Officers have previously responded to Stroud Local Plan consultations as well as providing comments on the Local Plan modelling report. The comments provided in those previous responses remain relevant. On reviewing the Pre-submission Plan and the supporting evidence provided, officers consider it to be unsound.

Concerns remain over the transport evidence provided to support the proposed Sharpness and Whaddon allocations. Also, a number of policies are considered unsound from a Minerals and Waste Policy perspective but amendments are suggested to help Stroud District Council (SDC) overcome these concerns.

Detailed comments are set out below.

Transport/Highways Authority Comments

All of the details set out within this section are made by officers of GCC in its capacity as the Local Highway and Transport Authority

Following on from comments made to previous consultations, this response will focus on specific concerns regarding the allocations at Sharpness and Whaddon and the soundness of the evidence that is provided to support their inclusion within the emerging Local Plan.

GCC Draft plan Consultation comments can be found at:
https://www.stroud.gov.uk/media/1164522/gloucestershire-county-council.pdf

Strategic Site Allocation Policy- PS36 Sharpness:

GCC officers have significant concerns with regards to allocation at Sharpness and the evidence provided to justify its sustainable transport interventions and inclusion within the Plan which are set out below.

Sharpness allocation rail proposal:

In regards to the evidence provided specifically for the Sharpness allocation, GCC officers have serious doubts about the rail proposal and the likelihood of this coming forward. Even if it did come forward demand would be low as it would fail to confer convenience. Rail travel in Gloucestershire is not favoured for short trips, especially where the alternative of the private car exists. Officers have therefore commissioned SLC to review the rail proposal and Restoring Your Rail (RYR) bid and Technical Note (dated 23rd June 2021) supporting documentation. This is attached as an appendix to this response.

There are three key significant issues that indicate this proposal is unlikely to be delivered, these are cost, strategic fit/purpose and deliverable from an operational perspective.

Costs

Should this site be allocated with the transport interventions as stated and build out commences, but the cost of providing the rail solution is higher than agreed by the developer, it is unclear how this would be this be funded. The predicted passenger numbers are extremely optimistic (as detailed below) and there is a risk that actual numbers may be significantly lower, in line with other 'local' rail stations in Gloucestershire. This would result in the revenue assumptions not being realised and the need for the service to be subsidised. The SLC review concludes that the service is likely to be loss making.

The supporting information suggests that the rail proposal will have one million passengers per annum. This is not considered realistic, for example, four of Gloucestershire's stations have less than 200,000 passengers per annum and Stroud serves over 500,000 passengers, with direct services to London and covers a much wider catchment area and population than the Sharpness proposal. The passenger numbers will determine the level of subsidy the service requires. However, the level of subsidy for this proposal is unclear, if it is based upon one million passengers per annum and that number is not achievable, then the service will require an even bigger subsidy.

The economic case is considered weak, based on high levels of demand, considerable infrastructure investment as well as the aforementioned need for on going (potentially high) subsidy. This is likely to lead to a low Benefit Cost Ratio (BCR).

Wider Economic Considerations:

In March 2020, GCC commissioned the Gloucestershire Rail Investment Strategy (GRIS), in partnership with the six district councils and Gfirst LEP.

https://www.gloucestershire.gov.uk/media/2096940/gloucestershire-rail-strategy.pdf

The GRIS sets out a strategy for which service improvements will deliver most for the County's economy, backed up by evidence of resultant GVA uplift. A series of tests of enhanced train services was developed, based on an assessment of the County's development plans and the gaps in the current rail service provision to

support them. Part of the study considered testing options relating to the reopening of the freight line from Cam & Dursley to Berkeley and Sharpness. This was in response to the significant Local Plan proposal for Sharpness. The services considered were;

- 1tph Sharpness – Bristol
- 2tph Sharpness – Bristol
- 1tph Sharpness – Cam & Dursley
- 2tph Sharpness – Cam & Dursley
- 1pth Sharpness – Gloucester – Cheltenham

The GRIS showed that the level of economic uplift from each option is relatively modest and doesn't take account of the significant investment in infrastructure that would be needed to deliver these services.

The overall GRIS results showed that an enhanced regional service between Bristol and Birmingham would deliver substantial economic benefits and improve connectivity along the M5 corridor south of Gloucester, transform connectivity between Gloucester/Cheltenham and Worcester and greatly improve Gloucester's connectivity to Birmingham. This matches the priority set out in the recently adopted Local Transport Plan (LTP) 2020-2040.This is an important conclusion, particularly as the Sharpness allocation's rail proposal could negatively impact on this wider ambition.

Strategic Fit

The recently published Network Rail Bristol to Birmingham Corridor Strategic Study discusses the possibility of increased service provision between Bristol and Gloucestershire's city region as well as additional freight pathing on the corridor. The study makes no mention of potential branch-line reopening and it is unknown whether there is additional capacity for such services without impacting wider regional train service ambitions. The service would largely only benefit the Sharpness development whereas other, more regional, service ambitions have the potential to benefit a wider range of users. The Sharpness proposal in fact has the potential to damage these strategic ambitions by taking up valuable line capacity.

Strategic Purpose:

The Sharpness proposal needs to strongly evidence why this heavy rail proposal is the best approach compared to alternatives. The underlying problem that the rail solution is to address needs to be clearly identified. From the supporting documentation it appears that the heavy rail solution is to help achieve a sustainable car minimal development. This is considered high risk as it is dependent on the 'buy in' of residents to make the ambition a reality and should it fail it could result in an unviable rail service. The proposed rail service therefore only focuses to serve that location, despite the small Sharpness population, even when fully built out. The heavy rail solution therefore does not have a strategic purpose as it stands.

Operational Issues:

As stated previously the reopening of the branch line for passenger use is not in the Network Rail (NR) Bristol to Birmingham Corridor Strategic Study which could impact on line capacity and pathing as well as timetabling. Train Operating Companies (TOCs) would also need to agree to a network change and there is no guarantee that that would be possible.

There are no commitments from TOC's, NR or the Department for Transport (DfT) to reopen this branch to passenger traffic which has the possibility of creating delivery issues further in the planning process.

Even if the ambitions in the NR study for additional services should not be delivered, the Sharpness rail proposal for the Sharpness – Gloucester service would still introduce conflict points, particularly with northbound services. The conflict moves would be where the service meets the mainline near Gloucester and when the service crosses the mainline to traverse the Sharpness branch-line. This adds additional complexity and performance risks to other services.

NR and the DfT will need to be convinced that the substantial modal shift is possible and that it is possible to include the proposal alongside other additional services on the Bristol to Birmingham corridor as set out in the recent NR Study.

Express Coach

The Sharpness allocation has proposed a Zeelo express coach model as stated in the Mobility as a Service (Maas) & Express Coach services document. The service configuration will see the coach service travel to destinations of most demand, directly and quickly making the journeys comparable to the car as stated in the supporting document. Appendix B of the MaaS and Express Coach document provides some information from Zeelo including a proposed route with stops at Aztec West, Rolls Royce, Airbus, M.O.D, UWE and central Bristol.

The information suggests a journey time of 35 minutes approximately. However, reviewing route journey planners this journey could take 1 hour 4 minutes following road alignments and assuming the stops are located directly at these destinations. A journey time of 45 minutes is suggested if the stops are located on primary routes somewhere in proximity to the destinations with a walk, cycle or other MaaS method required to finish the journey.

However, this has not considered whether it is possible, practical or safe to stop in these approximate locations but has been reviewed for the journey time comparison only. A direct journey from Sharpness to central Bristol is 41 minutes, whereas it is unclear whether the '35 minute' Zeelo route has considered stop, wait and/or alighting times at the destinations which would increase journey times. Therefore it is unclear how the approx. 35 minute journey time has been calculated. Furthermore, officer journey time reviews have been undertaken with no traffic. Peak times are likely to result in significantly longer journey times due to higher traffic flows. Officers do not believe that the journey times are comparable and this will do little to persuade users to shift modes from private car use.

Furthermore, the overall journey time has not considered walk/cycle times at origin and destination. The peripheral areas of the allocation are quite some distance away from the proposed coach pick ups which questions the practicality of such service for most users and whether it is a practical alternative method.

The service appears not to be entirely flexible, with set destinations and timing of service. The technical note states that if users miss the express coach service the opportunities for MaaS will ensure they have travel options. Furthermore, the MaaS and express coach document has stated high levels of demand/users switching to the Zeelo services. Given the limited departure/arrival times, this level of mode share looks unrealistic. The location of the site itself questions the level of mode share as it is not located on any strategic transport corridor unlike other proposed developments in the plan.

The mode share modelling provided in the MaaS and express coach document appears to align to a best case scenario where by residents embrace the transport offer, whereas no evidence to the contrary is provided.

This proposal suggests the development needs to be inhabited by like minded individuals who are willing to embrace this new method. This is considered unlikely in reality. The service also serves little strategic purpose other than to benefit the residents of Sharpness. GCC have ambitions to utilise the major transport corridors for high frequency bus services, linking with major transport hubs and railway stations, that can target a much wider population, as outlined in the Local Transport Plan 2020-2040. Sharpness' remote location will not benefit from the potential connectivity arising from GCC's strategic ambition and is therefore unlikely to realise a coach mode share that supports a sustainable pattern of development.

Furthermore, Section 3.8 'Option Assessment' of the RYR – Sharpness Branch line technical note recognises that a bus based solution would have unattractive journey times when considering acceptability. This does not provide confidence that bus/coach based solution would be successful.

<u>General Comments:</u>

The express coach and rail interventions are high risk, high cost proposals which may not generate sufficient demand to make them deliverable/viable, particularly if the residents do not buy into the vision for the development. There is also conflict with the ambitions of the development which focuses strongly on internalisation, which could conflict with the proposed numbers using the coach/rail proposals and possibly impacting on long term viability. Officers, therefore question the long term success of these methods in this location.

The site allocation is remote and a significant distance away from major transport corridors such as the A38, M5 and mainline railway. It is also landlocked to its west. This will inevitably impact on journey times to key destinations.

This leaves officers concerned that the intervention schemes may not be delivered but housing/employment may receive consent or have work commenced, leaving the site not just unsustainable, but less sustainable than other existing and proposed developments in Stroud District and Gloucestershire. It is GCC officer's view that the

assumptions used are overly ambitious and are not reflective of typical transport demand in Gloucestershire in relation to travel demand.

Therefore, officers have concluded that the evidence for this allocation is not sound. The development is unsustainable when considered against the policies outlined in both the NPPF and Stroud District Local Plan. The transport measures proposed are not considered viable or deliverable, and the future residents are expected to behave in a way that is not evidenced in any other location with similar, dislocated attributes, both geographically and in terms of transport opportunities.

Strategic Site Allocation Policy G2 - Land at Whaddon

Previous officer comments of concern relating to the Gloucester fringe site at Whaddon remain. The peripheral location needs consideration as to how sustainable transport interventions can be provided within the site allocation, but then integrated seamlessly into the existing built environment. Overcoming the severance caused by the railway is critical to this and further consideration is needed in regards to additional crossing points for walk, cycle and public transport. Previous comments have suggested routes adjacent to Daniel's Brook and Buckenham Walk. No supporting information has been provided to evidence that these issues have been addressed.

This site needs to heavily promote low traffic neighbourhoods as a means of encouraging cycling and walking for short journeys. Increased permeability for those trips into the existing built environment will also help integrate the site into Gloucester and provide access to wider local centres and employment. The public transport offer has to be realistic and comparable if not better than the car in terms of journey times and availability.

The highway impact also remains a significant concern. St Barnabas roundabout is identified as needing additional capacity to cater for the additional car traffic generated by the site allocation, but the specific impacts of this development site are unknown therefore it is difficult to determine what intervention is appropriate and whether that mitigation would have adverse environmental impacts. Furthermore, improving St Barnabas may have knock on impacts elsewhere along the A38 corridor and this issue needs to be understood, particularly as interventions are likely to be costly. The interventions should also include public transport consideration as well as walk/cycle accessibility in line with Cycle Infrastructure Design (LTN 1/20). To accommodate these users and provide a suitable junction with sufficient capacity will be difficult within the existing footprint of the roundabout. There will be implications for land take at this location and the impact it will have on site delivery. These are issues that are currently not addressed and are important concerns for officers.

Furthermore, the current traffic modelling exercises provide a cumulative effect assessment, evaluating the overall traffic impact of all Local Plan allocations within the study area. It does not identify which of the potential sites within proximity to key Strategic/Major/Local Road Networks junctions has the greatest impact upon them. M5 Junction 12 has been identified in the Local Plan Modelling as requiring enhanced intervention which is likely to result in significant costs in order to deliver. Whaddon is highly likely to have significant impacts on M5 Junction 12, but without site specific modelling evidence it is difficult to determine the extent of this impact.

Therefore officers consider that insufficient evidence has been provided to support this proposed allocation.

The site has challenging sustainable accessibility issues, potentially leaving future residents dislocated and separated from Gloucester City both geographically and in terms of transport opportunities. The evidence currently available for this proposal does not make it clear how the site could meet the sustainability requirements of the NPPF and Stroud District Local Plan. The highway impacts arising from the allocation and mitigation required have not been provided in sufficient detail, raising concerns over their viability, deliverability and impacts on the wider network. The underlying principles of any development in this area needs to articulate a vision for how new neighbourhoods will be created; how new residents will travel and meet their needs, and how internalisation of trips might mitigate the need for transport interventions on the principal road network and the impact of those interventions.

Minerals and Waste Policy Comments

All of the details set out within this section are made by officers of GCC in its capacity as the local Mineral and Waste Planning Authority (MWPA).

The Stroud District Local Plan Review has now reached the Pre-Submission (Regulation 19) plan-making stage. Consequently, the comments made by M&W policy officers relate to one or more of the three matters that will be assessed through examination and will largely determine whether the plan can move to adoption – legal compliance; soundness; and the duty-to-co-operate. For ease of consideration sub-headings have been used to identify the elements of the plan that have demanded a representation by officers of the MWPA:-

Core Policy CP11 - New employment development

Officers of the MWPA do not consider the pre-submission version of Core Policy CP11 to be sound as it is not clear whether future proposals for waste management-related infrastructure could be afforded local policy support? National policy as set out under the National Planning Policy for Waste (NPPW) advises that priority for new or enhanced waste management facilities should be given to sites identified for employment uses alongside a number of other land-use types.

However, officers of the MWPA would support to Core Policy CP11 going forward if a modification was made either through an additional bullet point; or slightly expanded text to bullet points 5 or 6; and / or a revision to the supporting text under paragraph 5.2. Confirmation is required that future proposals for waste management-related infrastructure might reasonably be considered alongside traditional employment land use categories of business use, general industrial use and storage / distribution use and “Sui Generis” industrial uses, tourism, retailing, health care, education and leisure facilities.

Delivery Policy EI2 - Regenerating existing employment sites

Officers of the MWPA do not consider the pre-submission version of Delivery Policy EI2 to be sound as it does not acknowledge the potential risk posed to the safeguarding of waste management facilities. This is an issue responded to by national policy within the NPPW. Waste management site safeguarding is also a

well-established local policy as set out in the adopted Gloucestershire Waste Core Strategy (WCS) under Core Policy WCS11 - Safeguarding Sites for Waste Management. Failure to accommodate this matter could also bring into question the duty to cooperate by way of undermining the MWPA's attempt to facilitate and support an efficient and effective countywide network of waste management facilities.

Nevertheless, officers of the MWPA would support to Delivery Policy EI2 going forward if a modification was made (mostly obviously to the supporting text under paragraph 5.24). The modification should clearly articulate that regenerative development at existing employment sites would need to ensure that potential adverse impacts on existing waste management facilities, permitted sites, and areas allocated for future waste management-related uses would not occur. Regenerative development that could generate incompatible land-uses should be avoided or accompanied by sufficient mitigation that will prevent prejudicing the efficient operations of waste management-related facilities and their ability to effectively implement the waste hierarchy.

Delivery Policy EI2a - Former Berkeley Power Station

Officers of the MWPA do not consider the pre-submission version of Delivery Policy EI2a to be sound as it is not clear whether waste management-related infrastructure uses could be afforded local policy support. National policy as set out under the NPPW advises that priority for new or enhanced waste management facilities should be given to sites identified for employment uses alongside a number of other land-use types.

However, officers of the MWPA would support policy EI2a going forward if a modification was made to the supporting text under paragraph 5.27. Waste management-related infrastructure should be added to the list of employment uses that may be supported.

Delivery Policy EI5 - Farm and forestry enterprise diversification

Officers of the MWPA do not consider the pre-submission version of Delivery Policy EI5 to be sound as it is not clear whether waste management-related infrastructure uses could be afforded local policy support. National policy as set out under the NPPW advises that priority for new or enhanced waste management facilities should be given to redundant agricultural and forestry buildings and their curtilages alongside a number of other land-use types.

However, officers of the MWPA would support Delivery Policy EI5 going forward if a modification was made to the third sentence of paragraph 5.30. Waste management-related infrastructure should be added to the list of potential uses identified.

Employment Allocation Policy PS43 - Javelin Park

Officers of the MWPA support the pre-submission version of Employment Allocation Policy PS43 as it clearly acknowledges waste management safeguarding requirements associated with the adjacent Javelin Park Energy from Waste (EfW) facility.

Strategic Site Allocation Policy PS34 - Sharpness Docks

Officers of the MWPA do not consider the pre-submission version of Strategic Site Allocation Policy PS34 to be sound. The policy and supporting text fails to acknowledge the need to safeguard mineral and waste management infrastructure that is present at Sharpness Docks. Safeguarding of mineral infrastructure is a matter responded to by the NPPF and the requirement to safeguard waste management facilities is set out in the NPPW. Furthermore, at the local-level mineral and waste safeguarding is an established part of the local development plan under adopted Minerals Local Plan for Gloucestershire Policy MS02 - Safeguarding mineral infrastructure and Core Policy WCS11 - Safeguarding Sites for Waste Management of the adopted Gloucestershire Waste Core Strategy (WCS). In addition, both spatial planning matters have been included on the county's Minerals and Waste Policies Map. The failure to accommodate this policy provision brings into question the duty to cooperate by way of undermining the local MWPA's attempt to facilitate and support efficient and effective countywide networks of mineral and waste management infrastructure.

However, officers of the MWPA would support Strategic Site Allocation Policy PS34 going forward if modifications were made. The 'Planning constraints and designations' set out on page 169 should include the presence of minerals and waste infrastructure and the need to ensure their efficient and effective operations will not be compromised by new development. This constraint should also be accommodated in the main policy text – under part a. A requirement should be added that will ensure future dock uses and dock-related industrial and distribution uses will not prejudice the efficient and effective operations of safeguarded minerals and waste infrastructure.

Strategic Site Allocation Policy G2 - Land at Whaddon

Officers of the MWPA do not consider the pre-submission version of Strategic Site Allocation Policy G2 to be sound. The policy and supporting text fails to reference the presence across part of the allocation of underlying sand and gravel mineral resources that are of potential economic importance. National policy on mineral resource safeguarding is contained within in the NPPF and has been further interpreted locally through the adopted Minerals Local Plan for Gloucestershire Policy MS01 - Non-mineral developments within MSAs. The overarching policy aim is to ensure valuable mineral resources are not needlessly sterilised by surface development. The county's Minerals and Waste Policies Map shows that a reasonable proportion of the south-western part of the allocation is within a designated Mineral Safeguarding Area (MSA).

Nevertheless, officers of the MWPA would support Strategic Site Allocation Policy G2 going forward if modifications were made. The 'sensitivity, constraints and designations' set out on page 155 should include the fact that part of the allocation falls within a designated Mineral Safeguarding Area (MSA). In addition, the text for Strategic Site Allocation Policy G2 should include a further bullet requiring any future development brief to…:- determine through an initial Mineral Resource Assessment (MRA), the significance of the underlying mineral resources present within the designated MSA and the extent to which any mitigation measures will be necessary to avoid sterilisation by surface development and / or whether a strategy for the prior

extraction of the mineral will be required for any future development proposals covering the relevant area of allocation G2.

Strategic Site Allocation Policy PS20 - Stonehouse - Eco Park M5 Junction 13

Officers of the MWPA do not consider the pre-submission version of Strategic Site Allocation Policy PS20 to be sound. The policy and supporting text fails to reference the presence across part of the allocation of underlying sand and gravel mineral resources that are of potential economic importance. National policy on mineral resource safeguarding is contained within in the NPPF and has been further interpreted locally through the adopted Minerals Local Plan for Gloucestershire Policy MS01 - Non-mineral developments within MSAs. The overarching policy aim is to ensure valuable mineral resources are not needlessly sterilised by surface development. The county's Minerals and Waste Policies Map shows that a proportion of the north-western and southern parts of the allocation and near to the site boundary with the A419 fall within designated Mineral Safeguarding Areas (MSAs).

Nevertheless, officers of the MWPA would support Strategic Site Allocation Policy PS20 going forward if modifications were made. The 'planning constraints and designations' set out on page 105 should include the fact that part of the allocation falls within designated Mineral Safeguarding Areas (MSAs). In addition, the text for Strategic Site Allocation Policy PS20 should include a further bullet requiring any future development brief to…:- determine through an initial Mineral Resource Assessment (MRA), the significance of the underlying mineral resources present within the designated MSAs and the extent to which any mitigation measures will be necessary to avoid sterilisation by surface development and / or whether a strategy for the prior extraction of the mineral will be required for any future development proposals covering the relevant areas of allocation PS20.

Ecology (biodiversity) Comments

Firstly on a matter of a small but important detail the various headers on each page of the HRA report do not correctly refer to the Pre-submission version of the Stroud Local Plan and need correcting.

Despite significant challenges of mitigating the effects of new development allocation upon national and internationally designated sites and upon wider biodiversity the policy approach and associated SEA/HRA processes have produced an acceptable pre-submission version of the Local Plan. From an ecological (biodiversity) perspective there are no obvious issues to raise regarding legal compliance, soundness or duty to co-operate including with our own authority. We note the Local Plan makes good provision for the forthcoming changes due if the Environment Bill currently before Parliament receives Royal Assent.

Conclusion

Sharpness and Whaddon are substantial allocations in the Plan and are clearly an important component of the development strategy for the District as a whole. Given the transport concerns raised above regarding these two sites, based on the available submitted transport evidence, GCC consider the Plan to be unsound.

Also, with regard to the Minerals and Waste comments, if the suggested policy amendments are not agreed then the Plan will be considered unsound on this basis as well.

If you would like to discuss any of the points raised above please do not hesitate to contact me.

Yours faithfully

[redacted]
Senior Planning Officer

Appendix A – Sharpness Vale Statement of Opinion is attached separately

SLC Rail

Sharpness Vale – Rail Service Viability

Statement of Opinion for Gloucestershire County Council

V2 June 2021

Contents

Table of Figures

Document Control

Version Control

Version No.	Date	Created/Modified by	Notes
V.1	*25.06.2021*	[redacted]	*First draft*
V.2	*01.07.2021*		*Complete document*

Approvals

Version No.	Name of approver	Title & organisation	Date
V.1	[redacted]	*Rail Strategy Manager, SLC Rail*	*25.06.2021*
V.2		*Rail Strategy Manager, SLC Rail*	*01.07.2021*

Executive Summary

Purpose

Gloucestershire County Council (GCC) has asked SLC Rail for an opinion in respect to the viability of the introduction of a new passenger railway service along the Sharpness branch line.

Background

The Stroud District Draft Local Plan Review (pre-submission Draft Plan 2021) provides for a 5,000 home, sustainable development called Sharpness Vale 'following Garden City principles', which will be 'boosted by the reopening of the Sharpness rail branch-line to passenger and tourism services'.

The 'Garden City Principle' relies upon sustainable transportation being provided by a combination of the railway and a green bus network, with the emphasis on the railway provision. If the draft plan is accepted on the condition of the delivery of a passenger rail service and it is subsequently found that it is not possible to do so, then the eventual development will not be sustainable in the way that the vision and the plan intended.

Railway Service Enhancement Proposal

The developers are clear that 'proposals for Sharpness Vale depend upon the allocation being confirmed in the Pre-Submission Draft Local Plan and the Local Plan being adopted during 2022'. The proposal is currently subject to a Restoring Your Railways application for government funding to develop a Strategic Outline Business Case. The proposal is for one train per hour (TPH) with the intention of increasing to 2 TPH, providing direct connectivity from Sharpness to Cam and Dursley and Gloucester. Infrastructure costs estimated at £34m and the train service will require subsidy. The developer's estimate of daily passenger demand is 4,000 on a typical weekday and 1 million journeys per annum.

Requirements of the Railway Authorities

The process of approval required to introduce new railway stations requires: a compelling 'strategic purpose'; a 'strategic fit' with the existing rail network; and evidence of a strong business case.

Fit between Proposed Scheme and Rail Requirements

Question	Opinion
Strategic Purpose	*The promoters have assumed a heavy rail solution without exploring other alternatives fully and explaining why heavy rail is the best solution.*
Strategic Fit	*The promoters will need to convince Network Rail and the Department for Transport that it is possible to include this scheme as well as other additional services proposed for the Bristol – Birmingham railway (for example by Midlands Connect) without detriment to train performance.*
Economic and Financial Cases	*The scheme does not currently have a compelling business case. It requires an investment of £34.85m and the resulting service will require subsidy on an ongoing basis.* *The level of passengers forecast for the scheme looks unrealistically high compared to a range of existing stations on the network.*

	Whilst no Benefit Cost Ratio has yet been presented, in our view it is unlikely that the scheme will have a strong value for money case. *Network Rail and the Department for Transport will need to be persuaded that the transformational modal shift assumptions are deliverable.*

Opinion

There are two key factors which should be considered alongside our advice:

- *That the transformative nature of the Sharpness Vale vision and, ultimately, the underlying business case is dependent upon (1) obtaining the planning consent for the development and (2) that residents entirely comply with the 'non car' approach. Both elements are, at this stage, uncertain – as is the degree to which the Department for Transport would be prepared to accept the 'non car' logic within the underpinning economic business case.*
- *That the promoters are at an early stage in the railway enhancement pipeline process. Therefore, there are questions asked in this document which may not yet have been considered by the promoters. But the answer to these questions will influence the likelihood of the scheme proceeding to delivery.*

In summary, our observations are as follows:

It is our opinion that, based upon the current situation, that there are considerable risks to the viability of the scheme which make it unlikely that it would gain the necessary approvals to progress to delivery.

1. Purpose

Gloucestershire County Council (GCC) has asked SLC Rail for an opinion in respect to the viability of the introduction of a new passenger railway service along the Sharpness branch line. This proposed service enhancement forms an integral aspect of the proposal for a sustainable 'Garden City' type development at a location to be known as Sharpness Vale. The purpose of the opinion is to inform the Local Planning process. The development will not be sustainable without the passenger rail service, and without the development there will be no justification for a train service.

SLC Rail has significant experience in working with clients to deliver new railway station schemes. The most recent station, Worcestershire Parkway opened in 2020. SLC Rail is currently working on a number of other station projects and has a detailed and up to date understanding of Network Rail's and the Department for Transport's issues and concerns and the headwinds associated with railway scheme delivery in a post-COVID world.

2. Background

Policy PS36 of the Stroud District Draft Local Plan Review (pre-submission Draft Plan 2021) provides for a 5,000 home, sustainable development called Sharpness Vale (2,400 dwellings will be completed by 2040 and the remainder by 2050).[1] *The Draft Local Plan characterises the Sharpness development as: 'following Garden City principles', which will deliver 'a truly sustainable pattern of living'; that 'sustainable forms of transport will be boosted by the re-opening of the Sharpness rail branch-line to passenger and tourism services'; and will benefit from a 'new railway station and enhancements to the Sharpness branch line and contributions to support a regular passenger service to Gloucester'.*[2] *The developers of Sharpness Vale are Sharpness Development LLP.*

Sharpness Development LLP's transport advisors, Stantec, state that Sharpness Vale will be 'a mature, attractive settlement that will provide for many day-to-day needs and reduce the need to travel'.[3] *Stantec state that 'the Sharpness philosophy is geared around attracting those that understand the approach that is being taken, it will be self evident'.*[4] *Stantec go on to explain that they are 'expecting people to want to buy into this lifestyle change', but then mention that they 'expect people to be attracted to Sharpness Vale because of its key transport links'.*[5]

The 'Garden City Principle' relies upon sustainable transportation being provided by a combination of the railway and a green bus network, with the emphasis on the railway provision. If the draft plan is accepted on the condition of the delivery of a passenger rail service and it is subsequently found that it is not possible to do so, then the eventual development will not be sustainable in the way that the vision and the plan intended.

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[1] *Stroud District Local Plan Review (Pre-submission Draft Plan 2021), p.176, p.178.*
[2] *Stroud District Local Plan Review (Pre-submission Draft Plan 2021), p.162, p.179.*
[3] *Sharpness Vale: Transport Approach: Stantec, 2020, p.5.*
[4] *Sharpness Vale: Transport Technical Appraisal: Stantec, 25 June 2020, p.1.5.*
[5] *Sharpness Vale: Transport Approach: Stantec, 2020, p.5.*

3. Railway Service Enhancement Proposal

Stroud District Council and Sharpness Development LLP are proposing a reinstatement of a passenger rail service to the Sharpness branch line. The location of the branch is shown on the map below.

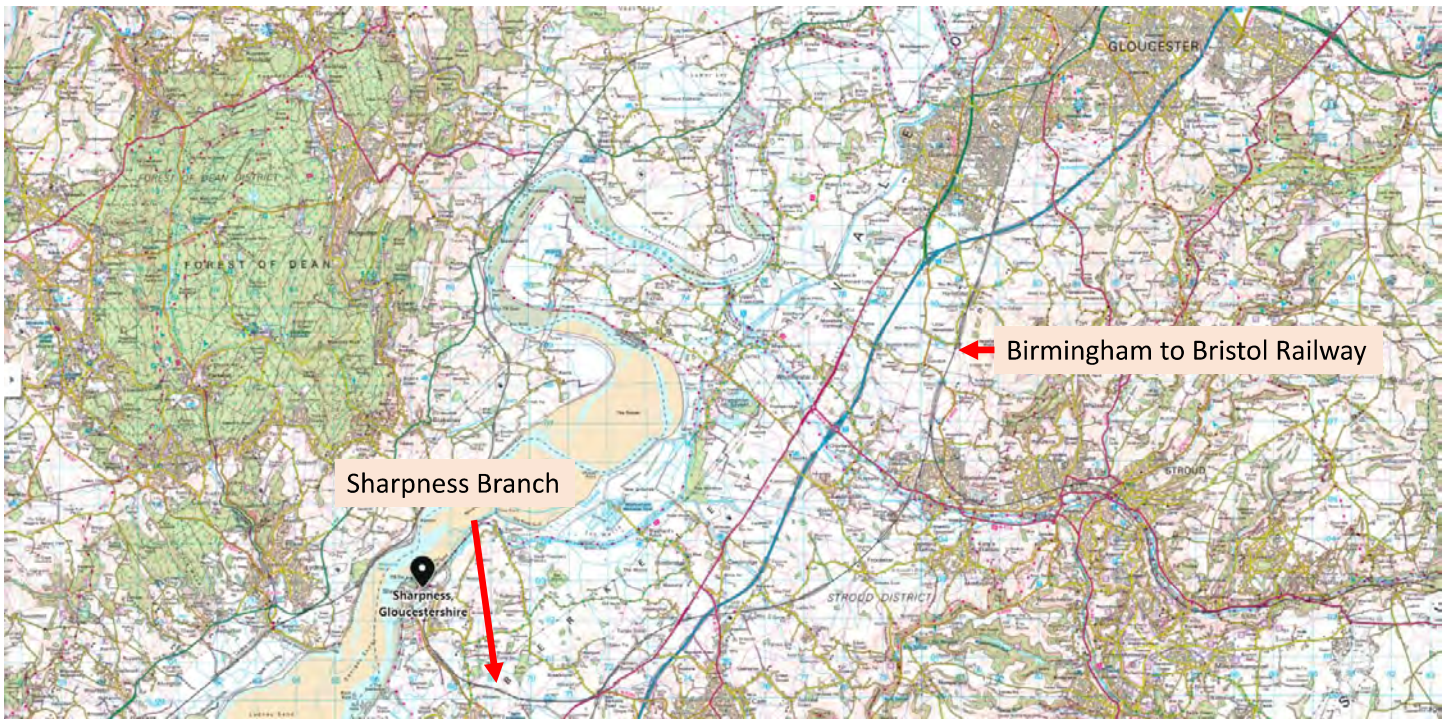

Figure 1 - Map of Sharpness (c) Ordnance Survey

The branch is 4 miles long, and joins the main Birmingham – Bristol line at Berkley Road Junction. Its sole use is for nuclear flask trains for the decommissioned Berkley power station. There is one path per day shown in the industry timetable, arriving at 09.19 and departing at 13.28. The path is shown as to be used "as required". The branch has a maximum permitted line speed of 15 mph. Access to the branch requires the train driver to collect a Train Staff, which is kept in Cheltenham Alstone Level Crossing Signal Box[6]. The line is therefore not currently suited for passenger traffic.

The proposed passenger service would initially constitute one train per hour (TPH) with the intention of increasing to 2 TPH, providing direct connectivity from Sharpness to Cam and Dursley and Gloucester. It would also provide indirect connectivity: changing at Cam and Dursley to access Bristol and the south west; and at Gloucester for Cheltenham, Birmingham and beyond. The proposal is currently subject to a Restoring Your Railways application for government funding to develop a Strategic Outline Business Case.

It is clear that considerable work has been undertaken to develop a business proposition for this scheme. A number of infrastructure requirements to upgrade the line, build a station, and enhance capacity at Gloucester have been identified. The infrastructure costs have been estimated at £ 34.65m (£12m station, £17.65m track and signal enhancements, £5m allowance for Gloucester stations works (only in 2 TPH scenario)), excluding optimism bias. The assumption is that a Train Operating Company will provide the trains, and that the service will require subsidy. The cost

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[6] *Western and Wales Sectional Appendix, section GW425*

of the subsidy is calculated at £1m in year 4 and reducing pro-rata to £206k in year 19. Presumably the subsidy in years 1-3 will exceed that of year 4. There is no explanation of what occurs after year 19, presumably the subsidy will continue to be required.

The importance of the rail connectivity to the developer becomes clear in the following statement:

'The philosophy is that, as sustainable mode capacity will exist, sufficient to allow every movement likely to take place during the key peak periods to be undertaken without reliance on the private car, then no highway capacity provisions will need to be made'.[7]

Although there is an assumption that this new community will be largely self-contained, there is also an assumption that many residents will seek to travel to Gloucester and beyond:

'The vision focuses on the morning and evening peak periods, when the whole network is under stress. We believe that if we can make sure that almost everyone could complete the journey they need to make by a sustainable mode, then we can remove the need to provide unsustainable highway improvements'.[8]

The developer has estimated that Sharpness Vale, when completed, will boost the existing 4,500 residents by a further 13,000-15,000 new residents as well as the incoming employees that will form part of the growth area.[9] *The developer's estimate of daily passenger demand amounts to 4,000 on a typical weekday and 1 million journeys per annum.*[10]

The developer has calculated peak demand to be between 8am and 9am and 5pm (300 departing and 94 arriving- total 393) and 6pm on a weekday (273 arriving and 140 departing – total 413).[11] *It is not clear when this level of custom will be achieved. If it is when the development is completed, then it is likely to be after 2050 (29 years hence) and only if the additional 2,600 units is given consent at the Local Plan extension in 2040. If construction commences in 2023 and achieves an average build-out rate of 342 pa (to achieve 2,400 by 2040) then 1,250 units will have been completed by 2027 and the halfway mark of 2,500 by 2031.*

The projected built-out rate will have a direct impact upon the volume of passengers, which in turn will have a direct impact on the subsidy required. If the build-out rate is slower than anticipated and/or the proportion of rail users is lower than anticipated, then the requirement for subsidy is likely to increase. As part of the financial case clarity will be required in respect to: who pays the subsidy; whether there an open-ended guarantee to pay the subsidy and if not clarity on what then happens; the approach if rail patronage does not align with the business case; and what happens in respect to subsidy after year 19.

In terms of deliverability of the railway scheme, it is understood that Sharpness Development LLP commissioned a detailed timetable study for the proposed scheduled services, which it is stated, has been signed off by Network Rail, and which demonstrates that the services can be accommodated.[12] *Although elsewhere in the Restoring Your Railway application it is also stated that: 'discussions with Network Rail and the timetable study have confirmed that there should*

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[7] *Sharpness Vale: Transport Technical Appraisal: Stantec, 25 June 2020, p.1.4*
[8] *Sharpness Vale: Transport Technical Appraisal: Stantec, 25 June 2020, p.1.3.*
[9] *Stroud District Council: Restoring Your Railway Bid, 2021, P.19 .*
[10] *Stroud District Council: Restoring Your Railway Bid, 2021, P.20.*
[11] *Sharpness Vale: Transport Technical Appraisal: Stantec, 25 June 2020, p.8.72, p.8.75.*
[12] *Sharpness Vale: Technical Note: Stantec, 18 June 2021, p.2.*

be no capacity issues on the branch line itself. Network Rail has indicated that train paths and capacity on the mainline either side of Berkeley Road are more constrained'.[13]

The developers are clear that 'proposals for Sharpness Vale depend upon the allocation being confirmed in the Pre-Submission Draft Local Plan and the Local Plan being adopted during 2022'.[14]

[13] *Stroud District Council: Restoring Your Railway Bid, 2021, P.20.*
[14] *Stroud District Council: Restoring Your Railway Bid, 2021, P.13.*

4. Requirements of the Railway Authorities

The process of approval required to introduce new railway stations onto the network is complex, onerous and time consuming. There is a requirement to satisfy Network Rail and the Department for Transport on:

- *the compelling strategic purpose for the new station*
- *the strategic fit with the existing network*
- *evidence of a strong business case which demonstrates both value for money and proves that the proposal is the best use of limited resources and rail capacity.*

Each of these aspects will be considered in more detail in the table below.

Requirement	Considerations
Strategic Purpose	*The strategic case needs to explain:* • *what 'problems' are to be solved;* • *what alternatives there are which could resolve the 'problems';* • *why rail is the best solution;* • *why the 'problem' needs to be solved now.* *An aspect of the strategic case is to explain and justify whether there are other potential benefits of the scheme. For example, some new stations can act as 'parkway' stations, or provide access to the railway network for unsatisfied customer demand, and unlock residential development.*
Strategic Fit	*On top of a strategic purpose, Network Rail and the Department for Transport need to be satisfied that:* • *there is a 'Strategic Fit' with the existing rail network and rail strategy.* • *the impact of the proposal on 'Resilience' relating to train performance and timetabling, on the rail network is understood,* • *the opportunity cost of provision of the proposed service on the limited capacity of the railway network is known.*
Economic and Financial Cases	*There is also a need to prove a business case, that the scheme represents value for money, and that it is affordable, both in terms of its initial capital cost but also in terms of any requirement for ongoing operational subsidy.*

Figure 2 - Requirements of railway authorities

5. Fit between Proposed Scheme and Rail Requirements

5.1. Strategic Purpose

The strategic case needs to explain: what 'problems' are to be solved; what alternatives there are which could resolve the problems; why rail is the best solution; and why the problem needs to be solved now.

The 'Problem Statement' for Sharpness Vale station would appear to be to provide rail connectivity for the proposed development. The vision for this 'Garden City' type development is that a very high proportion of residents will not use the car. Indeed, the underlying logic is that this development will attract residents who 'buy in' to this ethos. It remains to be seen to what degree this vision becomes reality. The 'car minimal' assumption does drive an aggressive assumption in respect to projected passenger numbers (see below). The existing Sharpness population is small, and because of the geographical location there is no prospect of a 'Parkway' role – there is already a station at Cam and Dursley that can perform this role to an extent, and which is closer to the trunk road network.

At this stage, which is pre-Strategic Outline Business Case, there appears to have been comparatively little consideration in respect to alternative solutions to the underlying 'problem'. A detailed 'Non-Car Movement Strategy' has been produced which considers the viability and funding of express bus services, but these are considered to be an essential addition to the rail service, and not an alternative.[15] The 'non-car' strategy is not included as an alternative option as part of the business case development, but is an entirely separate document.. There also appears to have been no consideration, for example, of other solutions such as: a branch line operation or train, or light rail; a fast bus service to Cam and Dursley station for integration into existing services. Network Rail and the Department for Transport would expect consideration of the alternatives within the Transport Business Case.

5.2. Strategic Fit

Although the railway scheme concerns the reintroduction of passenger services onto a branch line, the proposal does involve access to the strategically important Birmingham to Bristol main line. This important rail corridor is heavily utilised and any alteration to current and future timetables needs to be given detailed and careful consideration. This route is a conduit for some of the longest passenger train journeys in the country (such as an hourly Edinburgh to Plymouth, which in some hours extends to Aberdeen and Penzance). Because of the integrated nature of railway timetabling, a minor delay of a key long-distance train can have a large impact not only on its punctuality, but also the punctuality of many other services. This is particularly the case for services which travel through Birmingham New Street, which is the 5th busiest station in the country, and the busiest 'through' station. For this reason, any alteration of the timetabling on this route is likely to require considerable scrutiny.

The Restoring Your Railways application is slightly ambiguous in relation to the maturity of timetabling work with Network Rail. It is mentioned that the proposed timetable has been 'signed off' by Network Rail but also that there have been 'discussions with Network Rail and the timetable study has confirmed that there should be no capacity issues on the branch line itself. Network Rail has indicated that train paths and capacity on the mainline either side of Berkeley Road

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[15] *Stantec: Sharpness Vale: Mobility-as-a-service and express coach services, 30 March 2021.*

Junction are more constrained'.[16] *The strategic fit, and ultimately deliverability of this scheme, hinges upon the ability for this service to be integrated into the main-line timetable without introducing any additional performance risk.*

The introduction of the Sharpness service has the potential to create new performance risk. The southbound journey between Gloucester to Sharpness will involve two additional conflicting moves with the northbound mainline. The first as the train joins the mainline from Gloucester and the second as it leaves the mainline at Berkeley Road Junction. Such moves introduce additional complexity and performance risk.

During 2021 Network Rail has been leading the Bristol to Birmingham Corridor Strategic Study in respect to future aspirations for train service improvements, the underlying business rationale, and the scale of infrastructure requirements needed to unlock the increased capacity to deliver the enhanced train service.[17] *This study, undertaken collaboratively with stakeholders (including Gloucestershire County Council) identifies a range of strategic enhancements in relation to fast express services, regional services, and increased freight provision as shown below. There is no mention of the proposed Sharpness to Gloucester service within this document.*

Type of service	Proposed additional services (per hour)
Fast Express services	Birmingham to Bristol Birmingham to Cardiff
Regional services	Bristol to Worcester Gloucester to Bristol Swindon to Cheltenham
Freight 'paths'	Increase in freight paths to 2 per hour in each direction

Figure 3 - Identified service improvement aspirations on Network Rail Corridor Study

In terms of 'strategic fit' the proposed Sharpness to Gloucester service has the disadvantage of taking up valuable capacity on the main line whilst only servicing the new development and Cam and Dursley. In contrast, the proposed new regional services have potential to provide much greater connectivity to far more residents over a much wider geographical area. The Sharpness proposal needs to either prove that the business case is stronger than these alternatives, or to determine whether there is sufficient capacity for these services plus the Sharpness proposition.

The Corridor Study is very recent work that begins to map out the possible future direction of the railway. It may be that, in the short-term, and in the absence of these enhanced services it is technically possible to introduce a Sharpness service. But that might not be the best fit for the railway network in the long-term.

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[16] *Stroud District Council: Restoring Your Railway Bid, 2021, P.20.*
[17] *Network Rail: Bristol to Birmingham Corridor Strategic Study, June 2021.*

'Strategic fit' is important not only in relation to track capacity, but also in respect to train set utilisation and railway demand. There should be a strong case as to why scarce rolling stock should be used on the branch line when it could, arguably, be used more effectively enabling some of the additional regional services.

It would appear that, as yet, no compelling case has been made for the strategic fit of the Sharpness proposal. At this stage, given the longer term and wider scope aspirations of connectivity, it is difficult to envisage such a fit.

5.3. Economic and Financial Cases

Transport Business Cases require evidence of a strong, WebTag compliant, benefit cost ratio. Such a BCR would indicate that a project constitutes good value for money.

The indicative appraisal in the Restoring Your Railways application suggests that even with an aggressive assumption in respect to passenger numbers, the proposed service will require a sizeable subsidy for many years (see below). In other words, despite the capital expenditure of around £34.65m (not including optimism bias) the resulting railway service will be loss making.

In terms of a WebTag compliant business case, it seems unlikely (although not impossible) that in railway investment terms a positive BCR will be generated on a subsidised service which requires a capital investment of at least £34.6m.

We have estimated the annual operating costs of a 'Sprinter' style service on 1 TPH basis at £1.6m p.a and £3.1m for 2 TPH. The Restoring Your Railways document refers to a subsidy of £1m at year 4. A simple comparison of costs to subsidy would suggest that the projected ticket income is based around £600,000 p.a. (on the assumption of 1 TPH) or £2.2m (on 2 TPH).

	1 TPH	2 TPH
Estimated operational costs	1.6m p.a.	3.2m p.a.
Subsidy (at year 4)	1.0m	1.0m
Estimated ticket income required with subsidy to break even	0.6m	2.2m

Figure 4 - Operational costs, subsidy and estimated income

The Restoring Your Railways bid assumes that there will be 1 million passenger journeys per annum (a single trip being a passenger journey). The average ticket yield is likely to be low as most customers are likely to travel to Gloucester, or perhaps Bristol. It is not clear from the documentation how the journey profile has been created, or which year the patronage achieves this level. It is, though, a very optimistic level of customer demand. Whilst it is accepted that the whole rational of the Sharpness Vale project is that customers will eschew the car, it remains to be seen to what degree they do in reality and chose to utilise the train. The business case of the service is built, though, upon this optimistic assessment.

By way of comparison, the current level of journeys of local stations is shown in Figure 5. It can be seen that four stations in Gloucestershire have less than 200,000 journeys per annum. Stroud has a much larger patronage of 561,000 but that is just over half of what is proposed for Sharpness Vale. By way of comparison, if Sharpness Vale delivered 1 million journeys per annum it would be the 346th largest railway station outside of London out of 2,200. It would be comparable to stations at Kettering, Wellingborough and Stratford-upon-Avon. Many of the stations listed in the table below have a larger population, a wider catchment area, or a role as a parkway station.

	Passenger numbers p.a.	Population	Wider local catchment?	Possible parkway function?	Connectivity
Sharpness Vale	*1m*	*19.5k**	*No*	*No*	**(with 5,000 new homes)* *Cam and Dursley/Gloucester*
Local stations					
Stroud	*561k*	*32.6k*	*Yes*	*No*	*London and Cheltenham/Gloucester*
Kemble	*387k*	*1k*	*Yes*	*Yes*	*London and Cheltenham/Gloucester*
Lydney	*198k*	*8.8k*	*No*	*No*	*Cardiff/Gloucester/Cheltenham/ Birmingham/Nottingham*
Cam and Dursley	*191k*	*19.1k*	*No*	*No*	*Bristol/Gloucester/Cheltenham/Worcester*
Stonehouse	*166k*	*7.7k*	*No*	*No*	*London and Cheltenham/Gloucester*
Ashchurch	*102k*	*11k*	*Yes*	*Yes*	*London/Cheltenham/Gloucester/* *Birmingham/Cardiff/Nottingham/* *Worcester*
1m Journey stations					
Kettering	*1m*	*56k*	*Yes*	*Yes*	*London/Leicester/Nottingham/* *Derby/Sheffield*
Wellingborough	*1m*	*49k*	*Yes*	*Yes*	*London/Leicester/Nottingham/* *Derby/Sheffield*
Stratford-upon-Avon	*1m*	*27.5k*	*No*	*No*	*Birmingham*

Figure 5 - Benchmarking the proposed Sharpness Vale station

The scale of the ambition in relation to passenger numbers can be demonstrated by comparing the relationship between the size of the population and the number of rail journeys per annum (first two columns in Figure 5), and this is presented in the graph below. In Lydney, Stroud, Stonehouse and Cam and Dursley the notional resident makes less than 20 rail journeys per annum. This number is broadly similar to the larger stations of Wellingborough and Kettering. Kemble and Stratford-upon-Avon stand out for different reasons at around 40 rail journeys per notional resident. The former is skewed because the town is tiny and acts as a parkway station for Cirencester, the latter because of the number of tourist visitors. All are eclipsed, though, by Sharpness, which would have a ratio of 50 journeys per resident per annum.

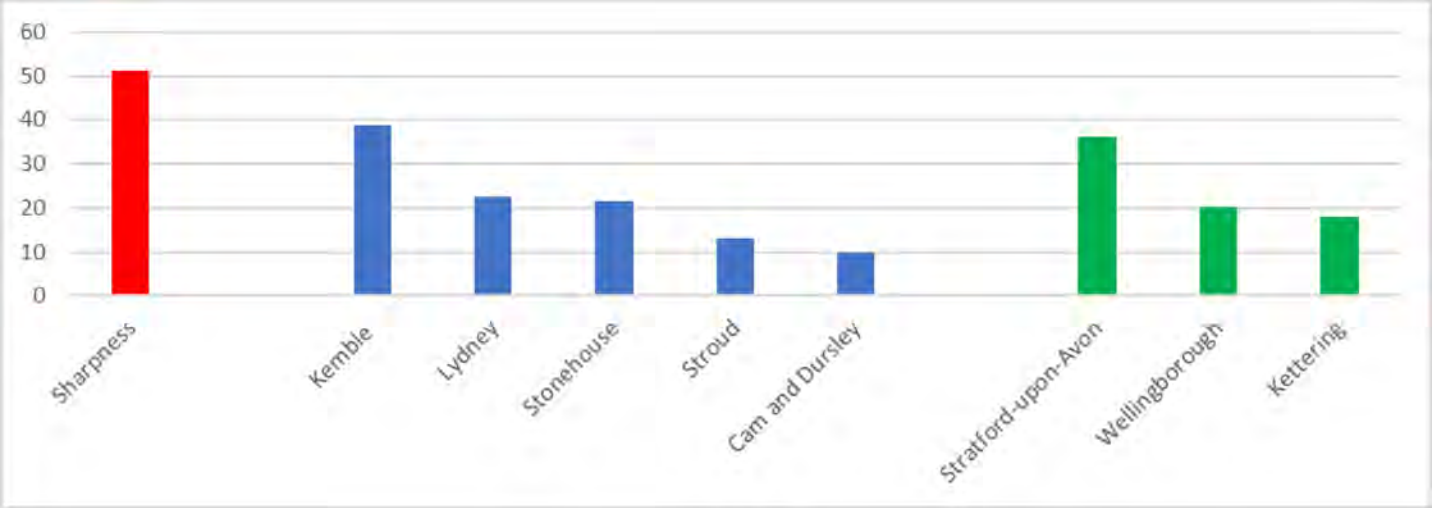


Figure 6 - Benchmarking graph: journeys per resident per annum

How the formula for subsidy has been calculated is unclear. If the subsidy is based upon the 1 million customers and that number is not achievable, then the service will require an even greater subsidy.

The relationship between build-out rate and thus passenger uptake and required subsidy are aligned. Whatever that relationship is, it is quite possible that passenger uptake is much slower than anticipated.

6. Opinion

There are two key factors which should be considered alongside our advice:

- *That the transformative nature of the Sharpness Vale vision and, ultimately, the underlying business case is dependent upon (1) obtaining the planning consent for the development and (2) that residents entirely comply with the 'non car' approach. Both elements are, at this stage, uncertain – as is the degree to which the Department for Transport would be prepared to accept the 'non car' logic within the underpinning economic business case.*
- *That the promoters are at an early stage in the railway enhancement pipeline process. Therefore, there are questions asked in this document which may not yet have been considered by the promoters. But the answer to these questions is likely to influence the likelihood of the scheme proceeding to delivery.*

In summary, our observations are as follows:

Question	Opinion
Strategic Purpose	*The promoters have assumed a heavy rail solution without exploring other alternatives fully and explaining why heavy rail is the best solution.*
Strategic Fit	*Whilst the lack of inclusion of the Sharpness project in the Corridor Study does not mean that it cannot happen, it is clear from the study that there will be considerable pressure for access to the mainline from other more strategic service enhancements.* *The promoters will need to convince Network Rail and the Department for Transport that it is possible to include this scheme as well as the other additional services without detriment to train performance.*
Economic and Financial Cases	*The scheme does not currently have a compelling business case. It requires an investment of £34.85m and the resulting service will require subsidy on an ongoing basis.* *The level of passengers forecast for the scheme looks unrealistically high compared to a range of existing stations on the network. If further forecasting work shows this to be the case, the level of subsidy required would be correspondingly higher than that suggested by the promoters.* *Whilst no Benefit Cost Ratio has yet been presented, in our view it is unlikely that the scheme will have a strong value for money case.* *Network Rail and the Department for Transport will need to be persuaded that the transformational modal shift assumptions are deliverable.*

Figure 7 - Summary of our opinion

It is our opinion that, based upon the current situation, that there are considerable risks to this scheme which make it unlikely that it would gain the necessary approvals for the scheme to progress to delivery.

Appendix B Gloucestershire Decarbonising Transport Forum 2022 – Journey to Net Zero

Welcome

Please go to **www.menti.com** to:

- Submit your answers
- Make a pledge
- Tell us your challenges and opportunities

Send questions to our Q&A panel: ltp@gloucestershire.gov.uk

Gloucestershire Decarbonising Transport Forum 2022

Welcome

Cllr David Gray

Cabinet Member for
Environment and Planning

Gloucestershire County Council

Agenda

09:30 Welcome (Cllr David Gray, GCC Cabinet Member for Environment & Planning)

09:35 Decarbonising Transport – Local Power in Action (Jason Torrance, UK 100)

09:55 Pathways to Net Zero (Claire Haigh, Greener Transport Solutions)

10:15 **Break**

10:35 Local Transport & Connectivity Plan (Melissa Goodacre, Oxfordshire County Council)

10:55 Our Journey to Net Zero (Pete Wiggins, Julian Atkins &, Luisa Senft-Hayward, Gloucestershire)

11:25 Workshop: How do we reduce transport carbon emissions

12:40 Lunch

13:40 Gloucestershire Youth Climate Group (Cate James-Hodges & Megan Land)

13:55 Business Role in Decarbonising Transport (Phil Smith, Business West)

14:15 Workshop Feedback

14:30 **Break** & Electronic Engagement: Challenges and Opportunities

14:50 Speakers Panel Q&A

15:50 Next Steps & Closing Remarks

16:00 **Close**

Gloucestershire
Decarbonising Transport
Forum 2022

Housekeeping

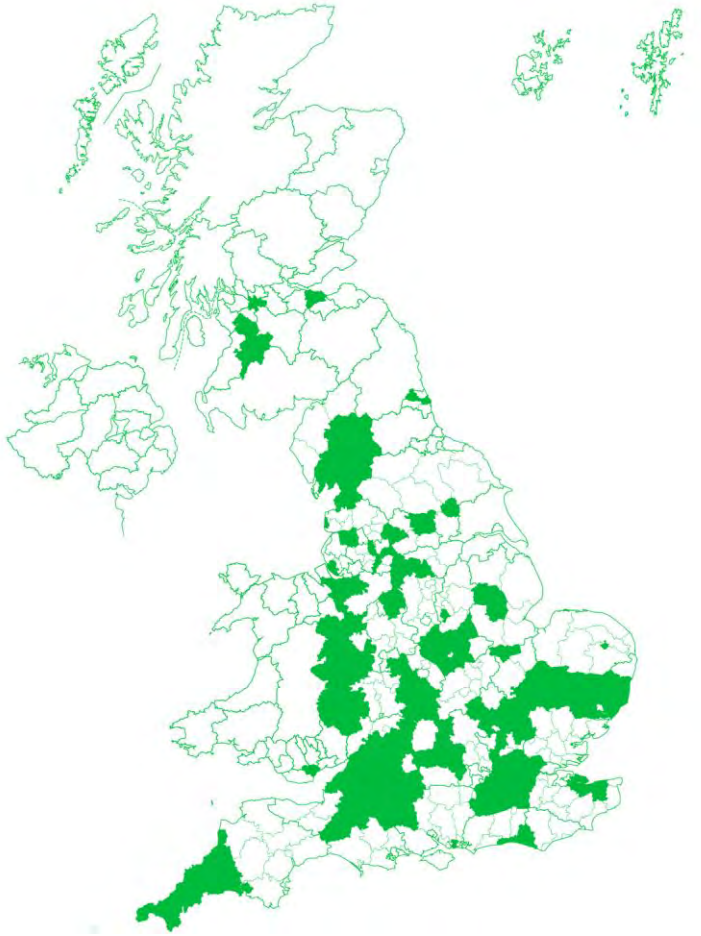
Decarbonising transport:
Local Power in Action

Jason Torrance, Assistant Chief Executive, UK100

What is UK100?

UK100 is a network of local leaders who have pledged to shift their communities to Net Zero ahead of the government's legal target. They do this to demonstrate their ambition and to make the case for more rapid change, to enable the transition to happen in a way that is fast and fair.

The network provides opportunities to learn from each other, agree priorities for legislative and regulatory change, engage with national decision-makers and businesses and develop a better understanding about how to build consent and support in their communities for rapid climate action.



Local Power in Action

Local Power in Action offers ambitious councils, who are members of the UK100 network, tailored support to accelerate progress towards their organisation's Net Zero goals. UK100 has deployed Net Zero Pathfinders to support leaders, cabinet members and senior officers at the council to overcome the political, organisational and engagement challenges they face in implementing their ambitious Net Zero projects.

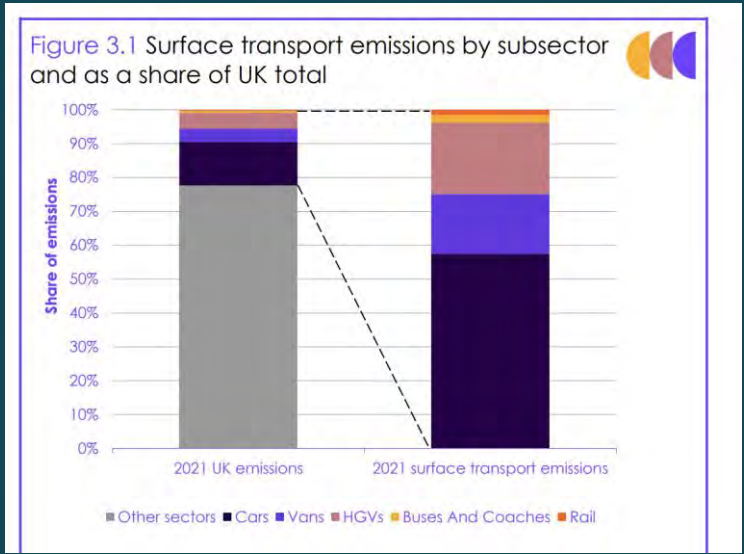
The 2022 programme cohort includes:

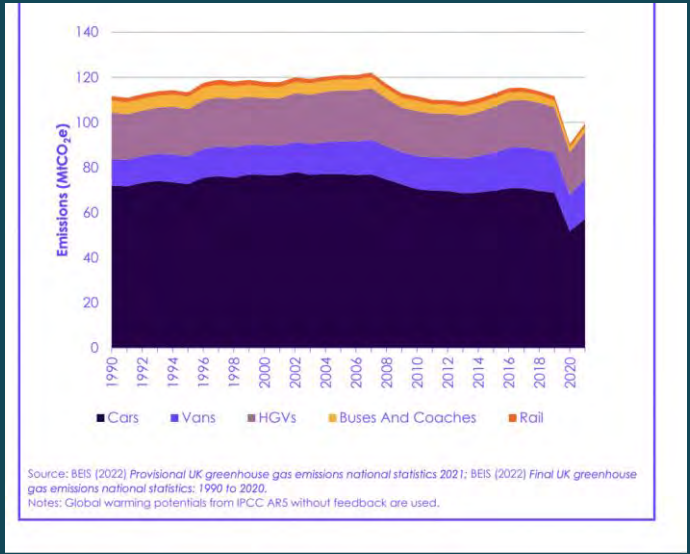
- Gloucestershire County Council
- West Yorkshire Combined Authority
- Leicester City Council
- Oxford City Council & Oxfordshire County Council

Roger Evans, Net Zero Pathfinder

Why decarbonising transport is important

Transport is largest contributor to UK GHG emissions, 23% in 2022





Top three challenges and opportunities

Rising Greenhouse Gas emissions

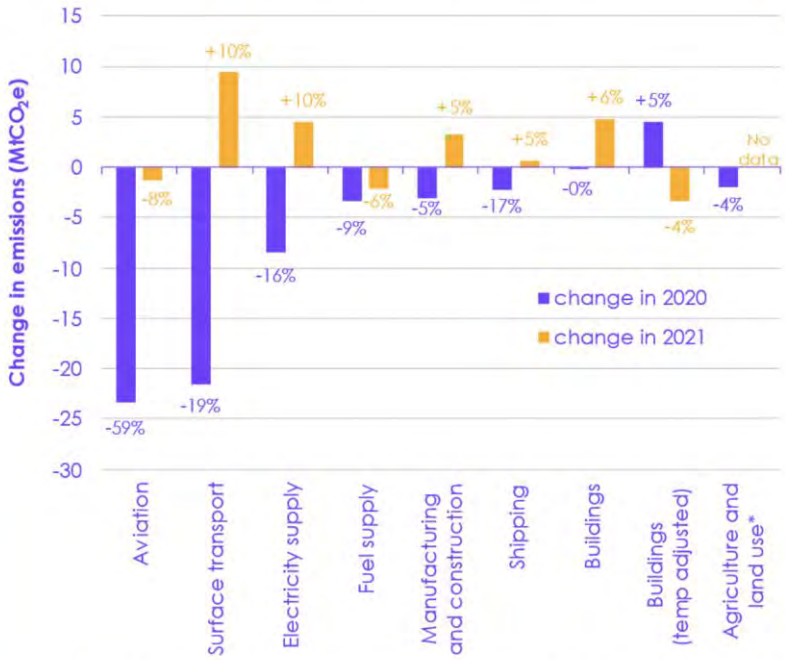
Access to jobs, education and services

Congestion

Rising Greenhouse Gas Emissions

“Car travel rebounded quickly following the lifting of lockdown restrictions. Public Transport is not recovering as quickly.”

Figure 2 Change in UK emissions 2019-2021



Source: BEIS (2022) *Provisional UK greenhouse gas emissions national statistics 2021*; BEIS (2022) *Final UK greenhouse gas emissions national statistics*; BEIS (2022) *Energy Trends: UK oil and oil products March 2022*; CCC analysis.
Notes: Global warming potentials from the IPCC Fifth Assessment Report (AR5) without feedback are used.
*Provisional 2021 estimates are not made for non-CO_2 greenhouse gases, so the change in 2021 agriculture and land use emissions is not shown.

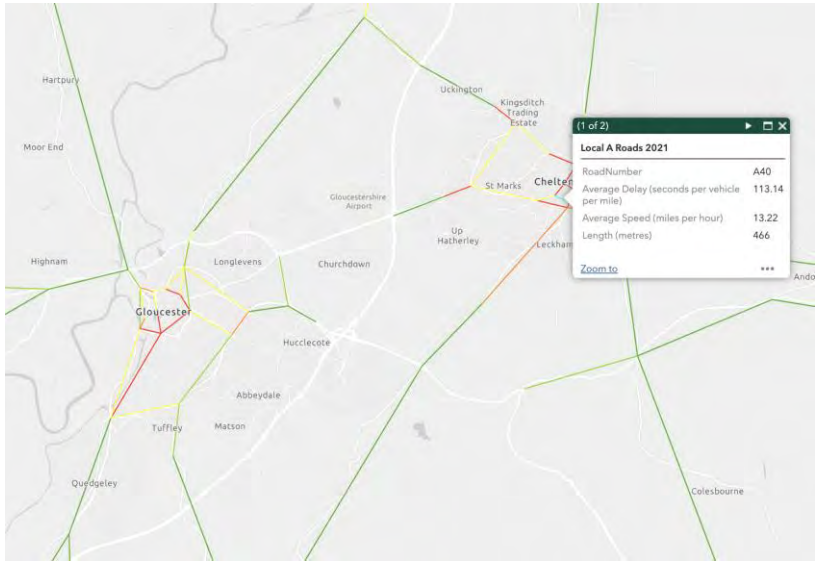
Access to jobs, education and services

“Five times as much public money has been committed to the UK’s Strategic Road Network than for clean transport.” *UK100’s Resilient Recovery task force*.

“Investment in sustainable transport creates more jobs per pound invested’ than carbon and resource-intensive road infrastructure projects - *Sustrans jobs study*

investing in sustainable transport infrastructure, including expanding and upgrading the rail network and building dedicated pedestrianisation and cycle lanes could create 229,000 jobs over the next two years.

Congestion



DFT - Road congestion and travel time statistics

- Currently congestion in urban areas costs the economy around **£11bn every year** through lost worker hours due to time wasted sitting in traffic and the health impacts of congestion.
- British Chamber of Commerce, this congestion and its associated costs drains some **£17,000** from each individual business in the UK each year.
- Congestion is set to rise by **85% by 2040** unless significant investment and policy change is committed to.


UK:
100

PATHWAYS TO NET ZERO

Claire Haigh, Founder & CEO
Greener Transport Solutions

Gloucestershire Decarbonising Transport Forum

19th July 2022

The Exam Question

- ***"What would be a credible and politically deliverable framework for the decarbonisation of transport that will deliver the necessary emissions reductions in the shortest time possible whilst mitigating any negative social impacts?"***

A credible framework

1. Transport sector on its own cannot achieve net zero
2. We must price properly for carbon
3. Reduce embedded carbon and “sweat the assets”
4. Better integration of transport and planning
5. Implement proper devolution
6. Net zero will require a step change in funding
7. A net zero test for public policy

Political deliverability

1. The need for consistent messaging
2. How to build a political mandate for change
3. A positive vision needed to overcome “NIMBYism”
4. We need a balanced discussion about the car
5. How to implement radical road measures
6. What can we learn from the Covid behavioural shift?
7. Engaging with the public

Social impacts

1. Unfairness of our current transport system
2. Social impacts of the switch to EVs
3. Free or subsidized public transport
4. The role of accessibility planning in social inclusion
5. Mobility credits and carbon allowances
6. Mitigating negative social impacts
7. Most severe cost-of-living crisis in a generation

The Way Ahead

- ***CCC have concluded that current Government policy will not deliver net zero. We need a new approach.***
- ***We need a strategy to tackle the cost-of-living crisis that will accelerate the transition to net zero and protect our energy security.***
- ***We must paint a positive picture of what a zero-carbon future looks like, of the future we want. The greener choice is most often the better choice.***

www.greenertransportsolutions.com
info@greenertransportsolutions.com

Break

10:15 -10:35

Please go to **www.menti.com** to:

- Submit your answers
- Make a pledge
- Tell us your challenges and opportunities

Send questions to our Q&A panel: ltp@gloucestershire.gov.uk

Oxfordshire County Council - Local Transport and Connectivity Plan

Gloucestershire Decarbonising Transport Forum – 19th July 2022

OXFORDSHIRE COUNTY COUNCIL

Introduction

- Who am I:
  - Melissa Goodacre – Infrastructure Strategy Team Leader
- Oxfordshire's experience of working towards targets to reduce transport emissions and reach net zero.
- Presentation covers:
  - Introduction to the LTCP
  - Overview of key policies
  - Lessons learnt / challenges

OXFORDSHIRE COUNTY COUNCIL

LTCP background

- The Local Transport and Connectivity Plan (LTCP) is Oxfordshire's statutory Local Transport Plan. It outlines our long term vision for transport in the county and the policies required to deliver this.

- It will replace the existing Local Transport Plan, LTP4, adopted in 2016. The LTCP is required to reflect changes to policy and funding since 2016 and account for new priorities such as decarbonisation.

- The LTCP also represents an opportunity to adopt and implement a new way of thinking, essential to help deal with the climate emergency.

LTCP development

- We have developed and consulted upon the LTCP in 3 stages:
  - Stage 1 – Topic Paper Engagement
  - Stage 2 – Development of Vision Document and consultation
  - Stage 3 – Development of the LTCP and supporting documents and consultation
- This approach has allowed for ongoing public feedback & stakeholder input.
- The LTCP has also been informed by a wide-ranging evidence base.

OXFORDSHIRE COUNTY COUNCIL

OXFORDSHIRE COUNTY COUNCIL

LTCP vision

- The vision outlines a clear long-term ambition for transport in the county and underpins the policies in the document.

"Our Local Transport and Connectivity Plan vision is for an inclusive and safe net-zero Oxfordshire transport system that enables all parts of the county to thrive.

It will tackle inequality, be better for health, wellbeing and social inclusivity and have zero road fatalities or life-changing injuries. It will also enhance our natural and historic environment and enable the county to be one of the world's leading innovation economies.

Our plan sets out to achieve this by reducing the need to travel and private car use through making walking, cycling, public and shared transport the natural first choice."