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P R A – Operations Planning Ltd

Reopening Stratford-upon-Avon to Honeybourne Railway Line Strategic Outline Business Case

On behalf of **Wychavon District Council**



Project Ref: 330610502 | Date: May 2021

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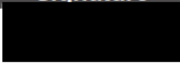


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Overview and Background

Overview

In November 2020, four rail promotion groups – the Cotswold Line Promotion Group; Shakespeare Line Promotion Group; Solihull and Leamington Rail Users Association; and Stratford Rail Transport Group - were successful in obtaining funding from the UK Government's *Restoring Your Railway Ideas Fund* to explore the potential restoration of the railway link between Stratford-upon-Avon (hereafter referred to as Stratford) in South Warwickshire and Honeybourne in Worcestershire. Subsequently, Wychavon District Council (WDC) commissioned Stantec UK Ltd and partners AllanRail and PRA Operations Planning to deliver a Strategic Outline Business Case (SOBC) for the reopening of the line. The funding partners for the study are WDC; Worcestershire County Council / Worcestershire Local Enterprise Partnership (LEP); Gloucestershire County Council; Cotswold District Council; Stratford-on-Avon District Council; Warwickshire County Council; Cotswold Line Promotion Group; Stratford Rail Transport Group; and Shakespeare Line Promotion Group

A 'business case' comprises three stages (Strategic Outline, Outline and Full), with more detail being provided at each stage. At the SOBC stage, the purpose is to confirm the strategic context for the proposals, make a robust case for change, and to provide stakeholders with an early indication of the proposed way forward (although a 'preferred' option is not selected at this stage).

In some respects, this business case involves taking a step-back to take two-steps forward. The 2012 *Stratford Rail Study* undertaken by Arup (and subject to later updates) considered rail options within the context of the Network Rail Governance for Railway Investment Projects (GRIP). GRIP is an eight-stage management and control process for the identification and delivery of railway projects. The study concluded at GRIP Stage 3 (Option Selection), which is the point at which a preferred option is identified. In DfT business case terms, GRIP Stage 3 takes a project to the point at which the SOBC is completed and the early stages of the Outline Business Case (OBC) have commenced. However, GRIP is a rail-based process only and thus does not consider the full range of options which could address the identified transport problems and opportunities. The purpose of this SOBC is therefore to undertake a wider multi-modal study in line with DfT Guidance, within which the restoration of the Stratford - Honeybourne railway line option will be nested – i.e., it has to take a wider perspective by:

- firstly defining **why** a transport solution is required; and then
- determining what the most appropriate **potential solutions** are.

This SOBC is therefore less about further developing the case for the Stratford - Honeybourne railway line directly, rather about framing that case within a wider multi-modal transport context. It examines the costs and quantitative and qualitative benefits of a range of public transport options which could improve local and strategic transport connectivity to, from and through Stratford.

In submitting their application to the *Restoring Your Railway Ideas Fund*, the scheme promoters identified five key purposes for restoring the Stratford – Honeybourne railway line:

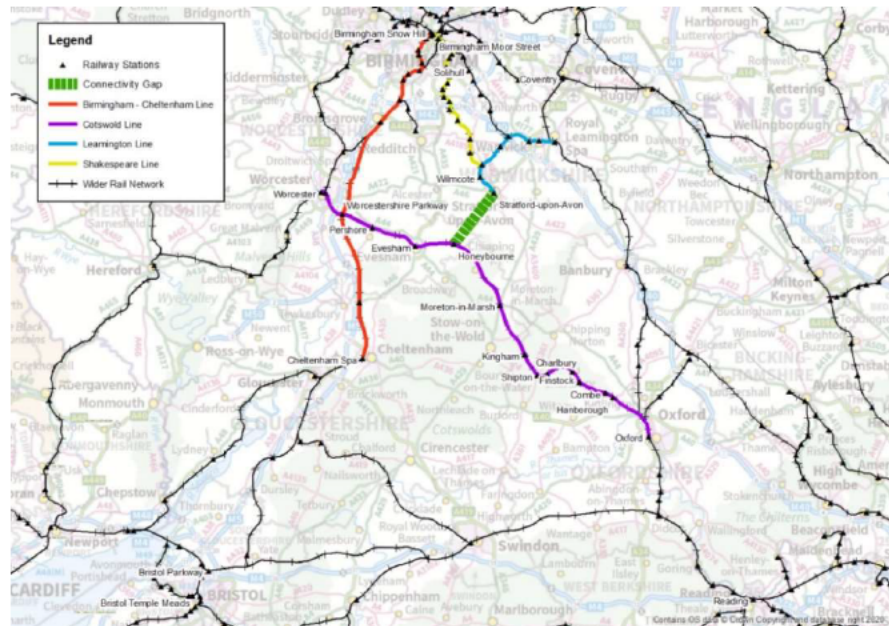
- *To realise the **latent demand for rail travel** not captured due to Stratford being located at the stub end of a truncated branch line, with slow and infrequent services as a result.*
- *To allow the **rail potential of Long Marston Garden Village** to be realised, in order to prevent it becoming a car-dependent settlement.*
- *To facilitate the provision of a **second route between Birmingham and Oxford via Stratford**, in the interests of network resilience and improved connectivity.*
- *To recognise the role of rail as a **regeneration** tool that could benefit Stratford town centre's economy in a post-pandemic era.*
- *To build on the travel **opportunities offered by Worcestershire Parkway** as an interchange for journeys from Stratford to the South-West / South Wales.*

Whilst the SOBC assumes a wider perspective, the principles set out above formed a starting point for the project and were further developed and supplemented through the study.

Background

Whilst Stratford itself is currently at the end of a branch line, its services interact with several main lines in the West Midlands. If the extension to Honeybourne was constructed in the future, it would also tie into the North Cotswold Line, with potential implications for services over a wide geographic area. The SOBC therefore has to consider Stratford in the context of the wider Warwickshire, Worcestershire and Gloucestershire railway network.

The main railway routes affected by this study are illustrated in the figure on the right, with their key characteristics summarised below:



- Shakespeare Line and Birmingham - Leamington – Stratford Line:** A combination of the Shakespeare Line and the Birmingham – Leamington – Stratford Line facilitates a half hourly service from Stratford to Stourbridge Junction via Birmingham Snow Hill, with one train per hour (tph) on each line. The latter line via Dorridge offers shorter journey times but service frequency is constrained by current infrastructure and the requirement to be accommodated alongside the irregular Stratford – Leamington and Stratford - London Marylebone services operated by Chiltern Railways.
- North Cotswold Line (NCL):** The NCL connects Hereford and Worcester to London Paddington via Oxford and Reading and would be the line which any services operating on the restored Stratford – Honeybourne link would join.
- Birmingham – Cheltenham Line:** This line intersects with the NCL at the newly opened (23rd February 2020) Worcestershire Parkway station, which provides NCL users with interchange opportunities for connections to the South-West and South Wales and direct express services to Birmingham and the East Midlands.

An SOBC for improvements to the NCL has recently been published by the North Cotswold Line Task Force (NCLTF), focused specifically on achieving a 2tph service between Worcester and London Paddington. Given the stage of development of the NCLTF SOBC, it is intended that any proposals emerging from this SOBC should, as far as possible, be complementary rather than conflicting with the outcomes of the Task Force’s work.

The pre-COVID-19 services offered from a sample of main stations in the study area are shown in the table below.

Origin Station	Destination Station	Typical tph	First Dep.	Last Arr.	Length of Operating Day
Stratford	Birmingham Snow Hill	2	06:26	23:23	16:57
	Leamington Spa / London Marylebone	<1	06:06	22:58	16:52
Worcester (Foregate Street & Shrub Hill)	Birmingham Snow Hill / New Street	2	05:30	00:05	18:35
	London Paddington	1	05:11	00:02	18:51
Worcestershire Parkway	Birmingham New Street	1	07:36	21:58	14:22
	Cheltenham Spa	1	07:58	22:32	14:34
	Worcester	1	06:07	21:12	15:05
	London Paddington	1	05:19	23:53	18:34
Moreton-in-Marsh	Worcester	1	05:35	21:45	16:10
	London Paddington	1	05:50	23:22	17:32

Methodology

The methodology for this SOBC is set out in the figure on the right and can be described as follows:

Step 1 (orange boxes): From the baselining and stakeholder engagement, generate and evidence the list of **transport problems**: (i) as experienced by **users** of the transport network; and (ii) problems caused by the **operation of the network**. Set out the consequences for **travel behaviour** and **society** at large.

Step 2 (red box): Develop a policy framework based on a review of key policy documents – this will influence the setting of Transport Objectives (TOs) and the subsequent appraisal of options.

Step 3 (blue boxes): Set Transport Objectives to address the evidenced problems. Set out the indicators which will be used in subsequent monitoring and evaluation. This process acts as a ‘futureproofing’ step, ensuring that the TO can be meaningfully appraised, then monitored and evaluated. The level of ambition associated with each TO can be expressed as the TO is progressively ‘*SMART-ened*’ through the business case stages.

Step 4 (pink box): Generate a list of options which would address the supply-side problems and appraise them against the TOs to establish a shortlist.

This completes the Strategic Case

Step 5 (green boxes): Establish the value for money and potential benefits of the shortlisted options. Through this process, identify options to be progressed to the Outline Business Case (OBC).

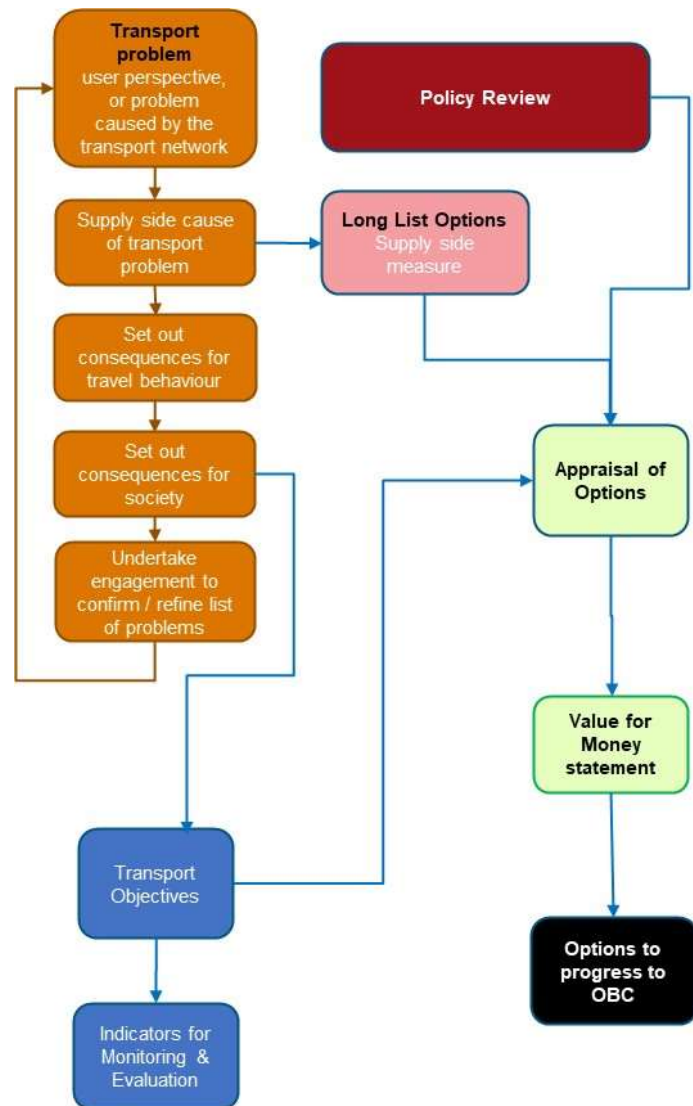
This completes the Economic Case

The **Financial, Commercial and Management Cases** follow-on from this, defining how the options would be funded, procured, delivered and managed.

Key to defining a strong rationale for intervention is ensuring a sufficiently robust underlying evidence base. Understanding who would benefit, and how, from improving local and strategic transport connectivity to, from and through Stratford is the foundation of this SOBC. This has been undertaken through a stakeholder engagement programme, supported by five key analysis tasks:

- high-level policy and strategy review
- transport baselining
- rail analysis (the role of the lines and existing and future capacity)
- environmental baselining
- socio-economic baselining

The data and policy analysis and review have been brought together with the findings of the engagement exercise (discussed below) to identify the transport problems and opportunities in the area and define the consequential socio-economic impacts.



Stakeholder Engagement

Stakeholder engagement has been integral to the SOBC and has involved a workshop with public sector stakeholders, one-to-one phone calls and written correspondence with other key stakeholders, including Members of Parliament, Councillors and Parish Councils. This engagement on problems, opportunities, objectives and options was supplemented by the collection (by the Stratford Rail Transport Group) of formal stakeholder notifications of support from 11 MPs; 9 SOBC funding partners; 13 Parish / Town Councils; 10 County / District Councillors; and 23 stakeholders across the rail industry, the public sector and business community. The proposed Stratford – Honeybourne scheme has also been the subject of 16 items of media coverage.

As the study area covers four Train Operating Company (TOC) areas (West Midlands Trains (WMT), Great Western Railway (GWR), Chiltern Railways and Cross Country), early and detailed engagement with the industry was essential. In addition to the TOCs, the study team consulted with the West Midlands Rail Executive, Network Rail and the NCLTF amongst others. The diagram below shows the stakeholders contacted through engagement programme undertaken.

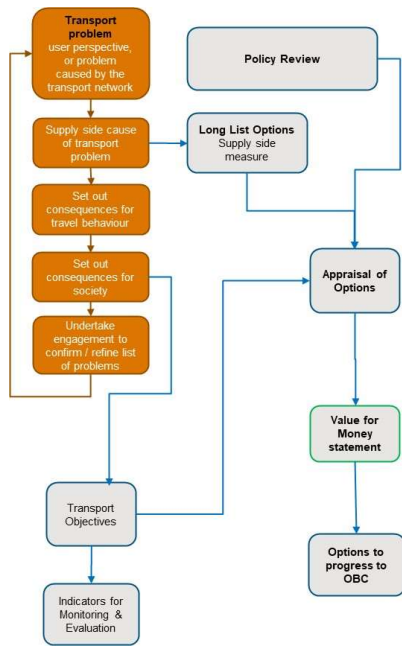


The outcomes of the stakeholder engagement exercise are incorporated within this report. Overall, there was a very strong desire for improved public transport connectivity from Stratford amongst stakeholders. There was also support from most stakeholders for the restoration of the Stratford to Honeybourne railway line, subject to effective mitigation of impacts on the Stratford Greenway – the high-quality active travel corridor developed on the former trackbed of the Stratford–Honeybourne railway - and the minimisation of construction and post-operation disruption.

Whilst this report presents a summary of the findings of the work and outlines the rationale for intervention, accompanying technical reports have been prepared to provide additional detail if required – these include:

- **Baselining Technical Note (Stantec and Allan Rail, June 2021)**
- **Option Development and Appraisal Technical Note (Stantec and Allan Rail, June 2021)**

These reports should be consulted for more detailed background information beyond the summary level detail presented in this SOBC report.



Strategic Case

Step 1a: Transport Problems and Supply-Side Causes

From a user perspective, five transport problems have been identified through the baselining and engagement. These problems and their supply-side causes are presented below.

Problem A: Limited ability to make **direct public transport journeys** between: (i) Stratford and Worcestershire, Gloucestershire, Oxfordshire and beyond; and (ii) the North Cotswold Line corridor¹ and the West Midlands.

Evidence

The figure below right uses TRACC² public transport connectivity software to illustrate the average public transport journey time from Stratford in the AM peak period for the following origins and destinations:

- Origin – Stratford town centre (implying a walk to the station)
- Destinations – lower super output area centroids (LSOAs)

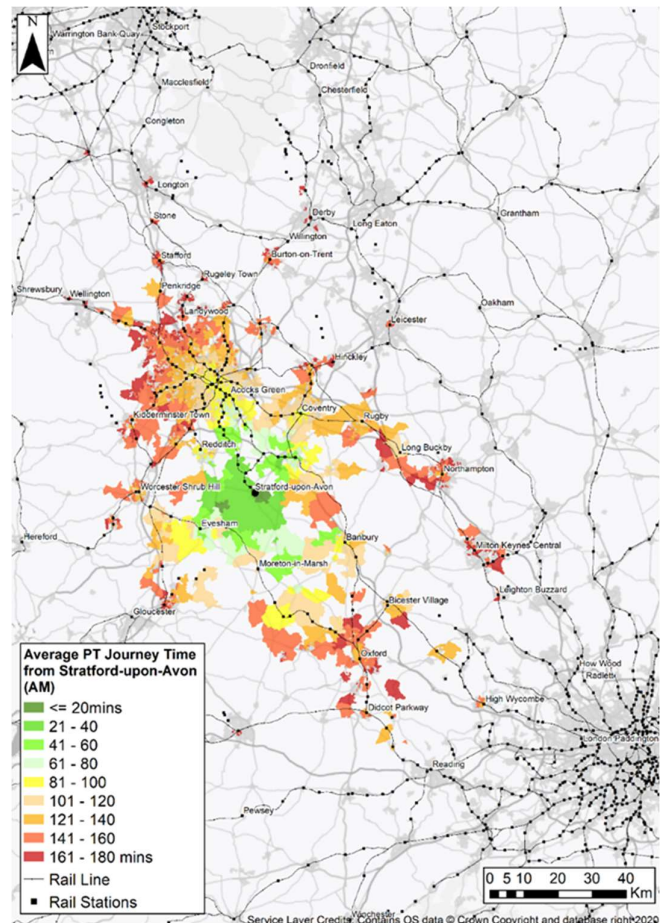
Journey time runs were undertaken in each of the following time periods, 06:00-09:00; 07:00-10:00; and 08:00-11:00, and the results were used to calculate an average shortest journey time across the three periods.

The figure on the right shows that, despite its central location between several major towns and cities (e.g., Birmingham, Worcester, Coventry, Warwick, Banbury etc), Stratford's public transport connectivity is relatively poor. Factoring in walk and wait times, only Warwick, Leamington and south-east Birmingham can be accessed within one hour when travelling by public transport in the AM peak period.

Southbound connectivity is even poorer – whilst limited bus connections do allow for travel to Evesham and Moreton-in-Marsh within an hour, reasonably proximate settlements such as Oxford and Cheltenham are upwards of two hours away by public transport. London is inaccessible by public transport within the stated time periods.

Connectivity from the North Cotswold Line corridor to Stratford and the West Midlands by public transport is similarly limited (note, this is not shown on the map). However, connectivity from the Worcester area to Birmingham is reasonable, and likewise Worcestershire Parkway provides an opportunity for residents of e.g., Pershore and Evesham to get to Birmingham, albeit with the requirement for interchange.

The MOIRA data provided by GWR also provides access to LENNON (Latest Earnings Networked Nationally Overnight) ticket sales data. This provides total ticket sales between stations on the British railway network. For illustrative



¹ From Hanborough to Pershore, including the Long Marston area.

² Note that the analysis used Q4 2019 bus and rail timetables, and thus represents the pre-COVID position (i.e., avoiding the COVID related service reductions). These timetables are, however, also pre-Worcestershire Parkway and this should be borne in mind when interpreting the results.

purposes, ticket sales from Stratford and Evesham were examined to highlight the main movements north and south of the Stratford – Honeybourne gap. The key points are as follows³:

- Rail travel **to / from Stratford** is overwhelmingly concentrated on the Birmingham market, both Birmingham itself and suburban settlements such as Shirley, Henley-in-Arden, Solihull, Dorridge etc. London and Leamington are the other main stations and there is a relatively small flow to Oxford. Despite the short ‘crow fly’ distance from Stratford to stations on the NCL, no stations on that line are in the ‘top 20’ for Stratford.
- The picture at **Evesham** is largely the inverse of Stratford, with little travel between that station and destinations to the north / north-east. The one exception is Birmingham (and Birmingham area stations), but the flow is very small compared to Stratford’s. Instead, Worcester, London and Oxford are the dominant stations. This pattern is repeated at stations along the North Cotswold Line.

The above examples highlight the very limited rail market (and hence public transport market) at present between: (i) Stratford and Worcestershire, Gloucestershire and Oxfordshire; and (ii) the North Cotswold Line corridor and the West Midlands.

Supply-Side Cause(s)

- No rail connections south of Stratford.
- Limited bus network to / from Stratford – mainly subsidised and based largely on a single driver day.
- Requirement for one or more interchanges for rail-based journeys from Stratford to points south and from the North Cotswold Line corridor to Birmingham.

Problem B: Long public transport journey times between: (i) Stratford and settlements such as Worcester, Evesham, Moreton-in-Marsh, Oxford and beyond; and (ii) the North Cotswold Line corridor and the West Midlands.

Evidence

The table below shows AM (05:00-09:00) journey times between key origins and destinations in the study area by rail, bus and road. To ensure the comparison is not biased towards any one mode, a central point in each location rather than the railway station was used as the origin and destination point. Bus and rail journey times were taken from TRACC and represent a combination of walk, wait and in-vehicle times. Road journey times are based on pre-COVID-19 Google API data. The differences in journey times between bus and rail and road and rail are shown in the last two columns. **Green** highlighted cells show where bus and road offer a **faster** journey time compared to rail, **red** highlighted cells a **slower** journey time compared to rail, and a dash shows that the journey could not be made within the specified time period.

³ Note: LENNON data is commercially confidential and thus no actual flows or volumes are reported.

Origin	Destination	Distance (miles), by fastest road route	Rail (mins)	Bus (mins)	Road (mins)	Bus (compared to Rail)	Road (compared to Rail)
Stratford	Honeybourne	12.3	165	97	22	68	143
	Worcester	24.3	134	97	46	37	88
	Evesham	15.2	172	43	26	129	147
	Moreton-in-Marsh	16.4	147	63	28	85	120
	Oxford	53.4	111	130	66	19	45
	Cheltenham	31.8	155	-	54	-	102
	Bristol Temple Meads	72.7	-	-	91	-	-
	Reading	78.4	128	-	101	-	27
	London Paddington	98.4	169	-	130	-	39
Worcester	Stratford	24.3	142	136	46	6	95
	Coventry	51.1	93	204	60	111	33
	Birmingham Moor Street	31.3	58	112	53	54	5
	Birmingham Snow Hill	31.1	65	120	51	56	13
	Solihull	34.2	86	134	46	48	40

For journeys between Stratford and all destinations and Worcester and all destinations, travel by car, even in the AM peak, is in all instances faster. Indeed, the public transport journey times from Stratford to some settlements which are relatively close by (e.g., Honeybourne, Worcester, Evesham and Moreton-in-Marsh) are almost prohibitive.

Supply-Side Cause(s)

- No rail connections south of Stratford.
- Limited bus network to / from Stratford – mainly subsidised and based largely on a single driver day.
- Requirement for one or more interchanges for rail-based journeys from Stratford to points south and from the North Cotswold Line corridor to Birmingham.

Problem C: High-cost of rail-based travel between: (i) Stratford and Worcestershire, Gloucestershire, Oxfordshire and beyond; and (ii) the North Cotswold Line corridor and the West Midlands.

Evidence

The table below provides day-of-travel anytime return and off-peak return fares and the cheapest one-month ahead fare from www.thetrainline.com for journeys originating in Stratford and Worcester (i.e., either side of the Stratford – Honeybourne gap).

Origin	Destination	Anytime Return (Adult)	Off-Peak Return (Adult)	Cheapest Return (Adult), 1 month ahead
Stratford	Honeybourne	£72.20	£52.20	£40.90
	Worcester	£19.20	£14.50	£14.50
	Evesham	£72.20	£52.20	£52.20
	Moreton-in-Marsh	£66.50	£40.40	£40.40
	Oxford	£42.20	£21.10	£21.10
	Cheltenham Spa	£49.90	£30.70	£26.40
	Bristol Temple Meads	£139.50	£68.30	£60.10
	Reading	£95.70	£49.20	£49.20

Origin	Destination	Anytime Return (Adult)	Off-Peak Return (Adult)	Cheapest Return (Adult), 1 month ahead
	London Paddington	£123.10	£52.80	£52.80
Worcester	Coventry	£17.30	£12.90	£12.90
	Birmingham Terminals	£12.20	£10.20	£10.20
	Solihull	£12.20	£10.20	£10.20

The indirect routing to / from Stratford means that even comparatively short journeys are in many cases very expensive, e.g.:

- Honeybourne: 12.3 miles / cheapest walk-up return fare, £52.20
- Evesham: 15.2 miles / £52.20
- Moreton-in-Marsh: 16.4 miles / £40.40

All stations within the Stratford to Worcester via Birmingham corridor (and also Coventry and Solihull) are located within the West Midlands fares area. This means that returns are day returns (rather than return within one month) and the price is consistent across the day (peak and off-peak variations excepted) and over time. In contrast, trips from Stratford to the other railway stations currently operate on a yield-based pricing system and thus typically allow return travel within one month and are cheaper if bought in advance and / or for quieter times of the day. This gives rise to fares boundary effects, where an Anytime Return from Stratford to Worcester stations is £19.20, but the equivalent fare to Evesham (which is only 16 miles beyond Worcester and closer as the crow flies) is £72.20. It is also confusing for many rail users, particularly overseas visitors to Stratford who will have a limited understanding of the UK rail fares system.

Supply-Side Cause(s)

- Product of multi-leg rail journeys, multiple interchanges and fares boundary effects.

Problem D: Long and unreliable road-based journey times between key settlements in the Stratford – Worcester - Oxford 'triangle'

Evidence

Stratford lies between two main north / south motorways in the West Midlands, the M5 and M40. Its connectivity to these routes, and indeed to Worcester, is via single carriageway A-roads. East-west journey times are relatively slow compared to rail and there are known congestion issues on the trunk roads around Stratford and Evesham. This is set within the context of high traffic growth on study area trunk roads⁴, as well as significant proposed development within the area.

Traffic congestion, such as that in and around Stratford and Evesham can lead to unreliable journey times for both local and strategic journeys. Desk-based research and secondary data analysis clearly highlighted the extent of the problem as set out below.

Strategic

From a strategic travel perspective, Midlands Connect is developing a business case for improvements to the A46 corridor - the 'Trans-Midland Trade Corridor' - which runs from the Grimsby / Immingham area to Tewkesbury. In the Strategic Case, they noted that:

- **Journeys between Stratford and Evesham are affected by speed and reliability issues caused by the series of roundabouts near both settlements.**⁵

⁴ Between 2015-19, Annual Average Daily Traffic (AADT) increased by 7% on the A46; 2% on the A422; 17% on the A29; and 6% on the A44. The equivalent growth in average daily flow across all A-class roads in England over the same period was 5%.

⁵ A46 Corridor Study – Stage One Enhanced Strategic Case (Midlands Connect, 2018), p. 10.

- Particularly **high volume-to-capacity ratios** are observed around **Evesham**, where local and long-distance traffic interacts.⁶ Indeed, Midlands Connect's research shows that **average speeds at rush hour around Evesham are regularly below 20mph**.⁷
- **Housing and job creation around Stratford – including the Long Marston development - is likely to be constrained without investment in the transport network.** The same point is made in relation to Evesham, where it is anticipated that housing and job creation in the area, including the strategic Vale Park development, will likewise be constrained without investment.⁸
- Moreover, analysis of 'INRIX' data and business interviews undertaken by Midlands Connect has highlighted that delays and reliability need to be tackled on the A46 around Stratford to provide a viable alternative route to the M5 / M42 / M6 and support improved South-West to Midlands connectivity.⁹

The issue of congestion on strategic routes in South Worcestershire is also highlighted in the Worcestershire Local Transport Plan 2018-2030.¹⁰

Local

At the local level, the *Stratford-upon-Avon Area Transport Strategy* highlights congestion as the main transport problem affecting the town. In summary, the main issues are:

- There is significant **congestion** in the **morning and evening weekday peaks**, as well as **seasonal tourist traffic**, predominantly on **summer weekends, bank holidays and during major events**.
- There are **significant development aspirations** in and around Stratford town centre, and in particular to the south at Long Marston. Mitigation of future induced traffic will be required to allow such developments to proceed.
- There are numerous causes of this problem including car dependency, high car ownership, limited route choice, local / strategic traffic conflicts and limited public transport provision.
- The consequences of traffic congestion include: **unreliable bus journey times**, and by extension challenges to the commercial viability of services; **poor air quality; lost trade; and negative impacts on residents**.
- Consultation also highlighted the issue of **avoidable vehicle kilometres** associated with Stratford residents driving to Warwick Parkway to catch trains to London.

Supply-Side Cause(s)

- High-dependence on road-based travel for part or all of most journeys due to lack of viable alternatives.
- Mainly single carriageway roads, many of which pass through settlements.
- Mixture of local and strategic traffic.
- Seasonal travel demand to key destinations including Stratford and the Cotswolds.

Problem E: Dependence on the **private car** for at least part of the journey within and beyond the Stratford – Worcester - Oxford 'triangle'

Evidence

The private car is by some distance the main mode of travel-to-work for journeys to and from Stratford, in part reflecting limited public transport options in the area – this is illustrated in the Census mode of travel-to-work data shown below (although note that this dates from 2011) - the first figure shows the mode of travel-to-work **from** Stratford and the second figure the mode of travel-to-work **to** Stratford.

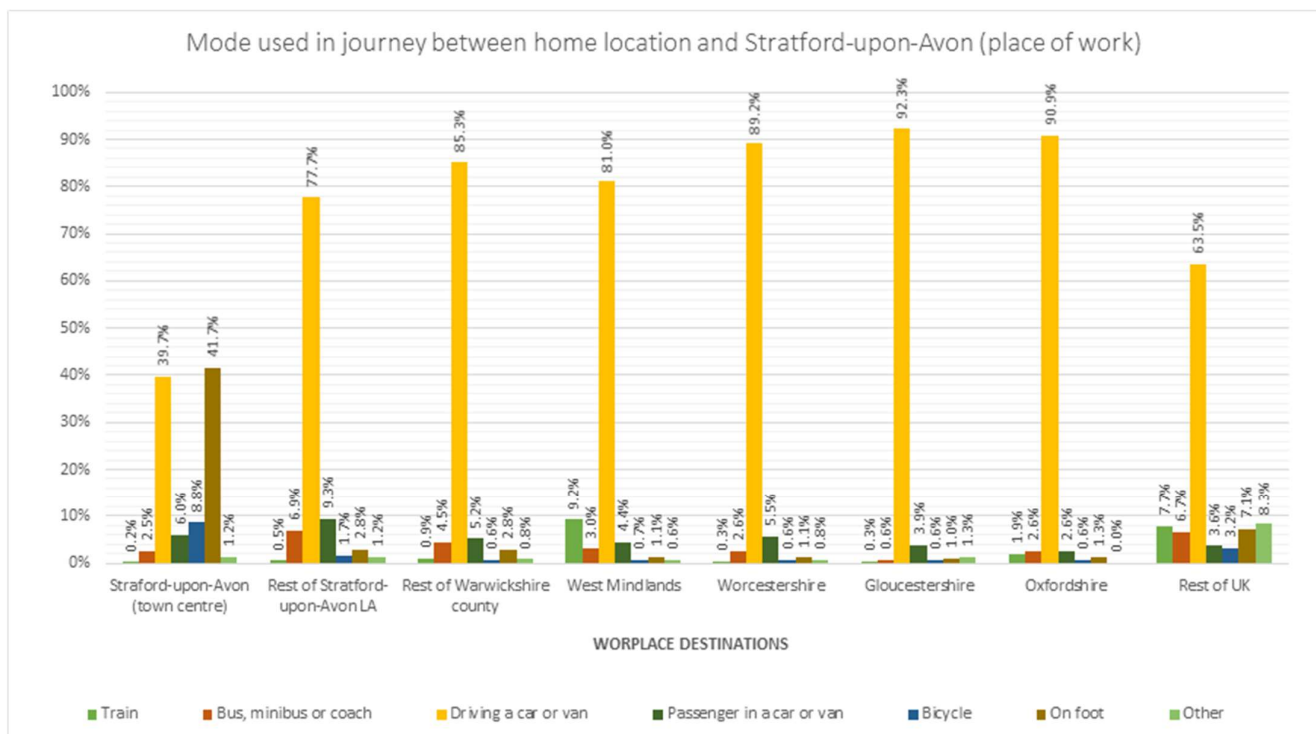
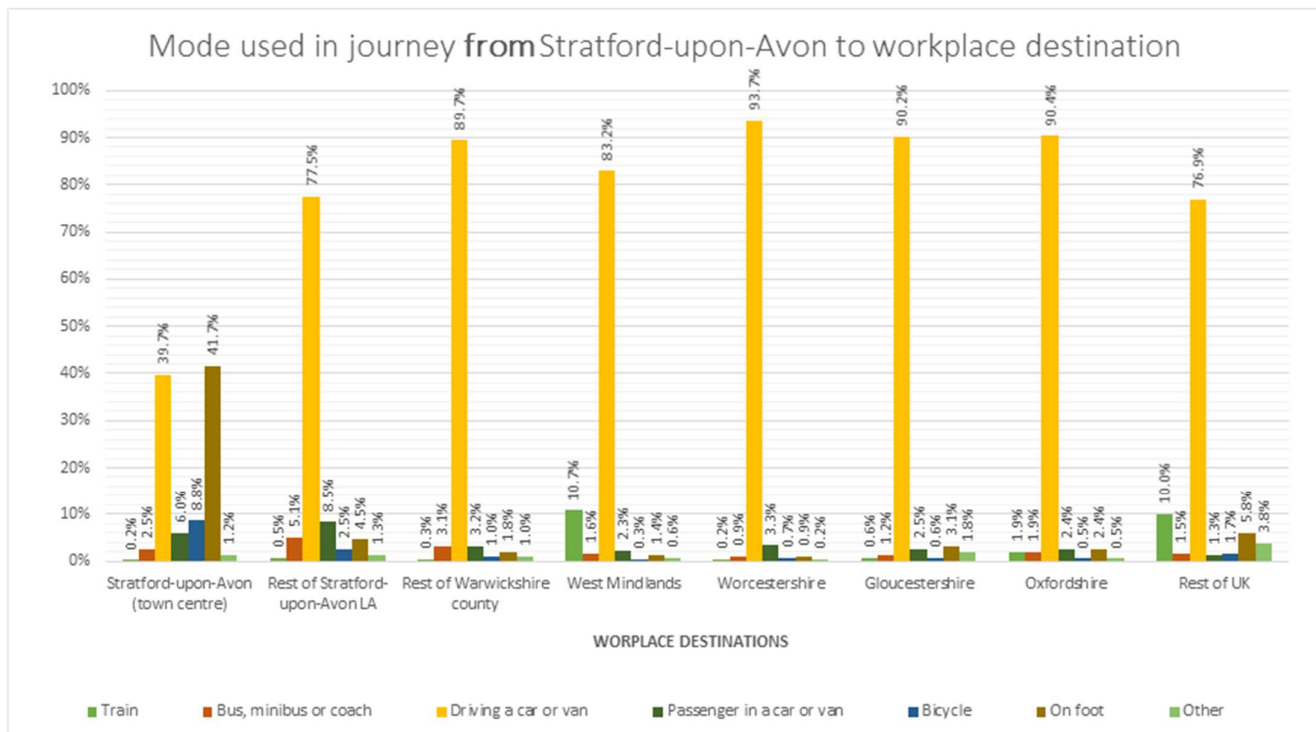
⁶ A46 Corridor Study – Stage One Enhanced Strategic Case (Midlands Connect, 2018), p. 10.

⁷ A46 Corridor Study – Stage One Summary (Midlands Connect, 2018), p. 1.

⁸ A46 Corridor Study – Stage One Enhanced Strategic Case (Midlands Connect, 2018), p. 26.

⁹ A46 Corridor Study – Stage One Enhanced Strategic Case (Midlands Connect, 2018), p. 26.

¹⁰ Worcestershire Local Transport Plan 2018-2030 (Worcestershire County Council, 2018), p. 34.



Reflecting the dominance of the private car for travel-to-work, car ownership in the Stratford District Council area significantly exceeds the England average. Only 13% of Stratford DC households do **not have access to a car or van**, which compares to the England average of 26%. Similarly, 49% of Stratford DC households have access to **two or more cars or vans in their household**, which compares to the England average of 32%.¹¹

¹¹ Census 2011 household car or van availability - <https://www.nomisweb.co.uk/census/2011/qs416ew>

Despite the relative affluence of Stratford overall, **workplace earnings lag the England average by £2,000 per annum**, in part due to the high proportion of lower paid hospitality jobs. The consultation with tourism bodies suggested that, when combined with high house prices (the **median house price in Stratford is 42% higher than the England median**), this generally leads to much of the workforce living outside of the town. Given limited public transport options and the often shift-based nature of hospitality work, this journey is typically made by car.

A survey of visitors to Stratford in 2015 also found that, excluding local visitors who walk and cycle into the town centre, **72% of all visitors to the town arrived by private car, compared to only 7% by train**¹² - this compares to **Windsor**, a town of a similar profile, where one third of visitors arrive by rail.¹³ Consultation with Shakespeare's England, the Destination Management Organisation for South Warwickshire, found that rail is a less attractive option due to the requirement to interchange at Leamington, particularly for international visitors who will be less familiar with the network and fares.

Outwith Stratford, the road network is such that, in many cases, the more direct routes as the 'crow flies' are not recommended by journey planners, with longer-distance routes offering faster journey times. For example, when travelling from Worcester to Oxford, it is recommended to travel north to Birmingham on the M5, M42 and then south on the M40 rather than use the A44 via Moreton-in-Marsh.

Supply-Side Cause(s)

- Limited public transport connectivity for many residents in the study area.
- Unattractive public transport options for visitors to Stratford.

Step 1b: Travel Behaviour Consequences

There are four travel behaviour consequences which emerge as a result of the transport problems:

- High-levels of car use for both travel-to-work and leisure / tourist trips.
- Desirable or economically valuable journeys are not made through: (i) not owning a car / second car; (ii) journey times considered too long; and (iii) absence of bus and rail connectivity.
- Undesirable behaviours which lead to negative impacts on motorists and surrounding communities (e.g., dangerous overtaking manoeuvres, 'rat running' through Welford, Long Marston and Pebworth for example etc.).
- Negative impacts on the commercial viability of bus services, in-turn reinforcing the dependence on the private car.

Step 1c: Societal Consequences

The transport problems and their influence on travel behaviour in-turn give rise to a set of societal consequences. These are briefly summarised below:

Employment and Training

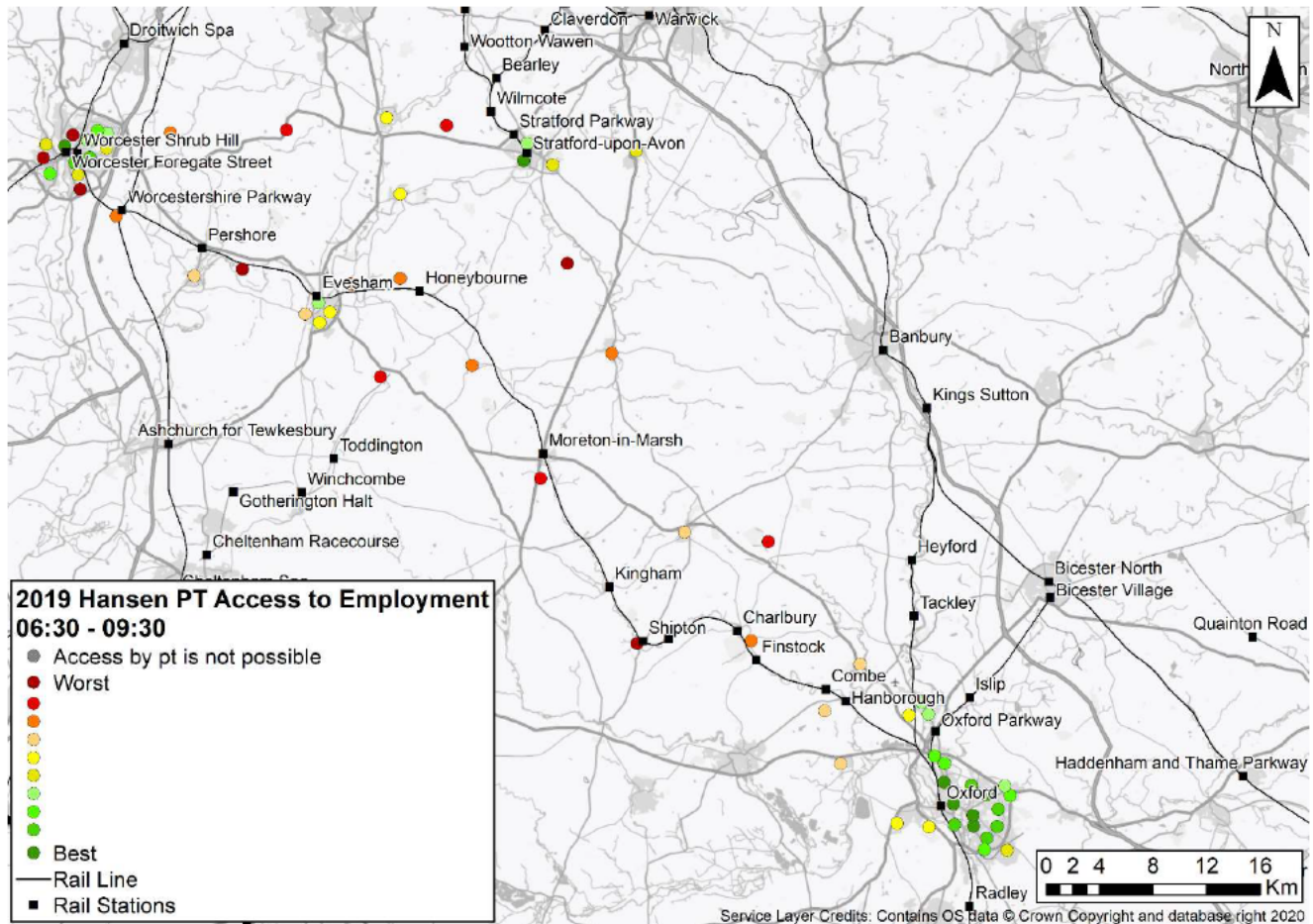
Poor transport connectivity can impact on the ability of residents of an area to access employment and training. To inform the extent of this impact, a set of 'Hansen' indicators were developed to evidence relative connectivity to employment, the objective being to identify areas at a disaggregate spatial geography with poor access to employment relative to other places in the study area. Hansen indicators provide a measure of the relative connectivity (based on journey times) of a set of 'origins' to selected 'destinations' in a defined study area, weighted by a chosen destination 'criteria' (in this case employment), with resulting high scores indicating good connectivity and low scores suggesting poor connectivity when summed for all destinations for each origin. A decay-function is applied in the calculation such that opportunities at more distant locations (i.e., with a longer travel time) are 'valued' less than opportunities closer by. To produce the Hansen analysis for this study, a public transport journey time calculation was undertaken in TRACC using the following:

- **Origins:** Mid-Super Output Area (MSOA) centroids within a triangle covering Stratford, Worcester and Oxford.
- **Destinations:** MSOA centroids within West Oxfordshire District, Stratford, Cotswold, Wychavon, Birmingham, Solihull, Coventry, Bromsgrove, Redditch, Worcester, Warwick and Oxford.

¹² Stratford-upon-Avon Visitor Survey 2015 (Stratford District Council, 2015), p. 21.

¹³ Windsor Visitor Survey 2017 (Royal Borough of Windsor and Maidenhead, 2017), p.18

The public transport journey time runs were undertaken over the 06:00-09:00, 07:00-10:00, 08:00-11:00 time periods and an average taken. The figure below shows the outputs of this analysis:



As would be expected, the major settlements (e.g., Oxford, Worcester and Stratford) are dominant in terms of having the best public transport connectivity to employment, reflecting both the concentration of employment in these areas and their rail and suburban bus connections. Access to the rail network is therefore essential in facilitating connectivity to employment, highlighting the limited bus network in the area. Evesham is a good example of this. Thinking ahead to options, closing the ‘connectivity gap’ between Stratford and Honeybourne would improve public transport connectivity to employment for settlements in the North Cotswold Line corridor, most notably to Stratford and Birmingham.

Travel to education is limited in a similar manner. For example, feedback from the University of Worcester noted that Stratford is a regional ‘cold spot’ for the University, with fewer than 0.2% of student applications coming from students in Stratford schools. Similarly, South Warwickshire NHS Foundation Trust noted that improving the connectivity of Stratford would make it easier and ‘greener’ for staff, patients and visitors to get to and from Stratford Hospital.

Productivity

The other side of the equation is the ability to attract labour to Stratford, particularly given the availability and cost of parking for inbound workers. This is an essential consideration for the town, where its economic weight significantly outstrips the size of its population. Stratford relies on inbound labour movements, particularly in the hospitality sector. The table below shows the number of prospective workers within different public transport journey time bands when travelling to Stratford in the AM peak.

Public Transport Journey Time to Stratford (minutes)	Working age population
20	12,625
40	45,785

Public Transport Journey Time to Stratford (minutes)	Working age population
60	100,050
80	221,927
100	641,777
120	1,286,990

Analysis of **Oxford's labour market** also highlights its dependence on in-commuting to fill jobs within the city. However, as with Stratford, Oxford has well-developed local connectivity but public transport journey times to areas of regional significance are relatively long:

Public Transport Journey Time to Oxford (minutes)	Working age population
20	61,480
40	124,282
60	190,231
80	288,353
100	618,969
120	1,734,825

Improving public transport connectivity within the Stratford – Worcester – Oxford 'triangle' would therefore contribute to **increasing the size of the labour market** for both areas (and Worcester). This would assist in providing a better match between labour demand and supply, better match skills to jobs and thus improve business productivity.

Development

In preparation for this study, the client group collated a list of proposed residential developments from the: (i) South Worcestershire Development Plan 2016; (ii) Stratford Core Strategy 2016-31 / emerging South Warwickshire Local Plan; (iii) Cotswold District Council Local Plan 2011-31; and (iv) West Oxfordshire Local Plan 2011-31. The table below sets out proposed residential development adjacent to the railway in these areas.¹⁴

City / Town / Village	Proposed Housing Units	Comment
Worcester City	8,949	SWDP, adopted 2016 and SWDP, Preferred Options – November 2019
Worcestershire Parkway	5,000	SWDP, Preferred Options – November 2019 – proposal for 5,000 new homes by 2040 with the potential for an additional 5,000 post-2041.
Pershore	3,437	SWDP, adopted 2016 and SWDP, Preferred Options – November 2019. This includes proposed Throckmorton Airfield development.
Evesham	1,660	SWDP, adopted 2016 and SWDP, Preferred Options – November 2019
Honeybourne / Pebworth	950	SWDP, adopted 2016
Long Marston area, including Garden Village and Meon Vale	4,942	Stratford Core Strategy, adopted 2016 and SWDP, Adopted 2016
Quinton	215	Stratford Core Strategy, adopted 2016 and SWDP, adopted 2016
Stratford	3,500	Stratford Core Strategy, adopted 2016
Mickleton	260	CDC LDP 2011-31, adopted August 2018. Anticipated development based on completions 2011-20 in the North Cotswold sub-area, which is the catchment for Moreton-in-Marsh station
Moreton-in-Marsh	776	
Blockley	15	
Chipping Campden	92	
Willersey	78	

¹⁴ Note that the Oxford Local Plan is not considered as any public transport improvement delivered through this study would have a peripheral impact on the development of the city itself.

City / Town / Village	Proposed Housing Units	Comment
Stow-on-the-Wold	122	
Charlbury (including Shipton, Burford and Stonesfield) and Chipping Norton sub-area	2,821	West Oxfordshire Local Plan 2011-31, adopted September 2018. Allocations cover Char bury and Burford and Chipping Norton sub-area, the catchments for Kingham and Charlbury stations
Eynsham, Long Hanborough and Woodstock sub-area	5,596	West Oxfordshire Local Plan 2011-31, adopted September 2018. Catchment for Hanborough station
Total	38,413	

The combined population of the Worcester City, Wychavon, Stratford, Cotswold and West Oxfordshire Council areas in 2019 was 561,258. The average household size in the UK is 2.4¹⁵ people, which would imply that, as a 'worst case', in the event that all of the new residential developments listed above were realised, the **population increase would be circa 92,000 people, a 16% uplift on current population levels.**

The current highway network in the area is already under pressure and development of this scale, even if only gradually realised over time, will add to this. Long Marston Garden Village and other developments to the south of Stratford in particular will put significant pressure on existing local transport networks. This development significantly adds to the case for improved public transport connectivity between Stratford and Long Marston and indeed beyond to Honeybourne for interchange with services on the North Cotswold Line.

Tourism

Stratford is an internationally significant tourist destination. It is estimated from the *Stratford Tourism Economic Assessment* data¹⁶ that the town attracts 2.4 million day visitors and 300,000 overnight visitors per annum relative to a population of circa 30,000¹⁷. This is estimated to generate annual visitor spend of £192 million, £240m of tourism value and support 3,200 direct full-time equivalent jobs. However, as with towns of a similar nature (e.g., Windsor, Bath, St Andrews, Canterbury etc), Stratford faces significant transport challenges in accommodating this high level of visitation.

Shakespeare's England noted in the consultation that current public transport connectivity imposes a constraint on the growth and success of Stratford's tourism product. As well as the issue of labour supply discussed above, it was noted that poor public transport connectivity makes it difficult to develop packages linking England's other historic towns and cities, Oxford and Windsor for example. Moreover, it also limits the business tourism market for conferences and large events.

At a local level, the evening economy in Stratford is limited for those living in relatively close proximity to the town (e.g. from South Warwickshire, Worcestershire and North Gloucestershire). This issue came through strongly in the consultation and represents a constraint on economic activity.

Outwith Stratford, the consultation found that tourist visits to destinations such as e.g. the Cotswolds and Blenheim Palace are largely made by private car. This creates negative traffic and environmental impacts on local communities, particularly 'honeypot' locations. This car dependency is driven to a large extent by the lack of high-quality public transport interchange options on offer for accessing these locations.

Environment

The identified transport problems also contribute directly to negative environmental impacts. The deficiencies with the current public transport supply-side create 'avoidable' car kilometres. At the national level, car dependency and avoidable car kilometres amongst both local residents and visitors generate CO₂ emissions. At the local level, air quality is a major issue with, for example, the entirety of Stratford town centre being defined as an Air Quality Management Area.

¹⁵ Families and households in the UK: 2020 (Office for National Statistics, 2021)

¹⁶ The Stratford Tourism Economic Impact Assessment used the Cambridge Economic Impact Model to examine the volume and value of tourism and the impact of that expenditure on the local economy. It works from national level surveys and regionally based data and distributes regional activity as measured in those surveys to local areas using 'drivers' such as the accommodation stock and occupancy which influence the distribution of tourism activity at a local level. The results of the model should therefore be regarded as indicative estimates of the scale and importance of visitor activity in the local area, rather than an absolute measure.

¹⁷ ONS 2019 population estimate

Community

Finally, the high traffic volumes on the main roads within the study area have negative impacts on the communities which they pass through, including for example:

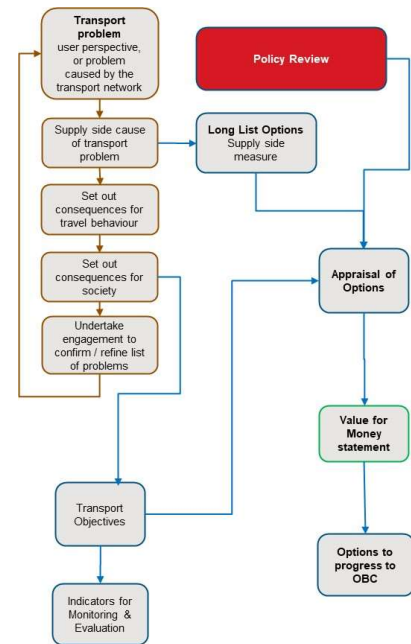
- **Public realm:** For example, the junction of the A429 and A44 trunk roads is at Moreton-in-Marsh, where traffic volumes have a negative impact on the high-quality public realm of the town. Large platoons of vehicles – and in particular commercial vehicles – have a negative impact on the landscape, a point made in consultation with the Cotswolds Area of Outstanding Natural Beauty. Finally, congestion is considered to impact negatively on the public realm of Stratford, and inhibit regeneration plans for this historic town.
- **Community impacts:** For example, in their A46 business case, Midlands Connect notes that the road corridor has negative impacts on communities associated with safety, noise and severance.¹⁸
- **Inappropriate routing:** ‘rat running’ through settlements to bypass traffic congestion, with particular problems through Welford, Long Marston and Pebworth highlighted in the engagement.

Step 2: Policy Review

The policy review provides context for the setting of transport objectives and the generation and appraisal of options thereafter. It is intended to ensure that any options which emerge from this SOBC are aligned with the prevailing policy direction.

At the **national level:**

- The UK Government is committed to **‘levelling-up’** across the whole of the United Kingdom. Part of the levelling-up agenda relates to improving transport links and investing in infrastructure that improves everyday life across the UK. In the context of this SOBC, the ‘levelling-up’ agenda is about **reducing transport inequalities**, improving connectivity for those who work in Stratford but do not have access to a car for example. It should, however, also be focused on **investing in the UK’s successful places**, ensuring that they fulfil their full potential as the country recovers from COVID-19.
- The Government has also committed to reduce **CO₂ emissions** by 78% by 2035 compared to 1990 levels (to be enshrined in law by the end of June 2021).¹⁹ Mode-switch from the private car to public transport will be essential in achieving this.
- The **Visit Britain / Visit England Five Year Strategy 2020-25** has set a target of attracting 49 million visits by 2025²⁰, which will require the potential of key tourism destinations such as Stratford to be maximised and their linkages to complementary destinations improved.²¹
- The Government has a manifesto commitment to **‘continue to increase the number of homes being built’**, with a target of 300,000 homes per annum being built by the mid-2020s.²² Whilst a review of the planning system – *Planning for the Future* – is ongoing, it is clear that realising the major developments in the study area, including the Long Marston Garden Village, will contribute strongly towards this target. However, **transport infrastructure will act as a constraint on this** if it is not invested in and improved.



At the **regional and local level:**

- Several local authorities within the study area, including Warwickshire County Council and Stratford, Cotswold and West Oxfordshire District Councils have declared **climate emergencies**. This policy position underpins the need to focus on delivering sustainable public transport rather than highway-based solutions to support growth and development. It should also be noted that Birmingham City Council has introduced a **Clean Air Zone** from 1st June

¹⁸ A46 Corridor Study – Stage One Enhanced Strategic Case (Midlands Connect, 2018), p. 25.

¹⁹ UK Government 6th Carbon Budget (BEIS, 2021).

²⁰ *Our Five-Year Strategy* (Visit Britain / Visit England, 2019), p.7

²¹ *Our Five-Year Strategy* (Visit Britain / Visit England, 2019), p.15

²² *Tackling the under-supply of housing in England* (House of Commons Library, 2021), p. 3.

2021, which further highlights the importance of offering public transport-based travel alternatives for travel to Birmingham.

- The **Stratford Area Transport Strategy (2018)** has set objectives focused on reducing car dependency; reducing trips by motorised modes through the town centre; and encouraging modal shift to active forms of travel. It also specifically cites **long and indirect journey times to Oxford, the Thames Valley and London**, which are considered to inhibit both local travel and the evening economy of the town. It is **supportive of the Stratford – Honeybourne link in principle**, as well as improvements to the North Cotswold Line and enhanced services on existing lines.
- Several other **Local Transport Plans**, including those of **Worcestershire and Gloucestershire County Councils** are supportive in principle for improvements to connectivity to / from Stratford, and thus through travel between those areas and Birmingham.
- As previously alluded to, there are **major development aspirations** across the study area, with the Long Marston Garden Village being of particular importance in this context. Any transport options emerging from this SOBC should integrate as far as possible public transport within these sites from the outset.
- At the regional level, **Midlands Connect** is pursuing improvements to the A46 ‘Trans-Midland Trade Corridor’. The A46 bypasses the north of Stratford before continuing south-west to Evesham and, ultimately, Tewkesbury. Improvements to public transport connectivity south of Stratford, and in particular to Evesham and the South-West via Worcestershire Parkway, would assist in relieving pressure on this road through encouraging mode switch to a parallel public transport corridor.
- Any rail-based options emerging from this SOBC should also be nested within the detailed **strategic rail planning** documents covering Birmingham, the South Midlands, Worcestershire, Gloucestershire and Oxfordshire. Of particular importance is ensuring that any solution identified is **complementary to the North Cotswold Line Task Force aspiration** of 2tph between London Paddington and Worcester.

Step 3: Transport Objectives

The setting of **transport objectives** for the SOBC is key to clearly expressing the **transport outcomes** sought and describing how resolution of the transport problems will result in **consequential societal impacts**. Guided by the transport problems and opportunities noted above, six objectives have been defined – these are set out below, together with a description of how they will be made ‘SMART’²³

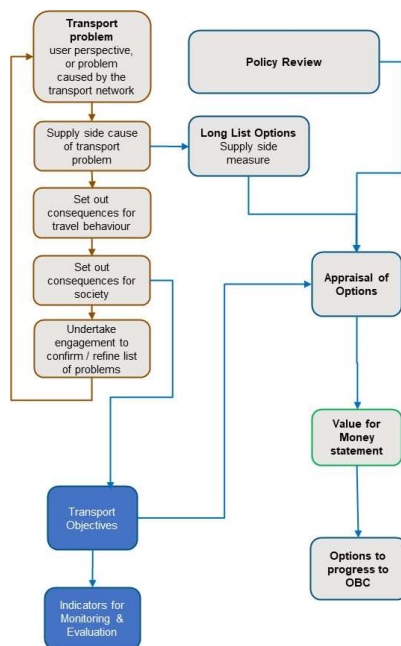
Transport Objective 1: Improve strategic public transport connectivity between Stratford and key cities and international gateways: (i) in the south-east (e.g. London, Oxford, Reading (for Heathrow and Gatwick) and East-West Rail; (ii) in the South-West and South Wales.

- *How will this objective be made SMART?* The options developed can be tested using TRACC connectivity software to highlight the change connectivity associated with each option.

Transport Objective 2a: Reduce public transport journey times between Stratford and Worcestershire, Gloucestershire and Oxfordshire.

Transport Objective 2b: Reduce public transport journey times between the North Cotswold Line corridor²⁴ and the West Midlands.

- *How will this objective be made SMART:* The options developed can be tested using: (i) TRACC connectivity software to highlight the change in journey times associated with each option; and (ii) conventional transport modelling to highlight the total quantum of time savings over a defined appraisal period.



²³ Specific, Measurable, Attainable, Relevant and Time-Bound

²⁴ From Hanborough to Pershore, including the Long Marston area.

Transport Objective 3a: Reduce public transport travel cost between Stratford and Worcestershire, Gloucestershire, Oxfordshire and beyond.

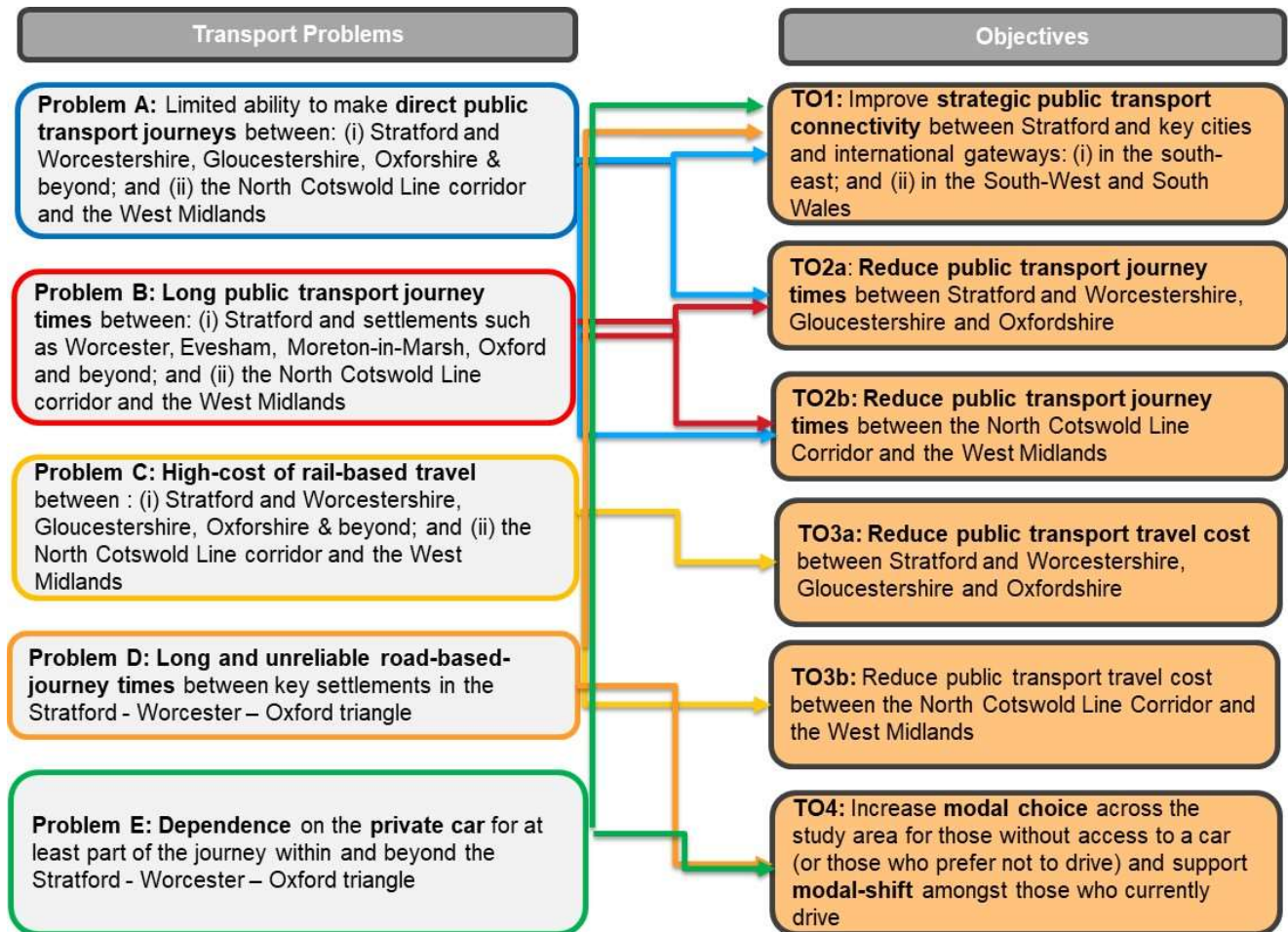
Transport Objective 3b: Reduce public transport travel cost between North Cotswold Line corridor²⁵ and the West Midlands.

- How will this objective be made SMART? Baseline fares for defined origin destination fares have been calculated and can be compared against the outturn fare for any option developed (this will require further development at OBC stage).

Transport Objective 4: Increase modal choice across the study area for those without access to a car (or those who prefer not to drive) and support modal-shift amongst those who currently drive.

- How will this objective be made SMART? Conventional transport modelling to highlight mode split compared to the baseline associated with any option. Census travel-to-work and car availability data can be used to track long-term changes.

The figure below shows how the objectives relate to the transport problems they seek to alleviate:



²⁵ From Hanborough to Pershore, including the Long Marston area.

Step 4: Options Long-List

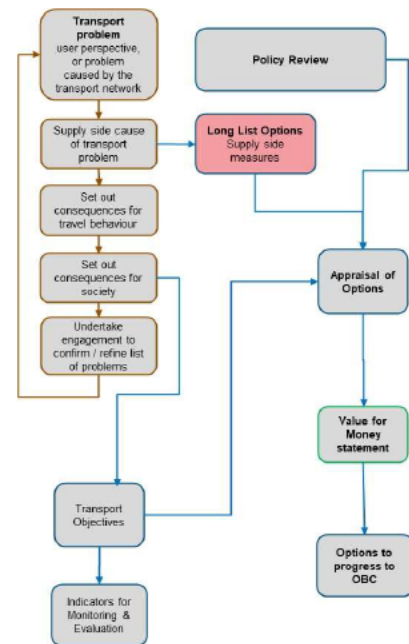
In accordance with business case guidance, a wide ranging and unconstrained optioneering exercise has been undertaken drawing in options:

- identified in previous studies;
- suggested by stakeholders through the engagement process; and
- identified through internal team discussions.

The options increment up through five themes, from low-cost rail access schemes and new services on existing lines through to the full Stratford – Honeybourne reopening. These five themes are:

- 1 - inter-urban bus
- 2 - improved rail access
- 3 - additional services on existing railway lines
- 4 - new light rail
- 5 - new heavy rail

A brief description of the options is provided in the table below. Additional information on each option, its advantages and disadvantages and infrastructure requirements is set out in the *Option Development and Appraisal Technical Note* (Stantec and Allan Rail, May 2021)



Option	Title	Brief Description
1a	Stratford – Oxford – London coach	Contracted hourly coach service Stratford – Oxford – Reading – London Victoria.
1b	Stratford – Worcester contracted bus service	Contracted half-hourly / hourly Stratford – Worcester bus service via A46 / A422.
2a	Stratford – Honeybourne 'rai bus'	Dedicated 'railbus' specified in franchise between Stratford and Honeybourne to connect with all train services.
2b	Stratford – Warwick Parkway 'railbus	Dedicated 'railbus' specified in franchise between Stratford and Warwick Parkway to connect with all train services.
2c	Develop Honeybourne into a parkway station	Construction of additional parking at Honeybourne to provide a parkway site on the North Cotswold Line.
2d	Stratford – Honeybourne demand responsive transport	Technology-based demand responsive bus service to connect with all train services.
2e	Stratford – Honeybourne bus rapid transit	Whole-route bus priority measures – including sections of segregated running - connecting Stratford town centre and Honeybourne railway station.
2f	Stratford – Warwick Parkway bus rapid transit	Whole-route bus priority measures – including sections of segregated running - connecting Stratford town centre and Warwick Parkway station.
2g	Stratford – Honeybourne, 'new' modes	Adoption of 'new' modes (e.g. Personal Rapid Transit, people movers etc) connecting Stratford town centre and Honeybourne railway station.
3a	Enhance existing Stratford – Leamington service, connecting to Birmingham - London Marylebone via Bicester North services	Hourly Stratford – Leamington service on clockface timetable.
3b	Stratford – London Marylebone via Bicester North	Direct hourly Stratford – London Marylebone via Bicester North service.
3c	Stratford – London Marylebone via Oxford	Direct hourly Stratford – London Marylebone service, running via the Cherwell Valley Line and reversing at Oxford.
3d	Stratford – London Paddington via Oxford	Direct hourly Stratford – London Paddington service, running via the Cherwell Valley Line to Oxford, Reading, Slough and London Paddington.
3e	Stratford – Old Oak Common HS2 via Bicester North	Direct hourly Stratford – Old Oak Common HS2 via Bicester North and a new passenger rail connection between Northolt Junction and Old Oak Common HS2.
4a	Very Light Rail, Stratford – Honeybourne	Lightweight rail system connecting Stratford to Honeybourne via Long Marston (and potentially other destinations).

Option	Title	Brief Description
4b	Tram, Stratford – Long Marston or Honeybourne	Conventional tram system connecting Stratford to Honeybourne via Long Marston (and potentially other destinations).
4c	Cross-Stratford TramTrain	TramTrain serving all or part of the Leamington – Evesham corridor.
5a	Stratford – Honeybourne Junctions link	Core scheme bid into RYR Ideas Fund. New Stratford to Honeybourne Junctions link facilitating hourly: (i) Stratford – Oxford – London Paddington; (ii) Birmingham Snow Hill – Worcester via Stratford; (iii) Stratford – Leamington.
5b	New Stratford South – Honeybourne Junctions link	Truncated version of core scheme bid into RYR Ideas Fund, removing the final mile into Stratford. New Stratford South terminus with hourly: (i) Stratford – Oxford – London Paddington; (ii) Birmingham Snow Hill – Stratford South via Worcester and Evesham.

In keeping with the strategic nature of this business case, an initial high-level appraisal has been undertaken to discount options which do not make a strong contribution to the objectives; and / or (ii) are likely to represent very poor value for money; and / or (iii) have likely insurmountable deliverability issues. The table below summarises the high-level appraisal of options against the study objectives – note that, whilst some options score well in terms of their contribution to the objectives, they may be rejected due to value for money and / or deliverability issues. A clear explanation of the basis for discounting each rejected option is provided in the subsequent table. All options are compared against the base position (i.e., the current day situation) and the scoring notation is as follows:

- O – neutral / no impact
- ✓ - minor benefit
- ✓✓ - moderate benefit
- ✓✓✓ - major benefit

Option	Description	Objectives ²⁶						Retain / Reject
		1	2a	2b	3a	3b	4	
1a	Stratford – Oxford – London coach	✓✓	✓	O	✓	O	✓	Reject
1b	Stratford – Worcester contracted bus service	O	✓	✓	✓	✓	✓	Reject
2a	Stratford – Honeybourne 'rai bus'	✓	✓✓	✓	✓	✓	✓	Reject
2b	Stratford – Warwick Parkway 'railbus	✓	✓	O	O	O	✓	Reject
2c	Develop Honeybourne into a parkway station	✓	✓✓	O	✓	O	O	Reject
2d	Stratford – Honeybourne demand responsive transport	✓	✓✓	✓	✓	✓	✓✓	Reject
2e	Stratford – Honeybourne bus rapid transit	✓	✓✓	✓	✓	✓	✓	Reject
2f	Stratford – Warwick Parkway bus rapid transit	✓	✓	O	O	O	✓	Reject
2g	Stratford – Honeybourne, 'new' modes	✓	✓	✓	✓	✓	✓	Reject
3a	Enhance existing Stratford – Leamington service, connecting with London Marylebone via Bicester North services	✓	✓	O	O	O	✓	Retain
3b	Stratford – London Marylebone via Bicester North	✓✓	O	O	O	O	✓	Retain
3c	Stratford – London Marylebone via Oxford	✓✓	✓	O	O	O	✓	Reject
3d	Stratford – London Paddington via Oxford	✓✓	✓✓	O	✓	O	✓✓	Retain
3e	Stratford – Old Oak Common HS2 via Bicester North	✓	O	O	O	O	✓	Reject
4a	Very Light Rail, Stratford – Honeybourne	✓✓	✓✓	✓	✓	✓	✓✓	Reject
4b	Tram, Stratford – Long Marston or Honeybourne	✓✓	✓✓	✓	✓	✓	✓✓	Reject

²⁶ TO1: Improve strategic transport connectivity between Stratford and key cities and international gateways: (i) in the south-east; and (ii) in the south-west and South Wales.

TO2a: Reduce public transport journey times between Stratford and Worcestershire, Gloucestershire and Oxfordshire.

TO2b: Reduce public transport journey times between the North Cotswold Line corridor and the West Midlands.

TO3a: Reduce public transport travel cost between Stratford and Worcestershire, Gloucestershire and Oxfordshire

TO3b: Reduce public transport travel cost between the North Cotswold Line corridor and the West Midlands.

TO4: Increase modal choice across the study area for those without access to a car (or those who prefer not to drive) and support modal-shift amongst those who currently drive.

Option	Description	Objectives ²⁶						Retain / Reject
4c	Cross-Stratford TramTrain	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓✓	Retain
5a	Stratford – Honeybourne Junctions link	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	Retain
5b	New Stratford South – Honeybourne Junctions link	✓✓✓	✓✓✓	✓	✓✓✓	✓	✓✓	Retain

The table below summarises the rationale for the rejection of options discounted as part of the high-level appraisal:

Option	Description	Rationale for Rejection
1a	Stratford – Oxford – London coach	<ul style="list-style-type: none"> - There is an established commercial scheduled, tourist and charter coach market between Stratford and London. Any subsidised intervention would likely prompt state aid concerns and at the very least could be expected to be challenged by operators. - In addition, this option would make only a very limited contribution to the objectives.
1b	Stratford – Worcester contracted bus service	<ul style="list-style-type: none"> - A Stratford – Worcester bus service would suffer the same journey time reliability issues as cars, unless aligned with bus priority measures. However, it is too long and complicated a route for 'whole-route' bus priority. - Lack of permanence – service could be withdrawn at relatively short notice. - Cross-county boundary service – would require a combined funding commitment from Warwickshire and Worcestershire County Councils.
2a	Stratford – Honeybourne 'railbus'	<ul style="list-style-type: none"> - For journeys from Stratford to all points south, south-east and west, interchange would be required at Honeybourne. Journeys from the North Cotswold Line corridor beyond Stratford to Birmingham (or Leamington, Coventry etc) would require a double interchange – journey times would be uncompetitive with alternatives. - Relatively poor service frequency at Honeybourne currently, generally 1tph but reducing to one train every two hours at certain points of the day (this could perhaps be addressed if the NCLTF proposals are realised). Nonetheless, Honeybourne would likely remain an unattractive option compared to Warwick Parkway and Birmingham International.
2b	Stratford – Warwick Parkway 'railbus'	<ul style="list-style-type: none"> - Replicates the existing Stratford – Leamington rail service, albeit it would be more frequent. - There would be no improvement in connectivity south of Stratford, whilst in the reverse direction, there would also be no improvement in connectivity between the North Cotswold Line corridor and Birmingham.
2c	Develop Honeybourne into a parkway station	<ul style="list-style-type: none"> - With the exception of travel to Worcester and possibly Oxford, there would be no obvious benefit over Warwick Parkway. - There would be no connectivity improvement for settlements along the North Cotswold Line to Stratford / Birmingham. - This option would increase car dependency in South Warwickshire and the transport inequalities faced by those without access to a car. It would also be contrary to the 'climate emergency' policies adopted by several local authorities in the study area. - Honeybourne Parkway would also duplicate other Park & Ride sites on the North Cotswold Line, including Moreton-in-Marsh and Kingham. - There is very little parking at Honeybourne at present. Land ownership, road alignment and traffic impacts would also all need to be considered and may act as a constraint on this option.
2d	Stratford – Honeybourne demand responsive transport	<ul style="list-style-type: none"> - Expensive compared to conventional fixed route / time bus services. Demand would also be concentrated around train departure and arrival times and thus several buses and drivers would be required. - Even with a large bus fleet, journey times to / from Honeybourne could be long for those who are picked-up first / dropped-off last. - For journeys from Stratford to all points south, south-east and west, interchange would be required at Honeybourne. Journeys from the North Cotswold Line corridor beyond Stratford would require a double interchange – journey times would be uncompetitive. - Relatively poor service frequency at Honeybourne – would likely remain an unattractive option compared to Warwick Parkway and Birmingham International.
2e	Stratford – Honeybourne bus rapid transit	<ul style="list-style-type: none"> - BRT is an expensive option to deliver compared to conventional bus services, as it can require significant infrastructure work over and above conventional bus priority. - Installing priority measures in Stratford, and in particular off-road running, could lead to construction-related impacts and visual amenity impacts when completed. It would also worsen existing congestion issues on radial routes, although from a policy perspective, this could be seen as a positive as it would deter car use. - Market south of Stratford very limited – raises questions of proportionality / value for money. - For journeys from Stratford to all points south, south-east and west, interchange would be required at Honeybourne. Journeys from the North Cotswold Line corridor beyond Stratford would require a double interchange – journey times would be uncompetitive. - Relatively poor service frequency at Honeybourne – would likely remain an unattractive option compared to Warwick Parkway and Birmingham International.
2f	Stratford – Warwick Parkway bus rapid transit	<ul style="list-style-type: none"> - The main issue with this option is that it would replicate the rail service to Leamington (abeit it would be more frequent). - BRT is an expensive option to deliver compared to conventional bus services, as it can require significant infrastructure work over and above conventional bus priority.

Option	Description	Rationale for Rejection
		<ul style="list-style-type: none"> - Installing priority measures in Stratford, and in particular off-road running, could lead to construction-related impacts and visual amenity impacts when completed. It would also worsen existing congestion issues on radial routes, although from a policy perspective, this could be seen as a positive as it would deter car use. - There would be no improvement in connectivity south of Stratford, whilst in the reverse direction, there would also be no improvement in connectivity between the North Cotswold Line corridor and Birmingham.
2g	Stratford – Honeybourne, 'new' modes	<ul style="list-style-type: none"> - 'New' modes, whilst innovative, are generally untried and thus bring cost and deliverability risks – one advantage may be reduced costs if operation is driverless. - The nature of the potential network and relative distances may be pushing the limits of some of the solutions. - Several of the solutions operate on dedicated and / or segregated infrastructure which would be disruptive and expensive to provide. - Market south of Stratford very limited – raises questions of proportionality / value for money. - For journeys from Stratford to all points south, south-east and west, interchange would be required at Honeybourne. Journeys from the North Cotswold Line corridor beyond Stratford would require a double interchange – journey times would be uncompetitive. - Relatively poor service frequency at Honeybourne – would likely remain an unattractive option compared to Warwick Parkway and Birmingham International.
3c	Stratford – London Marylebone via Oxford	<ul style="list-style-type: none"> - Indirect route to London with excessively long journey time. - There would be no improvement in connectivity south of Stratford, whilst in the reverse direction, there would also be no improvement in connectivity between the North Cotswold Line corridor and Birmingham. - Potential reduction in service for intermediate stations between Stratford and Leamington. - Opportunity cost in terms of paths on the heavily used Cherwell Valley Line.
3e	Stratford – Old Oak Common HS2 via Bicester North	<ul style="list-style-type: none"> - This option cannot be delivered until HS2 is complete and even then requires additional infrastructure. - There would be no improvement in connectivity south of Stratford, whilst in the reverse direction, there would also be no improvement in connectivity between the North Cotswold Line corridor and Birmingham. - Interchange would be required to the Elizabeth Line or the London Underground for the remaining portion of the journey into London, adding to journey times. - Potential reduction in service for intermediate stations between Stratford and Leamington. - Opportunity cost in terms of paths on the heavily used Cherwell Valley Line.
4a	Very Light Rail, Stratford – Honeybourne	<ul style="list-style-type: none"> - The VLR concept is in its infancy and is not yet proven. - Commercial viability of a scheme of this nature in a relatively small settlement is likely to be marginal at best – it would be a standalone scheme disconnected from the heavy rail network. - Whilst VLR would provide a connection between Stratford and Honeybourne, it would be slower than conventional rail, with multiple stops required between the two areas. In effect, it is a local rather than a strategic scheme. - For communities in the North Cotswold Line corridor, the only benefit would be improved connectivity to Stratford itself. The requirement for a double interchange and the associated journey times would be unattractive compared to interchange at Worcestershire Parkway. - Despite being less intrusive than other forms of light rail, it would still require construction work to facilitate on-street running in Stratford and would impact on the Greenway, either requiring parallel running or its potential relocation. In addition, traffic management arrangements would also need to be altered on Seven Meadows Road. - This option is likely to be high cost.
4b	Tram, Stratford – Long Marston or Honeybourne	<ul style="list-style-type: none"> - The rationale for rejection of trams is broadly similar to that for VLR. - The key additional point however is that, as trams are heavier weight vehicles, the infrastructure works required to deliver a tram network would be more intensive and expensive and, for a likely similar cost, TramTrain offers much wider benefits. - The impacts on the Greenway would be more significant. - This option is likely to be high cost.

Whilst the above table does rule out several options on their own merit, they could be combined with the options below to provide packages of improved connectivity, combining bus and rail options for example. The following standalone options are progressed for more detailed consideration, with a brief description of each presented below. It should be noted that the options as presented are illustrative only, and significant further work would be required to develop and test the different service permutations.

Option 3a: Enhance existing Stratford – Leamington service, connecting with Birmingham Snow Hill to London Marylebone via Bicester North services

This option would involve enhancing the current irregular service (circa two-hourly service, including Marylebone trains) between Stratford and Leamington Spa to a regular hourly service, ideally on a clock-face timetable. This would allow interchange with services to London Marylebone at Warwick Parkway or Leamington, with the latter station also providing interchange opportunities for Coventry, Oxford, and Nuneaton.

Option 3b: Stratford – London Marylebone via Bicester North

This option would involve consolidating and expanding the existing Stratford – Leamington and Stratford - London Marylebone services into an hourly Stratford – London Marylebone service via Bicester North. However, the current occasional Stratford – London service is an extension of London Marylebone to Banbury services, which call at a number of the intermediate stations, so are slower than London - Birmingham Snow Hill services, consequently it is frequently overtaken at Banbury adding considerable extra journey time. This option would therefore provide a direct connection from Stratford to London, but it is not an ideal service as the journey time would be relatively long (circa 20-25 minutes longer than the journey time from Banbury compared to the Birmingham Snow Hill to London Marylebone services).²⁷

Option 3d: Stratford – London Paddington via Oxford

This option would provide an hourly service to London Paddington via Leamington, Oxford and Reading. It would offer Stratford an equivalent level of connectivity south of Oxford (1tph) to that currently provided by Hereford / Worcester services on the North Cotswold Line, with a broadly comparable journey time in the region of two hours likely to be achievable.

Option 4c: Cross-Stratford TramTrain

The most 'rail-like' on-street running option through Stratford is the development of a cross-Stratford TramTrain network. A TramTrain can operate on conventional Network Rail infrastructure but can also undertake on-street / non-segregated running. The advantage with the TramTrain in this setting is that it could operate on the heavy rail network but at the same time would be able to run on-street and at grade through Stratford to reach the station and avoid the more significant civil engineering costs associated with a heavy rail solution.

It would also be able to reach beyond the Stratford to Honeybourne link. Potential services could extend as far as Stratford Parkway or even Leamington in the north and Evesham / Worcestershire Parkway in the south. It would provide a local connector service between the WMT and GWR networks, serving Stratford, Long Marston and several intermediate stations. Additional stops within Stratford could also be provided, improving accessibility and capitalising on the low 'station costs' and short station dwells that TramTrains offer. A key issue with TramTrain in this context however is that it would be a small self-contained operation and could not take advantage of the economies of scale associated with heavy rail (e.g. off-lease rolling stock, stabling facilities etc).

Option 5a: Stratford – Honeybourne Junctions link

This is the **core option which was submitted as the basis of the *Restoring Your Railway Ideas Fund***, fully restoring the rail link between Stratford and Honeybourne East and West Junctions. As it is the main focus of this study, a strategic train plan has been developed which would provide hourly services between: Stratford and London Paddington; Birmingham Snow Hill and Worcester via Stratford; and Leamington and Honeybourne. An indicative timetable for a southbound service illustrating the potential service pattern is included in Appendix A to this report (the northbound timetable and a timetable working on the basis of the proposed NCLTF 2tph London Paddington to Worcester service is included in the supporting option development paper).

The strategic train plan presented is towards the **maximum end** of what could be delivered and includes continuous double track into Stratford and a new station at Stratford South – **it should be noted that this is only intended to be illustrative of the type of service which could be delivered and the strategic benefits it could offer**. However, there are numerous potential service and infrastructure variations which could be delivered through this option – these options, together with their costs and the engineering solution would need to be developed further if this option progresses to OBC, gradually working towards a 'preferred' Stratford – Honeybourne option.

Option 5b: New Stratford South – Honeybourne Junctions link

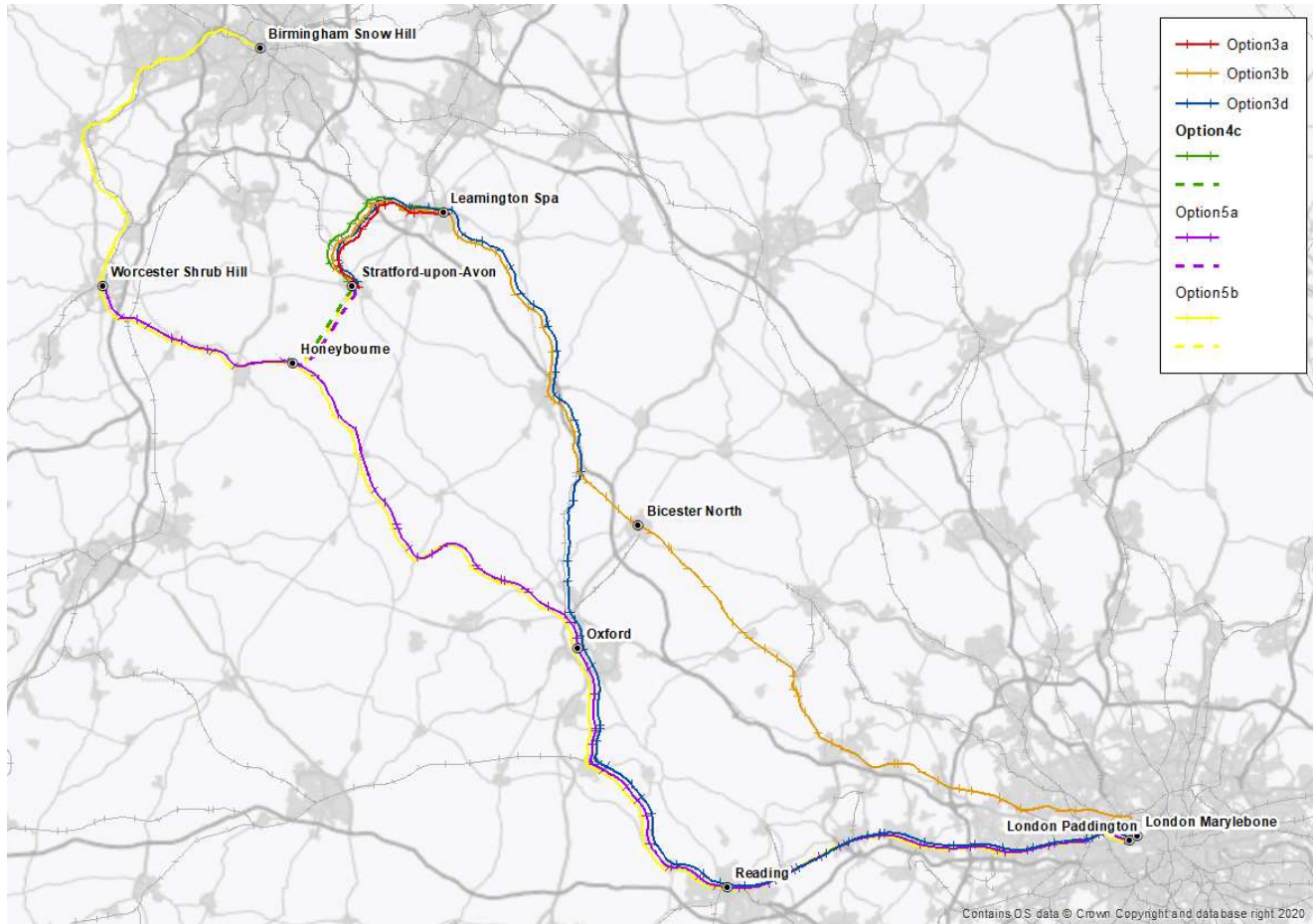
This option is a truncated version of the full Stratford – Honeybourne scheme. It would involve restoring the connection between Honeybourne East and West junctions as far as a site to the south of Stratford, with onward transfer by bus or active travel into the town. For illustrative purposes, this is assumed to be adjacent to Stratford Racecourse, at the start of the Stratford Greenway. The timetable would offer hourly services between Stratford South - London Paddington and Stratford South - Birmingham Snow Hill via Worcester. Again – this is just illustrative and further option development would be required at OBC stage.

²⁷

https://www.chilternrailways.co.uk/sites/default/files/files/timetables/May%2021%20SX%20Base%20Joint%20TT%20FINAL_0.pdf

The Economic Case considers each of these options on their own merit. However, there may be a case for combining and packaging options at OBC stage to provide a wider service offer, for example, Options 5b and 4c, which could provide a mix of strategic and local services with on-street running through Stratford.

A map of the remaining standalone options is provided below for reference:



Economic Case

The Economic Case assesses the shortlisted options' value for money in terms of economic, social and environmental benefits and costs.

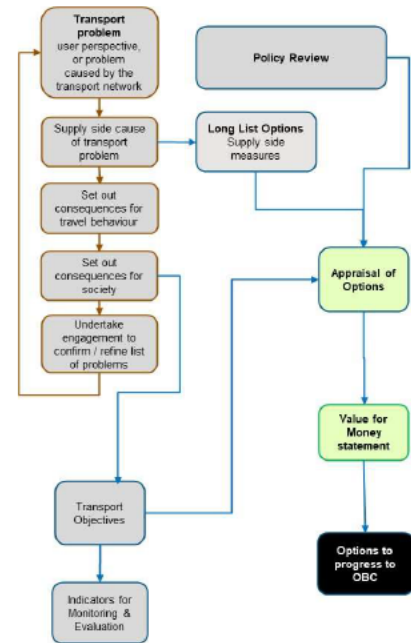
Step 5: Options Appraisal and Value for Money Statement

Demand and Revenue Forecasting and Option Economics

In line with the *Restoring Your Railway Ideas Fund* guidance, a high-level demand and revenue forecasting and option economics exercise was undertaken. The analysis – particularly costs – was based primarily upon the existing Stratford Rail Study (2012) and subsequent updates. The results of this exercise are summarised here, with a full method statement and workings contained in the *Option Development and Appraisal Technical Note* (Stantec and Allan Rail, June 2021).

The demand and revenue analysis is based upon the estimation of:

- **Incremental changes in demand** derived from elasticity-based calculations where additional services are added between existing station pairs (e.g. Stratford and Leamington).
- **'New' service demand** – i.e. services which do not currently exist – using a high-level 'gravity' approach based on demand between existing station pairs, populations and relative Generalised Journey Times (GJTs).
- **Tourism demand**, where the existing rail-mode share of tourist trips to Stratford (7% of overnight visitors and 9% of day visits²⁸) is assumed to increase by 6%-8% percentage points to align with the national average of 15%²⁹ for a city / large town destination.



Demand and Revenue Forecasts

For each option, the table below shows the estimated:

- net additional annual journeys (relative to the 2019 base)
- net additional revenue (in 2019 values and prices)
- additional demand from tourism trips from Oxford and Worcester³⁰
- additional revenue from tourism trips from Oxford and Worcester

Travel Movement	Option 3a	Option 3b	Option 3d	Option 4c	Option 5a	Option 5b
Net additional journeys	45,200	73,700	276,900	86,900	298,900	241,400
Net additional revenue	£123,600	£411,000	£2,153,800	£249,000	£1,398,000	£1,200,400
<i>Additional demand from tourism trips</i>	0	0	28,000	0	84,000	84,000
<i>Additional revenue from tourism trips</i>	0	0	£171,000	0	£448,000	£448,000

²⁸ <https://www.stratford.gov.uk/doc/206624/name/Stratford%20upon%20Avon%20Visitor%20Survey%20Final%20Report%202015.pdf>

²⁹ The Great Britain Day Visitor 2019 Annual Report, KANTAR

³⁰ The quantification of tourism impacts is only included for Options 3d, 5a and 5b because the study has only estimated the uplift in tourism demand from Oxford and Worcester to Stratford, reflecting the step-change in service provision. The GJT from London does not change significantly by comparison (20% compared to circa 50% for Oxford and 60% for Worcester) and thus this benefit is recorded in qualitative terms only. In reality, it will not be clear cut and Stratford may see some extra tourism from London that could be above the 'Core' demand forecast, but this would be getting into a level of detail beyond this SOBC.

Comparison of the forecasts with the previous Stratford Rail Study revealed broadly similar levels of demand and revenue for directly comparable travel movements, noting that there are some differences in the assessed option scenarios and that rail demand to / from Stratford has changed between 2012 and 2019.

Economic Assessment

An estimate of scheme costs and benefits has been undertaken for each option scenario. This included the following elements:

■ Scheme Costs

- Infrastructure investment costs for new railway lines and stations were extracted and approximated from previous studies. This was considered to be an appropriate high-level estimate of potential scheme costs for the SOBC and in line with the guidance. However, more detailed consideration of investment costs would be required for the OBC including option definition and the treatment of inflation, risk, and optimism bias.
 - It should in particular be noted that, for **Option 5a**, the Stratford – Honeybourne Junctions Link, the detailed costing developed in the Stratford Rail Study 2012 has been directly used, with costs uprated for inflation only. These costs are dated and reflect only one view of what the Stratford – Honeybourne link could look like. These costs would therefore have to be extensively developed at OBC as the option concept progresses, e.g. if continuous double track into Stratford or a new Stratford South station forms part of the preferred option or if a different engineering solution is adopted.
- Operational costs, which were estimated based on commercially confidential information.

■ Scheme Benefits

- Operator revenues, based on the demand and revenue estimates described above with two defined growth scenarios:
 - **Core** growth scenario where passenger demand recovers to 2019 (pre-COVID) levels by 2025 and then grows by 3.9% per annum (based on the previous 10-year trend for study area) up to 2041.
 - **High** growth scenario where passenger demand recovers to 2019 (pre-COVID) levels by 2022 and then grows by 6% per annum (as per the 2012 study high growth assumptions) up to 2041.
- User travel time benefits, which were estimated based on the demand forecasts and changes in travel time between station pairs.

Benefits and costs were assessed over a 60-year appraisal period with an assumed opening year of 2027 for all options. An indicative benefit-to-cost ratio (BCR) was derived for each option with all benefits and costs discounted and converted to 2010 prices based on the Department for Transport (DfT) Transport Appraisal Guidance (TAG) Databook³¹. A 20-year assessment period, up to 2041, was applied from the appraisal year of 2021 beyond which passenger demand, revenue, and user benefits were assumed to be constant in real prices.

It should be noted that **Option 4c** (TramTrain), was not included in the economic assessment given the level of uncertainty relating to potential required TramTrain infrastructure and operating costs. Should Option 4c be progressed to the OBC, either as a standalone scheme or in tandem with Option 5b, a detailed costing analysis of a Stratford TramTrain scheme would be required.

The table below summarises the Present Value of Benefits (PVB), Present Value of Costs (PVC) and BCR for the Core and High growth scenarios including additional tourism demand.

Option	Core Growth Scenario			High Growth Scenario		
	PVB	PVC	BCR	PVB	PVC	BCR
Option 3a	11.4	27.3	0.42	18.1	25.4	0.71
Option 3b	25.1	60.3	0.42	39.8	53.9	0.74
Option 3d	86.7	8.2	10.57	187.9	0.0	n/a
Option 5a	103.7	158.8	0.65	137.5	130.1	1.06
Option 5b	88.0	124.7	0.71	112.6	99.1	1.14

All costs in £m in 2010 prices, discounted

³¹ TAG databook version 1.14 (July 2020 Sensitivity Test)

The following points can be drawn from the above table:

- All options except **Option 3d** have BCRs less than 1 in the ‘Core’ growth scenario. The impact of including potential additional tourist rail demand is relatively modest, with a small reduction in operating deficit and PVC and a corresponding small increase in BCRs for **Options 3d, 5a, and 5b**.
- For the ‘High’ growth scenario, including tourist demand, **Options 5a and 5b** have BCRs greater than 1.
- A BCR value is not applicable for **Option 3d** in the High growth scenario as there are no costs to government where there is a forecast operating surplus that is attributed to the operator.
- More detailed inspection of **Option 3d** indicates that around **40% of the user benefits are associated with the enhanced service provision on the Banbury to Oxford \ Reading \ London travel movement, rather than the Stratford component of the new service**. However, even excluding these movements and their associated revenue, this option would likely present a BCR above 1 assuming no infrastructure investment is required (a more detailed review at OBC stage would be required to confirm this).
- **Options 5a and 5b** have similar BCRs, where the lower estimated benefits in **Option 5b** are countered by lower costs, noting that these are very high-level indicative estimates which will require significant further development if either of these options is progressed to OBC. **Options 3a and 3b** have marginally lower BCRs
- On the assumption that **Option 4c** (TramTrain) infrastructure costs could be of a similar scale or slightly cheaper than **Options 5a or 5b**, and that corresponding travel time benefits will be notably less, and operating deficits greater (based on the demand forecasts), then this option is likely to have the lowest BCR.
- It should be noted that more detailed modelling at OBC stage would quantitatively capture potential wider economic impacts including agglomeration, labour market impacts and land value uplift.

The BCRs less than one are not dissimilar to other proposed new rail services across the UK outwith London and the South-East and major conurbations. **The key issue is however the extent to which improved transport outcomes and wider socio-economic impacts not captured in the BCR analysis are realised and thus additive to these benefits**. These outcomes and impacts are considered in more detail below.

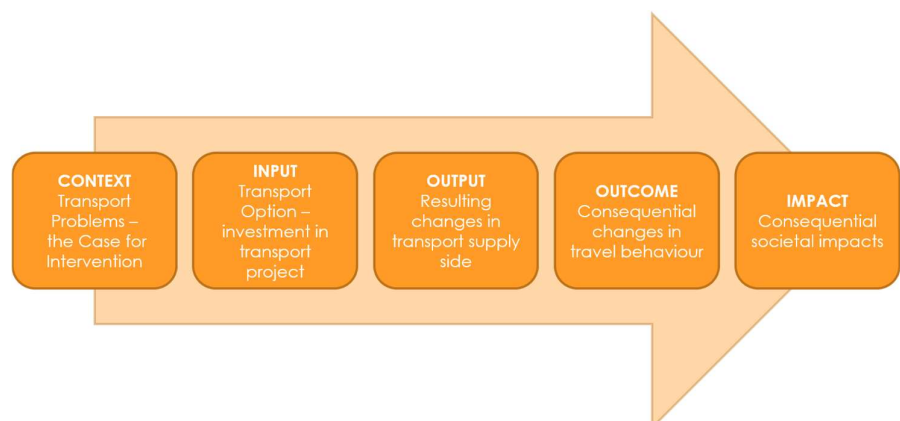
Wider Economic, Social and Environmental Impacts

In the context of a BCR, ‘benefits’ are social welfare benefits which accrue to the user, largely stemming from a reduction in journey times and vehicle operating costs. However, investment in transport schemes can also generate:

- **wider economic impacts (WEI)**, which are defined as the impact of a change on the transport network that is additional to the user benefits, generating induced effects that influence economic performance; and
- **distributional impacts**, whereby there may be no net benefit at the national level, but where there is a redistribution of benefits between geographic areas or groups within society – this is at the heart of the ‘levelling-up’ aspirations.

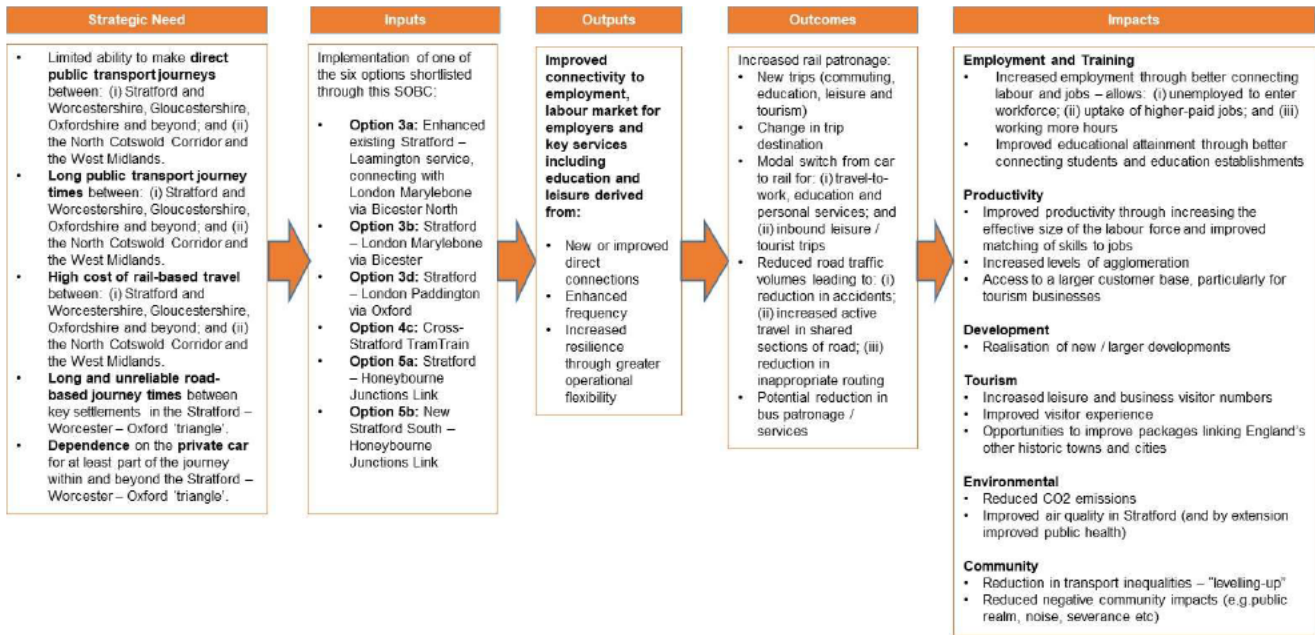
This section considers these wider benefits in the context of this SOBC. A five-stage logic-chain from initial transport problems and opportunities to eventual societal impacts is adopted to contextualise these benefits and the potential impacts that investment will generate. The main components of the logic chain are:

- **Context – the Strategic Case:** Transport problems and opportunities that improved connectivity will address and the rationale for proceeding with the intervention.
- **Input:** The transport investment and processes required to deliver the intervention – this would ultimately be the preferred option emerging from this business case at Outline Business Case stage.
- **Outputs:** The direct transport deliverable(s) from the investment – e.g., *additional connections / new public transport service and improved connectivity*



- **Outcomes:** Changes in travel behaviour which result from the supply-side improvements, e.g., more journeys by rail (new trips plus mode-switching).
- **Impacts:** Societal changes which occur as a result of the changes in travel behaviour and connectivity stemming from the intervention, e.g., improved labour market efficiency, reduced ‘forced car ownership’ etc.

The logic map below sets out the potential outcomes and impacts which could emerge from the delivery of one or a combination of the shortlisted options.



Clearly, the extent to which each impact will be realised – if at all – will vary by option. The anticipated magnitude of impact by option is summarised in the table below – the scoring notation is as follows:

- ○ – neutral / no impact
- ✓ - minor impact
- ✓✓ - moderate impact
- ✓✓✓ - major impact

Option	Description	Impact					
		Employment & Training	Productivity	Development	Tourism	Environment	Community
3a	Enhance existing Stratford – Leamington service, connecting with London Marylebone via Bicester North services	✓	✓	○	○	✓	✓
3b	Stratford – London Marylebone via Bicester North	✓✓	✓✓	○	✓	✓	✓
3d	Stratford – London Paddington via Oxford	✓✓	✓✓	○	✓✓	✓	✓
4c	Cross-Stratford TramTrain	✓✓	✓	✓✓	✓	✓	✓✓
5a	Stratford – Honeybourne Junctions link	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
5b	New Stratford South – Honeybourne Junctions link	✓✓	✓✓	✓✓✓	✓✓	✓✓	✓✓

Options 3a, 3b and 3d all make a positive contribution to expanding access to employment and the size of the labour market for Stratford employers, whilst also encouraging minor mode shift onto rail, lessening current negative environmental and community impacts of transport. Through the provision of direct services to London, **Options 3b and 3d** also contribute towards the growth of the tourism market (the impact of **Option 3d** is greater because the service calls at Oxford, is limited-stop and thus faster), although this is not the case with **Option 3a**, which still requires an unattractive interchange. None of the options which use existing lines contribute to development south of Stratford.

Cross-Stratford TramTrain (**Option 4c**) would deliver a positive impact against each category, particularly in terms of supporting development to the south of Stratford, connecting these areas to the Stratford employment market and lessening the community impacts of transport at present. However, as a largely local option, its contribution in terms of business productivity and tourism is limited.

Whilst all of the options can be expected to generate positive impacts to differing degrees, **the full restoration of the Stratford – Honeybourne Junctions link (Option 5a) will offer the most significant and widest range of benefits (Option 5b will also generate significant impacts, but these will be of a lesser magnitude than Option 5a due to the absence of a through service). This is because:**

- From an **employment and training** perspective, it provides connectivity to the widest range of potential destinations. As well as connecting Stratford to Worcester, Oxford and further afield including the South-West and South Wales via Worcestershire Parkway, it would also provide a direct connection between settlements on the North Cotswold Line, Evesham for example, and Birmingham. Moreover, for those with access to the new line who work in Stratford, it would address potential 'forced car ownership' issues, thus supporting the levelling-up agenda.
- The same is also true from a **business productivity** perspective. A new rail link of this nature would provide businesses in both Stratford and Oxford with access to a larger pool of labour. It would also bring businesses across the study area 'closer' together (i.e. agglomeration), addressing the current severance issues which exist. Moreover, and crucially for Stratford given its international appeal, it would provide it with access to a much wider customer market within defined travel time bands, most notably from Oxford, London and the Thames Valley.
- The realisation of this option would also be a significant enabler of **new development**, particularly with respect to Long Marston Garden Village where a potential new station is proposed (it would also address the inherent car dependency being built into this 'eco' village, embedding public transport from its conception, as has happened with Shawfair on the Borders Railway in Scotland). Moreover, it would provide fast, relatively frequent and reliable to and cross-Stratford rail services, providing developments in areas such as e.g. Evesham with direct connectivity to Birmingham by public transport. This impact would be magnified as services on the Shakespeare Line are improved over time. For those who still have to drive, road-based journey times would be more reliable if the overall number of road-based trips, and hence vehicles, is reduced.
- This option would also have a transformative effect on **tourism** in Stratford, and potentially the wider area if volumes increase - rather than being at the end of a branch line, Stratford would be directly connected to Oxford and London, and Heathrow and Gatwick via interchange at Reading. It would also become easier to market Stratford as part of a wider rail-based holiday package of destinations in west and central England, including Oxford, the Cotswolds, Bath and Windsor. The tourist experience would also be improved through being provided with fast and direct access to Stratford, avoiding interchange at Leamington when travelling by rail and road congestion / parking issues when travelling by car. There would also be benefits from improved rail connectivity / frequency for areas outwith Stratford in terms of increased opportunities for sustainable tourism, in the Cotswolds for example.
- From an **environmental and community** perspective, maximising mode switch from the private car will in-turn reduce avoidable car kilometres (including positive abstraction of Stratford residents currently driving to Warwick Parkway, and also releasing car parking spaces) and thus total CO₂ emissions, supporting the climate emergency position of Stratford District Council amongst others. At the local level, the availability of a viable public transport connection to and through the town from north to south will reduce car-based travel to and through Stratford, thus supporting improved air quality and regeneration and mitigating other negative impacts such as on the public realm. However, for environmental benefits to be maximised, mitigation is required for the **Stratford Greenway** to ensure that the active travel corridor to the south is at least as good as it is now.
- The impact on **local bus services**, and in particular the commercially operated Coventry – Stratford – Evesham service, should however be considered. There is a risk of reduced connectivity for some settlements if they are not adjacent to the railway and bus services are reduced or withdrawn as a result of rail-based competition.

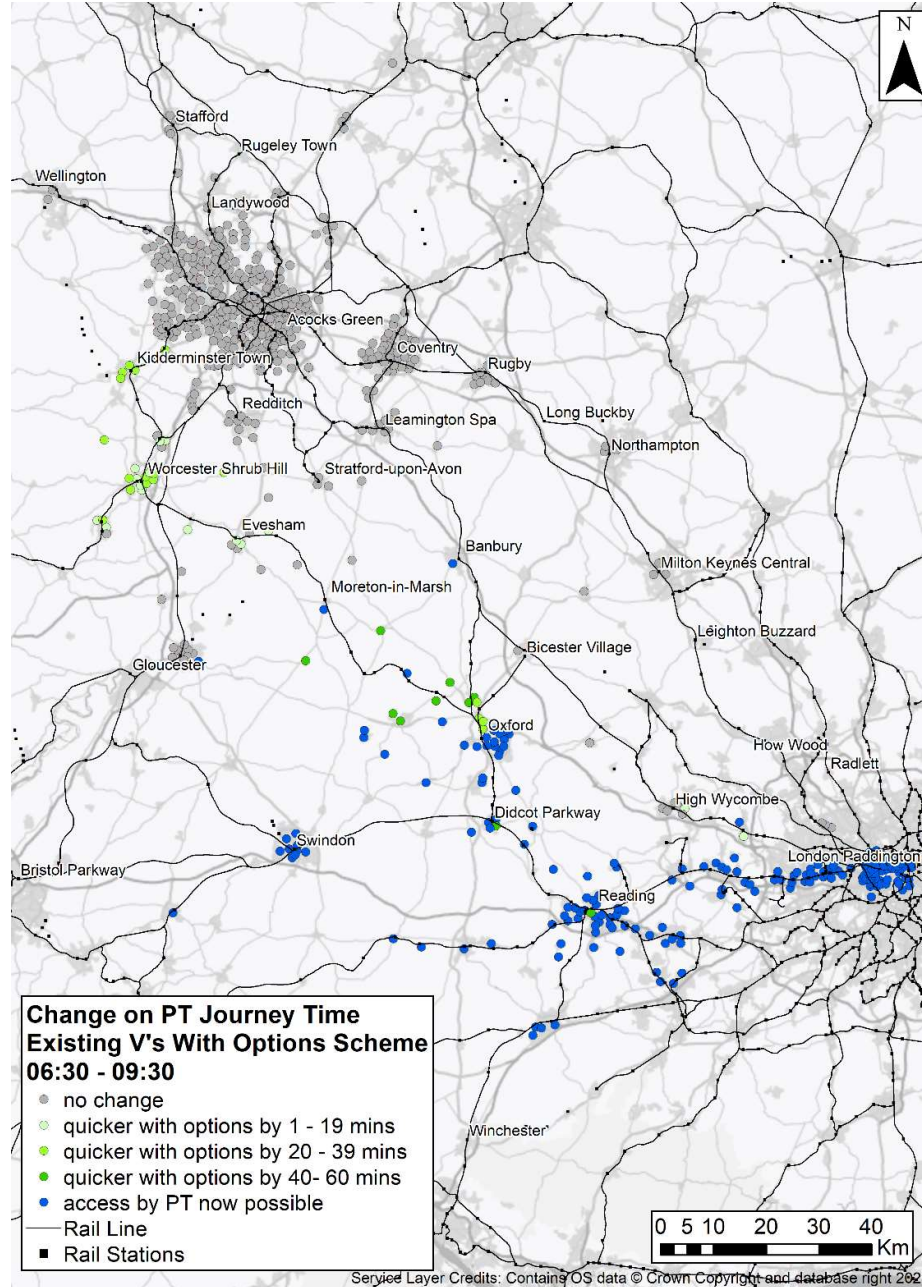
Whilst this study has considered all potential options to address the objectives, the focus of the application to the *Restoring Your Railway Ideas Fund* was on the restoration of the Stratford – Honeybourne junctions link. For this reason, additional analysis has been undertaken to highlight the potential change in connectivity offered by **Option 5a**. The

analysis is based on the illustrative strategic train plan in Appendix A with the aim of highlighting the type and scale of benefits which could be achieved. Note, however, this does not imply that Option 5a (and indeed the illustrative example of the option presented) is the preferred option, the decision on which is not made until OBC stage, following much more detailed analysis.

Connectivity Analysis

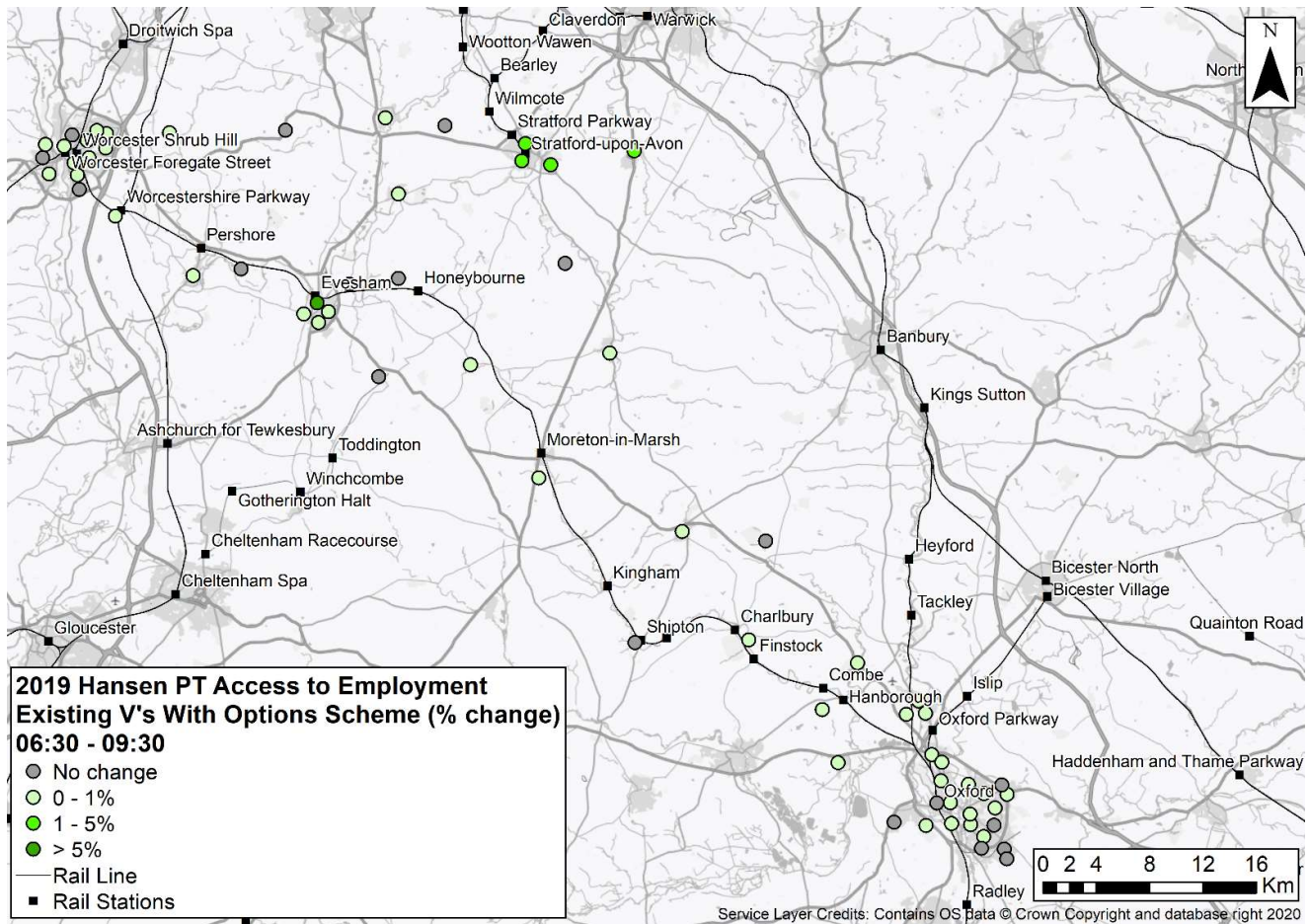
To further highlight the benefits of restoring the Stratford – Honeybourne railway line, the baseline connectivity analysis was re-run with **Option 5a** included. The percentage change in AM peak public transport connectivity from Stratford is shown in the figure on the right. Key points of note include:

- Public transport connectivity from Stratford to Evesham, Worcester and Oxford would be significantly improved. **Rail-based journey times to Worcester and Oxford would be less than one hour, making them easily commutable.**
- Such an improvement would also open-up connectivity to a whole range of new destinations including **Reading and London**, as well as more local destinations such as Hanborough. The **journey time to London Paddington in particular would be just under two hours**, providing a transformational change in public transport connectivity to the capital city.
- Whilst the analysis is focused on the 'from Stratford' direction, connectivity in the 'to' Stratford direction would also improve, particularly for movements from the likes of Moreton-in-Marsh, Honeybourne and Evesham to Stratford and Birmingham. The scale of improvement would however be less given alternative routes via Worcestershire Parkway and Oxford.



- Whilst the figure is focused on the AM peak, this change will be largely replicated throughout the day.

The 'Hansen' analysis has also been re-run to show the change in access to employment – this is illustrated in the figure below:



The key points of note from the above figure are as follows:

- Evesham and Stratford record particularly significant benefits in terms of access to employment, the former due to improved access to Stratford and Birmingham and the latter to points south.
- There are however benefits along the North Cotswold Line corridor, with improved access to employment benefiting Worcester, Pershore and Moreton-in-Marsh amongst other settlements.
- Whilst the figure above is focused on access to employment, connectivity improvements of this nature would also support improved access to further and higher education, the labour market for businesses etc.

Strategic Benefits and Opportunities

The restoration of the Stratford – Honeybourne link would connect two existing railway networks, the Shakespeare Line and the Stratford - Leamington / Birmingham routes to the north and the North Cotswold Line to the south. This would create a new through route, which would re-draw the geography of the railway, offering a wide range of potential new routing opportunities and alternative routes. These are summarised below:

Birmingham – Oxford Corridor

- Connections between communities on the eastern section of the North Cotswold Line corridor and Birmingham would generally be quicker (if through journeys are made without a change at Stratford) than routing via Oxford. This would also allow for a more appropriate and simpler fare structure that recognises direct links to Birmingham rather than making use of long-distance fares on existing routes (that said, interchange at Worcestershire Parkway and some fare reform may also assist in achieving this outcome, albeit journey times would be longer). It would be possible to operate direct Oxford to Birmingham via Stratford services, but these would not be time competitive with Oxford to Birmingham services via Leamington, so this would be driven by improved local connectivity only (a further option to be explored at OBC).

- The path between Leamington and Banbury currently used by the irregular Stratford – London Marylebone services would be released for other services.

A46 Corridor

- The A46 Corridor – known as the Trans-Midland Trade Corridor – is the subject of an ongoing appraisal in relation to a predominantly road-based set of interventions being promoted by Midlands Connect. The provision of a new Stratford to Honeybourne link fills a gap in the railway parallel to the A46, providing a continuous link from the East Midlands (notably Nottingham and Leicester), via Leamington and Stratford to Worcester, Cheltenham and Gloucester. Moreover, in the longer-term, the potential restoration of the connection between the NCL and the Birmingham – Cheltenham Line would enable the provision of direct Leamington to Cheltenham and Gloucester services via Stratford. This could be done by:
 - the restoration of the Honeybourne to Cheltenham line, part of which is operated by the Gloucestershire and Warwickshire Steam Railway;
 - the restoration of the Evesham to Ashchurch line; or
 - provision of a simple chord of approximately 1,000m at Worcestershire Parkway linking the NCL with the Birmingham - Cheltenham - Bristol line.
- The journey times for such a link would be competitive with road-based equivalents. This would potentially be important in moving Stratford from being peripheral to everywhere to being at the centre of activity, but also offers wider network benefits. Indeed, adopting the same principle, Midlands Connect has just (May 2021) published an SOBC for reconnecting Coventry, Leicester and Nottingham by rail.³² Whilst such a connection is beyond the remit of this SOBC, opportunities of this nature do highlight the potential strategic and operational benefits of restoring the Stratford – Honeybourne junctions connection.

Financial Case

The Financial Case is the first of the three delivery cases, which define how the potential options can be funded, procured, delivered and managed. Given the wide range of options still in-play at SOBC stage, the Financial, Commercial and Management Cases are light touch, reflecting the advice in the *Restoring Your Railway Ideas Fund* guidance.

Option Budget Profile

The options which make use of existing infrastructure (**Options 3a, 3b and 3d**) could potentially be delivered without significant capital investment, although intermediate signals between Stratford and Bearley Junction and higher line speeds in the Hatton Station area may be required. The restoration of the south bay platform at Leamington (Platform 1) may also be required for **Option 3a**. Should such investment be required, it is likely that it would be profiled over 1-2 years, but this would be confirmed in the OBC.

Options 4c, 5a and 5b are much more substantial projects, involving the provision of new infrastructure, stations and major civil engineering works. The option budget profile would be determined through progressive development of the Financial Case in the Outline and Full Business Cases (or through the Network Rail new Project Speed and / or Project Acceleration in a Controlled Environment (PACE) processes if the project is developed through that framework).

Cost Risk and Uncertainties

The options which make use of existing infrastructure (**Options 3a, 3b and 3d**) would benefit from the early involvement of the operators, West Midlands Trains for **Option 3a**, Chiltern Railways for **Option 3b** and Great Western Railway for **Option 3d**. The DfT Franchise Model should be used to quantify and cost potential changes, thus providing a reasonable degree of certainty around operating costs.

The options which involve new infrastructure (**Options 4c, 5a and 5b**) would have a significantly higher risk profile. This is particularly the case with **Options 4c and 5a**, which involve taking the railway through Stratford, either above or below ground, and thus have risks around land ownership / acquisition, relocation of utilities etc. In the Economic Case, a high-level of optimism bias has been applied at this stage, and robust risk management processes will be required as the business case / PACE works develops further.

³² [Building Back Greener \(midlandsconnect.co.uk\)](https://www.midlandsconnect.co.uk/building-back-greener)

At the macro level, there are two key uncertainties which could impact on the case for the options: (i) the profile of rail demand post-COVID-19; and (ii) for options which require infrastructure investment, the governance and investment approach which will be adopted by Great British Railways (GBR) as it replaces Network Rail.

Option Funding

For the options which make use of the existing infrastructure (**Options 3a, 3b and 3d**), there is considered to be limited scope for any funding outwith the standard franchise support for West Midlands Trains / Chiltern Railways / Great Western Railway and grant support for any Network Rail works, although there may be a requirement for 'multi-party' third party funding. The operational cost increase will feed through to the costs of the West Midlands Trains / Chiltern Railways / Great Western Railway franchises / management contracts.

For the new heavy rail options (**Options 4c, 5a and 5b**), as well as funding for the operational cost increases as detailed above, the capital funding profile would need to be developed through the next stages of the business case process. These could however include:

- Public sector grants or prudential borrowing (e.g. national government, Local Enterprise Partnerships, city / region / growth deals and local authorities).
- Inclusion of the ultimate preferred option through the Rail Network Enhancements Pipeline (RNEP).
- Funding secured against future revenue including land-value uplift, retail rents, car park revenue etc.
- Developer funding through the planning process and the application of the Community Infrastructure Levy. It should be noted that **£17m of developer contributions** have been secured for rail improvements in relation to the Long Marston development, and this has potential to increase³³.

Commercial Case

Delivery Partners and Contractual Arrangements

Given the variety of options still in-play at the conclusion of the SOBC, there is no single delivery model which can be defined at this stage. Indeed, there are a range of potential delivery models which are very much driven by the choices made for the services and infrastructure. These range from the conventional rail industry models to a new approach to service and infrastructure provision which may bring innovation, not just in the engineering but in the wider organisational aspects of the operation. This will be an important facet of any future OBC work as it will be an important part of delivering an innovative and cost-effective solution. In summary, for each option:

- **Options 3a, 3b and 3d:** The DfT, in partnership with the West Midlands Rail Executive and the relevant TOCs, would adopt the standard industry approach of planning and adding additional services through the franchise or emerging 'National Rail Contracts' post the Williams-Shapps Report.
- **Option 4c:** There are several options to deliver a new TramTrain network – should this option progress further, the delivery model would require significant further development at OBC stage. Options include:
 - (i) The standard industry approach with DfT taking the lead, in partnership with the West Midlands Rail Executive to define and specify the outputs, with WMT contracted to operate the TramTrains, either directly or through a third party, and Network Rail providing all of the infrastructure.
 - (ii) A TramTrain network operator could provide the TramTrain route and possibly take over the Long Marston branch from Network Rail (possibly on a long lease). TramTrains could be operated by this operator or WMT as a variation of the DfT and WMRE franchised operation.
 - (iii) Another option is a full council (likely Warwickshire County Council) owned TramTrain operation with both infrastructure and operation contained within a local operation (i.e. not Network Rail, Great Western Railway or West Midlands Trains) and operating under open access conditions on Network Rail infrastructure. This is broadly the delivery model being used for East-West Rail, but in this case with control through a group of local authorities.

³³ Long Marston Airfield Garden Village Expression of Interest (Stratford DC and Cala Homes, 2016), p. 30.

- (iv) A final option is for the infrastructure to be provided and owned by Network Rail, but with the TramTrain operation carried out by a bespoke company (i.e. not part of the WMT or GWR franchises), either as part of a DfT contracted activity or one contracted by local authorities.
- **Options 5a and 5b:** The standard industry approach with DfT taking the lead would likely be adopted. They would work with the West Midlands Rail Executive to define and specify the outputs, with WMT / GWR contracted to operate the services and Network Rail providing all the infrastructure.

Management Case

Given the range of options still in-play at the conclusion of the SOBC and their geographic spread, it is difficult to develop a coherent Management Case at this stage. For example, the governance arrangements and the stakeholder engagement plan would vary significantly for new services on the existing railway via Leamington compared to an entirely new route through and south of Stratford. To this end, the Management Case is focused on benefits realisation and the monitoring and evaluation framework.

Benefits Realisation

Business case guidance requires the promoter to identify in the Management Case the steps they will take to ensure that the anticipated project benefits are delivered. The benefits in the context of this project are succinctly summarised in the project logic map in the Economic Case. This logic map identifies the anticipated outputs, outcomes and impacts of the proposed investment, effectively mapping the investment through to the benefits which will be realised. This initial benefits realisation framework will be developed further in the OBC and refined as the preferred option emerges.

Monitoring and Evaluation Framework

Monitoring

The monitoring plan will predominantly be focussed on assessing the extent to which the ultimate preferred option contributes towards the Transport Objectives set out in the Strategic Case. For each of the objectives set, a baseline position has been established through this SOBC, together with a description of how that objective will be made SMART. This will form the basis of monitoring progress towards each objective over time.

Evaluation

The term 'Evaluation' in the business case context describes a one-off objective driven review or audit of a project's performance post-opening. There are two discrete elements to an evaluation:

- **Process Evaluation:** This is carried out early in the life of a project, before its full effects are known and concentrates on whether input (activity) and expected outcomes for a project are being / have been met. The process evaluation would be carried out immediately after the preferred option is delivered.
- **Outcome Evaluation:** This is carried out once sufficient time has elapsed for the project to have delivered its principal outcomes and assesses whether the TOs have been achieved. Guidance typically advises carrying out an evaluation at 1 and 3 or 5 years after opening. The evaluation would establish the extent to which the TOs and the transport outcomes and societal impacts envisaged in the project logic map have been delivered.

Conclusions

This SOBC has identified six potential options which would improve the strategic transport connectivity of Stratford. Three of these options are based on providing additional services on existing infrastructure, whilst the other three would deliver improvements through and / or to the south of Stratford.

The three options using the existing network (**Options 3a, 3b and 3d**) are the lowest cost and easiest to deliver given that they are extensions of existing services with no to minimal infrastructure enhancement. They also make a positive contribution to several of the objectives. However, these options offer fewer connectivity benefits for Stratford and no benefits at all for communities to the south of Stratford and along the North Cotswold Line. There may be some value in pursuing one of these options in the short-term to deliver immediate benefits and build the market, but they do not represent a complete long-term solution to the full range of identified transport problems. The progression of these options could either be treated as an integral part of the OBC or progressed independently as a short-term measure /

as part of a wider timetable recast, with the OBC focusing on the options with major new infrastructure requirements (**Options 4c, 5a and 5b**).

The options for the restoration of a service south of Stratford towards Honeybourne (**Options 4c, 5a and 5b**) all generate a BCR of less than one in the 'Core' growth scenario (assumed in the case of Option 4c – TramTrain), in large part due to the capital cost of providing new infrastructure to the edge of or through Stratford. However, the BCR only reflects a comparison of the cost against the quantifiable social welfare benefits of the scheme and does not thus capture the significant wider social and economic benefits offered by the Stratford – Honeybourne connection in the context of the objectives and scheme logic mapping. These include benefits in relation to employment and training, productivity, land-use development, tourism, the environment, community amenity and 'levelling-up' of opportunity for those without access to a car or who do not wish to own / use one. Moreover, the full restoration (**Option 5a**) would redraw the railway map of the south-west Midlands, offering a range of potential operational improvements for passenger services. **Understanding the full benefit of closing the Stratford – Honeybourne connectivity gap is only possible when all of the benefits of the scheme are considered in the round.**

Given the more local nature of a TramTrain scheme relative to long distance Oxford and London services, and its limited revenue potential, **Option 4c will not be progressed to OBC as a freestanding option.** It will only be considered in tandem with the other options, supplementing them to provide a through Stratford service.

The key requirement for the OBC will therefore be to further develop the service permutations, engineering solutions, costs, benefits, and deliverability of the core Stratford – Honeybourne Junctions link (**Option 5a**), comparing it to **Option 5b, both on its own merit and potentially combined with Option 4c.** The combination of **Options 4c and 5b** may offer reduced capital costs and construction-related disruption compared with a sub-surface heavy rail link (although this is not certain), but would also severely limit the benefits of the restored link for through Stratford movements given the requirement for a double interchange when travelling north. This differential in costs and benefits would need to be assessed through the OBC process if there is a desire to explore such a combination in more detail.

Detailed consideration would also need to be given as to the potential engineering solutions for each option, the mitigation of construction impacts and how the Greenway could be protected / enhanced or relocated in the event that one of these options are progressed. This would include a requirement for an updated Strategic Environmental Assessment³⁴ and Equalities Impact Assessment.

³⁴ Note that the Stratford Rail Study 2012 incorporated an environmental impact assessment which covered: air quality; water resources; land contamination and ground conditions; ecology and habitats; statutory designated sites; other wildlife sites; protected and notable species; potential impacts of new infrastructure; cultural heritage and archaeology; noise and vibration; landscape and visual impact; and the Greenway.

Appendix A: Strategic Train Plan, Southbound

Southbound Timetable for Stratford to Honeybourne Link with 1 tph Paddington – Worcester

Birmingham Snow Hill	dep			09.28	09 58		
Birmingham Moor Street	dep			09.31	10 01		
Solihull	dep				10.13		
Dorridge	dep				10 21		
Lapworth	dep						
<i>Hatton North Jn</i>	<i>pass</i>				<i>10/27</i>		
Leamington Spa	dep						10.40
Warwick	dep						10.45
Warwick Parkway	dep						
Hatton	dep						10 52
<i>Hatton West Jn</i>	<i>pass</i>				<i>10/28</i>		<i>10/54</i>
Claverdon	dep						10 57
Bearley	dep						11 02
Shirley	dep			09.45			
Whitlock's End	dep			09.48			
Wythall	dep			09.51			
Earlswood (West Midlands)	dep			09R53			
The Lakes	dep			09R56			
Wood End	dep			09R58			
Danzeley	dep			10P01			
Henley-in-Arden	dep			10.06			
Wootton Wawen	dep			10R09			
<i>Bearley Jn</i>	<i>pass</i>			<i>10/13</i>	<i>10/34</i>		<i>11/04</i>
Wilmcote	dep			10.15			11 06
Stratford Parkway	dep			10.18	10 38		11 09
Stratford-upon-Avon	arr			10.23	10.41		11.12
	dep				10.43	10.55	11.13
Stratford South	dep				10.47	10.59	11.17
Long Marston	dep				10 52	11.04	11 22
Quinton Rail Centre	dep						
<i>Honeybourne North Jn</i>	<i>pass</i>				<i>10/56</i>	<i>11/08</i>	<i>11/26</i>
Honeybourne	arr	From Ldn	ex Wor		10 58		11 28
	dep	10 31	10.43		11 00		
Evesham	dep	10 37			11 06		
Pershore	dep	10.44			11.13		
Worcestershire Parkway	dep	10 50			11.19		
<i>Norton Jn</i>	<i>pass</i>	10/53			11/22		
Worcester Shrub Hill	arr	11 00			11 29		
<i>Honeybourne North Jn</i>	<i>pass</i>		10/45			11/09	
Moreton-in-Marsh	dep		10.54			11.19	
Kingham	dep		11.02			11.27	
Shipton	dep						
Ascott-under-Wychwood	dep		11/06			11/31	
Charlbury	dep		11.11			11.36	
Finstock	dep						
Combe	dep						
Hanborough	dep		11.19			11.44	
<i>Wolvercot Jn</i>	<i>pass</i>		11/24			11/49	
Oxford	arr		11.28			11a53	
Reading	arr		11.54			12.24	
London Paddington	arr		12.24			12.54	

- Times shown in black are existing trains
- Trains added or times altered are shown in red
- Clashes are highlighted in yellow
- Junctions are noted in italics, with passing calls noted with a forward slash

It should be noted that the timetable is illustrative only and is not planned as entirely conflict-free because. This is because the objective of the planning work undertaken was to investigate the wider impacts and implications of re-opening the Stratford to Honeybourne link, including any possible additional infrastructure that is required.