

Investing in Strategic Transport Corridors in The Marches

The Marches Local Enterprise Partnership

May 2016



@marcheslep

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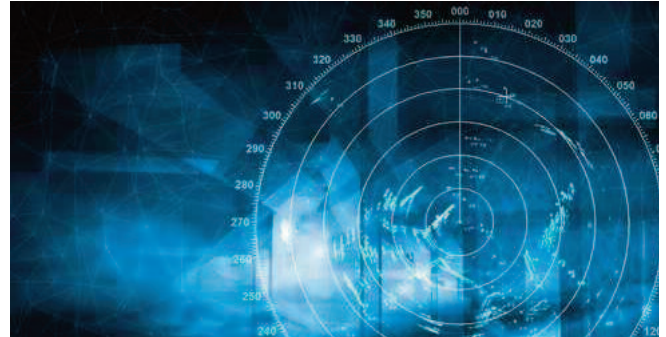
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Economic Context and Vision

The Marches, geographically one of the largest LEPs in the country, is an area rich in productive land, home to the three major urban centres of Hereford, Shrewsbury and Telford, an abundance of market towns, rural villages and stunning landscapes.

In total, there are 29,800 businesses operating in The Marches contributing £12.3 billion per annum to the UK economy. The Marches is a thriving and successful economic area where both small and large enterprises provide a variety of high value products and services within the local area, throughout the UK and internationally.

The Strategic Economic Plan (SEP) for The Marches identifies key economic growth sectors that will be further developed:



Defence and Security

4th best represented of all Local Enterprise Partnerships in the country



Agri-Food

22% of GVA The Marches - Highest employer location quotient in Agri-Tech in 2012



Advanced Manufacturing

1 in 7 jobs in The Marches provided by this sector

The economic vision for The Marches is of *“a strong, diverse and enterprising business base, operating in an exceptional and connected environment, where the transfer of technology and skills foster innovation, investment and economic growth.”*

The Marches Strategic Economic Plan promotes a strategy *“to create 70,000 new homes and almost 40,000 new jobs over the next twenty years accelerating growth and providing opportunities for all who live and work here.”*

Transport Requirements for Economic Success

Developing the economy – through delivering houses, training and jobs – requires an integrated and resilient transport network (both physical infrastructure and services) that is fit for purpose:

- **People who choose to visit, live and work in The Marches** need to have confidence that there are transport options that meet their lifestyle needs.
- **Business enterprises** require a transport network that:
 - Quickly and reliably connects the major employment centres with markets;
 - Enables business to collaborate and develop supply chain and customer relationships;
 - Enables people to access a wide selection of job / training opportunities; and
 - Is resilient to disruption by providing genuine choices of routes and modes.

This report sets out the transport needs of The Marches to establish a better understanding of the key transport corridors which are vital to deliver growth across The Marches. This report focuses on the strategic road and rail network, i.e. roads owned and maintained by Highways England and the rail network owned and maintained by Network Rail. Schemes on these networks require significant central government funding and deliver benefits at a regional level. This document sets out a high level strategy for addressing the issues in order to deliver medium and longer term sustainable economic growth.

This report will provide the initial evidence in support of key strategic programmes including:

- Network Rail's Control Period 6 Investment Plan (2019-2024);
- Highways England's Road Investment Strategy 2 (2020-2025) and Strategic Economic Growth Plan;
- West Midlands Rail;
- Midlands Connect and Midlands Engine for Growth; and
- Welsh Government.

The report identifies key transport corridors which are a priority for investment in The Marches. These strategic schemes supplement local highway improvements which are vital for unlocking development land. This evidence base will be used as part of the updated Marches Strategic Economic Plan.

The report highlights where the evidence base for a corridor or scheme needs further development for that scheme to go forward for delivery. This report will also draw on the latest outcomes of studies by Highways England, such as the ongoing study examining the long term future of the status and operational management of the A49 (between the A40 at Ross-on-Wye and the A5 at Shrewsbury).

The Marches Transport Network – A Well Connected Border Area

A major strength of The Marches transport network is the multiple connections and routes:

- The north to south spine of the main A49 / Marches Railway Line is complemented by a number of east – west corridors; and
- Road and rail links with other economic regions – the Midlands, North West England, South West England and Wales (south, mid and north).

However, the quality of infrastructure and services across the network is not always consistent and fit for purpose:

- West of the M50 and M54, the pinch points and missing links in the mainly single carriageway inter-urban road network result in a lack of efficient and reliable service in terms of journey times and reliability – both for local movements and long distance strategic traffic travelling between different regions and to / from international gateways.
- Traffic congestion is an increasing problem in the three urban centres of Hereford, Shrewsbury and Telford, and a number of development sites have stalled because of poor transport accessibility.
- Poor public transport in rural areas affects the ability of people without a car to access education, training and, in particular, jobs.

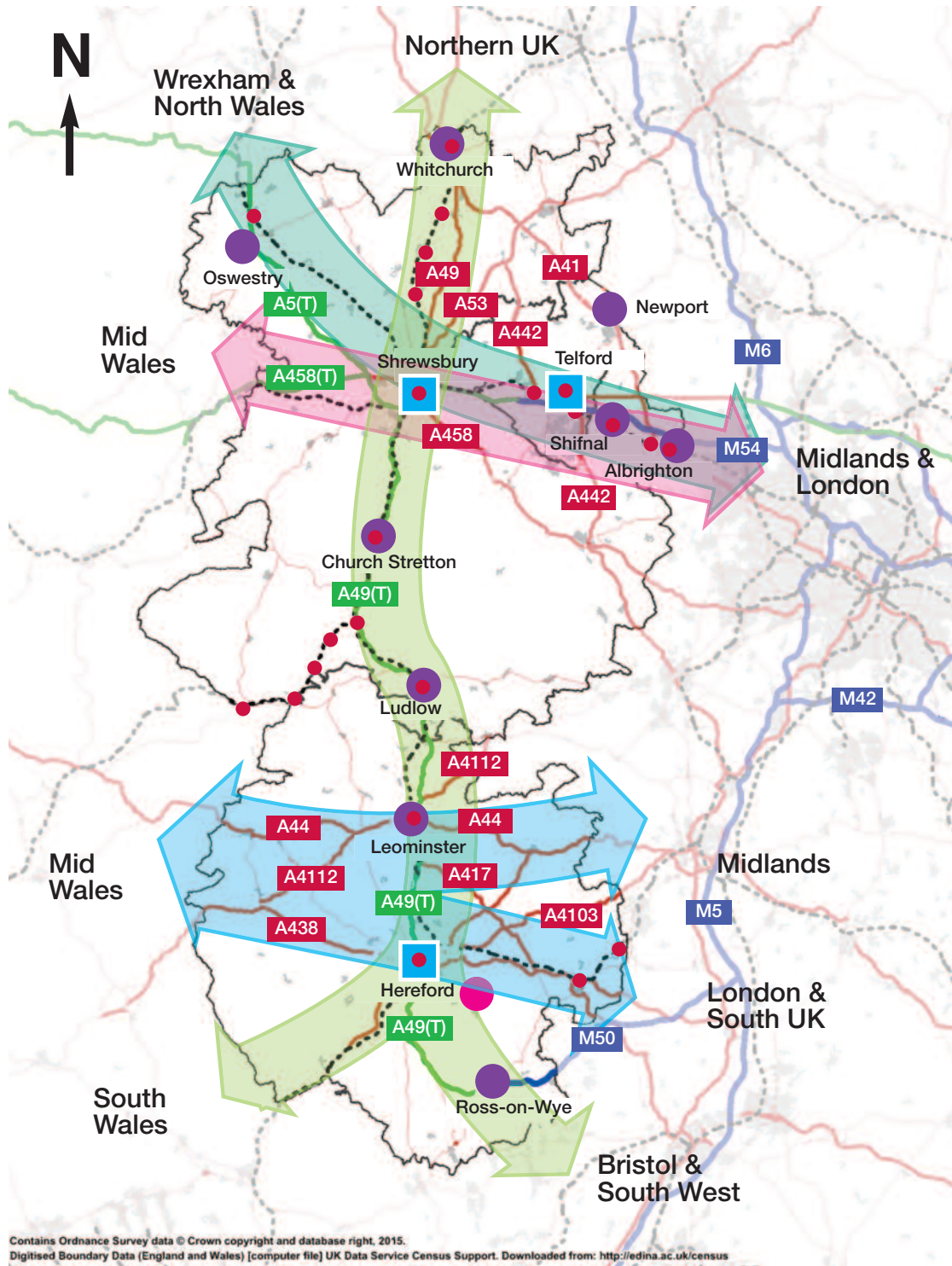
The lack of frequent direct rail links to London and the South East has been a major hindrance to business and to the visitor economy. There is untapped potential for moving long distance rail freight both for bulk goods and inter-modal.

Collaborate and Connect - A Compelling Investment Proposition

The report Promoting Growth in All Regions (Organisation for Economic Co-operation and Development) demonstrates that investing in “under-developed” (often rural) areas makes good economic sense, if there are **co-ordinated policy packages** – of which infrastructure is an important component. The transport needs of the priority economic sectors of The Marches are paramount – with particular priority given to freight transport as the “glue” that holds the economy together.

The Marches has strong economic and transport connections with other LEP areas (especially the West Midlands, South West and North West) and Wales. In order to grow, businesses in priority economic sectors need to be able to **collaborate** with supply chains / research establishments and **connect** with their customers. Excellent transport infrastructure is essential for collaboration and connection. Investment in The Marches transport network will therefore strengthen connections and enable the regional economies to collaborate to contribute to the success of UK PLC.

The focus of investment will be in **Strategic Transport Corridors** (STCs), which connect the main settlements of The Marches with adjacent regions, the rest of the UK and the key international gateways (ports and airports).



- | | | | | | | | |
|------------------------------------|--------------------------|--|------------|-----------------------------------|-----------------|--|-------------|
| | Key Urban Centre | | Trunk Road | | Railway Station | | Urban Area |
| | Opportunity Town | | A Road | | Railway Line | | The Marches |
| | Hereford Enterprise Zone | | Motorway | | | | |
| Primary Transport Corridors | | | | | | | |
| | | | | North South Spine (NSS) | | | |
| | | | | Wales & Marches to Midlands (WMM) | | | |
| | | | | East West Central (EWC) | | | |
| | | | | North West Frontier (NWF) | | | |

STC Name	Primary Transport Network Components
North – South Spine	<ul style="list-style-type: none"> • A49 Whitchurch – Shrewsbury – Hereford – Ross / A465 Hereford – Welsh Valleys • Marches Rail Line (Cardiff – Hereford – Shrewsbury – Manchester). • Connections to North West, South West and South Wales.
East – West Central	<ul style="list-style-type: none"> • M6 / M54 / A5 / A458: Birmingham – Wolverhampton – Telford – Shrewsbury – Mid Wales. • Birmingham / Wolverhampton – Shrewsbury Rail Line. • Connections to mid-Wales and to West Midlands and onwards to the rest of England.
North West Frontier	<ul style="list-style-type: none"> • A5 / A483: Shrewsbury – Oswestry – Wrexham. • Shrewsbury to Wrexham Rail Line. • Connections to North West, North Wales and Ireland.
Wales and Marches to Midlands	<ul style="list-style-type: none"> • A4103 / A4440 / M5: Hereford – Worcester – Birmingham and A44 / A4440 / M5 Leominster – Bromyard – Worcester – Birmingham. • Hereford to Birmingham Railway Line (via Worcester, Droitwich and Bromsgrove). • Connections to West Midlands, North West and South West.

Assessment of problems, objectives and economic functions enables STCs to be identified and prioritised, where:

- Transport demand is greatest;
- The evidence base for the problems is particularly strong;
- Connectivity with adjacent regions is most important; and
- Significant wider economic benefits are most likely to be delivered.

The **North – South Spine** and **East – West Central Corridors** are jointly likely to be the two highest priorities as they:

- Have high levels of travel demand - especially within and around the three urban centres, between Shrewsbury, Telford and the West Midlands, and between North and South Wales;

- Exhibit the most significant problems and traffic congestion e.g. Hereford, which will be exacerbated by further development;
- Connect with the most important and populous adjacent economic regions (South Wales, West Midlands and North West England); and
- Deliver greater economic integration within The Marches – by connecting the three urban centres, enabling housing development and in priority sector job creation.

The other two corridors still play a very important role in terms of connectivity to settlements in adjacent regions as well as for local movements.

The **North West Frontier** corridor (an extension of the East – West Corridor) is the next highest priority because of its important strategic role as a freight route – in particular the Trans European Transport (TEN-T) network to Holyhead and the Republic of Ireland. There are also important connections to settlements such as Wrexham and Chester. For local journeys, the Shrewsbury to Oswestry axis is becoming more important as both towns expand. Traffic flows even on the inter-urban sections of route are high.



The Wales and **Marches to Midlands** corridor provides an important link between the historically close areas of Herefordshire and Worcestershire, and then onward to the West Midlands conurbation. The rail corridor is of particular importance because it also provides a link to London and the Thames Valley. The A44 and A4103 (from Leominster and Hereford respectively) are important links to the M5 motorway at Worcester.



The detailed strategic roles of each STC and the **Investment Projects** needed to deliver economic growth are set out in Appendices B to E.



Investment Project Pipeline

Priority investment projects in each of the STCs are those which, on the basis of existing evidence, are likely to provide good value for money and be deliverable within realistic timescales. Some projects have been subject to more technical work than others, while others require further development.

The proposed investment projects are a flexible pipeline of opportunities which will continue to be developed and potentially re-prioritised in response to changes in circumstances. For each corridor the pipeline is therefore split into Category 1 (projects for which there is an existing evidence base) and Category 2 (projects requiring further development).

STC	Category 1 (Existing Evidence Base)	Category 2 (Projects for Further Development)
North – South Spine	<ul style="list-style-type: none"> • Newport to Shrewsbury Re-signalling • A49 / A5 Dobbies Island Junction Improvement • Hereford Relief Road 	<ul style="list-style-type: none"> • A49 Road Corridor Strategy • Marches Railway Line Service Enhancements • Maindee West Grade Separated Junction, Newport • Shrewsbury North West Relief Road
East – West Central	<ul style="list-style-type: none"> • Shrewsbury to Birmingham Railway Line Frequency Enhancements and Train Lengthening • M54 / M6 / M6 Toll Link Road 	<ul style="list-style-type: none"> • Shrewsbury to Wolverhampton Electrification and Line Speed Improvements
North West Frontier	<ul style="list-style-type: none"> • A5 / A483 Corridor Improvements 	<ul style="list-style-type: none"> • Additional Passenger Rail Service per hour between Wrexham and Chester
Wales and Marches to Midlands	<ul style="list-style-type: none"> • Shelwick Junction to Great Malvern Re-doubling • Hereford Relief Road • Leominster Southern Link Road 	<ul style="list-style-type: none"> • Worcester Southern Link Road Improvement Scheme

As an area that is strategically located, it will be important for The Marches to work with neighbouring regions, including Wales, to develop a compelling strategic and economic case for delivery of the investment projects in each corridor. This strategy document aims to start this process and outline a 'road map' for further work. It should be noted that other

schemes more aligned to the local highway networks have not been included in these lists as it would be expected that these would be delivered through the LEP's Growth Deal process; such schemes could include Craven Arms Business Park Expansion, redevelopment of the Three Elms Trading Estate and Newport Innovation Package.

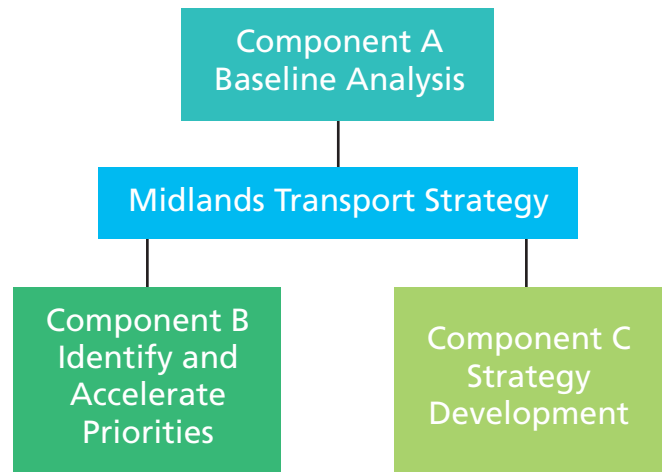
Road Map for Further Work

1. Policy and Investment Opportunities

A number of the investment projects will need to be funded and delivered by Network Rail and Highways England, as part of long term investment in strategic transport networks. Others will be reliant on the local highway authorities obtaining funding from central government or through third party investment. Whilst short term funding is mostly committed to existing projects through the Strategic Economic Plan (SEP), there are longer term opportunities through:

- **National Infrastructure Commission** – whose strategic objective is to provide an assessment of the UK’s infrastructure needs every 5 years, looking 30 years ahead and examining the evidence across all key sectors of economic infrastructure – including energy, roads, railways, ports and airports, water supply, waste, flood defences, digital and broadband.
- **Transport Development Fund** – £300 million over the next 5 years for the next generation of transformative transport infrastructure projects.
- **Highways England Road Investment Strategy (RIS)** and Strategic Economic Growth Plan (SEGP) – Connectivity challenges identified for development during the period 2015 – 2020, for delivery between 2020 and 2025 and up to 2040
- **Network Rail Long Term Planning Process (LTPP)** – Route Studies which set out priorities for Control Period 6 (2019-24).

- **Refranchising** – The franchises which cover the routes in The Marches are all up for renewal in the next three years as follows:
 - **London Midland** – March 2016.
 - **Wales and Borders** – October 2018.
 - **Great Western** – April 2019.
- **Midlands Connect** – Brings together a partnership of LEPs and Local Authorities across the Midlands (working with Network Rail and Highways England) to develop the strongest possible case for strategic transport investment in the Midlands – by connecting towns and cities in the Midlands, to each other, to international gateways and to key cities and gateways outside the Midlands, to realise the region’s full economic growth potential. Department for Transport funding has been secured to develop a Midlands Transport Strategy by March 2017:



It will be essential for The Marches to actively participate in the strategy development work and to make the case for the vital economic role of the areas. The importance of the rural hinterland and the transport needs of the priority economic sectors must be fully articulated alongside the understandable focus on large urban area challenges.

2. Building the Evidence Base

Robust business cases for investment projects in The Marches will require developing a detailed evidence base to set out current / future travel patterns that detail origin – destination movements for a range of journey purposes; by individual mode (road and rail); and for both passenger and freight movements.

Existing information at The Marches area level is based on the 2011 Census Journey to Work data which shows that:

- There is a high degree of relatively short distance commuting travel within the three local authority areas;
- Shropshire and Telford & Wrekin have the highest level of cross local authority travel within The Marches;
- Herefordshire has higher levels of commuting from / to Worcestershire compared with the other two local authorities in The Marches; and
- There are a wide variety of origins / destinations between The Marches and adjacent regions / local authorities – with the most significant being:
 - Mid and North Wales;
 - North West England;
 - Wolverhampton; and
 - Staffordshire / Stoke-on-Trent.

However, there is relatively little origin / destination data for personal business travel and freight traffic across The Marches and particularly along the strategic corridors. The ability to both quantify this level of travel and understand its economic impact will be crucial in determining the potential benefits of infrastructure scheme investments that address issues such as journey speed and reliability.

Analysis of further datasets could provide further supporting evidence for improvements to the corridors identified. Further evidence for analysis could include:

- TrafficMaster journey time and origin-destination data;
- Highways England journey time database;
- Traffic flows and key origin / destination movements from relevant transport models in The Marches;
- Passenger volumes on rail services from the PLANET South model; and
- Data collected for the Midlands transport model, currently being developed by Highways England.

The information and data used in the analyses contained in this report were extracted from a number of sources including:

- Department for Transport Annual Average Daily Traffic (AADT) flow data sourced from: <http://www.dft.gov.uk/traffic-counts/>;
- Census 2011 Travel to Work flows (WF01BEW - Location of usual residence and place of work) sourced from: <http://www.nomisweb.co.uk/>;
- The Marches SEP and related documents;
- Local authority Local Transport Plans and Local Development Frameworks;
- Highways England Route-based Strategies;
- Marches Rail Study;
- Network Rail Long Term Planning Policy; and
- Regional strategies – such as Midlands Connect and Wales National Transport Plan.



3. Strategic Economic Plan Refresh

The current Strategic Economic Plan (SEP) rightly focusses on the shorter term economic and infrastructure priorities as part of The Marches Growth Deal. A refresh of the SEP document should aim to build on the economic and transport evidence base in order to make a strong strategic case for the medium and longer term priorities.

The Midlands Connect work will be commissioning detailed business surveys and it is essential that those respondents located in The Marches are able to articulate and clearly evidence the case for transport infrastructure investment, as part of a wider policy package. The initial analysis undertaken in this document should be supplemented by further technical work in line with the requirements of The Marches LEP Accountability and Assurance Framework.

In some cases, this will entail liaison with Highways England and Network Rail, and it may be that in many cases the necessary information is not currently available. Nevertheless, it will be important to make the project promoters aware of the strong interest that The Marches LEP has in promoting the corridor schemes.

Where the constituent local authorities are scheme promoters, early feasibility and business case work should be commissioned as soon as practicable.

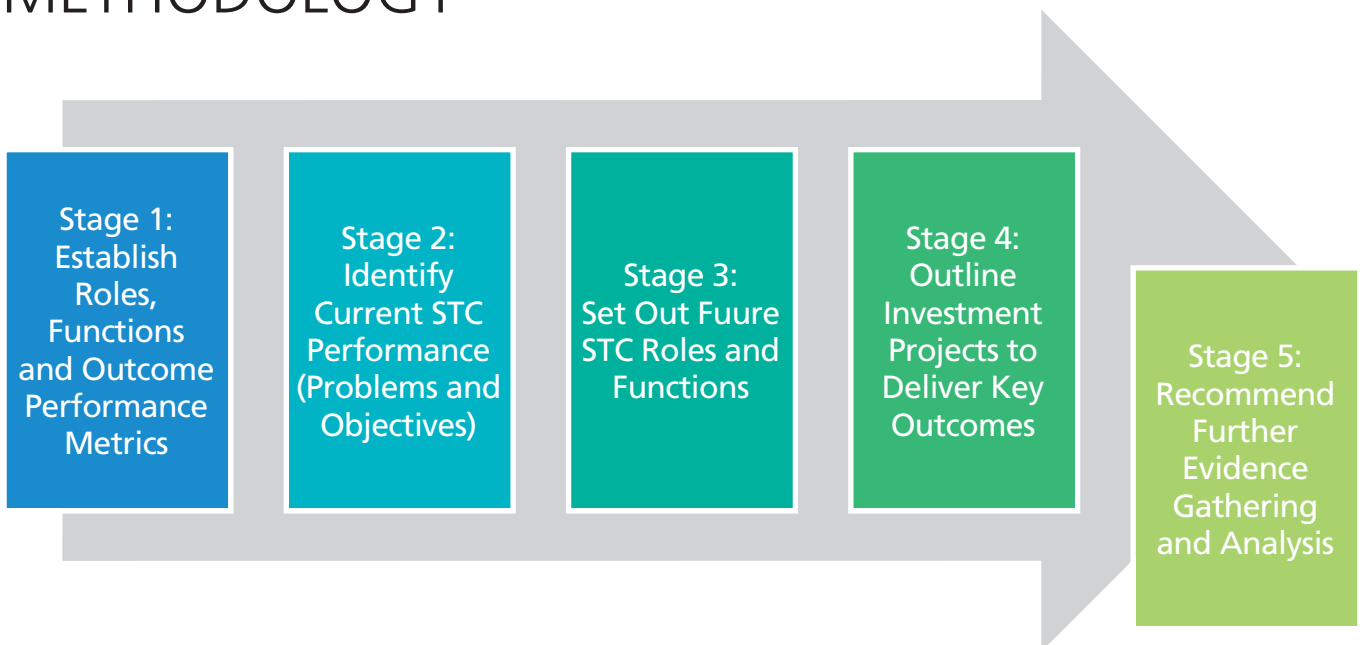
The overall aim should be to set out a summary programme for each scheme with an estimated timescale for the various stages of work – from business case through to completion of works. Links with planned development – through a phasing strategy – may be important for some schemes. Although some scheme timescales may be speculative, it is nevertheless important to provide an initial view as a means of gaining “in principle” commitment to progress technical work at the appropriate time.

Guide to Appendices

- **Appendix A** – Provides an overview of the methodology that has been used within this study to prioritise the corridors;
- **Appendices B to E** – Outline the assessment of problems and objectives; roles and functions; and project pipeline for each Strategic Transport Corridor (STC); and
- **Appendix F** – Contains a summary 'Road Map' for the development of investment projects.

APPENDIX A

CORRIDOR AND PROJECT ASSESSMENT METHODOLOGY



Stage 1 – Establishing Roles, Functions and Outcome Performance Metrics

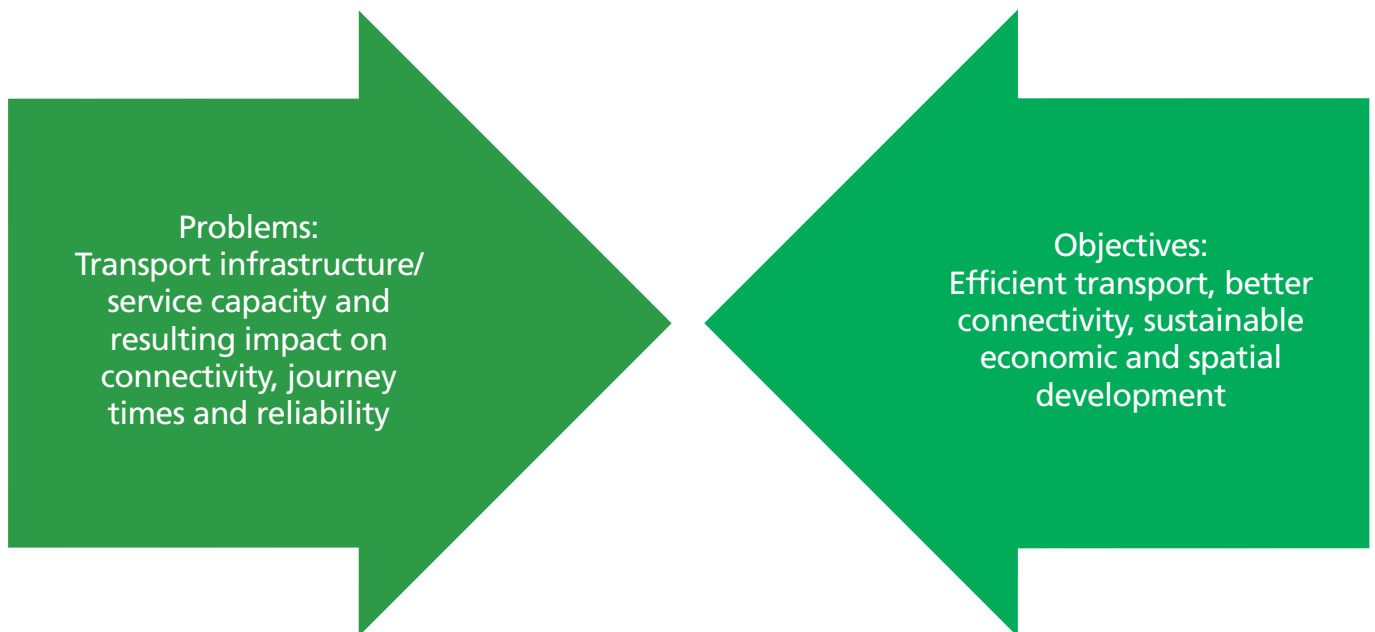
Each corridor has current and future economic, spatial and transport strategic roles that can be developed through co-ordinated infrastructure and wider policy investment. Functions are

specific beneficial outcomes that contribute to the roles. Outcome performance metrics are the means of understanding whether the functions are being met.

Strategic Role	Specific Function	Outcome Performance Metrics
Economic	<ul style="list-style-type: none"> Stronger economic agglomeration 	<ul style="list-style-type: none"> Business access to partners, suppliers and markets Support to priority SEP sectors
	<ul style="list-style-type: none"> Increasing labour market size 	<ul style="list-style-type: none"> Faster journeys to enable extended travel opportunities More public transport (rail and bus) services providing wider range of job opportunities
	<ul style="list-style-type: none"> Journey time savings and improved reliability 	<ul style="list-style-type: none"> Reducing business financial costs Increasing access to markets
	<ul style="list-style-type: none"> Tourism / leisure promotion 	<ul style="list-style-type: none"> Public transport service access to key destinations Reducing journey times from major population centres
Spatial Development	<ul style="list-style-type: none"> Housing growth 	<ul style="list-style-type: none"> Access to large urban extensions
	<ul style="list-style-type: none"> Employment growth 	<ul style="list-style-type: none"> Unlocking new development sites Access to existing employment areas
	<ul style="list-style-type: none"> Retail / urban centres 	<ul style="list-style-type: none"> Unlocking new development sites Access to town city centres
Transport (passenger and freight)	<ul style="list-style-type: none"> Connectivity to West Midlands region 	<ul style="list-style-type: none"> Areas covered by the West Midlands LEPs
	<ul style="list-style-type: none"> Connectivity to other regions 	<ul style="list-style-type: none"> In particular Wales, North West England and South West England, London / South East and East Midlands
	<ul style="list-style-type: none"> Connectivity to international gateways 	<ul style="list-style-type: none"> Links to sea ports Access to airports
	<ul style="list-style-type: none"> Links to High Speed 2 	<ul style="list-style-type: none"> Proposed stations at Birmingham (Curzon Street and Interchange) and Crewe
	<ul style="list-style-type: none"> Network resilience 	<ul style="list-style-type: none"> Provision of alternative routes in the event of travel disruption and maintenance priorities (in response to 2014 government Network Resilience Review)

Stage 2 – Identifying Current STC Performance (Problems and Objectives)

The first aim is to focus on current transport performance of the corridors and to broadly assess the implications of any problems for economic and spatial development in The Marches and adjacent regions. The second aim is to use the assessment of problems to define future objectives for the corridors and investment projects.



The sources of evidence used to identify the problems and objectives include:

- The Marches SEP and related documents;
- Local authority Local Transport Plans and Local Development Frameworks;
- Highways England Route-based Strategies;
- Marches Rail Study;
- Network Rail Long Term Planning Policy; and
- Regional strategies – such as Midlands Connect and Wales National Transport Plan.

Stage 3 – Set Out Future STC Roles and Functions

The future roles and functions of the corridors are based on an analysis of the evidence from the first two stages, but with a particular focus on identifying and testing links between transport corridor investment and delivery of economic / spatial plans. In some cases, the evidence suggests that the STC already performs the role and function well. In others, there is a clear gap between aspiration and reality, with a need for better evidence to justify the assumptions being made.

An important outcome is assessment of the corridors – based on the available evidence as to the scale of contribution to economic and spatial development:

- Within The Marches;
- In adjacent regions; and
- At a national level

Stage 5 – Recommend Further Evidence Gathering and Analysis

As this is a strategic analysis of STCs and investment projects, there will be a need for further evidence gathering and analysis to confirm and strengthen the conclusions in the previous stages of work – in particular with regard to the contribution of projects to strategic economic and spatial outcomes.

Stage 4 – Outline Investment Projects to Deliver Key Outcomes

Investment projects for each corridor have been identified from the SEP, previous technical studies and (where relevant) scheme business case material, in order to:

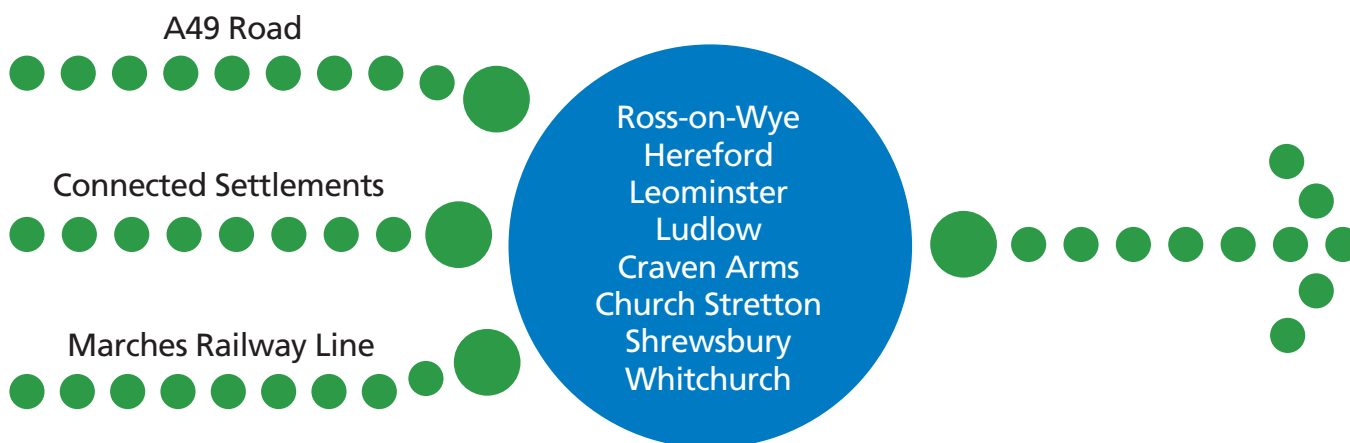
- Address the identified impacts of transport problems / objectives;
- Deliver the key performance outcomes in relation to economic and spatial roles; and
- Demonstrate a strong strategic economic development contribution across regional boundaries and at national level.

The approach to prioritisation is focussed on project-specific evidence of:

- Transport problems and wider opportunities being addressed;
- Value for Money; and
- Deliverability

APPENDIX B CORRIDOR ASSESSMENT

NORTH – SOUTH SPINE



Route	Key Facts and Figures
A49 Road	<ul style="list-style-type: none"> • Ross-on-Wye to Shrewsbury section managed by Highways England: As part of the Strategic Road Network (SRN) • Shrewsbury to Whitchurch section managed by Shropshire Council: As part of the Primary Route Network (PRN). <ul style="list-style-type: none"> • Route length of 90 miles: Mainly single carriageway, except for short sections within Hereford, at Dinmore Hill and around Shrewsbury (part of the A5). <ul style="list-style-type: none"> • Two Way Annual Average Daily Flows (2010-14 average): Traffic flows vary significantly between urban and rural locations: <ul style="list-style-type: none"> • Ross-on-Wye to Hereford: 8,878 (10.3% HGV) • Hereford Inner Relief Road (Greyfriars Bridge): 45,032 (3.5% HGV) • North of Hereford city centre: 23,970 (3.7% HGV) • Leominster Bypass: 12,067 (9.1% HGV) • South of Ludlow: 10,619 (8.8% HGV) • South of Shrewsbury: 12,109 (9.2% HGV) • Shrewsbury Bypass: 24,916 (8.8% HGV) • Shrewsbury to Whitchurch: 6,175 (10.3% HGV) <p>The busiest sections of the A49 are in the Hereford urban area and on the Shrewsbury bypass – where strategic and local traffic converges. The rural sections of the A49 generally have traffic volumes that are around 50% lower.</p> <p>Across the whole section, there has been small overall growth in traffic levels between 2010 and 2014 at 1.5%, with a small reduction (2.3%) in HGV volumes.</p>

Route	Key Facts and Figures
Marches Railway Line	<ul style="list-style-type: none"> <li data-bbox="481 297 1461 533">• Managed by Network Rail: Diesel traction. Broadly hourly long distance passenger services (West Wales / Cardiff to Manchester / Holyhead) provided by Arriva Trains Wales. Daily capacity of 9,800 seats between Hereford and Shrewsbury. Freight services provided by various operators, including DB Schenker which has a base at Hereford station. <li data-bbox="481 551 1461 824">• Route length of 84 miles: From Newport to Crewe, double track for entire length with operating speeds varying between 55mph and 90mph. Current estimated one-way theoretical capacity for each block signalled section ranges from 6 to 12 trains per hour (tph), with the number of services restricted by the lowest capacity (6tph) sections. Current maximum line usage (on the section between Craven Arms and Shrewsbury) is 4tph. <li data-bbox="481 842 1461 920">• Passenger stations at: Hereford, Leominster, Ludlow, Craven Arms, Church Stretton, Shrewsbury, Yorton, Wem, Prees and Whitchurch. <li data-bbox="481 938 1461 1290">• Freight facilities at: Moreton-on-Lugg (stone), Bayston Hill (aggregate). With a W8 loading gauge as far as Shrewsbury, the line offers an alternative option to routing traffic to the north via the busier, steeply-graded Lickey route through Bromsgrove and Birmingham. Between 10-13 freight services operate each weekday on a frequency of one freight train approximately every 1-2 hours. The route is used principally for the movement of coal (Portbury Coal Terminal to Rugeley Power Station), steel (Margam) and automotive (Portbury Automotive Terminal).

Problems and Objectives

The main transport infrastructure and service problems are:

Route	Source of Evidence and Identified Problems
A49 Road	<p>Highways England Route-based Strategy (2015): For the A49 northbound in Hereford the on-time reliability measure is 60%, the 4th worst on the Midlands to Wales route and the 77th worst on the whole SRN. The southbound figure of 60.5% is the 6th worst on the Midlands to Wales route and the 85th worst on the whole SRN. Average speeds are less than 20mph on the A49 Hereford Bridge (which has a 30mph limit). North bound peak hour speeds on the A49 Ross road are 7 mph and forecast to fall to 5mph in the next few years. Junction capacity at A40 / A49 Wilton roundabout near Ross-on-Wye results in poor reliability performance on the A40 and A49 links with the A4137.</p> <p>There is a lack of resilience on the A49 in Hereford as a result of only one major bridge crossing of the River Wye in the city, which has the effect of channelling all through traffic to one point.</p> <p>Hereford Congestion Study Journey Time Surveys (2012): Northbound journey times on A49 through Hereford vary between 12 and 35 minutes, which is a clear reflection of unreliable journey times</p> <p>Transport SWOT Analysis for SEP: There are long distances and relatively slow journey times between the urban centres of Hereford – Shrewsbury and Hereford – Telford.</p>

Route	Source of Evidence and Identified Problems
<p>Marches Railway Line</p>	<p>Network Rail Draft Wales Route Study (2015): Growth in passenger demand for the line between Cardiff and Manchester is estimated to be 34% by 2023 and 141% by 2043. There is forecast over-capacity (by 2023) on southbound peak (before 10am) services and northbound inter-peak (10am to 4pm) services between Hereford, Leominster and Ludlow. Much of this is due to large numbers of students.</p> <p>The Conditional Output aims to provide sufficient all day capacity for Marches line passengers taking account of anticipated growth to 2023 and 2043. The service operating on the corridor between Cardiff and Manchester via The Marches is an hourly service with 15 southbound and 16 northbound trains each day. The same service level is assumed to operate on this corridor in 2023 and 2043.</p> <p>The route serves passengers for the long distance market between South Wales and Manchester and local markets between stations on The Marches line. The service is also used by commuting passengers during the morning and evening peak into economic centres, such as Cardiff and Manchester as well as Hereford and Shrewsbury.</p> <p>The freight service output is to provide network capacity and capability for the provision of one hourly off peak path between Newport and Shrewsbury to take account of freight growth and potential re-routing of freight traffic from other parts of the network.</p> <p>The Marches Rail Study (2014): An assessment of demand from stations on The Marches line into Hereford shows that considerable growth is forecast, ranging from 41% from Church Stretton to 64% from Leominster.</p> <p>Even though there is a theoretical spare capacity of 3tph, in practical terms this could equate to a single additional freight service (per direction) and one or two limited stop passenger services.</p> <p>Based on anecdotal evidence regarding overcrowding of peak time services, particularly in the Hereford and Shrewsbury areas, extra capacity will be needed in the future.</p>

The STC objectives are:

- Addressing the issue of traffic congestion in Hereford, thereby providing transport network capacity to enable housing and employment development in the city.
- Providing efficient access to and from the Sustainable Urban Extensions in Shrewsbury.
- Delivering efficient and reliable journey times along the entire length of the corridor, to ensure that road and rail perform both local and long distance strategic functions for key economically important journey purposes.
- Enabling greater economic integration within The Marches – and with adjacent regions – through support to the priority sectors.

Future STC Roles and Functions

Specific Functions	Assessment of Route Function
Economic agglomeration	<p>A49 Road: Faster and more reliable access to key high density employment sites in Hereford (7,850 jobs) is needed to realise the potential for developing advanced manufacturing and defence industry clusters.</p> <p>A49 Road and Marches Railway Line: Access to existing urban centres of Hereford and Shrewsbury is very good by rail, but less effective by road because of traffic congestion. In conjunction with the East-West corridor, improved road and rail linkages between the three urban centres and Opportunity Towns will strengthen The Marches as a single economic entity.</p>
Tourism / leisure promotion	<p>Marches Railway Line: Higher train service frequencies, coupled with improved bus links / cycle routes to stations, would enable people who live away from the line to benefit connections to the urban centres for employment and education opportunities.</p>
Reducing business costs / increasing access to markets	<p>A49 Road: A less congested, more efficient / reliable strategic route will be essential for the reduction of business costs and to attract new business (especially in the Defence sector) to Hereford Enterprise Zone and other employment areas (existing and new) including Craven Arms. The route runs through large areas of agricultural land and is therefore important both for farmers, food / drink processors (in particular Cargill and Heineken in Hereford) and agri-tech companies (McConnel in Ludlow).</p>
Tourism / leisure promotion	<p>A49 Road and Marches Railway Line: There is already good access to the Shropshire Hills Area of Outstanding Natural Beauty (AONB) at Craven Arms / Church Stretton, by road only to Wye Valley AONB north and south of Ross-on-Wye and to the Meres and Mosses Landscape Partnership scheme (at Whitchurch). Access to existing tourism / leisure opportunities in Hereford and Shrewsbury centres is very good by rail, but less effective by road because of traffic congestion.</p>

Specific Functions	Assessment of Route Function
Connectivity to West Midlands	<p>A49 Road: No direct route but east-west connections at Ross-on-Wye (M50 / M5), Hereford (A4103 / A4440 / M5), Leominster (A44 / A4440 / M5), Brimfield (A456), Ludlow (A4117 / A456) and Shrewsbury (A5 / M54 and A458).</p> <p>Marches Railway Line: No direct route but east-west connections at Hereford (via Worcester Foregate Street / Bromsgrove) and Shrewsbury (via Telford Central).</p>
Connectivity to other regions	<p>A49 Road: Southern end of the route (at Ross-on-Wye) provides connections to South Wales (via A40 / A449 and A465) and South West England (M50 / A417). At Shrewsbury, the intersection with the East-West Corridor (A5) provides connections to North Wales. North of Whitchurch, the route eventually connects with the M56 to provide access to North West England. The route connects two Trans European Network routes – the M50 in the south and the M54 in the north – and so will provide an alternative to the increasingly congested M5/M6 corridor.</p> <p>Marches Railway Line: Serves passengers for the long distance market between South Wales and Manchester and local markets between stations on The Marches line. The service is also used by commuting passengers during the morning and evening peak into economic centres, such as Cardiff and Manchester as well as Hereford and Shrewsbury. South of Hereford, services provide connections to South and West Wales (and the major cities of Newport, Cardiff and Swansea). At Craven Arms, there are connections to Mid and West Wales via Heart of Wales Line. West of Shrewsbury, direct services run to Aberystwyth and Pwllheli (Mid Wales), Chester (North West England) and North Wales (via Wrexham and North Wales Coast to Holyhead). North of Shrewsbury, direct services run to North West England (via Crewe and Manchester).</p>

Specific Functions	Assessment of Route Function
Connectivity to international gateways	<p>A49 Road: Dual carriageway link via A40 and A449 (to M4 corridor) to Cardiff International Airport and Welsh sea ports of Newport, Cardiff, Swansea, Pembroke Dock and Fishguard. Major UK airports are accessible via the motorway network (starting with M50 and M54), but journey times from Hereford are longer because of lack of dual carriageway connections.</p> <p>Marches Railway Line: There are no direct services to major airports but access is feasible to London Heathrow (Changing at Newport and / or Reading), Manchester (changing at Wilmslow), Birmingham (changing at Shrewsbury or Birmingham New Street) and Cardiff (changing at Cardiff Central). There are direct services to Holyhead (for passenger services to Ireland), and (less frequently) Pembroke Dock and Fishguard (usually requiring a change of trains).</p>
Links to High Speed 2	<p>Marches Railway Line: The most direct connection from Shrewsbury would be via Birmingham Interchange and Crewe (when a hub station is constructed there). From both Hereford and Shrewsbury, access would also be via Birmingham Curzon Street for London-bound services.</p>
Network resilience	<p>A49 Road: The single major bridge crossing of the River Wye in Hereford is viewed as major resilience issue because there is no credible alternative for the volume of traffic. For traffic within The Marches and especially from Wales, the road provides a strategic north-south alternative route to the parallel M5 / M6 some 30 miles to the east.</p> <p>Marches Railway Line: This is the only rail route that links South and North Wales, which is a potential resilience issue in the event of service disruption. Diversions are available via the Hereford to Birmingham rail line (part of the Midlands to Marches corridor).</p>
Housing growth	<p>A49 Road: Provision of infrastructure is necessary to enable large urban extension housing sites in Hereford (6,500 units across the city), Leominster (2,100 units – with 1,500 in the southern Sustainable Urban Extension) and Shrewsbury (1,650 units in the two Sustainable Urban Extensions and 6,500 in total).</p>

Specific Functions	Assessment of Route Function
Employment growth	<p>A49 Road: Direct access to Hereford Enterprise Zone (4,200 jobs), a new employment site at Hereford Three Elms (minimum 10 hectares), Craven Arms (600 jobs) and Shrewsbury employment sites adjacent to the bypass (2,260 jobs).</p> <p>Marches Railway Line: Direct access to employment development in Hereford city centre (additional 410 jobs).</p>
Other development opportunities	<p>Marches Railway Line: Direct access to the expanding retail centres in Hereford and Shrewsbury.</p>

Investment Project Pipeline

The following table sets out the pipeline investment projects for the North – South Corridor.

Project	Summary Details
Category 1: Newport to Shrewsbury Re-signalling	<p>Rationale: Re-signalling, track layout works will allow 100mph line speed running by reducing the headway between services at key locations on the route such as Shrewsbury and Hereford.</p> <p>Transport connectivity benefits:</p> <ul style="list-style-type: none"> (1) Enhances rail freight capacity and provides an alternative to road, by enabling additional paths to be timetabled around passenger services. (2) Enables enhanced service frequencies – for example hourly services from Cardiff to Manchester and North Wales – which could be delivered through a future project. (3) Enhances links by reducing journey times between The Marches, Wales and North West England. <p>Wider economic benefits:</p> <ul style="list-style-type: none"> (1) Promotes higher capacity and more cost effective freight services for transport of goods. (2) Widens labour markets by reducing commuting journey times between the key towns. (3) Promotes higher volumes of inbound tourism to destinations along the line. <p>Estimated timescale: Programmed for delivery in 2017.</p> <p>Current cost estimate: To be confirmed.</p>

Project	Summary Details
Category 1: A49 / A5 Dobbies Island Junction Improvement	<p>Rationale: Junction capacity improvement, including lane widening on the two A5 arms.</p> <p>Transport connectivity benefits: (1) Reduces congestion at a key intersection of the A49 / A5, thereby delivering faster and more reliable journey times for freight traffic in particular on two priority corridors. (2) Assists with promoting A49 as alternative route to M5 / M6, thereby promoting network resilience.</p> <p>Wider economic benefits: (1) Unlocks 2,260 jobs and 1,650 new homes in the Shrewsbury Sustainable Urban Extensions. (2) Reduces costs of transport to businesses through reducing delays at a critical node in the Strategic Road Network (SRN).</p> <p>Estimated timescale: Opening by 2019 if funding can be identified.</p> <p>Current cost estimate: £5.5 million.</p> <p>Next steps: Identification of funding package and Outline Business Case (OBC).</p>



Project	Summary Details
Category 1: Hereford Relief Road	<p>Rationale and key outcomes: Western bypass of the Hereford urban area to remove through traffic from the A49 in the city centre and enable full build out of the Hereford Enterprise Zone.</p> <p>Transport connectivity benefits: (1) Reduces congestion / delays that are currently experienced and which are forecast to get worse in the future. (2) Provides an additional major road crossing of the River Wye to improve resilience in the event of travel disruption. (3) Provides a bypass of the city for long distance strategic traffic movements, in particular freight. (4) Enables local movements between the south and north of Hereford to avoid the congested city centre.</p> <p>Wider Economic Benefits: (1) Significantly improves access to Hereford Enterprise Zone and the other current / future employment areas (the rest of The Marches, North West England and North Wales), A465 (South Wales), A438 (Mid Wales) and A4103 (to / from West Midlands). (2) Enables further housing development at three urban extension sites and at smaller locations in the city (total 6,500 units).</p> <p>Current cost estimate: £160 million.</p> <p>Estimated timescale: Fully open by 2027, but with the potential for earlier phasing.</p> <p>Next steps: Development of Outline Business Case (OBC) and progression of funding options.</p>

Project	Summary Details
<p>Category 2: Shrewsbury North West Relief Road</p>	<p>Rationale and key outcomes: North western bypass of Shrewsbury from A5 to the A49 at Battlefield.</p> <p>Transport connectivity benefits: (1) Provide the missing river crossing between the western and northern parts of the town, significantly reducing traffic unnecessarily crossing through the town centre and congestion on its western and northern approaches. (2) Journey times between the west and north of Shrewsbury are predicted to be cut by two thirds (from 19.1 minutes to 6.6 minutes). (3) Completes the ring road around Shrewsbury and provides relief to key junctions – including A5 / A49 Dobbies Island.</p> <p>Wider economic benefits: (1) Provides access to the Shrewsbury West Sustainable Urban Extension (SUE):</p> <ul style="list-style-type: none"> • Approximately 28 hectares of housing land for circa 800 dwellings, employment land plus a local centre and strategic green space. • A potential long term direction for growth of the town. <p>(2) Further regeneration of Shrewsbury town centre as a result of removing through traffic.</p> <p>Current cost estimate: Approximately £100 million.</p> <p>Estimated timescale: Dependent on securing an appropriate funding package and obtaining necessary powers to construct the road.</p> <p>Next steps: The Oxon Link Road SEP scheme will provide an incremental step towards the long term provision of the Shrewsbury North West Relief Road. An Outline Business Case will need to make the case for further extension towards the north of the town, through updating the previous appraisal work.</p>

Project	Summary Details
Category 2: A49 Road Corridor Strategy	<p>Rationale and key outcomes: Integrated package of junction improvements and localised link widening enhancements primarily through provision of slow vehicle passing places / overtaking lanes.</p> <p>Transport connectivity benefits: (1) Addresses localised congestion issues at junctions in or near the main settlements. (2) Reduces delays and improves journey time by increasing opportunities to overtake slow moving vehicles.</p> <p>Wider economic benefits: (1) Reduces costs of transport to freight operators and their business customers. (2) Improves access to key settlements for a variety of economically important purposes (such as shopping / leisure / tourism).</p> <p>Current cost estimate: No firm scheme proposals have been identified but likely to be a package of smaller scale measures that may cost a few million pounds each.</p> <p>Estimated timescale: Potential delivery within next 5-7 years depending on scheme identification and funding opportunities.</p> <p>Next steps: Initial corridor strategy / feasibility study and Strategic Outline Business Case (SOBC).</p>

Project	Summary Details
<p>Category 2: Marches Railway Line Service Enhancements</p>	<p>Rationale and key outcomes: Train lengthening on selected Marches Line services between Cardiff and Manchester. Frequency enhancements based on a mix of longer distance and local services.</p> <p>Transport connectivity benefits: (1) Provision of sufficient all day capacity taking account of anticipated growth to 2023 and 2043. (2) Potential for new, shorter distance services to be operated between Hereford and Shrewsbury catering for local trips and reduce overcrowding on longer distance services. (3) Longer distance services could operate semi-fast giving journey time benefits for long distance passengers. (4) The Wales Transport Strategy suggests the need for service frequency enhancement on Marches line: half hourly to Shrewsbury, and hourly Cardiff to Bangor / Holyhead.</p> <p>Wider economic benefits: (1) Provision of additional capacity for rail freight services and the potential reduction of costs through economies of scale. (2) Potential widening of labour markets through faster / more frequent services for commuting. (3) Promotion of sustainable tourism to destinations served by the railway line.</p> <p>Current cost estimate: None available</p> <p>Estimated Timescale: 2019-23 for train lengthening. No timescale for any service frequency enhancements.</p> <p>Next steps: A study is required to assess operational feasibility and passenger demand business case for service frequency enhancements.</p>

Project	Summary Details
<p>Category 2: Maindee West Grade Separated Junction, Newport</p>	<p>Rationale and key outcomes: Maindee West Junction, where The Marches Line crosses on to the Great Western main line just to the east of Newport station, is a key pinch point for passenger and freight services. The project would create a single track grade separated bi-directional line across the South Wales Main Line.</p> <p>Transport connectivity benefits: (1) Increases the number of passenger and freight services that can access The Marches railway line from the Great Western main line (avoiding the need for an additional platform at Newport station).</p> <p>Wider economic benefits: (1) Promotion of closer economic relationships between the cities of South Wales and The Marches (for example through commuting, leisure and tourism). (2) Further enhancement of freight capacity / reliability and reduction in costs to customers.</p> <p>Current cost estimate: Not currently available.</p> <p>Estimated timescale: Likely to be needed by 2043.</p>

APPENDIX C CORRIDOR ASSESSMENT

EAST – WEST CENTRAL



Route	Key Facts and Figures
A5 / M54 / M6 Roads	<p>Managed by Highways England: As part of the Strategic Road Network (SRN).</p> <p>Route length of 43 miles (Shrewsbury A5 / A49 junction to Gravelly Hill Interchange): Dual carriageway (A5), dual lane motorway (M54) and three lane motorway (M6). There is no direct motorway access on to the M6 Toll Road or M6 North.</p> <p>Two Way Annual Average Daily Flows (2010-14 average): Very high levels of traffic on the M54 east of Junction 6:</p> <p>A5 east of Shrewsbury to M54: 34,417 (8.0% HGV)</p> <p>M54 Junctions 7 to 6: 20,514 (11.7% HGV)</p> <p>M54 Junctions 6 to 5: 50,313 (6.6% HGV)</p> <p>M54 Junctions 5 to 4: 49,027 (11.5% HGV)</p> <p>M54 Junctions 4 to 3: 49,339 (9.7% HGV)</p> <p>M54 Junctions 3 to 2: 48,656 (11.0% HGV)</p> <p>M54 Junctions 2 to 1: 54,996 (11.1% HGV)</p> <p>M6 Junctions 10a to 10: 122,906 (16.2% HGV)</p> <p>Over the whole section, there has been significant growth in traffic levels between 2010 and 2014 at 22.4%, with a corresponding increase (25.8%) in HGV volumes.</p>

Route	Key Facts and Figures
Shrewsbury to Birmingham Railway Line	<p>Managed by Network Rail: Diesel traction, although the section from Wolverhampton to Birmingham is electrified. Broadly 2tph (not on a regular headway) provided by a combination of London Midland (stopping service) and Arriva Trains Wales (semi-fast). Daily capacity of 7,280 seats between Shrewsbury and Birmingham. Freight services provided by various operators. Three trains per day provided by Virgin Trains starting in Shrewsbury and stopping at Wellington, Telford, Wolverhampton, Birmingham and onto London.</p> <p>Route length of 42 miles: Double track throughout. Operating speed is generally 70mph apart from a short 50mph section through Wellington and some 60mph limits between Wolverhampton and Smethwick Galton Bridge. There is an ongoing study to determine the capacity enhancements required to increase much of the line to 90mph running so to increase capacity, reduce journey times and improve operational resilience and flexibility. The route has a relatively high theoretical capacity (15-20tph between Wolverhampton and Birmingham), with the most restricted section (between Wolverhampton and Shrewsbury) being 10tph (compared with actual usage of 2-3tph). Between Wolverhampton and Birmingham there appear to be issues over spare peak hour paths. Loading gauge is W6 between Oakengates and Wolverhampton and W8 for the remaining sections.</p> <p>Passenger stations at: Shrewsbury, Wellington, Oakengates, Telford Central, Shifnal, Cosford, Albrighton, Bilbrook, Codsall, Wolverhampton, Sandwell & Dudley, Smethwick Galton Bridge and Birmingham New Street.</p> <p>Freight facilities at: Telford International Railfreight Terminal (Donnington) adjacent to MOD Logistics site and freight-only line to Ironbridge Power Station (due to close in late 2015). In 2014 there were 3 freight trains run each working day between Shrewsbury and Wolverhampton, all of which carried coal. Between Wolverhampton and Birmingham typically 1-2 freight services were operating on the line each working day. All the freight services observed operating were carrying steel and travelling either to or from Wolverhampton Steel Terminal.</p>

Problems and Objectives

The main transport infrastructure and service problems are:

Route	Source of Evidence and Identified Problems
A5 / M54 / M6 Roads	<p>Highways England Route-based Strategy (2015): The highest traffic flows are on the section of the M54 (Junctions 2 to 1) nearest to the M6. The only M54 link that features in the top ten least reliable journey times is the westbound carriageway from Junctions 6 to 7 (63.4% on-time reliability). The M54 between Junctions 1 and 2 to the north of Wolverhampton experiences congestion and has junction capacity issues at Junction 1. There is no motorway to motorway link from the M54 northbound to M6 and M6 toll. Instead, road users use Junction 1 to the A449 or A460 for accessing the M6 northbound and M6 Toll. This causes junction capacity issues at this location and subsequent congestion on the M54. High levels of congestion also along A460 connecting M54 and M6 North/Toll. Very high traffic flows and levels of congestion are experienced on the M5 and M6 through the Black Country (Junction 2 of the M5 through to Junction 10a of the M6), particularly at M6 Junction 10 and M5 Junctions 1 and 2.</p> <p>Midlands Connect Corridors and Hubs Report (2015): The M6 Toll is considered to be under-used and hence does not alleviate M6 congestion to the extent that it may otherwise do. A number of consultees for the business research identified that the high cost of using the route results in limited use by the logistics and manufacturing sector as part of their distribution routes.</p>

Route	Source of Evidence and Identified Problems
Shrewsbury to Birmingham Railway Line	<p>Transport SWOT Analysis for SEP: Work commuting and business travel rail links between Shrewsbury / Telford and Wolverhampton / Birmingham are inadequate, which limits the development of labour markets and restricts wider job opportunities. The lack of a fast and regular all-day direct service to London makes business travel unattractive. A small number of direct services take around 2.5 hours to travel from Shrewsbury to London Euston. Otherwise a change at Wolverhampton is required, adding at least another 15-20 minutes to the journey.</p> <p>Marches Rail Study (2014): An assessment of demand from stations on the Shrewsbury to Birmingham line shows that significant growth is forecast by 2024, for example: 51% (Shrewsbury and Cosford), 46% (Telford Central, Wellington and Oakengates) and 42% (Shifnal). Applying forecast growth to current passenger levels results in some services (particularly in the peak) becoming overcrowded. This shortfall in capacity will place a limitation on demand growth if it is not addressed.</p> <p>Midlands Connect Corridors and Hubs Report (2015): The heavily constrained two-track railway between Wolverhampton and Birmingham can be a significant source of delay. A number of long-distance services such as Virgin Trains and Cross-Country operate on that corridor and hence may import delay from elsewhere on the railway network. Some rail freight services use the intermodal terminal in Telford. However, in accessing this terminal from the east, trains must use the busy rail network in the West Midlands and further service development is constrained.</p> <p>Network Rail Draft Wales Route Study (2015): The Long Distance Market Study has identified a conditional output of an inter-urban service between Shrewsbury and London of 1 to 2 trains per hour with an end to end journey speed of 80mph.</p>

The STC objectives are:

- Ensuring that there is efficient and reliable access for employees and freight movements to the I54 Enterprise Zone near Wolverhampton from other strategic employment in The Marches particularly in Shrewsbury and Telford.
- Delivering efficient and reliable journey times between Shrewsbury, Telford and the West Midlands, especially for freight movements.
- Providing more efficient and economically viable longer distance connections for economically important passenger and freight journey purposes including growth of freight usage at Telford Rail Freight Terminal.
- Enabling greater economic integration within The Marches – and with adjacent regions – through support to the priority sectors.

Future STC Roles and Functions

Specific Functions	Assessment of Route Function
Economic agglomeration	<p>A5 / M54 Road and Shrewsbury to Birmingham Railway Line: Access to existing major urban centres of Telford and Shrewsbury is very good by rail, but less effective by road to Shrewsbury because of traffic congestion. Whilst historically built around car access, the relatively high capacity highway network in Telford is also starting to come under strain – especially at the M54 motorway junctions and adjacent to large development areas.</p> <p>Telford alone has 400 acres of employment land including T54 site on the doorstep of I54 Enterprise Zone, minutes from the M54. With the necessary investment in infrastructure, this land could deliver significant growth through innovation and job creation.</p> <p>There is a particularly strong advanced manufacturing agglomeration linkage between businesses in Telford which are part of the supply chain for Jaguar Land Rover.</p> <p>In conjunction with the North – South Spine corridor, improved road and rail linkages between the three main Economic Development Centres and Opportunity Towns will strengthen The Marches as a single economic entity.</p>
Increasing labour market size	<p>Shrewsbury to Birmingham Railway Line: Higher train service frequencies, coupled with improved bus links / cycle routes to stations, would enable people who live away from the line to benefit from connections between the various settlements on the line for employment and education opportunities.</p>
Reducing business costs / increasing access to markets	<p>A5 / M54 Road: A less congested, more efficient / reliable strategic route will be essential for the reduction of business costs and to attract new business to sites in both Telford and Shrewsbury (with the latter having a greater geographic distance to the West Midlands and UK motorway network). Linkages between Jaguar Land Rover near Wolverhampton and supply chain businesses in Telford / Shrewsbury are particularly important.</p>

Specific Functions	Assessment of Route Function
Tourism / leisure promotion	<p>A5 / M54 Road: The route is a key element in supporting tourism across the west of England and Wales and an increase in traffic flows is seen in the summer months. There are heavier traffic flows on the M54 around Telford, extending to the M6 junction and surrounding routes, for the V Music Festival held annually at the end of August. The least reliable journey time location across the whole SRN in 2012/13 was on this route. The re-developed and regenerated town centre of Telford is now becoming a much more attractive destination for retail / leisure.</p>
Connectivity to West Midlands	<p>A5 / M54 Road: This is a hugely important route both for car-based journeys (commuting and business) and in particular supply-chain connectivity with the Jaguar Land Rover sites in the West Midlands.</p> <p>Shrewsbury to Birmingham Railway Line: This is one of two major rail routes from The Marches into the West Midlands conurbation, with very strong links to Wolverhampton city centre, central parts of the Black Country and Birmingham city centre.</p>
Connectivity to other regions	<p>A5 / M54 Road: This route provides a vital strategic connection to the core UK motorway network via the M6 (to North West and South West England) and the M6 Toll Road (to the East Midlands, East and South East England). At Shrewsbury, intersection with the North-South Corridor (A49) provides connections to South Wales. Beyond Shrewsbury connection to A458 with links to mid-Wales including Snowdonia Enterprise Zone (Llanbedr).</p> <p>Shrewsbury to Birmingham Railway Line: At either end of the line there are important strategic connections – at Birmingham (going in all directions to the rest of the UK) and at Shrewsbury (towards South Wales, Mid Wales, North Wales and North West England).</p>

Specific Functions	Assessment of Route Function
Connectivity to international gateways	<p>A5 / M54 Road: As a result of a direct connection with the M6, all major UK airports are accessible via the motorway network, with Birmingham, East Midlands and Manchester being the most convenient in terms of journey time. In combination with the North West Frontier corridor (starting from the A5 west of Shrewsbury), the route provides a connection to the port of Holyhead for freight traffic to / from the Republic of Ireland.</p> <p>Shrewsbury to Birmingham Railway Line: There is a two hourly direct service to Birmingham International Airport, with additional services available via a change of trains at Birmingham New Street. Services to other UK airports require at least one change of train. There are a small number of direct trains to Holyhead (for passenger services to Ireland), with a more services accessible via a change of trains at Shrewsbury.</p>
Links to High Speed 2	<p>Shrewsbury to Birmingham Railway Line: The most direct connection from Shrewsbury and Telford would be via Birmingham Interchange or Curzon Street. For Shrewsbury, a connection at Crewe would also be viable.</p>
Network resilience	<p>A5 / M54 Road: For the M54 as far as Telford, the A5 and A41 / A464 roads provide alternative routes in the event of an incident on the motorway, although significant traffic congestion would be inevitable and not desirable. Between Telford and Shrewsbury, any alternative to the A5 would be on local B roads. For traffic to / from North Wales, the road provides a strategic east-west alternative route to the A55 / M56 / M6.</p> <p>Shrewsbury to Birmingham Railway Line: The line provides a strategic alternative to / from North Wales to the route than runs via Stafford and Crewe.</p>
Housing growth	<p>A5 / M54 Road: Telford has significant numbers of residential sites with planning permission currently stalled, and investment in transport infrastructure on the corridor will help to make these more attractive for developers. The route is in close proximity to large urban extension housing sites in Shrewsbury (900 units).</p>

Specific Functions	Assessment of Route Function
Employment growth	<p>A5 / M54 Road: On the eastern gateway of Telford, investment in junction improvements to M54 will deliver a 31 hectare employment site minutes from the M54 and less than 12 miles from I54 Enterprise Zone. The site offers opportunities for tier one supply chain and, through investment, wider benefits to advanced manufacturing supply chain across The Marches area.</p>
Other development opportunities	<p>Shrewsbury to Birmingham Railway Line: Direct access to the expanding retail centres in Telford and Shrewsbury.</p>

The following table sets out the pipeline investment projects for the East – West Corridor.

Project	Summary Details
Category 1: Shrewsbury to Birmingham Railway Line Frequency Enhancements and Train Lengthening	<p>Rationale and Key Outcomes: Shorter term 30 minute (2tph) interval regular “clock face” service and longer term increase to a 20 minute (3tph) service. Lengthening of peak period services.</p> <p>Transport connectivity benefits: (1) Increases capacity for both local and longer distance commuting movements. (2) 1 of the 3 tph could be extended to London, thereby providing a regular direct link from Shrewsbury and Telford to the capital. (3) Addresses current and forecast peak hour capacity issues and generally provides a more attractive service for the passenger.</p> <p>Wider economic benefits: (1) Widens labour markets for commuting to work opportunities in Shrewsbury, Telford urban centres and the wider West Midlands. (2) Encourages greater levels of business connectivity between The Marches, West Midlands and London. (3) Enhanced public transport access to the potential National Aeronautical Academy at Cosford.</p> <p>Estimated timescale: To be confirmed.</p> <p>Current cost estimate: To be confirmed.</p> <p>Next steps: An updated business case will need to demonstrate that there is a clear value for money case for incorporation into the next London Midland franchise (due to commence in June 2017).</p>

Project	Summary Details
<p>Category 1: M54 / M6 / M6 Toll Link Road</p>	<p>Rationale and Key Outcomes: Direct access from the M54 motorway to the northbound M6 Motorway and southbound M6 Toll Road.</p> <p>Transport connectivity benefits: (1) Addresses a major constraint for the Shrewsbury and Telford corridor, by reducing journey times of those seeking to access the M6 northbound and reducing traffic congestion on the A449 and A454 in Staffordshire. (2) Provides a higher standard route for freight operations for long distance operations heading towards the ports in east and south east England (for example Felixstowe and Dover).</p> <p>Wider economic benefits: (1) The proposed M54 / M6 / M6 Toll Road Link will provide access in all directions and is therefore essential for the economic development of The Marches and improving access to markets in the rest of the UK and Europe. (2) The scheme will expand the catchment area for employers in the area, providing a boost to the regional economy, creating jobs and making the Wolverhampton-Telford-Shrewsbury corridor a more attractive place for inward investment. (3) The future economic development of the Wolverhampton to Telford Technology Corridor will be significantly boosted by the scheme. The i54 Technology Business Park is situated directly off the M54, and in March 2011 became an Enterprise Zone. In September 2011 Jaguar Land Rover (JLR) announced a decision to build their new engine plant at i54 creating around 750 additional jobs within the company and more within the supply chain, some 12 miles away from Telford and less than 20 miles from Shrewsbury. (4) Both Shrewsbury and Telford have strong supply chain links to JLR with scope to grow. Access to M6 northbound and M6 Toll Road will help to facilitate this supply chain growth through delivering fast and reliable motorway links.</p> <p>Estimated timescale: 2019 onwards for delivery.</p> <p>Current cost estimate: To be confirmed.</p> <p>Next steps: Following a Preferred Route Announcement, Highways England will develop preliminary designs for further public consultation as part of the planning process for a Nationally Significant Infrastructure Project (NSIP).</p>

Project	Summary Details
<p>Category 2: Shrewsbury to Wolverhampton Electrification and Line Speed Improvements</p>	<p>Rationale and Key Outcomes: Electrification of the line between Wolverhampton and Shrewsbury, with increases in line speed to 90mph.</p> <p>Transport connectivity benefits:</p> <ul style="list-style-type: none"> (1) Reduced journey times as a result of lower power to weight ratio of trains and improvements to track alignment / condition. (2) Increased capacity as a result of reduced headways deliverable through electrification and ability to run longer trains. (3) Improved operational reliability of the trains would deliver a more attractive passenger service. (4) Would enable running at least 1tph through to London Euston using the electrified West Coast Main Line. <p>Wider economic benefits:</p> <ul style="list-style-type: none"> (1) Increased train capacity will improve links for people to jobs and services and help open up new opportunities for businesses. Electrification of the route will help to promote business and leisure tourism visitors using sustainable modes of transport and reducing the accessibility problems within The Marches, whilst increasing tourism revenue. (2) Reductions in maintenance / operating costs will enable savings to be re-invested in additional rail schemes over time. (3) Analysis undertaken by KPMG in 2012 concluded that electrification of the line could provide a West Midlands regional GVA benefit of £262m per annum as well as creating 3,320 jobs across the West Midlands area, with the majority of these being in Shrewsbury and Telford. <p>Current cost estimate: Not currently available.</p> <p>Estimated Timescale: Not currently available.</p> <p>Next steps: This scheme has been identified as a potential scheme through the West Midlands HS2 Connectivity Package and subsequent devolution of transport funding through the West Midlands Combined Authority. Further work required to develop costs, feasibility and business case including integration with Network Rail's electrification strategy. To date, the business case has only looked at operational/maintenance benefits and not economic impact. Potential also unlock significant freight growth as electrification would remove existing barriers to line gauge from W6 to W10 enabling intermodal freight to access the terminal.</p>

APPENDIX D CORRIDOR ASSESSMENT

NORTH WEST FRONTIER



Route	Key Facts and Figures
A5 / A483 Roads	<p>English sections managed by Highways England: As part of the Strategic Road Network (SRN).</p> <p>Welsh sections managed by the Welsh Government:</p> <p>Route length of 39 miles (Shrewsbury A5 / A49 junction to A483 / A55 junction south of Chester): Dual carriageway (A5 Shrewsbury bypass, A5 Nesscliffe bypass and A483 from Wrexham to Chester). Remaining sections are single carriageway.</p> <p>Two Way Annual Average Daily Flows (2010-14 average):</p> <p>A5 Shrewsbury Bypass, west of A49 junction: 33,479 (6.5% HGV)</p> <p>A5 Shrewsbury Bypass, between A488 and A458: 25,610 (8.4% HGV)</p> <p>A5 between Shrewsbury and Oswestry: 18,299 (7.0% HGV)</p> <p>A5 Oswestry Bypass, between A495 and A483: 23,803 (9.6% HGV)</p> <p>A5 between Oswestry and Wrexham: 24,466 (8.1% HGV)</p> <p>A483 Wrexham Bypass: 42,420 (6.9% HGV)</p> <p>A483 between Wrexham and Chester: 36,605 (9.5% HGV)</p> <p>Over the whole section, there has been moderate growth in traffic levels between 2010 and 2014 at 7.5%, with a small reduction (1.7%) in HGV volumes.</p>
Shrewsbury to Chester Railway Line	<p>Managed by Network Rail: Diesel traction. Double track between Shrewsbury and Wrexham. The Wrexham – Chester section was single track until the recent re-doubling of 5.5 miles between Rossett and Saltney Junction. Broadly 1tph (not quite on a regular headway) provided by Arriva Trains Wales. Freight services provided by various operators.</p>

Route	Key Facts and Figures
	<p>Route length of 27 miles: Route length of 27 miles: The Shrewsbury to Wrexham line operates at 70mph through to Wrexham, although this is interrupted by a section of 50mph line at Ruabon.</p> <p>The Shrewsbury to Gobowen section has a theoretical capacity of 5tph, which increases to between 8tph and 10tph for subsequent sections to Wrexham. Current usage is generally 1tph.</p> <p>Loading gauge between Shrewsbury and Chester is W6.</p> <p>Passenger stations at: Shrewsbury, Gobowen, Chirk, Ruabon, Wrexham General and Chester.</p> <p>Freight facilities at: Whittington (Celtic Oil) and Chirk (Kronospan Works).</p>

Problems and Objectives

The main transport infrastructure and service problems are:

Route	Source of Evidence and Identified Problems
A5 / A483 Roads	<p>Highways England Route-based Strategy (2015): For an inter-urban rural road the route carries relatively high levels of traffic – especially between Oswestry, Wrexham and the A55 at Chester. The A5 northbound Oswestry Bypass features in the top ten least reliable journey times (63.6% on-time reliability).</p> <p>Midlands Connect Corridors and Hubs Report (2015): The route is identified as an extension of the M54 / A5 route towards the port of Holyhead.</p> <p>The Marches Strategic Economic Plan West of the M54 motorway and A5 dual carriageway, a single-carriageway route, running between the A5 Shrewsbury bypass and the A483 at Ruabon, south of Wrexham, forms part of the Trans European Network (TEN-T) from Felixstowe and Holyhead. This final western section of the TEN-T, which facilitates national and European freight movements from southern and eastern English sea-ports into Wales and Ireland, is the only one which still contains sections of single carriageway. The route is therefore totally inadequate for the volume of traffic travelling from Ireland and the industrial areas of North East Wales and there is frequent congestion and accidents on this route.</p>

Route	Source of Evidence and Identified Problems
Shrewsbury to Chester Railway Line	<p>Network Rail Draft Wales Route Study (2015):</p> <p>The baseline includes the proposed North-South Journey Time Reduction Scheme between Shrewsbury and Chester via Wrexham, enabling faster journey time opportunities and some additional capacity. The section from Wrexham to cities in north west England is identified as a “priority flow” in the “Regional Urban” market. Demand from Wrexham to Chester is forecast to increase by 30% (2023) and 88% (2043).</p> <p>The “Conditional Output” is around providing sufficient capacity for passengers commuting into Chester from Welsh Route Study corridors during the peak hour taking account of anticipated growth to 2023 and 2043.</p> <p>The number of trains arriving into Chester during the morning high peak hour (0800-0900) from 2019 will be the same as today, with five trains arriving from the North Wales Coast, Wrexham and Crewe corridors.</p> <p>The average train load arriving into Chester from Welsh Route Study Corridors in the morning high peak hour is 47 per cent in 2023 and 68 per cent in 2043. The planned capacity is sufficient to accommodate demand growth for the morning peak arrival into Chester for 2023 and 2043.</p>

The STC objectives are:

- Ensuring that there is efficient and reliable access for employees and freight movements to employment areas in the Shrewsbury – Oswestry – Wrexham growth corridor.
- Enabling the corridor to provide a more efficient, effective and safe route for long distance traffic movements between North Wales and the West Midlands.
- Enabling greater economic integration within The Marches – and with adjacent regions – through support to the priority sectors.

Future STC Roles and Functions

Specific Functions	Assessment of Route Function
Economic agglomeration	<p>A5 / A483 Roads and Shrewsbury to Chester Railway Line: There are close economic and transport links between Shrewsbury and Oswestry, and Oswestry and Wrexham. There is significant potential to develop a closer economic relationship between the three towns if transport links can be improved. Oswestry Innovation Park has the potential to create nearly 2,000 jobs and close links with larger settlements will be important for labour provision and supply chain activity.</p>
Increasing labour market size	<p>Shrewsbury to Chester Railway Line: Higher train service frequencies, coupled with improved bus links / cycle routes to stations, would enable people who live away from the line to benefit from connections between the various settlements on the line for employment and education opportunities.</p>
Reducing business costs / increasing access to markets	<p>A5 / A483 Road: A faster route more reliable route with fewer major accidents / incidents would provide a significant benefit to local businesses (especially those to the north west of Shrewsbury) by reducing costs of transport (especially in sectors where profit margins are already squeezed). Location of businesses in Oswestry will become more attractive with better highway links both east (towards Shrewsbury) and north (towards Wrexham). The food and drink industry represents an important part of the north Shropshire economy and better transport links will reduce costs in what can often be a relatively low margin business.</p>
Tourism / leisure promotion	<p>A5 / A483 Road: The route is a key element in supporting tourism to north Shropshire and North Wales (including the Snowdonia National Park). Shrewsbury to Chester Railway Line: The route is a key element in supporting tourism to north Shropshire and the resorts on the North Wales coast.</p>
Connectivity to West Midlands	<p>A5 / A483 Road and Shrewsbury to Chester Railway Line: In conjunction with the A5 / M54 East – West Central Corridor, the route provides an important link to the West Midlands conurbation for longer distance freight movements in particular.</p>

Specific Functions	Assessment of Route Function
Connectivity to other regions	<p>A5 / A483 Road: This route provides a vital strategic connection to North Wales Coast (via the A55 at Chester) and North West England (Greater Manchester via A55 / M56 and Merseyside via A55 and M53).</p> <p>Shrewsbury to Chester Railway Line: To the north west of Shrewsbury there are direct links to the North Wales Coast via Chester and (with a change of trains at Wrexham) Merseyside.</p>
Connectivity to international gateways	<p>A5 / A483 Road: The connection to the A55 at Chester provides routes to the ports of Liverpool (via M53 / Mersey Tunnel) and Holyhead (A55 / A5).</p> <p>Shrewsbury to Chester Railway Line: There are direct train services to Holyhead via the North Wales coast line.</p>
Links to High Speed 2	<p>Shrewsbury to Chester Railway Line: The most direct connection from Wrexham and Shrewsbury would be via Birmingham Interchange or Crewe.</p>
Network resilience	<p>A5 / A483 Road: The route provides a shorter distance strategic alternative for long distance traffic travelling between the A55 (to the west of Chester) and the West Midlands via the M56 and M6.</p> <p>Shrewsbury to Chester Railway Line: The line provides a strategic alternative to / from North Wales to the route than runs via Crewe.</p>
Housing growth	<p>A5 / A483 Road: The route is in close proximity to large Sustainable Urban Extension (SUE) housing sites in Shrewsbury (900 units) and Oswestry (750 units).</p>
Employment growth	<p>A5 / A483 Road: The route provides direct access to the Sustainable Urban Extensions at Shrewsbury (2,600 jobs) and Oswestry Innovation Park (a 22.7 hectare site for B1, B2 and B8 use, with the potential to deliver up to 6,000 jobs).</p>
Other development opportunities	<p>Shrewsbury to Chester Railway Line: Direct access to the expanding retail centre of Shrewsbury.</p>

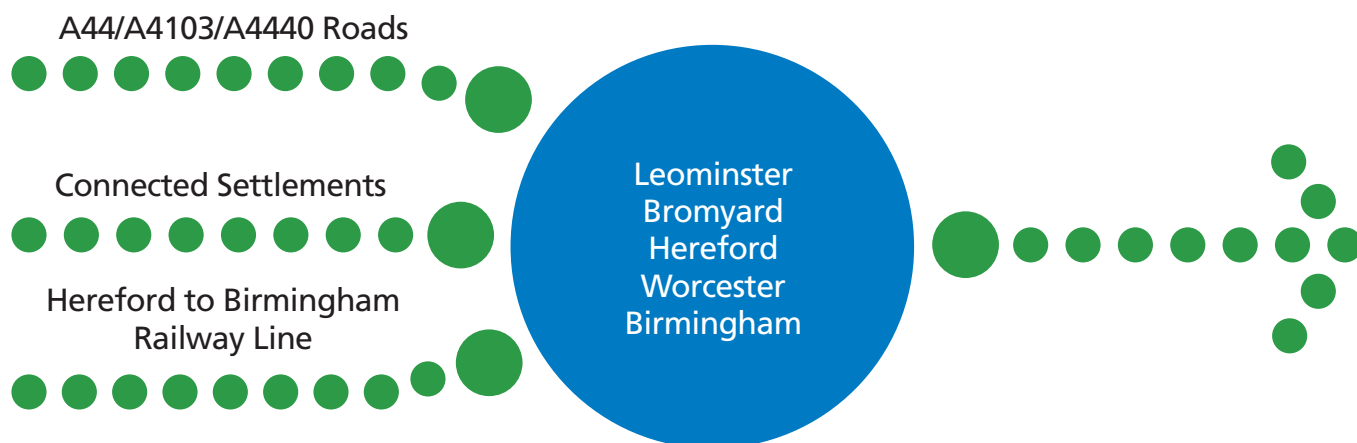
The following table sets out the pipeline investment projects for the North West Frontier Corridor.

Project	Summary Details
<p>Category 1: A5 / A483 Corridor Improvements</p>	<p>Rationale and Key Outcomes: Dualling or partial dualling of the A5 / A483 between Shrewsbury and Ruabon; and improved junction capacity on the A5 Shrewsbury and Oswestry bypasses.</p> <p>Transport connectivity benefits: (1) Addresses a significant section of sub-standard single carriageway route on the TEN-T corridor linking Republic of Ireland, North Wales and the West Midlands. (2) Improves journey time reliability and network resilience for all road users in the event of a major incident.</p> <p>Wider economic benefits: (1) Significant improvement to journey times for freight movements on the TEN-T network, with resulting reduced costs of transport to businesses. (2) Widens labour markets for commuting to work opportunities in Wrexham, Shrewsbury, Oswestry and Telford. (3) Enables development-led growth in towns such as Shrewsbury, Oswestry and Wrexham, both in the long and short term.</p> <p>Estimated timescale: To be confirmed.</p> <p>Current cost estimate: To be confirmed.</p> <p>Next steps: High level discussions about a study of options for the corridor have taken place, and this work will be necessary to identify the optimum value for money schemes to address the identified problems.</p>

Project	Summary Details
<p>Category 2: Additional Passenger Rail Service per Hour Between Wrexham and Chester</p>	<p>Rationale and Key Outcomes: Redoubling of the remaining single line section between Rossett and Wrexham General and layout changes at Wrexham General station.</p> <p>Transport connectivity benefits: (1) Improved train frequency and capacity between Shrewsbury, Wrexham and Chester – as well as for longer distance services along the North Wales Coast to Holyhead. (2) Potential for introduction of a service from Shrewsbury to Liverpool via Wrexham, Chester and the potentially re-opened Halton Chord south of Runcorn.</p> <p>Wider economic benefits: (1) Makes train travel for economically productive journeys – specifically commuting and travel during the course of business – more attractive. (2) Widens labour markets through provision of better access to job opportunities in close proximity to stations.</p> <p>Current cost estimate: £35m to £75m.</p> <p>Estimated timescale: Not available.</p> <p>Next steps: An updated Strategic Outline Business Case (SOBC) should consider the changes to the economic case (previously marginal) in the light of increases in actual passenger numbers and revised forecasts.</p>

APPENDIX E CORRIDOR ASSESSMENT

WALES AND MARCHES TO MIDLANDS



Route	Key Facts and Figures
A44 / A4103 / A4440 Roads	<p>Managed by Herefordshire Council and Worcestershire County Council: As part of the Primary Route Network (PRN). Route length of 30 miles for A44 / A4440 (Leominster to M5) and 29 miles for A4103 (Hereford to A44). Birmingham city centre is another 37 miles northbound up the M5 motorway.</p> <p>Two Way Annual Average Daily Flows (2010-14 average). Generally very low traffic flows except for the Worcester Southern Bypass:</p> <p>A4103 east of Hereford (A465 to A417): 7,251 (7.3% HGV)</p> <p>A4103 east of A417 junction: 6,660 (7.1% HGV)</p> <p>A44 between Leominster and Bromyard: 3,713 (7.5% HGV)</p> <p>A44 east of Bromyard: 8,962 (4.6% HGV)</p> <p>A4440 Worcester Southern Bypass: 26,141 (5.1% HGV)</p> <p>Over the whole section, there has been moderate growth in traffic levels between 2010 and 2014 at 3.4%, with a small reduction (2.9%) in HGV volumes.</p>

Route	Key Facts and Figures
Hereford to Birmingham Railway Line	<p>Managed by Network Rail: Diesel traction with varying track formations, including:</p> <ul style="list-style-type: none"> • Approximately 18 miles of single track between Shelwick Junction and Malvern Wells, with a short loop at Ledbury station which is located 12 miles from Shelwick Junction. • A short section of single track between Droitwich Spa and Stoke Works Junction. • Four tracking (Up and Down, Slow and Fast lines) for approximately 4 miles between Halesowen Junction and Kings Norton, with Hereford to Birmingham services running on the fast lines. • Remaining sections of route are double track. <p>Route length of 55 miles: Broadly 1tph operated by London Midland, with an occasional 2nd tph operated by First Great Western from Hereford or Great Malvern to Worcester Shrub Hill and then onward to London Paddington. Total daily seat capacity on the London Midland services is 6,020.</p> <p>The single line sections of the route are restricted to 4tph. Line speeds on the Hereford to Birmingham route are relatively low and fluctuate considerably. Between Hereford and Ledbury the track is mostly 70mph running, before a stretch of 40mph line through Ledbury (falling as low as 25mph in the down direction for a short period). Line speeds then increase to between 70mph and 75mph through to Droitwich Spa, though there are several instances where this falls considerably. Between Droitwich Spa and Stoke Works Junction the line speed is 65mph, falling to 30mph through the junction. Between Bromsgrove and Barnt Green line speeds are 75mph-90mph, increasing to 90mph for several miles before falling on the approach to University and Birmingham New Street.</p> <p>Passenger stations at: Hereford, Ledbury, Colwall, Great Malvern, Malvern Link, Worcester Foregate Street, Worcester Shrub Hill, Droitwich Spa, Bromsgrove, University and Birmingham New Street.</p> <p>Freight facilities: there is currently no rail freight activity on the line as far as Worcester.</p>

Problems and Objectives

The main transport infrastructure and service problems are:

Route	Source of Evidence and Identified Problems
A44 / A4103 / A4440 Roads	<p>Worcestershire Strategic Economic Plan (2014): Growth within Worcester and its environs is significantly constrained by capacity problems along the A4440 Worcester Southern Link Road.</p>
Hereford to Birmingham Railway Line	<p>Marches Rail Study (2014): There is only one morning peak service from Hereford into Birmingham arriving before 0900, operated by a 5 car set that experiences a high train load in excess of seated capacity. In the afternoon and evening peak, load factors are relatively high leaving Birmingham but generally fall beyond University and Bromsgrove. The data does not currently suggest a serious passenger capacity issue, with no services operating with passengers in excess of capacity. Any future increase in patronage on the line could be restricted as services become increasingly crowded, with train lengthening and increasing service frequency being potential ways of tackling this problem. The single track section between Shelwick Junction and Ledbury is currently operating at maximum capacity constrains the potential of operating more services along the route.</p>

The STC objectives are:

- Enabling greater economic integration between The Marches and Worcestershire through support to the priority sectors.
- Providing additional transport capacity where there are physical constraints, in order to deliver faster and more reliable journeys for commuters and freight flows.
- Providing transport infrastructure to support the growth of Leominster, and to improve its links to Worcester and the M5 motorway.

Future STC Roles and Functions

Specific Functions	Assessment of Route Function
Economic agglomeration	<p>A44 / A4103 / A4440 Roads: There are close economic and transport links between Hereford, Leominster, Bromyard and Worcester (and then onwards towards Birmingham). There is significant potential to develop a closer economic relationship between these towns if transport links can be improved.</p>
Increasing labour market size	<p>Hereford to Birmingham Railway Line: Higher train service frequencies, coupled with improved bus links / cycle routes to stations, would enable people who live away from the line to benefit from connections between the various settlements on the line for employment and education opportunities.</p>
Reducing business costs / increasing access to markets	<p>A44 / A4103 / A4440 Roads: A faster route more reliable route with fewer major accidents / incidents would provide a significant benefit to local businesses by reducing costs of transport (especially in sectors where profit margins are already squeezed) to the motorway network and the West Midlands conurbation.</p>
Tourism / leisure promotion	<p>A44 / A4103 / A4440 Roads and Hereford to Birmingham Railway Line: The route is a key element in supporting tourism to Wales and the city of Hereford and the county of Herefordshire. The Malvern Hills also lie along the route. The ability to attract day and short stay visits from the West Midlands area is particularly important.</p>
Connectivity to West Midlands	<p>A44 / A4103 / A4440 Roads: The route provides a vital link to the whole of the West Midlands conurbation for freight movements in particular. The areas to the south and west of Birmingham are particularly important as they are easily accessible from the M5 / M42.</p> <p>Hereford to Birmingham Railway Line: The route provides important links to Worcester, Birmingham University and Birmingham city centre for educational and work purposes in particular.</p>

Specific Functions	Assessment of Route Function
Connectivity to other regions	<p>A44 / A4103 / A4440 Roads: Access to the national motorway network at M5 Junction 7 (Worcester South) provides links to the remainder of the UK. The A44 continues east of Worcester to provide a direct link to Oxford and then to the south coast via the A34.</p> <p>Hereford to Birmingham Railway Line: The section from Hereford to Worcester as it forms part of the route to Oxford, Reading and London Paddington via the North Cotswold line. Improving connections to London and the South East is particularly important in order to make single day business trips (in both directions) much more viable.</p>
Connectivity to international gateways	<p>A44 / A4103 / A4440 Roads: There is access to all the major UK ports and airports via the national motorway network, with the most accessible being via the M5 and M6 corridors.</p> <p>Hereford to Birmingham Railway Line: There is access to Birmingham International Airport (via a change at Birmingham New Street), and London Heathrow / Gatwick (changing at Reading).</p>
Links to High Speed 2	<p>Hereford to Birmingham Railway Line: The most direct connection would be via Birmingham city centre. An alternative would be Birmingham Interchange.</p>
Network resilience	<p>A44 / A4103 / A4440 Roads: The A44 from Leominster and A4103 from Hereford both converge to the west of Worcester. The A465 between Hereford and Bromyard provides a link between the two roads, which can enable diversions in the event of an incident.</p> <p>Hereford to Birmingham Railway Line: If there are problems on The Marches Railway Line, the route to Birmingham provides an alternative for journeys to Shrewsbury, Crewe, Manchester and North Wales.</p>
Housing growth	<p>A44 / A4103 / A4440 Roads and Hereford to Birmingham Railway Line: Hereford (6,500 units) and Leominster (2,300 units) have substantial housing allocations that will benefit from improvements to transport infrastructure and services.</p>

Specific Functions	Assessment of Route Function
Employment growth	<p>A44 / A4103 / A4440 Roads: Employment sites in Hereford to the north of the city centre, and to the south / east of Leominster, will benefit from improvements to transport infrastructure.</p> <p>In Hereford, a minimum of 10 hectares of employment land, comprising predominantly of a mixture of use class B1, B2 and B8 located near to the new livestock market with access to the Hereford Relief Road and A4103 Roman Road.</p> <p>Hereford to Birmingham Railway Line: Employment areas in the city centre (especially in very close proximity to the station) will benefit from improved services.</p>
Other development opportunities	<p>Hereford to Birmingham Railway Line: Direct access to the expanding retail centre of Hereford.</p>



The following table sets out the pipeline investment projects for The Marches to Midlands Corridor.

Project	Summary Details
<p>Category 1: Shelwick Junction to Great Malvern Re-doubling</p>	<p>Rationale and Key Outcomes: Re-doubling of the line between Shelwick Junction and Malvern Wells, providing a continuous two track route to / from Hereford.</p> <p>Transport connectivity benefits: (1) Removes a significant constraint on the future development of train services west of Worcester – and in particular gives the ability to increase service frequency to Herefordshire stations. (2) Provides the option for a greater number of direct services from Herefordshire stations to London and the South East via Worcester.</p> <p>Wider economic benefits: (1) Widens labour markets through provision of better access to job opportunities in close proximity to stations (for example in Hereford, Worcester and Birmingham). (2) Provides a great number of service options for single-day business travel between Hereford, the West Midlands and (in particular) London and the South East.</p> <p>Estimated timescale: To be confirmed.</p> <p>Current cost estimate: To be confirmed.</p> <p>Next steps: A detailed feasibility study and Strategic Outline Business Case (SOBC) should be undertaken to understand required infrastructure and economic benefits of higher frequency services.</p>

Project	Summary Details
<p>Category 1: Leominster Southern Link Road</p>	<p>Rationale and Key Outcomes: Provision of a road from Baron’s Cross roundabout to the A44 / A49 Worcester Road roundabout.</p> <p>Transport connectivity benefits: (1) Reduces current and forecast traffic congestion on the existing A44 Bargates and the town centre inner relief road. (2) Enables safer and more efficient access to the Strategic Road Network (A49) both south to Hereford and North towards Ludlow /Shrewsbury from Mid Wales. (3) Provides a more efficient route to Leominster railway station.</p> <p>Wider economic benefits: (1) Enables development of a 1,500 unit strategic urban extension to the south of the town. (2) Provides better local access to employment areas to the south of Leominster.</p> <p>Estimated timescale: The full link to be completed by 2025.</p> <p>Current cost estimate: To be confirmed.</p> <p>Next steps: Now that the Herefordshire Core Strategy has been adopted, funding and delivery of the road will be closely linked to the development planning process. Accelerated provision of the road infrastructure would be beneficial to rate of housing delivery.</p>

Project	Summary Details
<p>Category 2: Worcester Southern Link Road Improvement Scheme</p>	<p>Rationale and Key Outcomes: Dualling of the Worcester Southern Link Road, from Powick Hams to M5 Junction 7, including development of a new bridge adjacent the existing Carrington Bridge and replacement of the railway bridge over the Southern Link Road.</p> <p>Transport connectivity benefits: (1) Reduces congestion and improves journey times / reliability to the M5 along the A4103 and A44 corridors (2) Provides alternative route to the A49 / M50 for traffic travelling to the West Midlands and beyond (which would also become more viable with construction of the Hereford Relief Road).</p> <p>Wider economic benefits: (1) Greater certainty / acceleration of planned growth in Worcester, which could benefit residents and business in The Marches through closer economic links. (2) Reduces costs of freight transport for business by enabling faster / more reliable access to the motorway network.</p> <p>Estimated timescale: Described in the Local Transport Plan as a medium to longer term aspiration. The more recent SEP proposes to ask the DfT to “indicatively” prioritise funding for the Carrington Bridge dualling elements of the A4440 Worcester Southern Link as part of the government’s capital programme 2016/17 to 2020/21.</p> <p>Current cost estimate: Approximately £80 million, including contingency and allowance for risk.</p> <p>Next steps: This is a matter for Worcestershire LEP and Worcestershire County Council, but support from The Marches LEP and local authorities will be an important aspect of cross-boundary collaboration.</p>

APPENDIX F. SUMMARY OF NEXT STEPS FOR INVESTMENT

Strategic Corridor	Scheme	Next steps
North-South Spine	Category 1	
	<ul style="list-style-type: none"> Newport to Shrewsbury Re-signalling 	<ul style="list-style-type: none"> Delivery by Network Rail
	<ul style="list-style-type: none"> Dobbies Island Junction Improvement 	<ul style="list-style-type: none"> Development of Outline Business Case and progression of funding options
	<ul style="list-style-type: none"> Hereford Bypass 	<ul style="list-style-type: none"> Development of Outline Business Case and progression of funding options
	Category 2	
	<ul style="list-style-type: none"> Shrewsbury North West Relief Road 	<ul style="list-style-type: none"> Oxon Link Road scheme will provide an incremental step towards the long term provision of the Shrewsbury North West Relief Road. An Outline Business Case will need to make the case for further extension towards the north of the town, through updating the previous appraisal work.
	<ul style="list-style-type: none"> A49 Road Corridor Strategy 	<ul style="list-style-type: none"> Initial corridor strategy / feasibility study and Strategic Outline Business Case
	<ul style="list-style-type: none"> Marches Railway Line Service Enhancements 	<ul style="list-style-type: none"> Study is required to assess operational feasibility and passenger demand business case for service frequency enhancements.
<ul style="list-style-type: none"> Maindee West Grade separated junction, Newport 	<ul style="list-style-type: none"> To be determined 	

Strategic Corridor	Scheme	Next steps
East-West Corridor	Category 1	
	<ul style="list-style-type: none"> Shrewsbury to Birmingham Railway Line Frequency Enhancements and Train Lengthening 	<ul style="list-style-type: none"> An updated business case will need to demonstrate that there is a clear value for money case for incorporation into the next London Midland franchise
	<ul style="list-style-type: none"> M54 / M6 / M6 Toll Link Road 	<ul style="list-style-type: none"> Following a Preferred Route Announcement, Highways England will develop preliminary designs for further public consultation as part of the planning process for a Nationally Significant Infrastructure Project
	Category 2	
<ul style="list-style-type: none"> Shrewsbury to Wolverhampton Electrification and Line Speed Improvements 	<ul style="list-style-type: none"> Scheme has been identified as a potential scheme through the West Midlands HS2 Connectivity Package and subsequent devolution of transport funding through the West Midlands Combined Authority. Further work required to develop costs, feasibility and business case including integration with Network Rail's electrification strategy. 	

Strategic Corridor	Scheme	Next steps
North West Frontier	Category 1	
	<ul style="list-style-type: none"> A5 / A483 Corridor Improvements 	<ul style="list-style-type: none"> High level discussions about a study of options for the corridor have taken place, and this work will be necessary to identify the optimum value for money schemes to address the identified problems.
	Category 2	
	<ul style="list-style-type: none"> Additional Passenger Rail Service per Hour Between Wrexham and Chester 	<ul style="list-style-type: none"> An updated Strategic Outline Business Case should consider the changes to the economic case (previously marginal) in the light of increases in actual passenger numbers and revised forecasts.

Strategic Corridor	Scheme	Next steps
Wales and Marches to Midlands	Category 1	
	<ul style="list-style-type: none"> Shelwick Junction to Great Malvern Re-doubling 	<ul style="list-style-type: none"> A detailed feasibility study and Strategic Outline Business Case should be undertaken to understand required infrastructure and economic benefits of higher frequency services.
	<ul style="list-style-type: none"> Leominster Southern Link Road 	<ul style="list-style-type: none"> Partnership working between Herefordshire Council and developers to identify a corridor and preferred route/design scheme and funding options. Establish a Strategic Outline Business Case.
	Category 2	
	<ul style="list-style-type: none"> Worcester Southern Link Road Improvement Scheme 	<ul style="list-style-type: none"> Scheme to be progressed by Worcestershire LEP and Worcestershire County Council, support from The Marches LEP and local authorities will be an important aspect of cross-boundary collaboration.



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