Western Gateway Sub-national Transport Body

WESTERN GATEWAY RAIL STRATEGY PHASE 2

SEPTEMBER 2020

PUBLIC

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WSP

Kings Orchard
1 Queen Street
Bristol
BS2 0HQ

Phone: +44 117 930 6200

wsp.com

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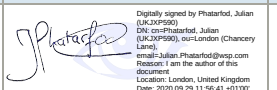
Signature				
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Signature				
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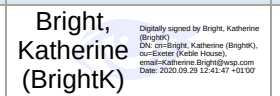
Signature				
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CONTENTS

EXECUTIVE SUMMARY

To be a region that is **sustainably connected** and provides **high quality** and **value for money** travel opportunities for all its businesses, residents and visitors

Western Gateway is the Sub-National Transport body formed of the nine local authorities between Gloucestershire and Dorset. It aims to be a region that is sustainably connected and provides high quality and value for money travel opportunities for all its businesses, residents and visitors.

WSP was commissioned by BCP Council on behalf of the Western Gateway Transport Steering Group and its Stakeholders to develop a Rail Strategy for the region. Based on engagement with Stakeholders in the form of eConsultations, an online eWorkshop and a number of specific interviews, the conditional outputs developed during Phase 1 were investigated in more detail and fortified to drive change in the five key themes:

1. **Choice** - This theme seeks to make rail the mode of choice across the Western Gateway.
2. **Decarbonisation** - This theme aims to enable rail to contribute more actively towards the overall decarbonisation of the Western Gateway region.
3. **Social Mobility** - This theme targets to provide equal journey opportunities by rail for all residents of the Western Gateway by improving access to stations, multi-modal interchange, and affordable rail travel.
4. **Productivity** - This theme seeks to enable rail to contribute more actively to improvements in productivity across Western Gateway.
5. **Growth** - This theme facilitates sustainable growth across Western Gateway through better connecting development to rail and making sure the rail network is resilient to change.

23 conditional outputs set out the ambitions for rail in WG. **Six route maps to delivery** describe the governance, actions and processes for Western Gateway to follow as the implementation of the strategy progresses. This includes the establishment of **five cross-industry Taskforces** to deliver, monitor and evaluate these route maps between 2020 through to 2040 and beyond, ensuring that investment is prioritised and targeted to make a tangible difference to residents, businesses and visitors to the Western Gateway.

The strategy will require all relevant stakeholders to collaborate and leverage their influence to deliver this strategy and realise the identified Conditional Outputs. The Western Gateway Board and each of the **5 Taskforces** will have a series of actions and tasks to undertake within designated timescales to progress towards delivery of the strategy. This is clearly defined for the 0-3 year phase of the strategy, with actions and tasks for later phases being defined by deliverables and decisions made by the Board in the first phase. The **6 route maps** to Delivery are outlined in the table below: these are designed to be a blueprint for the Board and Taskforces to procure and deliver the necessary studies, business cases, and, in later stages of the strategy, design and construction. Chapter 7 contains the Route Maps themselves and more detail on the conditional outputs to be monitored and evaluated by each Taskforce.

Route Map	Owner
Strategy, Governance and Collaboration	Western Gateway Board
Strategic Planning and Configuration States	Strategic Planning Taskforce
Digital Solutions	Digital Solutions Taskforce
Stations & Access to Rail	Stations & Access to Rail Taskforce
Freight Taskforce	Freight Taskforce
Future Ready & Resilience	Future Ready & Resilience Taskforce

The Rail Strategy presents an ambitious yet deliverable vision for making rail a vital part of a sustainable transport network both within Western Gateway and across to its neighbouring authorities which has the support of all stakeholders who have been involved in its production.

Contact name Julian Phatarfod and Karen Heppenstall

Contact details +44 (0)79 0196 0166 | Julian.Phatarfod@wsp.com

+44 (0)74 6940 2383 | Karen.Heppenstall@wsp.com

1 INTRODUCTION

1.1.1 Western Gateway (WG) is the Sub-National Transport (STB) body formed of the nine local authorities between Gloucestershire and Dorset. It aims to be a region that is sustainably connected and provides high quality and value for money travel opportunities for all its businesses, residents and visitors.

1.1.2 Part of this overall Strategic Transport Plan is to develop a mode-specific Rail Strategy which outlines how rail will help deliver the overall vision and objectives for transport in WG.

1.1.3 WSP was commissioned by BCP Council on behalf of the Western Gateway Transport Steering Group and its Stakeholders to develop a Rail Strategy for the region. This Strategy presents the need for change based on a review of policy, challenges and trends, it explores the region's vision, objectives and priorities, and develops a series of Conditional Outputs which will support the delivery of these objectives.

1.2 PREVIOUS WORK

1.2.1 This Phase 2 Report builds on the Phase 1 Report issued in February 2020, which outlined the need for change, the vision, objectives and priorities for rail in WG, and a series of draft Conditional Outputs. The technical reports for both Phases will be amalgamated and condensed into a single, published strategy document in September 2020.

1.2.2 The Phase 1 report set the geographical, economic and transport contexts for this work, at strategic, policy and operational levels, setting out details of the current rail network and passenger and freight services, committed and developing plans for improvements, and how these fit with the strategies and aspirations of the local authorities in Western Gateway. The report pays close attention to potential demographic and technological changes and how they may affect the demand for and supply of transport over coming decades. An important facet of this work is the attention paid to cross-boundary services – WG railways are part of a national network, and some key transport nodes which serve WG populations are outside the region. Key policy considerations include:

- the climate emergency;
- an integrated transport network within WG;
- interconnected UK-wide transport networks;
- an evolving railway network;
- a strategic transport network;
- a customer focused rail network;
- sustainable growth and a resilient network; and
- freight requirements and opportunities.

1.2.3 The Phase 1 report and subsequent work has identified that the **need for change** covers all aspects of the railway, including:

- route and track upgrades, including capacity and speed enhancements, to take account of growth (covering passenger and freight services);
- service levels (frequency, routes served; connections)
- rolling stock (quality, efficiency, traction modes);
- station access and facilities;
- the place of stations in their communities and wider transport networks;
- journey times (including line speeds and service frequencies); and
- reliability and punctuality.

1.3 REPORT STRUCTURE

1.3.1 This report presents Phase 2 of the development of the rail strategy and is structured as follows:

- Introduction, Context, Progress, Definitions and Designations
- Theme chapters:
  - Choice;
  - Social Mobility;
  - Decarbonisation;
  - Productivity; and
  - Growth;
- Delivering the Rail Strategy.

1.3.2 Chapter 1 is a condensed summary of the Phase 1 report with amendments based on the feedback and continuous improvement process through eConsultations and workshops.

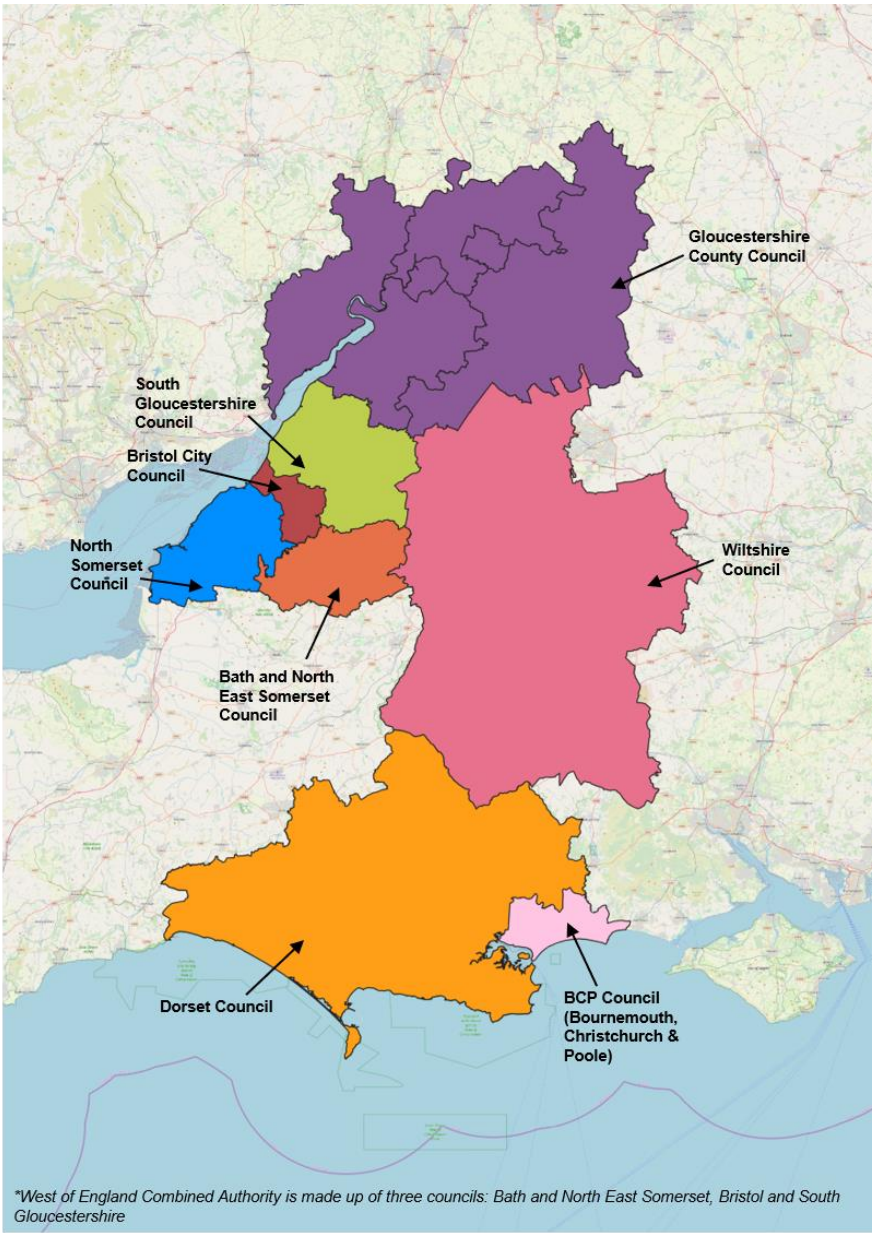
1.3.3 The five themes – Choice, Social Mobility, Decarbonisation, Productivity, Growth – were identified by WSP based on stakeholder workshops to provide a clear framework for the strategy. They are closely inter-connected, while still giving clear focus and shape. Each theme is summarised in a high-level objective and developed into a number of priorities. These in turn are linked to a series of Conditional Outputs (COs), each of which becomes deliverable through a series of actions, for the short, medium and long-term. Objectives, priorities and COs sometimes overlap, and many of the actions address more than one theme objective or CO. COs are conditional upon them demonstrating a robust business case (Value for Money) for identified interventions intending to deliver the respective outputs, and the aim of the strategy is to provide a robust framework and a consistent appraisal across the Western Gateway.

1.3.4 Work on this strategy started before the COVID-19 pandemic. The short-term effects of lockdown on rail patronage are well documented; at the time of writing, passenger numbers on the rail network are rising – but are still considerably below pre-COVID levels. It is uncertain whether changed working, shopping and travel behaviours will persist after the pandemic (and when that might be), but the focus of this strategy, on setting out aspirations for the rail network in the context of the climate emergency and making rail accessible by all, remains valid, looking ahead towards a net carbon zero future.

1.4 GEOGRAPHICAL CONTEXT

1.4.1 Western Gateway and its nine constituent local authorities comprise a great variety of places, with major urban centres and conurbations, market towns and rural areas, coastal and inland as seen in Figure 1-1. The region borders the Peninsula Transport area to the south west (Cornwall, Devon, Somerset) and with three sub-national transport body areas to the north and east: Midlands Connect, England's Economic Heartland and Transport for the South East. The Western Gateway area also borders Wales.

Figure 1-1 - Local Authority Boundaries in the Western Gateway



1.4.2 The current rail network geography, with main lines, secondary lines, rural/branch lines and freight lines, provides connections to most of the major towns and cities in the area, albeit some of the routes are indirect, or direct train services are not provided. There are multiple east-west routes, providing good connectivity from most of the region to London in the east, and west to Cardiff and Exeter and beyond. There are four routes providing north-south connectivity: the cross-country routes to Birmingham and beyond from Exeter and Bournemouth, plus the Portsmouth-Cardiff route and Bristol-Weymouth routes (at a lower service frequency).

1.5 NETWORK RAIL CONTEXT

1.5.1 Western Gateway bridges two Network Rail routes and regions. The southern part of Western Gateway sits within the Wessex route (part of Southern Region), with the northern part, including West of England, sitting in Western route and Wales & West Region.

1.5.2 Network Rail's System Operator function looks to the future through its Continuous Modular Strategic Planning (CMSP) process. The CMSP is designed to explicitly put passenger and freight users at the heart of the process. The development of this strategy has seen extensive engagement with both route strategic planning teams to ensure the interface between STB strategy and NR CMSP is productive, seamless and effective.

1.5.3 The timing of both the development of the rail strategy and the two CMSP programmes – Bristol to Birmingham and Dorset CMSP - provided a unique opportunity to align and interface with both the Wessex and Western System Operator teams to establish a way of working for future CMSPs. This Rail Strategy will provide a framework that requires the CMSP process to be part of the next step for developing the evidence base and justification for investment decisions. This strategy is designed to steer and support NR in understanding what scenarios and aspiration to test, and further details on the CMSP and ongoing programme are illustrated in Section 7.3 of the report.

1.6 STAKEHOLDER ENGAGEMENT

Engagement touchpoints

1.6.1 In a similar vein to Phase 1, Phase 2 also consisted of a series of stakeholder engagement touchpoints in order to capture, review and iterate the contents of the strategy. Due to the ongoing distancing guidelines brought on by COVID-19, these were all moved to digital engagement activities, with three eConsultations, an eWorkshop and a series of meetings with Network Rail being held online.

- eConsultation 1: Designations and Definitions used as part of the strategy (more detail below);
- eConsultation 2: How the conditional outputs are to be measured, the setting of targets and the current gaps in meeting these, broken into:
  - 2a) themes Choice and Social Mobility
  - 2b) themes Decarbonisation, Productivity and Growth
- eWorkshop on intervention identification and barriers to delivery
- Meetings with Network Rail after each touchpoint from both a Route Management perspective and the teams for two ongoing Continuous Modular Strategic Planning (CMSP) programmes: Bristol to Birmingham and Dorset.

Summary of eConsultations

1.6.2 Feedback from the three waves of eConsultations was broadly supportive of the Conditional Outputs. A recurring theme was the importance of balancing vision and ambition, on the one hand, with realistic deliverability on the other. There was also repeated recognition that the wide range of stakeholders involved in delivering improvements to the rail network, whose drivers are not necessarily aligned, necessitates collaborative working to identify and overcome hurdles and barriers to progress. Much detailed feedback was provided, allowing definitions and categorisations to be refined and enhanced.

Evidence Base

1.6.3 At the start of Phase 1, stakeholders provided WSP with 64 documents, reports and studies relating to rail and transport planning within the Western Gateway geography. This included a wide range of types of document from high level studies to more detailed programmes of interventions.

1.6.4 We have reviewed these and assessed their relevance to the delivery of each CO. This assessment is presented as part of the write-up of each CO in the subsequent chapters, and where specific interventions have been identified, they have been incorporated into our route maps to delivery where relevant.

1.7 HUB DESIGNATION

1.7.1 As part of the development of the strategy we have developed agreed definitions for stations which fulfil different roles on the rail network. All stations perform a hub function of some kind to their local communities, with some performing more regional or national functions based on the level of service and facility offering. The National and Regional Hubs shown on the map in Figure 1-2.

National Hub

A station on the network that is regularly served by high speed, long distance services linking the station and settlement in question to other nationally significant towns and cities. In addition, the station also provides regional and local connections, hence being a station where high levels of interchange are expected. Station facilities should reflect the nature of journeys to, from and through the station.

Regional Hub

A station on the network that is served by strategic routes of regional and sub-national significance that will often, but not always, provide an interchange function – either rail to rail, or rail to another mode that provides strategic connectivity. Stations will usually be located in larger urban / economic centres and may experience more inward than outward travel (i.e. an attractor location), and / or reasonable levels of interchange.

Local Hub

A station that provides access to rail within its community in order for passengers to be able to use rail to access regional and / or national hubs as part of an end-to-end journey. Rail-to-rail interchange will be minimal at most of these stations, and station facilities reflect the volume and type of use.

1.7.2 A Hub Designation at this stage by no means fixes a station in a specific category in the future. Where stations aspire to fulfilling a different role on the network in the future to better serve its population (residential, employment or leisure), key characteristics such as service frequency (and destinations), catchment or station facilities that designate it at present can be identified as part of a gap analysis and a case put forward to change the role of the station on the network.

1.7.3 We have included a selection of Regional and National Hubs outside the WG boundary (“out-boundary”) on the map in Figure 1-2 to indicate where routes facilitate cross-border connectivity for stations within the WG boundary (“in-boundary”). This has also helped to define the types of services in the section below.

1.7.4 These categorisations affect how various COs in the strategy are framed, with different levels of service and facility appropriate and proportionate for different designations.

Figure 1-2 - National and Regional Hubs within and around the Western Gateway

1.8 SERVICE DESIGNATION

1.8.1 A service designation is required to adequately categorise services and flows with regards to the COs. This will ensure that the specific nature of services is taken into consideration to make the COs SMART while providing an appropriate level or proportionality. The definition of the four service categories below will depend on corridor catchment type, usage patterns, train service specification and will require a cross-authority and cross-operator consensus:

Intercity | Regional | Urban | Local

- **Intercity:** long distance, limited-stop services between National Hubs. This includes services which connect two out-boundary National Hubs and serve an in-boundary Regional Hub;
- **Regional:** limited-stop services between Regional Hubs intended to provide longer-distance connectivity where at least one Hub is in-boundary;
- **Urban:** metro-style services which connect local stations in a conurbation around an in-boundary Regional or National Hub; and
- **Local:** services between Regional-Local Hubs or Local-Local Hubs where at least one of these Hubs is in-boundary.

1.8.2 We have indicated the Intercity and Regional services on the map in Figure 1-3.

Figure 1-3 - Intercity and Regional Services in the Western Gateway

1.8.3 The nature of a service can change en route, for example some intercity trains have a more regional nature further away from London or Birmingham.

1.8.4 There is evidently close alignment between service and hub definitions. There will always be a level of subjectivity regarding the designation of individual stations, services or flows into these categories, and as the network evolves, it is anticipated that stations or services designated into one category at this stage can change designation as their role changes. The COs have consequently been set with an element of flexibility so that an inevitable 'exception to the rule' will not be a reason for failure to meet a CO.

1.9 ACCESSIBILITY

1.9.1 Some of the COs relate to 'accessibility' and a definition of accessibility is required to ensure that the authorities and other organisations know unambiguously what the CO is trying to achieve regarding 'access'. Accessibility and mobility can frequently become incorrectly used and clarity (in the form of this definition) will ensure the COs remain SMART. Within this rail strategy, we have used the term 'accessibility' as defined below. We also provide a definition of 'onward travel' to provide clear distinction between 'Access for All' and 'Access to Stations'.

Access for All

1.9.2 Following consultation, we have tightened our definition of 'Accessibility' to refer to what is commonly referred to in the rail industry as 'Access for All'. This rail industry adopted term is used in

a somewhat generic way to describe the ability of station facilities and routes through the station (from station approaches to boarding trains) to be used by all members of society. The intent is that no user is discriminated against when using station facilities and boarding / alighting services, regardless of any disability (visible or hidden).

1.9.3 It is governed predominantly by 2 pieces of legislation:

- EU Technical Specification for Interoperability – Persons of Reduced Mobility (PRM-TSI) and the UK Implementation of this Legislation; and the
- DfT Design Standards for Accessible Railway Stations – A Code of Practice

1.9.4 However, current thinking suggests that the legislation listed above does not go far enough in stipulating accessibility requirements, and there is still too much focus on physical impairments.

1.9.5 The 2010 Equality Act in fact identifies 9 Protected Characteristics that should not be discriminated against. These are:

- Age;
- Disability;
- Gender Re-Assignment;
- Marriage / Civil Partnership;
- Pregnancy and Maternity;
- Race;
- Religion / Belief;
- Sex; and
- Sexual Orientation.

1.9.6 Beyond this, this rail strategy will also seek to provide equal opportunities to other social factors such as deprivation, making rail in the Western Gateway fully inclusive.

Onward Travel

1.9.7 Previously defined as ‘Access to Stations’, this definition covers the full range of modes by which station users are able to reach the station from their homes or workplaces – often defined as ‘First Mile / Last Mile access’, including:

- Highway Access;
- Car Parking – quantity, quality and distance from station entrance(s);
- Bus Routes & proximity of bus stops to station entrance(s);
- Walking and Cycling routes – signposting, safety / security;
- Cycle Parking provision – quantity and quality; and
- Pick-Up and Drop-Off arrangements – private vehicle and taxi.

1.9.8 For the most part, this covers the public highway and to some degree, the transition between public highway and railway infrastructure. As this is a rail strategy, accessibility (as defined above) aspects out of the direct control of partners to this strategy (e.g. step-free access to buses) are excluded.

2 CHOICE

2.1 INTRODUCTION TO THEME

2.1.1 This theme seeks to make rail the mode of choice across the Western Gateway. Although in some parts of the region (e.g. in the Greater Bristol area) rail is competitive with car, for the vast majority of people who have access to both car and rail, they are drawn to choosing road over rail due to aspects such as infrequency of services, on-train journey times and the need to interchange. Coupled with the association that rail is unreliable and expensive, there is a need to improve both the reality and perception of rail travel.

2.1.2 Three priorities were identified through stakeholder engagement in Phase 1. The table below expands on what these priorities are and what addressing them will mean to WG.

Priority	Description
Improve frequency of services to provide more flexibility in travel options	A clear criticism of the current rail network from stakeholders was the frequency of services in WG, particularly in the N-S access. This applies as much to evening and weekend travel (discretionary journeys) as to peak time travel. This priority is addressed by CO C1 and C4. As part of uplifting frequency, it is essential to consider freight frequency, to ensure rail is a viable option for the movement of goods. This is addressed by CO C6.
Make rail to rail interchange (where direct services not possible) as seamless as possible	The lack of direct journeys and extended interchange times compounds the concern of stakeholders regarding frequency. Both of these aspects contribute to the reasons why people currently do not choose rail. This priority is addressed by CO C2 and C5.
Improve operational reliability of the network to give confidence in rail as a mode of choice	Part of rail's poor perception stems from poor reliability of the network. This priority is addressed by CO C3.

2.1.3 Six conditional outputs were identified through stakeholder engagement in Phase 1. These are listed in the table below and this chapter adds more detail about their targets, gaps and routes to delivery.

Conditional Output	Description
C1: Frequency	Increase the frequency of services to aspirational target levels appropriate for service type
C2: Interchange	Min and max interchange time at stations on hub-to-hub routes
C3: Performance	A percentage uplift in Right Time arrivals, an increase in customer satisfaction regarding performance
C4: Extended Timetable	Improved evening, morning and weekend services
C5: Direct Services	Increased number of direct passenger services through Hub stations
C6: Freight	Enabling sufficient capacity and access to the network for freight services to allow existing and new markets to develop

2.2 CONDITIONAL OUTPUT C1: FREQUENCY

INTRODUCTION

2.2.1 Frequency was identified by stakeholders as one of the biggest concerns within Western Gateway and one of the barriers to rail mode choice. The timetable can be inconsistent, particularly in rural areas, which discourages people to choose rail. As a key driver to modal shift it is important that frequency is high enough for people to choose rail at local, regional and national journeys.

What?	Increase the frequency of services to minimum off-peak aspirations appropriate for service type
Why?	Frequency is a key driver behind service quality and mode share, and an increase in frequency will enable rail to become the mode of choice in the Western Gateway. While the development and issuing of a Train Service Specification (TSS) is typically the responsibility of a service specifier (the Department for Transport) in close consultation with Network Rail and other stakeholders, we have developed minimum off-peak aspirations based on views captured by stakeholders.
Where?	Route-wide, see below
When?	Medium term, to be refined in delivery plan
Who?	Service specifiers accountable, supported TOCs and Network Rail
How Measured?	See below.
Interdependencies with other COs	P1 – Journey Time
Example persona testing	For a day tripper, would the increased service frequencies enable them to make a return journey by rail between their home and their destination within one day?

EVIDENCE BASE

2.2.2 The desire for improved frequency was identified in 54 out of 64 studies reviewed as part of the strategy and was the most frequently observed theme. This highlights the scale of priority that service frequency improvements has in the region, however many of these studies had not progressed to identify interventions in order to deliver these.

HOW WILL IT BE MEASURED (TARGETS) AND GAP ANALYSIS

2.2.3 This conditional output is measured using our service designation which outlines minimum average number of trains per hour in the off-peak on a weekday. The gap analysis is performed against this weekday off-peak frequency in the December 19 timetable, based on the aspirational minimum frequency for each service type.

2.2.4 This is measured by the frequency of routes where direct services exist (and notes where indirect services also exist on the route). Where no direct route currently exists, this is addressed in Conditional Output C5 which looks at increasing direct services. Where timetable inconsistencies prevail, this has been noted too.

2.2.5 Within each service type we recognise that there are specific regional differences which may – by nature of demand – necessitate higher frequencies to drive modal shift and hence the aspirational frequencies are still considered a minimum. This is particularly the case on Regional routes and Intercity routes which connect to Birmingham, and Network Rail CMSP processes will likely test frequencies above the minimum aspiration set in the tables below.

2.2.6 The deliverability of these frequencies and the interventions required to achieve them will assessed in more detail by Network Rail CMSP teams to develop future Train Service Specifications (TSS).

Intercity

Minimum Aspirational Frequency: 2tph

2.2.7 Intercity Routes have been defined as direct services between National-National hubs. This includes services which connect two out-boundary National Hubs and serve an in-boundary Regional hub. These have been ordered in terms of greatest gap to lowest gap.

Route	Current Frequency	Gap
Weston-Super-Mare – Bristol – Swindon – Reading	2 indirect, selected direct	2
Exeter – Westbury – Reading	0.5 direct + 0.5 indirect	1.5
Cardiff – Gloucester – Cheltenham – Birmingham	1 direct + 2 indirect	1
Cardiff – Bristol Parkway – Swindon – Reading	1 direct + 1 indirect	1
Cardiff – Bristol – Bath – Westbury – Salisbury – Southampton	1	1
(Bournemouth) – Southampton – Birmingham*	1	1
Exeter – Yeovil – Salisbury – Basingstoke	1	1
Exeter – Taunton – Bristol – Cheltenham – Birmingham	1	1
Bristol – Bath – Chippenham – Swindon – Reading	2	0
Bristol – Bristol Parkway – Swindon – Reading	2	0
Bristol – Cheltenham – Birmingham#	2	0

*2tph to Southampton in the short term with a longer-term aspiration to extend to Bournemouth.

#Bristol to Birmingham CMSP process will likely test above the minimum 2tph aspiration.

2.2.8 We have distinctly avoided the use of London in this conditional output: stakeholder feedback indicates that the focus on London journey times has been a significant contributing factor to the erosion of regional connectivity in the area. Decoupling from London will allow the region's strategic attention to be focussed on regional routes and corridors. While some of the routes clearly have an endpoint in London and/or other cross-border National Hubs and might not necessarily reflect the stopping pattern of the current timetable, the purpose is to illustrate service frequency and connectivity across a rail corridor and not a specific origin destination pair.

Regional

Minimum Aspirational Frequency: 1tph

2.2.9 Regional Routes have been defined as direct services between Regional-Regional hubs where at least one hub is inside the Western Gateway boundary. It has been noted in the table below that some of these routes have a minimum aspirational frequency of 2tph and some of these routes should have their timetabling irregularities resolved. It is considered that a barrier to modal shift is the inconsistent service pattern and a more clock-face design would support modal shift. The identified gap has nevertheless been measured based on a 1tph aspiration as for other routes anything above 1tph is not an achievable goal from a value for money perspective. These have been ordered in terms of greatest gap to lowest gap.

Route	Current Frequency	Gap
Exeter – Weston-Super-Mare	1 indirect	1
Westbury – Chippenham	0.5	0.5
Westbury – Taunton	0.5 irregular	0.5
Westbury – Reading	0.5 irregular	0.5
Weymouth – Yeovil – Westbury – Bath – Bristol	0.5 irregular	0.5
Gloucester – Cheltenham – Worcester Shrub Hill	0.5 + 1 indirect	0.5
Bristol – Weston-Super-Mare (semi-fast, not Intercity)	1	0
Weymouth – Poole – Bournemouth – Southampton*	2	0
Salisbury – Southampton	1	0
Cheltenham / Gloucester – Swindon – Reading *Aspirational frequency of 2tph by way of a second direct hourly service*	1 direct + 1 indirect	0
Bristol – Gloucester *Aspirational frequency of 2tph by way of a second direct hourly service*	1 direct + 1 indirect	0
Westbury – Salisbury *Timetable irregularity to be prioritised in next timetable planning process*	2 irregular	0

*Note: this represents the fast/semi-fast services and this route is complemented by the Urban services across the Dorset and BCP route as described below. While no gap has been identified here, the Dorset CMSP is considering whether an increase to this service frequency is viable.

Urban

Minimum Aspirational Frequency: 4-6 tph

2.2.10 Urban Routes have been defined as metro-style services which connect local stations in urban and peri-urban areas around a regional or national hub inside the Western Gateway boundary. The aspirational frequency is across the core metro area and the detailed stopping patterns are subject

to feasibility analysis by NR and their CMSP process according to infrastructure constraints and timetable planning rules.

2.2.11 Our definition of metro-frequency for the Dorset Metro area has been made in consultation with Dorset and BCP Council representatives and the NR Dorset CMSP team.

2.2.12 Our definition for the Bristol area has been broken down by routes and the aspirational frequencies have been taken from the MetroWest proposal documents based on the schemes which are being progressed by the West of England Combined Authority (WECA). Thus, there are already committed and planned interventions to address the gaps identified. In the longer term, WECA may wish to consider increasing frequency further, to 4-6tph on select routes, dependent upon the success of MetroWest. The aspirational frequencies in this strategy do not prohibit a future assessment of this need. MetroWest will deliver 5tph across the Temple Meads to Stapleton Road core, along with 4tph between Temple Meads and Parson Street.

Route	Current Frequency	Gap
Wareham – Brockenhurst (Dorset Metro) *Aspirational frequency 6tph across route (variable stopping pattern)*	1-3 Lower at local hubs	min 3
Bristol – Portishead (MetroWest Phase 1) *Aspirational frequency 2tph*	0	2
Bristol – Severn Beach (MetroWest Phase 1) *Aspirational frequency 1tph to Severn Beach* *Aspirational frequency 2tph to Avonmouth*	 0.5 to Seven Beach 1.5 to Avonmouth	 0.5 0.5
Bristol – Bath Stopper Service (MetroWest Phase 1) *Aspirational frequency 2tph*	1	1
Bristol – Weston-Super-Mare Stopper Service* *Aspirational frequency 2tph*	1	1
Bristol – Yate and Gloucester (MetroWest Phase 2) *Aspirational frequency 2tph*	1	1
Bristol – Henbury (MetroWest Phase 2) *Aspirational frequency 1tph*	0	1

*note: Bristol to Weston-Super-Mare is already 2tph when including the semi-fast services however an increase beyond this has been identified as a stakeholder priority.

Local

Minimum Aspirational Frequency: 1tph

2.2.13 Local Routes have been defined as direct services between Regional-Local hubs or Local-Local hubs where at least one hub is inside the Western Gateway boundary, but the route falls outside the metro areas described above. Many of the local connectivity concerns are based on timetabling irregularities as a barrier to modal shift and priority should be given to restoring timetable consistency. The routes selected below are illustrative of local minimum aspirational frequencies. These have been ordered in terms of greatest gap to lowest gap.

Route	Current Frequency	Gap
Swanage – Wareham – Bournemouth	0	1 (long term aspiration 2)
Salisbury – Romsey calling at all stations	1	0
Castle Cary – Westbury	2-hour gaps and 2 in an hour	0 but timetabling consistency

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

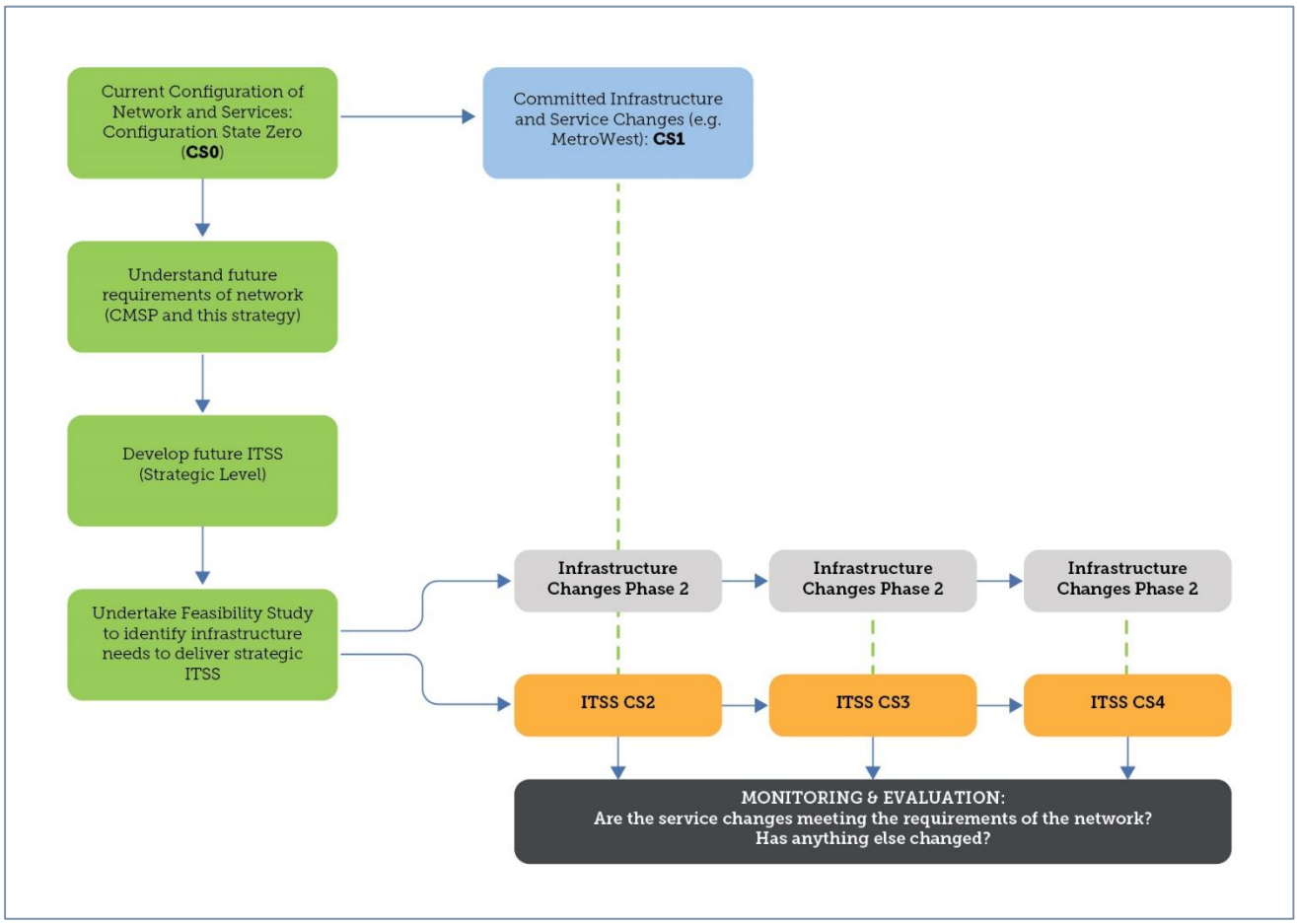
2.2.14 As discussed above, there are studies and committed schemes already in progress for addressing service frequency in urban areas. These are the Dorset CMSP and the WECA MetroWest programme (set out below). A wider CMSP programme is also planned (details included in Chapter 7) that will consider future demand for rail travel and options for how that demand can be met. In some instances, this will include frequency uplifts, where this strategy will be used as a baseline to recognise stakeholder aspirations.

- MetroWest Phase 1a: Half hourly services Severn Beach Line to Bristol Temple Meads to Bath Spa to Westbury. Opening December 2021.
- MetroWest Phase 1b: reopened Portishead line, hourly services with new stations at Pill and Portishead. Opening 2024 (Delayed due to COVID-19).
- MetroWest Phase 2: reopening the Henbury Line, new stations at Henbury, North Filton and Ashley Down and an additional service to provide half hourly services to Yate and Gloucester. Opening May 2023.

2.2.15 Any uplift in frequency to address the gaps identified above must both be supported by a business case and in some cases will require infrastructure changes to be delivered. This will be an iterative process between NR, WG, Operators and other stakeholders, through the establishment of a Strategic Planning Taskforce.

2.2.16 We recommend that through the CMSP process which is already collaborative, a prioritised Train Service Specification for Western Gateway is established, that reflects a minimum of 4 ‘configuration states’ as service frequencies progressively improve towards achievement of the CO targets. The first ‘configuration state’ may be achievable on the existing network under current Timetable Planning Rules; however it is expected that future ‘configuration states’ will require the delivery of infrastructure changes to permit the subsequent service changes. This is a recognised industry process that has been used previously, for example on major programmes such as Northern Hub, as illustrated in Figure 2-1 below.

Figure 2-1 - Strategic Planning Configuration States



2.3 CONDITIONAL OUTPUT C2: INTERCHANGE

INTRODUCTION

2.3.1 Interchange is another key driver to mode choice and attracting people to use rail. Direct services are not feasible between all hubs and therefore it is important to provide interchange options that are achievable, accessible and not a barrier to choosing rail. Interchange is another key concern highlighted by stakeholders in order to attract more people to use rail.

What?	Maximum interchange time at stations on hub-to-hub routes
Why?	Conditional Output C2 addresses a key stakeholder concern regarding long wait times at some interchange stations where direct journeys are not available, and passengers are required to change trains. In general, an optimum connection time appears to be no less than 10 minutes and no more than 20 minutes to allow achievable connections without an impact on journey times (recognising the large weighting applied to wait time by passengers in business case development).
Where?	At stations where interchange is required as part of an end-to-end journey

When?	Short to medium term Two stages outlined below, one for 2025 and one for 2030
Who?	Service specifiers accountable, supported by TOCs and Network Rail
How Measured?	See below
Interdependencies with other COs	M1 – Station Access C1 - Frequency (an improvement to frequency will support this CO) C5 - Direct Services (an improvement to direct services will support this CO)
Example persona testing	For a regional or long-distance commuter, is the interchange time appropriate to offer a journey time which is competitive with the car?

EVIDENCE BASE

2.3.2 The desire to improve interchange was identified in 37 out of 64 previous studies as part of the development of this strategy and is therefore assumed to be a key priority for stakeholders.

2.3.3 We have analysed where interchange is required across hub to hub journeys made within the Western Gateway. Note this analysis was performed on all Regional and National hubs as per the Hub designation: this therefore includes a selection of out-boundary hubs to facilitate cross-border connectivity.

2.3.4 Of the 300 hub to hub journey pairs, 146 cannot be made directly (almost 50%) and Table 2-1 below shows which National/Regional Hub/Hub trips require interchange.

2.3.5 Stakeholder feedback has identified that a key concern is Local to Regional and Local to National journeys which require interchange however we have not undertaken a full journey planning exercise as part of this study (as this requires more than a timetable analysis). While a sample of journeys was considered, we have avoided a regional bias in the analysis and the regional-specific gaps in interchange acceptability can be addressed as part of CMSP programmes in these areas.

2.3.6 The use of Generalised Journey Time was considered but due to the nature of it bundling all components together (frequency, speed/time and interchange), we have unpacked into separate conditional outputs to enable more targeted interventions to be established.

Table 2-1 - List of hub to hub connections served directly

		In or out of WG boundary		OUT	OUT	IN	OUT	OUT	OUT	IN	IN	IN	OUT	IN	IN	OUT	IN	OUT	OUT	IN	IN	IN	IN	IN	OUT	OUT	OUT	OUT
		National or Regional		N	N	N	N	N	N	N	N	R	N	R	R	N	R	R	R	R	R	R	R	R	N	R	R	R
				BHM	RDG	BRI	OXF	SOU	BSK	BTH	BPW	CNM	SWI	BMH	SAL	DID	GCR	EXD	WOS	POO	CPM	WSB	WEY	WSM	CDF	TAU	YVJ	YVP
OUT	N	Birmingham New Street	BHM																									
OUT	N	Reading	RDG	☑																								
IN	N	Bristol Temple Meads	BRI	☑	☑																							
OUT	N	Oxford	OXF	☑	☑	☐																						
OUT	N	Southampton Central	SOU	☑	☑	☑	☑																					
OUT	N	Basingstoke	BSK	☑	☑	☑	☑	☑																				
IN	N	Bath Spa	BTH	☐	☑	☑	☐	☑	☑																			
IN	N	Bristol Parkway	BPW	☑	☑	☑	☐	☐	☐	☑																		
IN	R	Cheltenham Spa	CNM	☑	☑	☑	☐	☐	☐	☑	☑																	
OUT	N	Swindon	SWI	☐	☑	☑	☐	☐	☐	☑	☑	☑																
IN	R	Bournemouth	BMH	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐															
IN	R	Salisbury	SAL	☐	☐	☑	☐	☑	☑	☑	☐	☐	☐	☐														
OUT	N	Didcot Parkway	DID	☐	☑	☑	☑	☐	☐	☑	☑	☑	☑	☐	☐													
IN	R	Gloucester	GCR	☑	☑	☑	☐	☑	☐	☑	☑	☑	☑	☐	☑	☑												
OUT	R	Exeter St Davids	EXD	☑	☑	☑	☐	☐	☑	☑	☑	☑	☐	☐	☑	☐	☐											
OUT	R	Worcester Shrub Hill	WOS	☑	☑	☑	☑	☐	☐	☑	☑	☑	☐	☐	☐	☑	☑	☐										
IN	R	Poole	POO	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐									
IN	R	Chippenham	CPM	☐	☑	☑	☐	☐	☐	☑	☐	☐	☑	☐	☐	☑	☐	☐	☐	☐								
IN	R	Westbury	WSB	☐	☑	☑	☐	☑	☑	☑	☑	☑	☑	☐	☑	☐	☑	☑	☑	☐	☑							
IN	R	Weymouth	WEY	☐	☐	☑	☐	☑	☑	☑	☑	☐	☐	☑	☐	☐	☑	☐	☐	☑	☐	☑						
IN	R	Weston-Super-Mare	WSM	☐	☑	☑	☐	☐	☐	☑	☑	☐	☑	☐	☐	☑	☐	☑	☐	☐	☑	☐	☐					
OUT	N	Cardiff Central	CDF	☑	☑	☑	☐	☑	☐	☑	☑	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑				
OUT	R	Taunton	TAU	☑	☑	☑	☐	☐	☐	☑	☑	☑	☑	☐	☐	☑	☐	☑	☐	☐	☑	☑	☐	☑	☑			
OUT	R	Yeovil Junction	YVJ	☐	☐	☑	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐		
OUT	R	Yeovil Pen Mill	YVP	☐	☐	☑	☐	☐	☑	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☑	☐	☐	☐	☑	

HOW WILL IT BE MEASURED (TARGETS)

2.3.7 This conditional output will be measured on hub to hub services (both National and Regional) where an interchange is required where at least one hub is inside the Western Gateway boundary (ie. Out-Out are excluded).

2.3.8 Based on consultation with stakeholders, we have set the aspirational interchange time standard as:

Key Aspiration: Interchange
10 minutes minimum – 20 minutes maximum

2.3.9 We have retained a high level target as the analysis is highly sensitive to changes in timetable and changes to frequency. More detailed specific station interchanges may not be relevant in a subsequent timetable change and therefore the target should be treated as an STB-wide aspiration.

2.3.10 This CO is highly dependent on performance and the confidence passengers have that short connection times can be made, especially those with accessibility requirements or making different types of journey (eg leisure vs commute): we have therefore set a 10 minute minimum. A number of interchange times across WG fall within the 5-9 minute category which with even a minor perturbation in arrival will cause a missed connection and we feel that the 10 minute threshold will materially improve the current baseline. On high frequency routes, a missed connection due to a late arrival is less of a concern: we recommend that the 10 minute minimum is aspired towards as part of timetable planning exercises, reducing the impacts of low frequency journeys where the risk of a missed connection is a barrier to travel.

2.3.11 We also recognise that the introduction of new direct services will help improve this CO.

2.3.12 There will always be discrepancies and any changes or interventions specific to interchange must always be weighed up with the benefits of doing so. Western Gateway should therefore work together with Network Rail and the Department of Transport on timetable specification exercises.

GAP ANALYSIS

2.3.13 We have looked at the current interchange times on hub to hub journeys where an interchange is required as per the matrix above and whether or not it meets the aspirational range:

Type of hub	Current compliance (all interchange hubs)	Current compliance (inside WG-only)
Regional	40%	37%
National	63%	66%

2.3.14 Many journeys within and across the Western Gateway require interchange at hubs *outside* the Gateway (especially Reading, Didcot, Swindon, Yeovil). We have reported compliance current compliance figures for both above, and recognise that they may be differing levels of influence that Western Gateway may be able to have at hubs outside the boundary.

2.3.15 We have set very broad aspirational compliance levels against this baseline as follows:

	Stage 1 (2025)	Stage 2 (2030)
Regional Hub aspiration	50%	60%
National Hub aspiration	70%	80%

2.3.16 We recognise that a number of factors are at play and changes to frequency and direct services will support the delivery of this CO. We also recognise that there will always be exceptions to the rule and that due to the diverse nature of journeys made across the STB, increasing or reducing some interchange times will not be feasible. The key focus here is that this interchange time band is kept as a guiding principle to strive towards as part of the timetable planning process.

2.3.17 We also recognise that there are a number of stations across the Western Gateway geography which act as strategic interchange points which were not designated as Regional Hubs in our station classification process, such as Trowbridge, Dorchester and Castle Cary. Stations with an interchange function are determined by network and service patterns, and although this was part of the consideration in Hub designation, it was not the sole factor, with aspects such as facilities and catchment also informing the designation. There is no reason why these stations cannot be measured against the Regional Hub aspiration for interchange.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

2.3.18 Interventions for Interchange will be overseen by the Strategic Planning Taskforce and need to be included within the Strategic Planning process identified in CO C1, such that any opportunities for improved interchange at each 'configuration state' are identified and considered. This Taskforce will be able to monitor and evaluate the interchange aspirations for each hub designation and adapt targets based on observed service levels, journey purposes and other interchange characteristics (eg. commuter interchange, long distance leisure interchange or station infrastructure barriers).

2.3.19 Some specific infrastructure projects just outside the boundary of Western Gateway are due to deliver improved interchange for Western Gateway residents to access Heathrow Airport and central London. The recent remodelling of Reading Station as part of the Great Western Electrification Programme and in preparation for Crossrail is a key part of this.

2.4 CONDITIONAL OUTPUT C3: PERFORMANCE

INTRODUCTION

2.4.1 Confidence and trust that you will arrive at your destination when you planned is a key factor in mode choice: poor performance is consistently flagged as an issue to passengers in the National Rail Passenger Survey and is a barrier to attracting people to rail.

What?	A percentage uplift in Right Time arrivals and an increase in customer satisfaction regarding performance
Why?	Performance is one of the most important factors in passenger choice making and the level of confidence that users have in rail as a mode. Traditionally, performance monitoring and management has been isolated to rail industry bodies however there exists an opportunity for

	local authorities to be more closely aligned to the process (even if the delivery remains largely with those bodies). The emphasis in this output will be performance at every stop of every service, not simply at the destination, which mirrors the industry's recent move away from the Public Performance Measure (PPM) towards Right Time, T-3 and T-5 metrics. This also then facilitates interchange (rather than just measuring punctuality at service destination).
Where?	Route-wide, targets to be disaggregated by operator where necessary
When?	Short to Medium term Stage one by the end of 2021 Stage two by the end of 2025 Stage three by the end of 2030
Who?	TOCs and Network Rail will be accountable and specified and monitored by service specifiers.
How Measured?	See below
Interdependencies with other COs	G3 – Network Resilience
Example persona testing	For a business traveller or delivery employee, is the railway reliable enough to depend upon for business needs?

EVIDENCE BASE

2.4.2 The desire to improve performance was identified in 52 out of 64 studies provided as part of the study and is therefore assumed to be a key priority for stakeholders.

2.4.3 Most of the studies analysed the timetable however they did not identify direct interventions to improve network performance by reducing delays and increase punctuality beyond the measures that Network Rail and TOCs can implement. There is therefore an opportunity for more close working regarding performance so that local authorities can support the prevention, mitigation and recovery from delays on the network.

HOW WILL IT BE MONITORED

2.4.4 Based on discussions with Network Rail, the terminology in this Conditional Output will look at 'monitoring' rather than 'measuring'. There are existing metrics and benchmarks which TOCs and NR work towards delivering and the STB should not be setting new – and possibly conflicting – targets beyond contractualised industry figures.

2.4.5 That said, TOCs and NR have indicated that they welcome ways in which local government can support the prevention, mitigation and recovery from delays based on delay causes identified as being appropriate, specifically those over which they have influence.

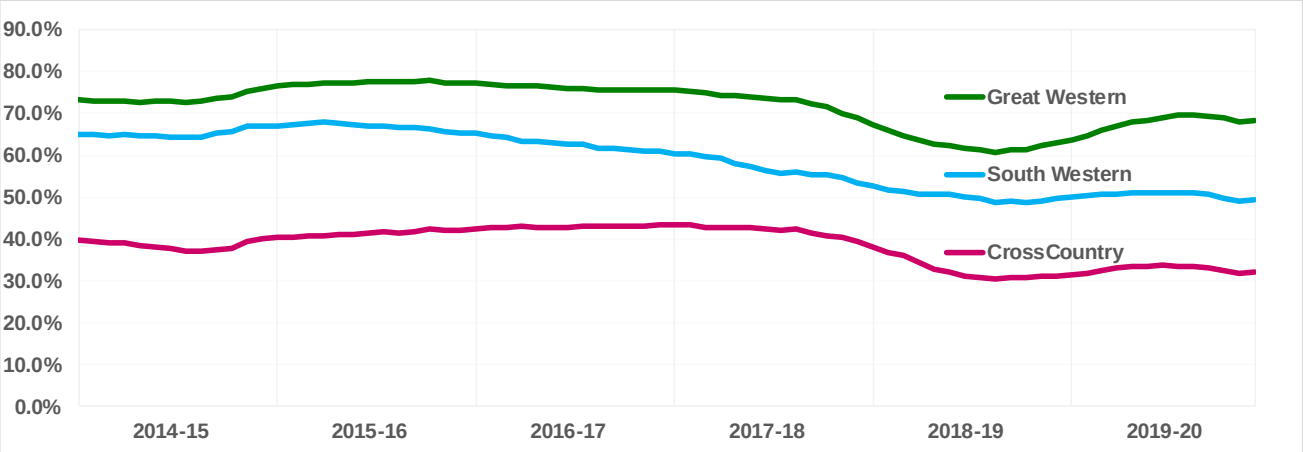
2.4.6 Possible ways in which local and combined authorities could support TOCs and Network Rail in the prevention, mitigation and recovery from primary and secondary delays include, but is not limited to:

- Supporting funding bids for infrastructure improvements and station upgrades;
- Level crossing-related delays;
- Fatalities and trespass mitigation by working with local community groups and/or enforcement services;
- Vegetation management across the interface of council to railway land boundary to reduce trackside debris delays; and
- The support in provision of replacement coach services during disruption for example by enabling better access to and from stations, removing restriction, safeguarding parking.

2.4.7 We recommend that performance is monitored using Right-Time arrivals (RT) and T-3 metrics as reported by the Office of Rail and Road, alongside the National Rail Passenger Survey (NRPS) score for Performance as reported by Transport Focus for each TOC (based on the relevant service group(s) for the operators in the geography). We recognise that the industry has moved away from the Public Performance Measure (PPM) due to its end-station nature while RT and T-3 measure performance at every stop of a service.

2.4.8 Figure 2-2 displays the Right Time Arrival metrics as reported by the ORR for GWR, SWR and CrossCountry, indicating they have not exceeded 78%, 68% and 43% respectively since 2014/15.

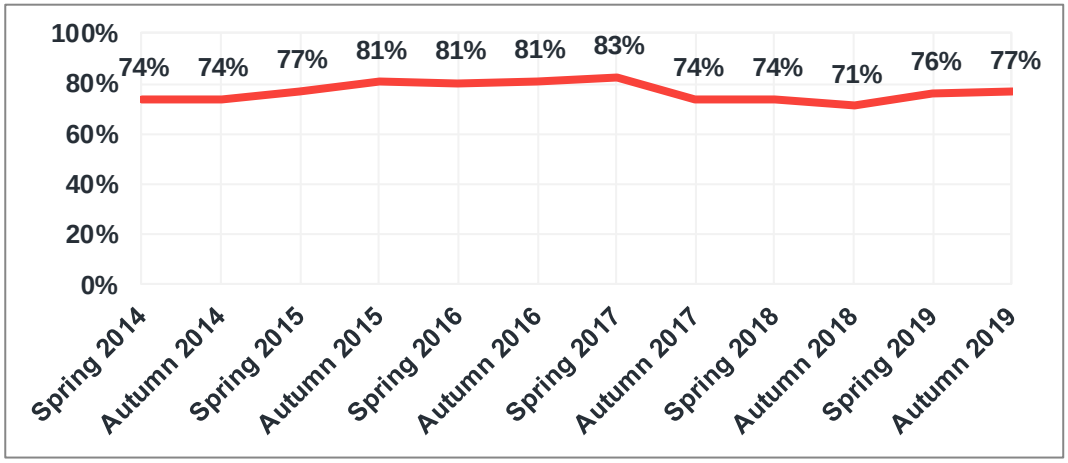
Figure 2-2 - Periodic right time arrivals by sub-operator* (Rail Year 2015 to 2020)



*based on consultation with the respective TOCs, the sub operator groups used are “West” for GWR, “Mainline” for SWR and “South West” for CrossCountry”. The report used for this was *Disaggregated PPM Right Time and CaSL at sub operator level for All TOCs - Table 3.9*

2.4.9 From a customer satisfaction point of view, we have looked at NRPS scores for the last 6 years (2014-2019) and the Punctuality/reliability of the train metric. This indicates that over the past 6 years, the highest satisfaction score in any wave was 83% (in Spring 2017).

Figure 2-3 - NRPS Punctuality/Reliability score for all three sub-operators* (2014-2019)



* for this, we have combined the most applicable service grouping for the three train operators of the Western Gateway, being GWR Long Distance, SWR Long Distance and CrossCountry South.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

2.4.10 A draft of this study included target figures for Right-Time arrivals and NRPS scores however these have been deemed inappropriate and run the risk of conflicting with contractualised performance measurement processes: we therefore recommend that performance is measured based on the TOC and Network Rail benchmarks and the associated Schedule 7.1 and Schedule 8 in franchise agreements.

2.4.11 This study does not identify specific interventions beyond the establishment of a Future Ready & Resilience Taskforce, through which nominated representatives from Western Gateway can work collaboratively with rail industry partners to influence performance improvement measures towards the industry targets described above.

2.4.12 An initial action within this Taskforce would be the development of an action plan which includes dates and aspirations, for example commissioning a study to further identify possible infrastructure interventions or establishing a detailed analysis of delay causes and their hotspots on a recurring basis.

2.5 CONDITIONAL OUTPUT C4: EXTENDED TIMETABLE

INTRODUCTION

2.5.1 Changes in passenger behaviour across all journey purposes has indicated that there is demand for earlier and later trains in the timetable. Many of these passengers currently opt for the private car (if they own or have access to one) as rail simply does not provide a service to enable modal shift for these discretionary journeys. This is especially notable on service groups whose timetable has been designed based on arrival and departure times in London. This is a concern not only on weekdays but also for weekend services.

2.5.2 The main barrier to extending a timetable is its impact on essential maintenance, both from an engineering and infrastructure point of view (Network Rail) but also fleet maintenance and traincrew requirements point of view (TOCs). This is discussed in further detail below.

What?	Improved evening, morning and weekend service times and frequencies
Why?	Travel habits have changed, and there is an ever-growing demand for evening and weekend discretionary travel for leisure purposes, as well as serving the wider-ranging and more flexible working hours. Stakeholders have expressed the need for both earlier and later running of services, and improved frequencies at weekends. The purpose of this CO is to make train services available at times when passengers wish to travel, and to support the evening and weekend economy by improving train services at these times.
Where?	Route-wide
When?	Short to medium term Two stages outlined below, one for 2025 and one for 2030
Who?	Service specifiers accountable
How Measured?	See below
Interdependencies with other COs	-
Example persona testing	For inter-urban shoppers or socialisers, are there enough evening, morning and weekend services to make rail the choice for turn-up-and-go trip?

EVIDENCE BASE

2.5.3 An increase in earlier and later services was identified in 44 out of 64 studies that were reviewed. It is noted that this could be improved if the timetable were decoupled from London and an increase in local and urban provision (as identified in C1 frequency) particularly around Bristol and BCP/Dorset is achieved.

HOW WILL IT BE MEASURED (TARGETS)

2.5.4 This conditional output will be measured on hub to hub services (both National and Regional) where at least one hub is inside the Western Gateway boundary (ie. Out-Out are excluded). The time thresholds below have been derived from stakeholder consultation.

Service Type	Latest first service arrival at Hub station	Earliest last service departure from Hub station
Time at Hub	07:00 (09:00 on Sundays)	23:00

GAP ANALYSIS

2.5.5 We have analysed the number of point to point hub flows which meet the standard outlined above in a holistic manner relating to all stations. The percentage relates to the number of these flows that meet the standard divided by the number of total point to point hub flows in the Western Gateway (excluding Out-Out flows). This analysis was performed on all Regional and National hubs as per

the Hub designation: this therefore includes a selection of out-boundary hubs as we recognise that they can also be attractors and producers for trips to and from the Western Gateway.

Current	Weekday + Saturday	Sunday
Latest Arrival	33%*	21%
Earliest Departure	31%	20%

2.5.6 *For clarity: on 33% of all National to National hub or Regional to National hub flows where at least one of these hubs is within the Western Gateway, you can reach the destination hub by 07:00 on a weekday and Saturday.

2.5.7 Stakeholder feedback has identified that a key concern is Local to Regional and Local to National journeys however we have not undertaken a full journey planning exercise as part of this study (as this requires more than a timetable analysis). While a sample of journeys was considered, we have avoided a regional bias in the analysis and the acceptability of regional-specific gaps in early and late arrivals can be addressed as part of CMSP programmes in these areas.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

2.5.8 The main barrier to extending a timetable is its impact on essential engineering works which Network Rail perform during the evening and weekend hours. The extension of a timetable runs the risk of further squeezing an already constrained window to deliver an ambitious pipeline of improvements. Furthermore, constraining engineering time can impact the delivery of some of the other interventions and associated improvements identified in the conditional outputs as part of this strategy. We appreciate that this would necessitate a review of the Engineering Access Statement (EAS) between the TOCs and Network Rail. Beyond engineering access, fleet maintenance cycles and traincrew diagramming will be impacted by an expanded timetable and the increase in cost that this will entail.

2.5.9 As such, we recommend that delivery of this CO is in part included in the remit of the Future Ready & Resilience Taskforce. This will facilitate discussions regarding the correct balance between provision of services for passengers and the essential maintenance and renewal work required to retain resilience of the network.

2.5.10 In addition, interventions for Extended Timetable need to be considered within the Strategic Planning process identified in CO C1, such that any opportunities at each ‘configuration state’ are identified and assessed. In every case, the business case for extended services will need to be established.

2.6 CONDITIONAL OUTPUT C5: DIRECT SERVICES

INTRODUCTION

2.6.1 As described in 2.3, Interchange has been identified as one of the main challenges within Western Gateway. A number of hub to hub connections which cannot be made directly are considered to be instrumental in preventing modal shift from car to rail. Introducing new direct services will increase the attractiveness of rail as mode of choice. We note that sufficient improvements to interchange and frequency can deliver equivalent benefits to new direct services.

What?	Increased number of direct passenger services through Hub stations
Why?	Conditional Output C5 is about direct connectivity, particularly inter-regional connectivity. The improvement that this CO will drive is linked to supporting the delivery of C2 Interchange because increasing direct services will reduce the requirement for passengers to change trains. The purpose of the CO is to improve the attractiveness of rail by reducing the number of interchanges required to make a journey, increasing the range of destinations available without changing train, or by changing train only once.
Where?	At national and regional hub stations
When?	Medium term 80% of identified direct services in service by 2030
Who?	Service specifiers accountable
How Measured?	See below
Interdependencies with other COs	C1 - Frequency C2 - Interchange
Example persona testing	For a person with reduced mobility, is there a direct service, with an available seat, between major destinations?

EVIDENCE BASE

2.6.2 The addition of direct services was identified in 39 of the 64 studies which were reviewed. While some of these have been identified with local interests in mind, many could provide a sub-national benefit and therefore could be considered as part of upcoming timetable planning exercises.

2.6.3 The new direct services identified in this Conditional Output are based on stakeholder aspirations and views of their respective local authority's residents: an economic assessment including forecast demand will need to be performed to establish the business case for all of these proposed routes and their associated interventions.

HOW WILL IT BE MEASURED (TARGETS)

2.6.4 This conditional output is closely linked with C1 Frequency (where this was calculated based on existing direct services) and C2 Interchange (as the increase in direct services reduces the disbenefit experienced by having to change trains). Based on the 25 National, Regional and Other Hubs we are considering in this strategy, there are 131 Origin-Destination (O-D) pairs (excluding Out-to-Out boundary links) that have direct services, and 99 O-D pairs where at least one interchange is required.

2.6.5 We used a minimum of 4 services a day as a guideline for whether a connection is currently classed as a direct service (compared to isolated evening peak services for example which don't reflect general connectivity). There is also an increasing consensus that a standard pattern of services all day every day is not fit for purpose, particularly around the beginning and end of weekends: the further investigation of direct services will need to consider time of day fitness for purpose.

2.6.6 We have considered the two Yeovil stations separately in this analysis.

2.6.7 Table 2-1 in Conditional Output C2 on Interchange (Page 22) indicates the gaps in direct service.

2.6.8 We have also ranked all hubs in terms of their connectivity to each other. It is unsurprising that Bristol Temple Meads and Bath Spa are at the top of the list of In-Boundary Hubs, but Westbury is also well-connected with direct services (albeit infrequently in some cases). This is reflective of Westbury's position at a key junction on the network. It is notable that Poole and Bournemouth are the worst-connect in-boundary stations with direct services to only 4 and 7 other hubs (respectively).

Table 2-2 - Rank of most hub to hub direct connections

Rank	Station	Hub Type	In or Out	Connected Hubs
1	Bristol Temple Meads	National	In	21
2	Bath Spa	National	In	20
3	Westbury	Regional	In	18
4	Bristol Parkway	National	In	17
5	Gloucester	Regional	In	16
6	Cheltenham Spa	Regional	In	15
7	Salisbury	Regional	In	12
8	Chippenham	Regional	In	10
9	Weymouth	Regional	In	10
10	Weston-Super-Mare	Regional	In	10
11	Reading	National	Out	9
12	Southampton Central	National	Out	9
13	Swindon	National	Out	8
14	Exeter St Davids	Regional	Out	8
15	Cardiff Central	National	Out	8
16	Basingstoke	National	Out	7
17	Bournemouth	Regional	In	7
18	Didcot Parkway	National	Out	7
19	Taunton	Regional	Out	7
20	Yeovil Pen Mill	Regional	Out	7
21	Worcester Shrub Hill	Regional	Out	6
22	Birmingham New Street	National	Out	5
23	Poole	Regional	In	4
24	Yeovil Junction	Regional	Out	4
25	Oxford	National	Out	1

2.6.9 Of the 99 links with no direct service, some are not viable due to infrastructure considerations and geographical constraints, and as such we have made a professional judgement about which ones are strategic enough to include as part of this strategy. This view has been informed by previous consultations and views expressed by stakeholders, and the above-described analysis which has highlighted other links. We note that a number of these are contingent upon reversing movements and/or associated infrastructure upgrades. Out-Out journeys have been excluded.

2.6.10 Based on stakeholder consultation and the evidence base documents we have reviewed, we have suggested direct services as described in Table 2-3. These have been grouped into four categories. The services per category have been prioritised to connect local communities and inter-regional journeys over national journeys which in the past may have severed this local connectivity. The aspiration for these routes is a 1tph direct service.

2.6.11 These have been categorised by the hubs they connect and what kind of intervention is required. Category B interchange improvements primarily relate to timetabling and Category C infrastructure improvements refer to major investment to deliver. All of these would require economic appraisal to establish whether they deliver Value for Money.

Table 2-3 - Suggested future direct services to be investigated

Category	Suggested routes to investigate
Category A1 **New direct services that connect at least one National Hub**	▪ Bath Spa – Taunton – Exeter ▪ Salisbury – Reading ▪ Bristol Temple Meads – Chippenham – Swindon – Oxford ▪ Southampton – Salisbury – Westbury – Swindon – Oxford ▪ Bath Spa – Birmingham ▪ (Cardiff/Malvern) – Bristol – Portsmouth – Brighton
Category A2 **New direct services that connect Regional hubs**	▪ Chippenham – Gloucester/Cheltenham Spa ▪ Chippenham – Salisbury ▪ Chippenham – Castle Cary – Yeovil – Taunton ▪ Weston-super-Mare – Bath Spa – Westbury / Chippenham ▪ Weston-super-Mare – Gloucester ▪ Gloucester – Taunton
Category B **Direct service options which could also be achieved through interchange improvements:**	▪ Poole – Bournemouth – Salisbury *(interchange improvements at Southampton Central, will require working together with TfSE and NR Wessex)* ▪ Bournemouth – Poole – Yeovil – Castle Cary / Westbury – Bath – Bristol *(interchange at Weymouth paired with regularised Heart of Wessex Line service, or interchange at Dorchester if paired with a new station investment option)* ▪ Weymouth – Salisbury *(interchange improvements at Southampton Central, will require working together with TfSE and NR Wessex)* ▪ Salisbury – Birmingham *(service and interchange improvements at Reading or Basingstoke, will require working together with TfSE and NR)* ▪ Westbury – Birmingham *(service and interchange improvements at Reading, Swindon or Bristol, could be part of Salisbury – Birmingham service or extension of Chippenham – Cheltenham listed above)*
Category C **Direct service options which will require infrastructure investment**	▪ Bournemouth – Poole – Yeovil – Exeter *(May be better achieved through interchange improvements at Weymouth to a regularised Heart of Wessex Line service (but would also require infrastructure intervention at Yeovil)* ▪ Weymouth – Exeter *(May be better achieved through a regularised Heart of Wessex Line service (but would also require the infrastructure intervention at Yeovil))*

2.6.12 It is understood that the delivery of East West Rail will present options for direct connections from the Western Gateway to Cambridge via Oxford.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

2.6.13 Interventions for Direct Services will be overseen by the Strategic Planning Taskforce and need to be included within the Strategic Planning process identified in CO C1, such that any opportunities at each 'configuration state' are identified and considered. In every case, the business case for extended services will need to be established.

2.7 CONDITIONAL OUTPUT C6: FREIGHT CAPACITY

INTRODUCTION

2.7.1 The rail network within Western Gateway has a significant role in freight transport national wide. There are three national strategic freight routes that pass through WG. They play a significant role in connecting ports with domestic intermodal hubs, particularly Bristol and Southampton to the Midlands. If rail meets freight clients' expectations, there is high potential to attract transport of goods by rail. Improving rail freight transport will also help developing the area, as we explore under the Productivity theme. This also helps to meet decarbonisation targets by moving the freight off road to rail. It was identified from stakeholders' responses that freight capacity is a significant challenge in Western Gateway.

What?	Enabling sufficient capacity and access to the network for freight services to allow existing and new markets to develop.
Why?	Rail freight is often de-prioritised in capacity planning, and this detracts from the benefits that rail freight can offer to freight customers over road-haulage. By making sufficient capacity on the rail network available, this will increase the attractiveness of rail to freight customers, thereby enabling a transfer of goods from road to rail. The purpose is to increase choice for freight shippers by making rail a viable alternative for more journeys.
Where?	Capacity will be required where there are existing or potential rail freight flows.
When?	Medium to long term
Who?	Network Rail and local authorities accountable for capacity and access, respectively. Freight operators have a role in attracting and accommodating new business through adapting their models.
How Measured?	See below
Interdependencies with other COs	D3 – Freight Growth D4 – Freight Capture P4 – Freight Capability

Example persona testing	For a logistics employee in an emerging or established retail market, is there an opportunity to shift operations onto rail?

EVIDENCE BASE

2.7.2 The improvement to freight capacity was identified in 27 of 64 studies which were reviewed. These aspirations marry closely with decarbonisation targets and the growth of freight in conditional outputs D3 and D4.

FREIGHT – ASPIRATIONAL SERVICE PATTERN (F-ASP)

2.7.3 Conditional Output C6 will be measured against an aspirational service pattern on 8 key routes serving freight transport in Western Gateway, some of which are part of the three national strategic freight routes. These are listed below and illustrated in **Figure 2-3**.

2.7.4 Three national strategic freight routes:

- (1) Southampton to West Midlands via Salisbury, Westbury and Swindon
- (2) South West (Bristol) and Wales (Cardiff / Newport) to the Midlands via Gloucester (Key Commodities
- (3) Great Western Mainline London to South Wales via Reading, Swindon and Bristol

2.7.5 Key routes in Western Gateway:

- (1) Totton to Salisbury and Westbury (part of (1) above)
- (2) Westbury to Swindon (part of (1) above)
- (3) Frome and Westbury to Reading
- (4) Westbury to Bath Spa and Bristol
- (5) Bristol to South Wales (part of (2) and (3) above)
- (6) Bristol to Gloucester and the Midlands (part of (2) above)
- (7) Bristol to Exeter and beyond
- (8) Dorset Coastline

2.7.6 We have divided these 8 routes into Primary and Secondary routes based on their importance to the Western Gateway freight market which is driven by Aggregates from the Mendips quarries (near Frome) and activity around the Bristol and Avonmouth ports. Less of an emphasis has been placed on the Southampton to West Midlands strategic freight route as this does not play as large a contribution in serving Western Gateway specifically, and improvements to it are being considered by NR and others.

Route Grading	Routes Included	Frequency
Primary	3, 4, 5, 6	16 paths per day
Secondary	1, 2, 7, 8	4 or 5 paths per day

Figure 2-4 – Strategic, Primary and Secondary Freight Routes within the Western Gateway

GAP ANALYSIS

2.7.7 A detailed gap analysis was unable to be carried out for this Conditional Output due to the irregular nature of the freight timetable and the impact that COVID-19 has had on freight operations. Furthermore, freight has safeguarded capacity that is intermittently used, which requires a more detailed analysis and consultation to understand.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

2.7.8 In order to better understand the freight market and build collaborative relationships with customers and operators, we recommend the establishment of a Freight Taskforce to take this aspect of the strategy forward. A key first action for this group is to commission and deliver a freight market study. For this CO, it will need to include the detailed gap analysis as described above.

2.7.9 Neighbouring STBs are beginning to develop of Freight and Logistics strategies over the coming months. Once the Freight Taskforce has been established, cross-border collaboration will be essential to improve rail freight opportunities within the Western Gateway area.

3 SOCIAL MOBILITY

3.1 INTRODUCTION TO THEME

3.1.1 This theme focusses specifically on addressing the needs of the remote, less connected and/or deprived parts of the Western Gateway, which were identified as a challenge in the early stages of stakeholder engagement. The target is to make rail an integral part of connecting those remote and often deprived communities. Successful delivery of this theme will lead to a rebalancing of the regional economy, providing equal opportunities to all Western Gateway residents.

3.1.2 Three priorities were identified through stakeholder engagement in Phase 1. The table below expands on what addressing these priorities will mean to WG.

Priority	Description
Improve multi-modal interchange to rail through improving access to stations by car, bus and active modes	For rail to be successful, it needs to be part of a sustainable transport network. Stakeholders told us that in some parts of WG, particularly where access to rail is dependent upon good bus links, this connectivity is poor or absent at present. This is addressed by CO M1 and M2. The question of accessibility within stations for all users is addressed through CO M6, in order that barriers (perceived or real) are removed.
Create new direct journey opportunities between places that are not currently rail-connected, particularly north – south and rural areas	There are large parts of WG that are rural and remote, and/or without access to rail. These parts of WG are also often the more deprived areas that are in need of the economic growth that rail connectivity can bring. As well as addressing this priority through CO M1 and M2, we have also included M3 which will consider penetration of rail to a wider geography.
Make rail travel more affordable through fares management and incentives	The perception of rail is that fares are too expensive and unfair as it is difficult to find discounted fares. Ticket prices, particularly at peak make rail uncompetitive with car travel, and also unaffordable to the deprived parts of society. We address fares and ticketing solutions through COs M4 and M5.

3.1.3 Six conditional outputs were identified through stakeholder engagement in Phase 1. These are listed in the table below and this chapter adds more detail about their targets, gaps and routes to delivery.

Conditional Output	Description
M1: Station Access	Improvements to car and active modes access to stations, including safety, routing, signposting and parking
M2: Modal Integration	Integration of sustainable modes through alignment of bus and rail timetables / maximise bus to rail interchange
M3: Regional Catchment	Uplift in % population within rail catchment
M4: Fares Influence	Transparent, flexible and affordable fares structure or other financial incentives (push / pull)
M5: Ticketing Solutions	Multi-modal ticketing that encourages sustainable end-to-end journeys, including Mobility as a Service (MaaS)
M6: Accessibility	All stations in Western Gateway fully accessible

3.2 CONDITIONAL OUTPUT M1: STATION ACCESS

INTRODUCTION

3.2.1 This conditional output will provide improvements to car and active modes access to stations, including safety, routing, signposting and parking. Implementing this CO will drive modal shift and promote rail as an integral part of a sustainable transport network, enabling passengers to feel that they are able to get to their local stations quickly and safely, and be confident that when they get there, space will be available for car or cycle parking.

3.2.2 This conditional output now incorporates the former **P3: Station Gateways** which was focussed upon wayfinding, and therefore has significant overlap with this CO.

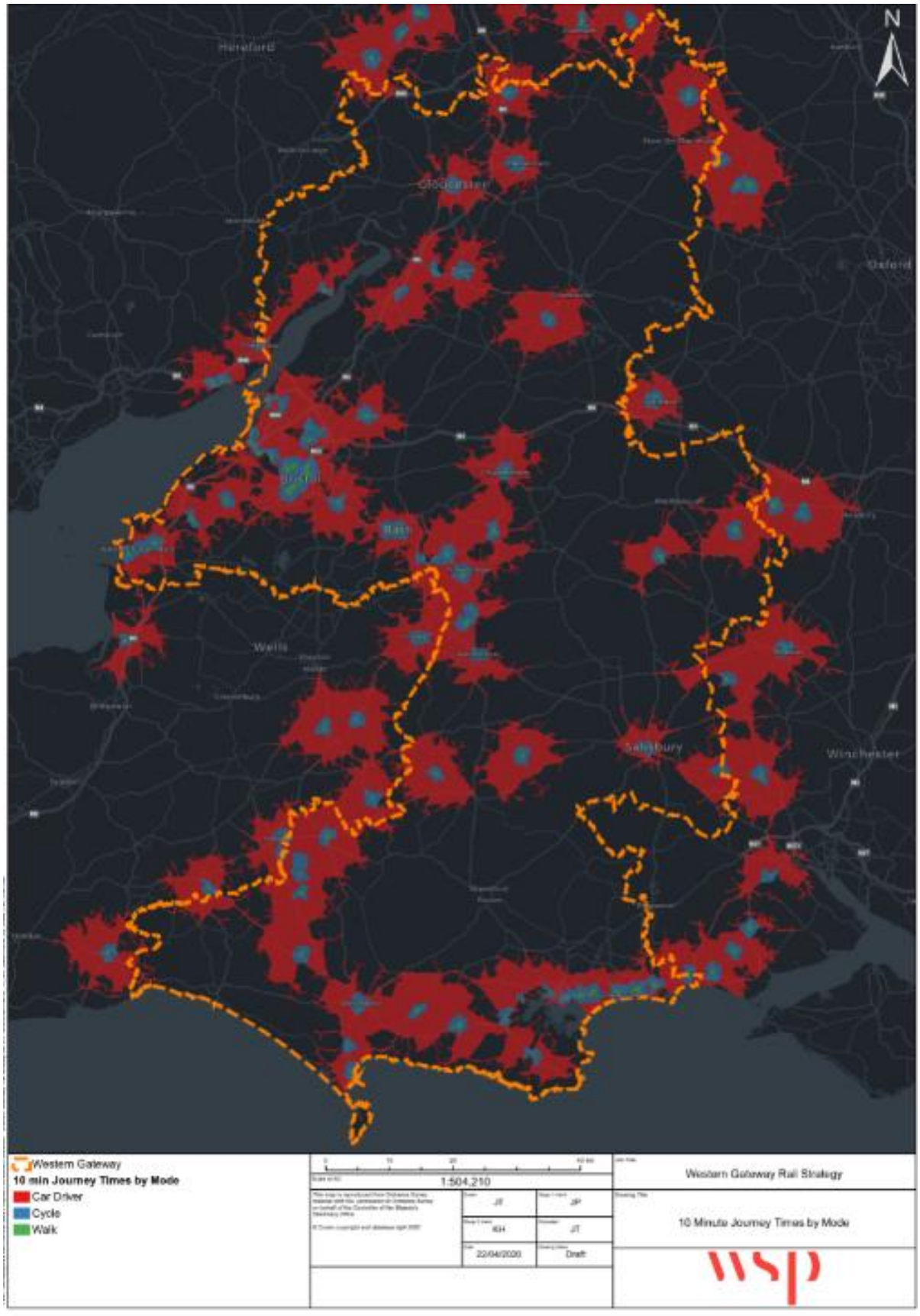
EVIDENCE BASE

3.2.3 A large evidence base of information was received during the eConsultation to identify areas within the Western Gateway where station access improvements can be made and the limitations. These include:

- Improvement to accessibility routes to the stations is required, as poor routes may be a factor. This includes a lack car parking facilities at stations;
- Car parking requirements will need to be determined for each station as the demand is very localised;
- Accidents within the area may influence customers travelling to stations due to the risk of being involved or subsequent delays. Accident data was collated for a range of train stations within the Western Gateway to establish whether there was a specific correlation in accidents and whether any of the train stations were outliers. On review notable train station outliers included Clifton Down, Lawrence Hill, Weston Super Mare and Bournemouth;
- Crimes within the area may influence customers walking or cycling to stations for fear to their safety. Crime data was collated for a range of train stations within the Western Gateway to establish whether there was a specific correlation in crime locations and whether any of the train stations were outliers. On review notable train station outliers included Gloucester, Trowbridge, Weymouth and Bournemouth;
- Security issues within the station deter customers;
- Analysis of a 10 minute journey time by car, cycle and walking from stations is shown below in Figure 3-1;
- Analysis of station usage compared to walking catchment (0-10 minutes) to determine whether there is a large population that isn't reflected in rail usage; and
- Individual station access plans should be used to develop targets for car, cycle and disabled parking at each station. All stations should have a travel plan in place by 2025 to support improvements.
- The diversity of settings for stations, ranging from city centre locations to rural and parkway stations means that signposting and wayfinding is likely to need bespoke solutions in each setting, ranging from physical signposting (both highway and active modes) to digital wayfinding.

3.2.4 The most complete wayfinding study is the "Wiltshire Walking & Cycling Wayfinding Outline Strategy Report", which could serve as a suitable exemplar for strategic wayfinding design.

Figure 3-1 - 10 Minute Journey Times by Mode from Rail Stations



3.2.5 During reviews of the 64 documents received from various stakeholders across Western Gateway, approximately 37 of them included reference to interventions and aspirations related to improving modal integration and wayfinding throughout the region's stations.

HOW WILL IT BE MEASURED (TARGETS)

3.2.6 The desirable measures for this conditional output are set out in Table 3-1 and Table 3-2 based on connecting multi-modal sustainable transport services especially those not connected to the wider region via rail. Provisional targets have been set based upon the initial targets set out at consultation phase but taking into considering the eConsultation responses:

Table 3-1 – Station Access Parking Provision Targets

Type of Provision	% daily Station Users provided for		
	National Hubs	**Regional Hubs**	**Local Hubs**
Car Parking	5%	15%	10%
Cycle Parking	7.5%	7.5%	7.5%
Disabled Parking (Wide Spaces)	10% of total car parking provision (as specified in DfT Design Standards for Accessible Railway Stations – A Code of Practice)		
EV Charging Points	5% of total car parking provision, but can be linked with disabled spaces		

Table 3-2 – Station Access Safety & Security Provision Targets

Type of Provision	How provided / measure?
Access and Signposting	100% compliance with DfT Design Standards for Accessible Railway Stations – A Code of Practice
Safety	A reduction in road traffic collisions close on station approaches
Security	A reduction in reported crimes on station approaches

3.2.30 Provisional targets have been set based upon the initial targets set out at consultation phase but taking into considering the eConsultation responses.

3.2.31 Targets for EV charging points will need to be reviewed as patterns of uptake evolve, in particular to assess what proportion of EV owners seek to charge their vehicles at car parks as opposed to at home.

3.2.32 In addition to visual signposting, both seasoned Western Gateway rail travellers and first-time visitors will rely heavily on journey planning apps and GPS map applications to guide their journeys, so in the absence of physical wayfinding, digital wayfinding capability represents a cost-effective and accessible way to provide awareness and comfort with using rail stations.

3.2.33 The Western Gateway STB should:

- Develop and deliver a Western Gateway Wayfinding Strategy and Delivery Plans for all stations which should:
  - Concentrate on key journeys and personas for the Western Gateway area
  - Incorporate information and signage requirements for emerging integrated transport modes, such as cycle hire schemes and charging areas for electric cycles and vehicles
- Develop a digital wayfinding app for use across the Western Gateway area. It will require:
  - Business-to-business collaboration with journey planning app providers
  - Incorporating Google Augmented Reality features, combining Google's existing Street View and Maps data overlaid on a live feed from phone cameras; this may require the design of an Application Programming Interface (API) to be used in conjunction with Google's systems
  - Linking and co-development with the "one-app" journey planning and digital ticketing capabilities outlined in conditional output M5 – Ticketing Solutions, as well as the journey planning studies in conditional output P3 – International Gateways
  - Marketing and advertising collaboration with TOCs and third-party retailers to incorporate the digital wayfinding resource into their apps

3.2.34 Success for this aspect of the CO will be measured through

- Click-through funnel statistics from TOC apps and third-party ticket retailers for local digital wayfinding link previews
- Monitoring trends in off-peak rail travel passenger numbers on the Western Gateway Routes

GAP ANALYSIS

3.2.35 We have taken into consideration the concerns surrounding car and cycle parking provisions by developing a series of targets to make rail more accessible to a wider range of customers.

3.2.36 Demand for car parking spaces often exceeds capacity by the end of the morning peak and causes a problem for those wishing to make journeys at times when the trains themselves are less busy.

3.2.37 Although we have undertaken a high-level assessment of crime statistics in proximity of stations, it is not yet understood whether the likelihood of becoming a victim of crime is a deterrent from rail travel. We are aware of a correlation between cycling to the station and cycle theft. Train Operating Companies should make a conscious effort to work collaboratively with the Western Gateway and British Transport Police to enforce the Secure Stations scheme to reduce crime and play a greater role in safeguarding customer and staff at stations.

3.2.38 Western Gateway and stakeholders should work collaboratively to ensure all station environments are visible, obvious and welcoming to all users in order to spur economic growth and enable modal choice in their communities. They must also integrate seamlessly with other modes of sustainable transport, ideally highlighting it intuitively as the first and most obvious choice for onward travel. Several of these concepts are also discussed in other interdependent COs such as G2 Mobility Hubs.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

3.2.39 We recommend the establishment of a Stations & Access to Rail Taskforce, whose remit will include a more detailed gap analysis of the elements of this CO, alongside the development of Station

Travel Plans for all stations in WG within the first 3 years. Both of these elements will enable the identification of priorities for investment across Western Gateway and a phased delivery of interventions.

3.2.40 Station Travel Plans have been identified as a key intervention to provide passengers information how to travel to and from the station. This will reduce congestion around the station, provide ease of access and consequently hope to reduce traffic collisions. It will also lessen the stations effect on the environment, and encourage more travel by rail. However, rather than take a 'one size' fits all approach more use needs to be made of Station Travel Plans so that the needs and expectations of passengers at National, Regional and Local Hubs are taken into account before decisions on where to target resources are made.

3.3 CONDITIONAL OUTPUT M2: MODAL INTEGRATION

INTRODUCTION

3.3.1 This conditional output will provide improvements to integration of sustainable modes through alignment of bus and rail timetables / maximise bus to rail interchange. This output will drive modal shift and promote rail as an integral part of a sustainable transport network. Passengers using local bus services to connect to rail need to be confident that the interchange between the two modes (in both directions) will be comfortable and attractive. This needs to include consideration of proximity of bus stops to the rail station, as well as mode to mode wait time.

EVIDENCE BASE

3.3.2 A large evidence base of information was received during the eConsultation to identify areas within the Western Gateway modal integration improvements can be made to connect stations and the limitations. These include:

- The frequency of bus and rail services are key – identification needed to clarify the impact of a missed connection;
- Currently local authorities do not have direct control over bus operators and the services they choose to provide. There is a need for a process to co-ordinate rail and bus times;
- A portion of the local hub stations are vital to the Western Gateway and important for connectivity throughout the region;
- Bus timetabling is easier to amend than rail timetables;
- Importance of the integration between modes needs to be a suitable period to allow for delays and those with disabilities to transfer in time;
- To ease coordination between both rail and bus journey a clock face timetable for both should be introduced; and
- Once the targets have been established they should be considered as part of travel plans for the stations, linking with M1.

3.3.3 During reviews of the 64 documents received from various stakeholders across Western Gateway, approximately 37 of them included reference to interventions and aspirations related to improving modal integration throughout the regions stations.

HOW WILL IT BE MEASURED (TARGETS)

3.3.4 The desirable measures for this conditional output are shown below in Table 3-3 and are based on connecting multi-modal sustainable transport services especially those not connected to the wider region via rail.

Table 3-3 – Modal Integration Measures

Type of Provision	Measure
Local bus services connecting Regional Hub **Local Hub stations to non-rail connected places**	Bus services timetabled to allow train-to-bus and bus-to-train with wait for second service of 15 to 20 minutes, Monday-Saturday daytime, every 30 minutes at other times (aligned with train timetables)
Bus stops for local bus services close to station	Bus stops with local services are within 200m of station entrance and on a step-free route
Connectivity by sustainable transport modes	End-to-end journey times by sustainable modes (bus+rail) from towns without stations to key regional destinations are competitive with private car

3.3.14 Provisional targets have been set based upon the initial targets set out at consultation phase but taking into considering the eConsultation responses.

GAP ANALYSIS

3.3.15 Over the past years city transport policy across the UK has been focused on private transportation, although city transportation planning has usually included some forms of public transportation. This has been as a result of a variety of causes, including economic growth and societal preferences that have, in many cases, translated into a political environment favouring car ownership particularly in rural areas due to a lack of modal integration.

3.3.16 Through our gap analysis we identified a range of bus and rail services without integrated timetables and where bus stops are currently located too far away from stations, or where buses to key destinations do not call at bus stops which are located close to rail stations.

3.3.17 From this analysis, 8 isolated towns were identified, with a range of potential major hub destinations that could be reached via bus/rail (including journey time), the interchange time from bus to rail stations and the duration taken to reach hub destinations by car. Notable isolated towns with bus journey times over 40 minutes plus to the nearest train station included; Bridport (43 minutes), Cinderford (52 minutes) and Blandford Forum (1 hour 4 minutes).

3.3.18 Map-based information can be analysed with bus timetables to identify where bus stops are currently located too far away from stations, or where buses to key destinations do not call at bus stops which are located close to rail stations.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

3.3.19 The Stations & Access to Rail Taskforce as described in CO M1 will be responsible for actions required to deliver this CO. As well as rail industry partners, a key representative on this group must be from Bus Operators in order for a successful outcome to be achieved.

3.3.20 An early action for this Taskforce should include analysis of bus services for all Regional and Local Hub stations and all locations without rail stations, in order that findings can be incorporated into Station Travel Plans. This action works alongside those for COs C4 Fares Influence and C5 Ticketing Solutions as one of the key interventions to tackle the gaps previously analysed with integrated multi-modal ticket solutions.

3.4 CONDITIONAL OUTPUT M3: REGIONAL CATCHMENT

INTRODUCTION

3.4.1 The conditional output is intended to drive a percentage uplift in population living within a rail catchment. Increasing the proportion of the population living within the catchment of a rail station (e.g. within 15 minutes travel time by their chosen mode, noting that catchment will depend upon the nature of the journey purpose) is likely to be a contributory factor in whether that population will choose to use rail as part of their end-to-end journey. There are two obvious ways to achieve this CO – by shortening journey times to the station or creating new stations with new catchments.

EVIDENCE BASE

3.4.2 A large evidence base of information was received during the eConsultation to identify areas within the Western Gateway where the rail catchment can be increased. These include:

- If parking facilities are limited then customers are unable to utilise the facilities stations possess, so this must be considered alongside increasing station catchments;
- Improving bus services throughout the region is key to connecting to rail stations;
- Where parking is available competition should be introduced such as free parking – drawing on the success of parkway stations;
- Marketing campaigns to encourage the uptake and benefit of rail travel to hard-to-reach communities; and
- Consideration of the time it takes for individuals to travel to stations, implementation of station travel plans to provide this information.
- Network Rail Wessex Route First/Last Mile strategy to ensure transport solutions which remove the risk of congestion, promote sustainable transformational growth and develop the region's economic capability are introduced.

3.4.3 During reviews of the 64 documents received from various stakeholders across Western Gateway, approximately 36 of them included reference to interventions and aspirations related to improving modal integration throughout the regions stations. In addition, an additional suite of documents highlighting interventions to specifically improve Access to Rail that were submitted to the DfT Restoring Your Railway Ideas Fund have been reviewed.

HOW WILL IT BE MEASURED (TARGETS)

3.4.4 The desirable targets for this conditional output are shown below in Table 3-4 and are based on increasing the regional rail catchment of the Western Gateway.

Table 3-4 – Regional Catchment Targets

Type of Provision	Target
Location of rail stations in relation to residents' homes	Increase proportion of population living within 15-minute **walk** of a rail station
Location of rail stations in relation to residents' homes	Increase proportion of population living within 15-minute **cycle** of a rail station
Location of rail stations in relation to residents' homes	Increase proportion of population living within 15-minute **drive** of a rail station

3.4.13 Provisional targets have been set based upon the initial targets set out at consultation phase but taking into considering the eConsultation responses.

GAP ANALYSIS

3.4.14 Aspirations for rail schemes have been identified within existing documentation however they take time to develop and deliver, due to Network Rail's GRIP process. Without protection these linear assets are easily destroyed by redevelopment. Therefore, Western Gateway planning authorities should strive to protect potentially valuable routes for which a business case has not yet been established to better connect the region. This links with CO G1 Transit Oriented Growth.

3.4.15 We have identified significant populations without easy access to rail stations; however, good access to a station is not always enough for residents to use the station. At a local level we have compared station usage (ORR data on station entries and exits) with the local population within walking distance. For most stations there is a broad relationship - the more people live close to a station, the higher that stations usage is; however this is not always the case. This suggests that other factors are at play – competing modes, a poor rail service (suburban Bristol) or a particularly good service (Westbury), or demand displaced from a nearby location (Kemble serving Cirencester, Lydney serving Coleford).

3.4.16 Furthermore, to identify and clearly understand the relationship between location of rail stations in relation to residents' homes assessments and monitoring of council walking and cycling action plans (LCWIPs) could be undertaken.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

3.4.17 To address underlying issues to connect the regional catchments across the UK, DfT has launched the Restoring Your Railway Ideas Fund ('Reversing Beeching'). Stakeholders in the Western Gateway have used this opportunity to put forward a number of proposals for projects to restore lost rail connections to communities. DfT will fund 75% of costs up to £50,000 of successful proposals to help fund transport and economic studies and create a business case.

3.4.18 Future funding to develop projects would be subject to agreement of the business case. Once successful projects are identified, subsequent proposals will need to focus on making the strategic and economic case for the scheme, as well as setting out any recognised challenges. Furthermore, the inclusion of socio-economic benefits, the train service proposed, any infrastructure and operating costs along with a consideration of the system impact and disbenefits on existing users will need to be provided.

3.4.19 At the time of writing, ten of the first rounds bids have been announced as successful, of which one is situated within the Western Gateway geography, shown in Table 3-5.

3.4.20 DfT have informed other first round bidders that a further decision may be imminent, and two of these are situated within the geography, listed in Table 3-6. Nine bids put forward for the second round of funding are located within the Western Gateway, and are listed in Table 3-7. There will be a third funding round in November 2020 to enable as many communities as possible to take advantage of the support provided.

3.4.21 The inclusion of these funding bids in this strategy is acknowledging the importance that DfT is now placing on making rail more accessible to deprived and rural communities. The concept aligns directly with this CO, so Western Gateway, through the Stations & Access to Rail Taskforce, has a role in shaping the future development of these schemes, regardless of whether bids to DfT are

successful. As such, a further assessment of all bids by Western Gateway is proposed to establish whether they have the ability to deliver both this and other COs.

3.4.22 It is understood that for schemes taken forward through the 'Restoring Your Railways' fund, they will be required to pass through the Rail Network Enhancements Pipeline process, with the next stage being the submission of an SOBC at 'Decision to Develop' stage. For these schemes, the ability to demonstrate that they are aligned with the STB Rail Strategy will be a factor in the SOBC being approved.

Table 3-5 – Successful First Round Ideas Fund Bid

First Round	Status: Funding Confirmed
Project	Devizes via Lydeway in Western Gateway
Organisation	Wiltshire Council in partnership with Devizes Development Partnership
Project Contents	Plans to build a railway station on the outskirts of Devizes. Funding will support preparation of a feasibility study. If this is positive it is anticipated that the station could open within 5 years. It would support residents and the visitor economy.

Table 3-6 - First Round Ideas Fund Bids Awaiting Response

First Round	Status: Ongoing
Project	Melksham Single Track Line Capacity Enhancements*
Organisation	Wiltshire Council
Project Contents	Capacity improvement proposals for the Swindon-Westbury route, focusing on the Thingley Junction – Bradford Junction. The infrastructure options development assessment would consider the requirements for a Swindon-Westbury local service of a basic one train per hour frequency, with further options for an extension southward to Southampton, optimised timings for connections Westbury and frequency improvements above the one train per hour.
Project	Westbury Station Hub*
Organisation	Wiltshire Council
Project Contents	The proposal will develop the Westbury Station Hub concept towards a Strategic Outline Business Case, identifying infrastructure requirements that support the function of Westbury Station as an important connecting hub, capable of accommodating service frequency aspirations including some restored secondary services, improved connection timing and operational resilience.

* DfT have requested further information on these Round 1 bids which are still "in the system" but are hoped to be progressed.

Table 3-7 – Submitted Second Round Ideas Fund Bid

Second Round	Status: Submitted with results announced end of Summer 2020
Project	Shepton Mallet (Mendip Vale)

Second Round	Status: Submitted with results announced end of Summer 2020
Organisation	Mendip District Council
Project Contents	Shepton Mallet's current nearest mainline station is Castle Cary which is over seven miles away, but new stations and a bypass have been proposed in a business case from Mendip District Council for major new transport projects. Included in the plans is a new 'Shepton Parkway' railway station and a new bypass near Street, and the district council has committed £320,000 towards developing a full business case. This would allow for residents and vistors to rely on rail rather than Sedgemoor motorway link.
Project	Radstock Railway reinstatement
Organisation	The North Somerset Railway
Project Contents	To provide various services both directly and indirectly, to Swindon, Westbury, Taunton, Exeter, the South West, Weymouth, London, Bristol,Cardiff, Gloucester and Cheltenham, plus have a beneficial effect on the Somer Valley community for example, more tourism, easier journeys for commuters, and leisure travel..
Project	St Anne's Park Station
Organisation	Bristol City Council
Project Contents	St Anne's Park Station has been out of use for 50 years and could be reopened under proposals being put forward by the MP for Bristol East. Reopening the station has the potential to transform travel in the area: reducing gridlock, improving air quality and opening up access to other areas of our city for residents. Local residents have led a longstanding campaign to reopen St Anne's as the area has been poorly served by public transport for some years
Project	Restoring secondary services on the Great Western Main line
Organisation	Wiltshire
Project Contents	The proposal is to enable rail to increase its market penetration, support the local economy and reduce environmental impacts by: Introducing additional (stopping) services on the route between Bristol and Didcot via Chippenham. Opening new stations to improve access to rail at Royal Wootton Bassett and Corsham. Increasing frequency between key regional centres
Project	Charfield Station
Organisation	WECA
Project Contents	Charfield is on the Bristol/ Birmingham route between Yate and Cam and Dursley and is in South Gloucestershire. Network Rail are working towards single option designs and funding has been secured for development and in principle for construction from WECA. A New Station Application has been submitted for this station by the Council.
Project	Bristol West Capacity Enhancement
Organisation	WECA

Second Round	Status: Submitted with results announced end of Summer 2020
Project Contents	This scheme looks to address existing capacity issues which is restricting necessary increases in frequency of train services into and out of Bristol Temple Meads. This capacity issue was highlighted in the Greater Bristol Area rail Feasibility Study (GBARFS), part funded by the DfT and finalised in November 2019.
Project	Cirencester Community Rail project
Organisation	Cirencester Community Development Trust
Project Contents	To re-instate the train route from Cirencester to Kemble by building a single-track line with passing loops following the old route.
Project	Project Wareham – complete the link (Wareham – Swanage)
Organisation	Swanage Railway
Project Contents	Project Wareham entails delivering the infrastructure and capability to enable the full re-instatement of the Purbeck Line and the re-introduction of timetabled passenger services between Swanage and Wareham.
Project	Improvement of railway services at Pilning station / reinstatement of FB to Platform 2
Organisation	Pilning Station Action Group
Project Contents	Reinstatement of footbridge to Platform 2: the footbridge was removed from this station as part of the electrification programme so that there is no access to the West bound platform. Services are infrequent and a significant uplift is desired.

3.5 CONDITIONAL OUTPUT M4: FARES INFLUENCE

INTRODUCTION

3.5.1 This conditional output provides a transparent, flexible and affordable fares structure or other financial incentives (push / pull). Public perception of rail fares is that they are expensive and complex, and feedback from Transport Focus suggests that many passengers do not feel that they get Value for Money from the fares they pay. With changing travel habits, season tickets in their traditional form no longer offer a better value alternative.

3.5.2 As a consequence, potential passengers will choose car travel in preference. Furthermore, a specific issue in Western Gateway is that season tickets to London are disproportionately cheap compared to a peak return fare, which drives a bias towards London rather than regionally-based businesses.

3.5.3 We are aware that there is an ongoing fares reform in the rail industry and, paired with the ongoing Williams review of franchising, looks to provide more devolution and local control over fares and ticketing to enable more targeted, appropriate and affordable local pricing structures. This presents an opportunity for the Western Gateway and its constituent authorities to ‘get ahead’ and identify ways in which fares can be simpler, tickets can be integrated and the pain points/barriers to choosing rail based on this can be eased/lifted.

EVIDENCE BASE

3.5.4 A large evidence base of information was received during the eConsultation to identify how the influence of fares could change customer's perception of rail travel and other sustainable travel modes within the Western Gateway and the limitations.

3.5.5 During reviews of the 64 documents received from various stakeholders across Western Gateway, approximately 11 of them included reference to interventions and aspirations related to improving ticketing solutions throughout the region. One of the key documents highlighting the priority and desire for an improvement in fares was the South Western Franchise – Consultation response from Wiltshire Council.

HOW WILL IT BE MEASURED (TARGETS)

3.5.6 In a similar manner to the ongoing monitoring and management of performance, the fitness-for-purpose of fares will only be achieved if TOCs (with the Rail Delivery Group), Local Authorities, the DfT and the ORR work together to identify where fares are the barrier to rail being the main mode of choice. This includes looking for multi-modal integration, notably with the regional and urban bus networks, but also first-mile last-mile integration such as car or bike sharing solutions.

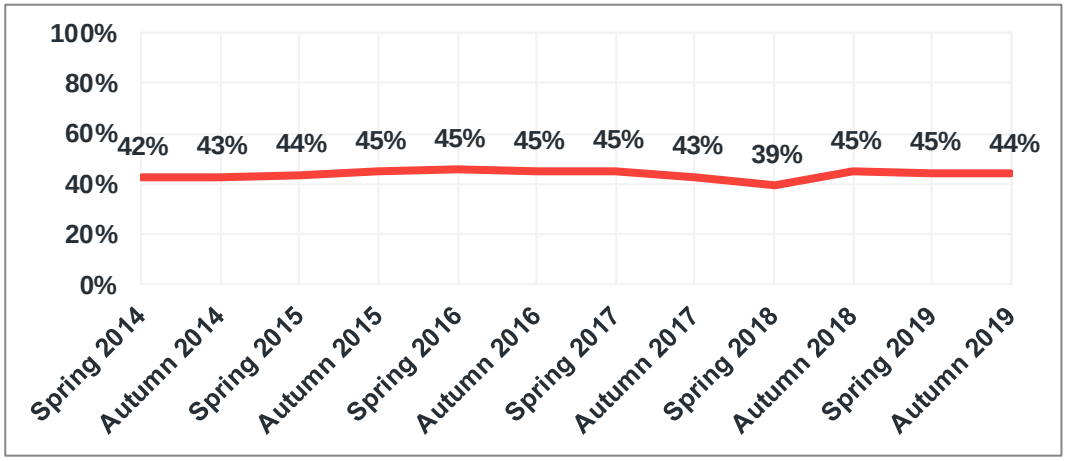
3.5.7 Targets for an improvement to passenger satisfaction based on National Rail Passenger Survey (NRPS) data have been set reflecting the responses to the eConsultations where stakeholders expressed that customer satisfaction with value of money as a key indicator for choice of mode. While these targets are blunt, they reflect this desire to improve satisfaction of value for money.

GAP ANALYSIS

3.5.8 This conditional output has struggled to be implemented not only within the Western Gateway but nationally due to the lack of agreement between public and private sectors to root and branch a reform to tackle the fares and ticketing regulation.

3.5.9 The gap analysis on NRPS data identified a plateauing trend of value for money of the price of rail tickets from 2014 to 2019. This indicated that over the past 6 years, the highest satisfaction score in any wave was 45%. For this, we have selected the most applicable service grouping for the three train operators of the Western Gateway, being GWR Long Distance, SWR Long Distance and CrossCountry South.

Figure 3-2 - NRPS Value for Money score for all three sub-operators (2014-2019)



DELIVERY PLAN – IDENTIFIED INTERVENTIONS

3.5.10 Fares and Ticketing will fall under the responsibility of the recommended Digital Solutions Taskforce, and their immediate task will be to develop an Action Plan to both improve Value for Money in fares alongside addressing the challenges around digital multi-modal ticketing (See CO M5).

3.6 CONDITIONAL OUTPUT M5: TICKETING SOLUTIONS

INTRODUCTION

3.6.1 The ticketing solutions conditional output hopes to provide multi-modal ticketing that encourages sustainable end-to-end journeys, including Mobility as a Service (MaaS). In addition to frustration about fares (described at M4), members of the public are not incentivised to link different modes together with multi-modal tickets. Journey planning has to be done by mode, making it all too easy to take the most convenient option, which in Western Gateway will most often be road vehicle (private car or taxi). End-to-end journey planning and ticketing (including future mobility considerations such as Bike Hire or Car Sharing) has the potential to change habits. The output prioritises National Hubs to link to Smart Ticketing schemes in Greater Bristol and BCP.

EVIDENCE BASE

3.6.2 A large evidence base of information was received during the eConsultation to identify how ticketing solutions could be implemented within the Western Gateway and the limitations. These include:

- A non-smartphone solution (e.g. ITSO card);
- Multi-modal planner to allow customers to plan journeys to events at venues;
- Legislation makes it difficult for bus operators to participate in multi-operator ticketing schemes so would be useful for these to be reviewed by the appropriate bodies;
- Multi-modality across the Western Gateway is complex given the vast number of fare combinations e.g. bus, car club vehicle and shared bike; and
- Information on onward travel options may be more useful than intermodal fares as it is difficult to apply special offers such as advance fares and add-ons which offer good value (e.g. PlusBus).

3.6.3 During reviews of the 64 documents received from various stakeholders across Western Gateway, approximately 17 of them included reference to interventions and aspirations related to improving ticketing solutions throughout the region.

HOW WILL IT BE MEASURED (TARGETS)

3.6.4 The desirable standards for this conditional output are shown below in Table 3-8 based on low barriers for both the journey planning and ticketing experiences - One Ticket One App maximum - being:

Table 3-8 – Ticketing Solutions Targets

Criteria / Measure	Proposed Target
Tickets required for door-to-door journey	Up to one ticket required for journey (ticketless journey also possible)
Sources of information required for journey planning	Up to one app/service required for journey planning

3.6.7 Provisional targets have been set based upon the initial targets set out at consultation phase but taking into considering the eConsultation responses.

3.6.8 Success of ticketing solutions will be measured with the introduction of end-to-end journey planning and through a one ticket service and an associated uplift in rail being part of a sustainable end-to-end journey. National hubs are the priority, with the hope regional hubs will follow suit to incentivise members of the public to shift from their single occupancy car travel to multi-modal transport with the aid of a ticketing solution.

GAP ANALYSIS

3.6.9 Ticketing Solutions are struggling to reach their full capacity due to the wide range of alternatives that are available throughout the UK without a definitive solution. Customers are no longer happy with resigning themselves to a range of average services and want an app tailored personally to their requirements.

3.6.10 This conditional output will need to be met with a range of aspirations which are yet to deliver a solution to provide a simple yet intuitive, user friendly resolution to provide combined tickets across a range of multi-modal transport. The challenge is to achieve the shift of customers to One Ticket One App due to the vast numbers of TOCs.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

3.6.11 Fares and Ticketing will fall under the responsibility of the recommended Digital Solutions Taskforce, and their immediate task will be to develop an Action Plan to both improve Value for Money in fares alongside addressing the challenges around digital multi-modal ticketing as described above.

3.6.12 There are a handful of ticketing schemes already in development within Western Gateway. These include PlusBus in a number of towns and cities, and the Freedom Travel Pass in Swindon and Wiltshire. An early action of the Digital Solutions Taskforce will be to gather information on all such schemes and assess their success. Longer-term, applying Mobility as a Service Solutions and multi-modal Digital Ticketing across WG will be the objective.

3.7 CONDITIONAL OUTPUT M6: ACCESSIBILITY

INTRODUCTION

3.7.1 This conditional output looks to make all stations in Western Gateway fully accessible, according to our definition of Accessibility. There are still a number of stations on the Western Gateway rail network that are non-compliant with national and European Accessibility standards and present a challenging and sometimes threatening environment to those with physical and / or hidden disabilities. These individuals are disadvantaged and will often choose a different mode of travel (or not to travel at all, leading to isolation). We have extended this definition in line with the 2010 Equality Act to seek to ensure there is no discrimination on the basis of age, disability, gender re-assignment, marriage/civil partnership, pregnancy and maternity, race, religion and belief, sex, or sexual orientation.

EVIDENCE BASE

3.7.2 A large evidence base of information was received during the eConsultation to identify areas within the Western Gateway accessibility improvements can be made throughout stations. These include:

- Certain disabilities receive less attention than other, for example mental illness or needs for toilet facilities are often overlooked.
- Important to have trained staff as they can increase confidence in travelling, introduction of more recognisable purple uniforms for Mobility Assistance staff.
- Accessibility measures should be applicable for anyone mobility impaired, for example an individual with a broken arm or carrying heavy baggage. These initiatives could be targeted at locations which have the greatest usage or are close to other accessible modes.
- A number of stations have step-free access to the platforms but not between the platforms. Stations need these facilities to enable disabled individuals to reach connecting trains within the interchange timeframe.
- Western Gateway stations would benefit from consulting with disability groups regionally and locally to help identify specific stations or features within the station that they may have struggled with in the past.

3.7.3 During reviews of the 64 documents received from various stakeholders across Western Gateway, approximately 25 of them included reference to interventions and aspirations related to improving accessibility throughout the region.

HOW WILL IT BE MEASURED (TARGETS)

3.7.4 The accessibility targets are shown in Table 3-9 below:

Table 3-9 – Western Gateway Accessibility Measures

Type of Provision	How provided/measure
Accessible stations – step-free access, appropriate ramps, audio-visual information, accessible ticket windows etc	100% compliance with DfT Design Standards for Accessible Railway Stations – A Code of Practice
Accessible stations	Increase in rail use by people with registered disabilities above general increase in passenger numbers

3.7.11 Provisional targets have been set based upon the initial targets set out at consultation phase but taking into considering the eConsultation responses.

3.7.12 This CO will be measured by the number of stations made accessible over the next 10 years, with a target of 100% compliance by 2030. Each station should hold a record of rail registered disabled passengers which should increase over time once the stations become compliant with national and European Accessibility standards.

GAP ANALYSIS

3.7.13 Using data from National Rail Enquiries (NRE) (extracted May 2020) there is a shortfall of accessible facilities at a number of stations as shown below and illustrated in Figure 3-3. For this analysis, we looked at the 70 Western Gateway stations.

- Stations with step-free access to platforms (classified as 'A' and 'B' on NRE): 62
- Stations with platform-to-train access ramps: 45
- Stations with accessible ticket facility (adjustable height counter/window or TVM): 44
- Staff at stations: 28
- Customer Help Point: 69

3.7.14 However, only 7 stations (10%) are classed as fully accessible, where this is defined as 'Class A' step-free access to platforms, plus exhibiting all the other facilities identified. These stations are Bristol Temple Meads, Bristol Parkway, Bath Spa, Chippenham, Gloucester, Weymouth and Westbury. A further 14 stations have 'Class B' step-free access to platforms (i.e. step-free in some way, but with non-compliances, e.g. ramp gradient, not all platforms etc.) plus all other facilities. This is shown in Figures 3-4 and 3-5.

Figure 3-3 – Train Station Accessible Facilities

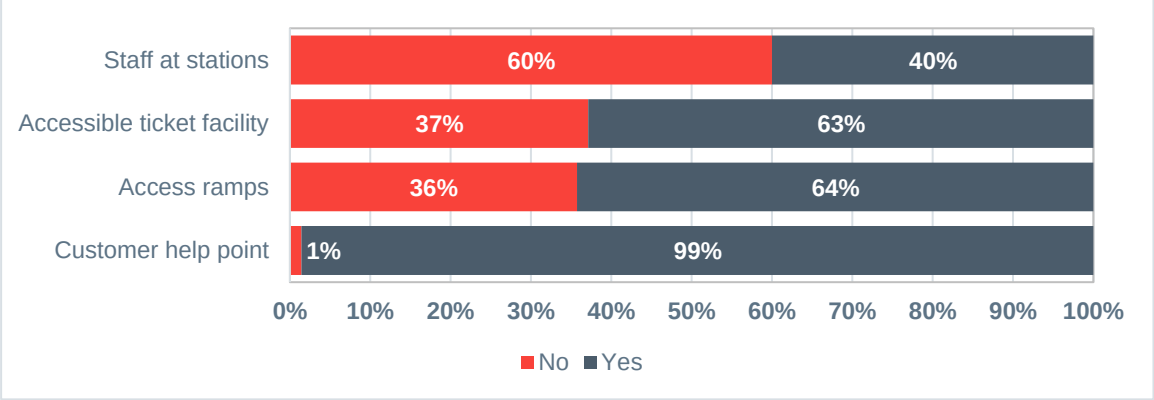
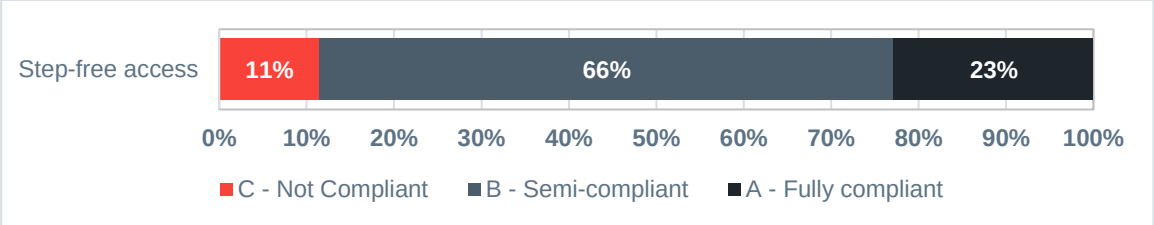
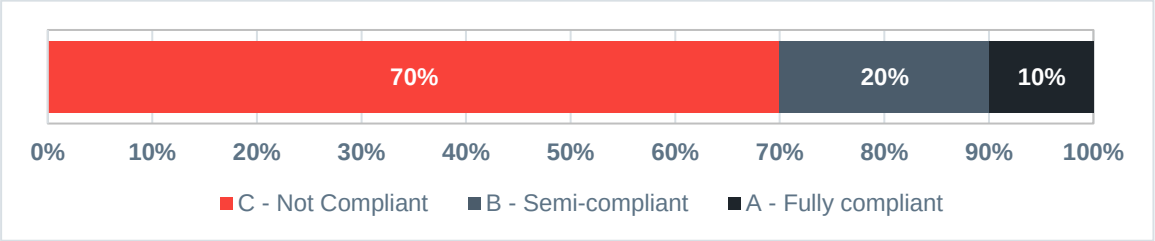


Figure 3-4 – Train Station Step-free access



3.7.15 Figure 3-5 combines these together: 21 out of 70 stations (30%) are therefore semi or fully compliant with accessibility requirements.

Figure 3-5 – Train Station Overall Accessibility



3.7.16 Various parts of the rail network including Western Gateway TOCs have recently introduced sunflower lanyards for identification of hidden disabilities.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

3.7.17 The Stations & Access to Rail Taskforce as described in CO M1 will be responsible for actions required to deliver this CO. As well as rail industry partners, a key representative on this group must be from a Disability Action Group in order for a successful outcome to be achieved. An early Accessibility Audit will allow a prioritisation of schemes for phased delivery.

4 DECARBONISATION

4.1 INTRODUCTION TO THEME

4.1.1 The ‘Decarbonisation’ theme is highlighted to enable rail to contribute more actively towards the overall decarbonisation of the Western Gateway region.

4.1.2 This theme emerged very strongly as an acknowledgement that rail can and will be a key contributor to the Climate Change Emergency, Net Zero targets and the decarbonisation national agenda. Decarbonisation relates to and builds upon the ‘Choice’ theme, as modal shift to rail for people, goods and services is part of transport decarbonisation.

4.1.3 The conditional outputs focus on a holistic view of decarbonising the railways and overall transport. This includes:

- Reducing fossil fuel and overall energy usage for railway traction, operations, maintenance and construction;
- Utilising railway capacity more efficiently, to avoid wasteful use of what is still primarily diesel traction; and
- Enabling modal shift to rail and other, less carbon-intensive modes from more carbon-intensive modes for people, goods and services.

4.1.4 This theme is important in the Western Gateway because most transport in the area uses combustion engine road vehicles. Since transport is the single largest contributor to carbon emissions in the UK, the Western Gateway will not meet Net Zero ambitions without decarbonising its transport as much as possible.

4.1.5 Three priorities were identified through stakeholder engagement in Phase 1. The table below expands on what these priorities are and what addressing them will mean to WG.

Priority	Description
Identify ways to reduce the carbon emissions per passenger of rail journeys on diesel rolling stock	The contribution that burning diesel fuel makes to climate change is now recognised, and as such this priority focuses on how to reduce the carbon footprint of rail – in this instance by better utilising each litre of diesel burnt (where diesel is the only choice of fuel available). This is addressed with COs D1 and D2.
Identify alternatives to diesel rolling stock including priorities for electrification	Accepting that it will not be possible to electrify every line and / or replace every diesel train with a net-zero alternative, electrification remains the best way to decarbonise the rail network. This can be supported by proactively pursuing other fuel choices, where hydrogen and battery-powered are all becoming viable options. This is addressed by CO D1.
Identify ways in which more freight can be transported by rail rather than road, in particular to deep sea ports	Road freight transport has a significant carbon footprint, and rail can make a major contribution to reducing that. Understanding the future freight market – both existing and potential, will allow this contribution to be unlocked. This is addressed by COs D3 and D4.

4.1.6 Five conditional outputs were identified through stakeholder engagement in Phase 1. These are listed in the table below and this chapter adds more detail about their targets, gaps and routes to delivery.

Conditional Output	Description
D1: Carbon Emissions	Reduce “at source” carbon emissions to zero
D2: Carbon Footprint	Reduce carbon footprint by increasing load factor of underutilised services
Dx: Network Efficiency	Most appropriate use of network capacity to effectively and efficiently transport all people, goods and services
D3: Freight Growth	An increase in rail freight in existing markets
D4: Freight Capture	An increase in rail freight by development of new markets

4.2 CONDITIONAL OUTPUT D1: CARBON EMISSIONS

INTRODUCTION

4.2.1 The rail sector must meet Net Zero ambitions to comply with legislation, which will require the reduction of “at source” carbon emissions for railway operations. This will predominantly pertain to rolling stock, infrastructure and technology choices on the railway. However, this is an opportunity for railway companies to achieve further reductions by working in a cross-industry capacity between TOCs and Network Rail; working with Local Authorities to integrate with local transport plans; working with the DfT to remove barriers to progress; working with Distribution Network Operators to design robust solutions and working with suppliers to develop innovation. This will achieve further decarbonisation of stations, supply chains and offices, and achieve greater emissions reduction than companies could achieve in isolation.

EVIDENCE BASE

4.2.2 In April 2020, the DfT published “Decarbonising Transport: Setting the Challenge”, a policy paper explaining how it intends to develop a plan to meet the government’s target of net zero transport emissions by 2050. The plan is scheduled to be published later this year.

4.2.3 The policy paper points out that rail is a relatively low-carbon form of transport and is becoming less carbon intensive as new trains come into service and the railway uses greener electricity. In 2018, greenhouse gas emissions from passenger and freight rail services made up 1.4% of the UK’s domestic transport emissions and 10% of passenger-km travelled in Great Britain.

4.2.4 Greenhouse gas (GHG) emissions from diesel trains and electricity generation per rail passenger-km in 2018-19 were 10.3% lower than for 2017-18. Rail GHG emissions are projected to rise by 19% between 2018 and 2050.

4.2.5 Railway decarbonisation from a supply perspective will entail the following measures:

- Decarbonise rail infrastructure:
  - Electrify routes with overhead line;
  - Electrify depots;
  - Invest in energy-efficient technologies and operations in stations and railway offices;
  - Install local solar generation where possible; and
  - Convert to renewable, zero-emissions energy supply for traction and non-traction electrical supplies wherever possible;

- Decarbonise fleets
  - Convert to electric traction rolling stock and/or zero-emission autonomous traction modes, such as hydrogen and battery trains and locomotives;
  - Ensure fleets have regenerative braking capabilities;
  - Convert railway maintenance rolling stock and plant to zero-emissions technologies; and
  - Upgrade commercial road vehicle fleets to electric vehicles;
- Decarbonise processes
  - Target embedded carbon across processes, procurement, projects and waste management;
- Decarbonise supply chains
  - Set and measure carbon targets within franchises and procurements; and
  - Co-develop emissions reduction innovations in-life with suppliers, with shared incentives.

The delivery responsibility for these items sits with Network Rail and the TOCs and FOCs, however, the power to change some of these arrangements sits within the ORR and/or the Government, given the regulated environment and rigid franchise structures in the railway. Therefore, decarbonising the WG route will involve Taskforce joint working to enact structural changes within the highest levels of transport leadership.

Network Rail Traction Infrastructure Decarbonisation

4.2.6 The ORR has placed regulated targets upon Network Rail to reduce carbon dioxide from its operations by 25% over the course of CP6. This 25% relates to all Network Rail operations, of which traction infrastructure decarbonisation is a component. In future years, Network Rail will have a responsibility to further reduce greenhouse gas emissions to align with, and contribute to, national targets and Government initiatives, including Net Zero by 2050. Network Rail is one of the largest consumers of electricity in the UK, with electrical traction contracts of £400M p.a. and non-traction contracts of £60M p.a.

4.2.7 Network Rail's Central Energy Management team helps the Routes reduce their energy and water use, carbon emissions and costs, while Route-devolved utility budgets are designed for local control to reduce consumption.

4.2.8 Currently, only 24% of the Western Gateway geography is electrified, broken down in Table 4-1. For the figures in Table 4-1 we have included all track as shown in the map including cross-border connections and not truncated at the WG boundary. Eg. electrification to Cardiff, Reading and Basingstoke is included, along with the non-electrification to Exeter, Worcester and Birmingham.

Table 4-1 - Current electrified track length

	Track length (km)	Percentage Electrified
Total Track	**1,578**	**100%**
Non-Electrified	**1,194**	**76%**
Electrified (Third-Rail DC)	*161*	*10%*
Electrified (Overhead AC)	*223*	*14%*
Total Electrified	**384**	**24%**

The map in Figure 4-1 indicates the current state of network traction across the Western Gateway.

Figure 4-1 - Western Gateway Current Network Traction Map

4.2.9 Network Rail has recently published a cross-industry Traction Decarbonisation Network Strategy (TDNS) which has identified for all lines across the UK where electrification, battery or hydrogen power could be used. A significant number of routes throughout the Western Gateway are non-electrified and TDNS has identified widescale electrification of these lines, with some lines identified for battery-powered trains. This will support Western Gateway in identifying interventions to pursue alongside Network Rail and CMSP processes across the region.

4.2.10 Network Rail classified routes as being either **single option** or **multiple option** based on the characteristics of the route and the capabilities of the traction options (for example suitability of route length for battery or hydrogen). Table 4-2 lists the proposed options and with the categorisation means as defined by Network Rail, with the map in Figure 4-2 displaying these against the current traction characteristics.

Table 4-2 - Future electrification options proposed in TDNS for Western Gateway routes

Electrification Option	Route	Description
Multiple options, proposed battery	Heart of Wessex Line between	Assuming the remainder of the route for the Weymouth and Exeter to Bristol services is

Electrification Option	Route	Description
	Dorchester and Castle Cary	electrified, this section could be operated using battery-powered rolling stock.
Multiple options, proposed electrification	Severn Beach Line	While the commuter services on this line could be operated by battery given the route's short length, it could be used as a diversionary route for freight and provide more resilience and therefore electrification is proposed (NB: not on map).
Single option, ancillary electrification	West of England Line between Exeter and Salisbury	While identified for electrification, Network Rail denoted this line as ancillary as it only just met the parameters of a 'single option'
Single option, core electrification	All other non-electrified routes in Western Gateway	All other non-electrified routes in Western Gateway other than those mentioned above have been identified as suitable for electrification.

Figure 4-2 – Map of future electrification options in TDNS for Western Gateway routes

Network Rail Non-Traction Infrastructure and Fleet Decarbonisation

4.2.11 Network Rail is also pursuing large-scale carbon reduction activities through an internal programme which includes energy efficiency, energy management practices and innovation in renewable energy, energy storage, low carbon design and transitioning its vehicle fleet to electric vehicles.

4.2.12 Network Rail electrical supply budgets are regulated but are devolved to Routes, which may empower Routes to influence carbon emissions at the local supply level.

TOC Rolling Stock Decarbonisation

4.2.13 This Rail Strategy surveyed the traction supply status of the rolling stock fleets for TOCs who operate on the Western Gateway routes; this included entire fleets, as each TOC's services run across STB boundaries, although it is noted that not all of the fleets surveyed are used within Western Gateway. The majority of TOCs' rolling stock is not electric traction-based, as the routes are mostly not electrified.

4.2.14 Rolling stock planning happens during the franchising process and is wholly dependent upon the availability of electric traction infrastructure. Changes to the franchising process from the Williams Review and changes to the rolling stock leasing and financing models may offer more opportunities for TOCs to convert to bi-mode, zero-emissions autonomous modes, or convert to electric rolling stock within the lifetime of a franchise, but currently this is not the case.

Joint-working on Decarbonisation

4.2.15 Meeting Net Zero goals will require a cross-industry effort, one which transcends the fragmented nature of the railway industry.

4.2.16 The franchise process presents a major obstacle to decarbonisation of the network: franchise agreements are not of an appropriately large scope or length to empower TOCs or FOCs to make infrastructure changes which could reduce station, office, depot, rolling stock and supply chain carbon emissions. TOCs and FOCs need to be part of the solution, but there is no existing framework or mechanism for them to be involved in the decarbonisation process.

4.2.17 TOC and FOC arrangements after the Williams Review and the COVID-19 Emergency Measures Agreements need to build in opportunities for the DfT, Network Rail, TOCs and FOCs to influence carbon emissions actions together. All parties are moving in the same direction, but few are empowered to create the necessary change at the right levels.

4.2.18 As the franchises do not allow enough scope to set and deliver carbon targets, emissions commitments must be made independent of the franchising process, in a cross-industry manner, via the proposed Future Ready & Resilience Taskforce.

4.2.19 The table below shows the published targets and commitments from operators within the WG area, most noticeable are the many commitments from Transport for Wales. Transport for Wales had the benefit of partially devolved franchise specification process and a longer franchise length of 15 years; this is likely to have aided the franchisee's ability to make emissions commitments.

Table 4-3 - Decarbonisation targets by TOC

Train Operator	Ambitions
All operators	by 2040 electrification about 2/5 of rail network

Train Operator	Ambitions
All operators	Targets – the rail industry, including government, should support the target of net zero carbon by 2050 as proposed by the Committee on Climate Change (CCC)
South Western Railway	South Western Railway (SWR) have supported the Riding Sunbeams pilot scheme to power trains through connecting solar panels directly into the railway system as traction current. This entails installing 135 solar panels on derelict land near Aldershot station without disrupting services. All SWR Desiro electric stock (Classes 444/450) used in the Western Gateway area have had regenerative braking since 2012.
South Western Railway	Reducing our energy & resource use - increasing recycling to 90%, reducing energy used at stations, depots and offices by 41%, water by 18.8% and carbon emissions from our trains by 56%, optimising our buildings by upgrading our lighting and installing controls and generating clean energy from solar panels.
CrossCountry	We will work to maintain a continuous reduction in the carbon footprint of our business and its people. Our environmental impact and energy consumption will be managed through the implementation of technology such as smart metering and the Driver Advisory System (DAS), which will be installed across our fleets to provide real time advice to drivers, promote fuel efficient driving, optimise journeys, increase punctuality and reduce our carbon emissions.
Transport for Wales	Published Net Zero timeline for actions over the first ten years of the franchise, including monitoring emissions
Transport for Wales	Supporting a more ‘resilient Wales’ TfW stated that electricity for stations and overhead wires on the Core Valley Lines will come from 100% renewable energy, with at least 50% sourced in Wales.
Transport for Wales	By no later than 31 December 2023, we’ll ensure that the rail service covering the Core Valleys Lines will consume no diesel fuel and achieve 100% passenger capacity miles under zero carbon power (except for Special Events and recovery from perturbation).
Transport for Wales	We’ll upgrade our trains to reduce carbon emissions.
Transport for Wales	We’ll install driver advisory systems on rolling stock to give drivers feedback on performance of fuel efficiency by April 2020
Transport for Wales	We’ll ensure that 100% of our electricity is from renewable sources with 50% of this generated from Welsh renewable sources by 2025. We’ll monitor and report on these percentages.
Transport for Wales	30% reduction in carbon emissions for Wales and Borders traction by the end of 2023

Train Operator	Ambitions
Great Western Railway	We'll improve the integration of different methods of transport and ensure our services are accessible to all, as well as reducing carbon emissions on our network by helping our customers make more sustainable travel choices.

4.2.20 A notable exemplar for WG TOCs is the Go-Ahead Group, which operates the Govia Thameslink Railway concession and the Southeastern franchise, as well as bus services across numerous locations in Britain, including the Go South Coast fleet of around 850 buses across Dorset, Wiltshire, Hampshire and the Isle of Wight. They have a company-wide Climate Change Taskforce which works across their transport functions. Measures which they are working on include:

- exploring green tariffs for non-traction energy (6% of their total energy use);
- installing solar panels at stations;
- saving energy through regenerative braking on electric rolling stock; and
- targeting embedded carbon across their processes, procurement, projects and waste management.
- These measures could be incorporated into the WG Future Ready & Resilience Taskforce commitments.

Decarbonisation Roles for railway stakeholders

4.2.21 Local Authorities and wider transport specifiers and providers must also work to decarbonise their local transport modes. Out of the key National and Regional Hub locations for the Western Gateway area, few Local Authority areas have existing or planned zero- or low-emission local modes of public transport available: Bristol has 21 micro-hybrid buses, Swindon has announced £50m in funding for a fleet of electric buses, and Salisbury has a fleet of Low Emission Buses.

4.2.22 Most Local Authorities do not have zero- or low-emission modes available for local transport; funding is likely to be the main issue, with COVID-19 further complicating business cases for new buses and infrastructure. However, collaborative delivery across railway and Local Authority partners, enabled by changes in DfT policy and regulation, could pool funding, create cost efficiencies, and share benefits. The most notable example in this case would be aligning local plans for electric bus and/or taxi charging sites with Network Rail grid and substation upgrades for railway traction, to combine civils access and optimise grid connection costs and local electricity generation and storage across the widest mobility landscape and land area. This can also create additional revenue streams from electric vehicle charging sites, some of which could be offered within Network Rail and/or Local Authority car parking assets.

4.2.23 Local transport operators may also be members of Greener Journeys, a national alliance of bus companies encouraging the modal shift from car to bus and coach to reduce emissions, so working with other cross-industry groups will provide opportunities for proactive engagement.

4.2.24 Support for rail electrification and/or reduction in carbon emissions formed a part of the following rail project studies and business cases:

- Metro West Phases 1 and 2 business cases, led by North Somerset Council and WECA;
- North Cotswold Line Transformation: Strategic Outline Business Case; and
- Swindon and Wiltshire Rail Study 2019.

4.2.25 In addition to the WG STB documents, WG stakeholder engagement from the eConsultation process highlighted support for Network Rail's Traction Decarbonisation Network Strategy (TDNS):

- Adjacent STBs/Local Authorities do not have specific carbon taskforces, but will align to the TDNS and its accompanying Business Case to determine which corridors are to be electrified;
- The WG STB should respond to the TDNS and progress its recommendations.

HOW WILL IT BE MEASURED? (TARGETS)

4.2.26 The Western Gateway region will need to measure the attributes outlined in the TDNS; this entails monitoring the transition from a mostly-diesel railway network to a mostly-electric network.

4.2.27 To understand local railway emissions within the Western Gateway area, we recommend building a simulation tool to calculate the emissions for each train service as it passes through the STB area; as the rail network decarbonises, the simulation inputs can be updated to gauge the effects on local emissions.

4.2.28 Railway decarbonisation will only be achieved if TOCs, Network Rail, and Local Authorities work together across boundaries to deliver the structural and infrastructure changes to achieve Net Zero. Crucially, this will interface with conditional outputs G2 – Mobility Hubs, D2 – Carbon Footprint and G3 – Network Resilience. We recommend that a Western Gateway Future Ready & Resilience Taskforce is established and meets quarterly.

Stage 1 (2021)
Establishment of a Future Ready & Resilience Taskforce consisting of select Western Gateway Officers, a representative from each TOC and a representative from each Network Rail region which should meet quarterly.

4.2.29 The Taskforce members will need to agree, set, measure and report on emissions reduction progress within their individual purviews, but the true value of the Taskforce itself will be to plan and monitor the following:

- Adoption of the measures within the Rail Industry Decarbonisation Taskforce's "Final Report to the Minister for Rail 2019" for the WG region;
- A cross-industry strategy to lobby for the systemic changes required to decarbonise the railway by reducing energy use at source, across all operators and Network Rail. This may include:
  - Upgrading stations with solar panels or energy-saving fixtures and designs;
  - Consolidating or sharing offices, depots and operations;
  - Agreeing energy supply purchasing frameworks;
  - Exploring green tariffs for non-traction energy;
  - Saving energy through regenerative braking on electric rolling stock;
  - Targeting embedded carbon across all processes, procurement, projects and waste management;
  - Reducing energy use and changing energy sources for maintenance and construction; and
  - Drawing on best practice from other operators, competitors, industries and neighbours.
- A framework for collaborative development and electrification of stations and public realm environments to support integrated, sustainable local transport connections and encourage joined-up modal shift to sustainable and EV modes (EV buses, e-bikes, e-scooters); joins up with G2 – Mobility Hubs;
- Agreeing procurement best practices for flowing carbon targets into the supply chain and co-developing incentive and innovation schemes with supply chain partners;

- Lobbying for a consistent, rolling programme of electrification, both continuous and infill between key nodes, to retain design and construction skills and local expertise;
- Mapping the short-, medium- and long-term outcomes and impacts of decarbonisation across the network and assigning cross-industry issues for resolution to specific working groups. Examples include the following issues:
  - Increased overhead line may require more railway maintenance access and could have network reliability and resilience implications, especially in the face of climate change; joins up with G3 – Network Resilience;
  - Increased electrification will increase grid supply demands and may impact energy security; the Taskforce will need to support Network's Rail's responses to Electricity Market Reform and energy storage initiatives that have been introduced nationally, to maximise opportunities and synergies;
  - Hydrogen traction will require strategic site planning for depots; it may also create wider hydrogen economy opportunities; and
  - Local solar energy generation and battery storage may require a new collaborative framework agreement between the Taskforce members.

4.2.30 Successful integration with railway stations and vehicle charging infrastructure synergies at station and depot sites will help Local Authorities, TOCs, FOCs and Network Rail achieve their sustainability goals, by reducing infrastructure spend and encouraging modal shift to rail and active modes.

GAP ANALYSIS

4.2.31 The Government policies for Net Zero and most Local Authorities' declarations of Climate Emergencies are relatively recent, and therefore have not been fully incorporated into all policies and Local Plans. However, the number of reports and policies which entail decarbonisation measures increases with each year, and therefore this Rail Strategy can build upon an increasingly supportive environment and policy basis from which to achieve its decarbonisation conditional outputs. The standard across many WG areas is a 2030 carbon-neutral target, so this is the recommended target.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

4.2.32 Interventions for this CO include:

- Stage 1 (2021): Establishment of a Future Ready & Resilience Taskforce consisting of select Western Gateway Officers, a representative from each TOC, the Rail Delivery Group, the DfT and a representative from each Network Rail region and the Network Rail System Operator. It should meet quarterly.;
  - The Taskforce STB members will respond to the cross-industry TDNS and integrate the Strategy into planning and projects across the respective constituent members, focussing on co-development and co-delivery of solutions. This will include the prioritisation of schemes based on deliverability;
  - The Taskforce will also respond to consultations about future TOC and FOC arrangements, in the wake of the Williams Review and the COVID-19 Emergency Measures Agreements, to build in opportunities for the DfT, Network Rail, TOCs and FOCs to influence carbon emission actions together. This will ensure that all parties continue to move in the same direction, while empowering all parties to create the necessary change at the right levels;

- The Taskforce will progress cross-industry and cross-region carbon targets, commissions and plans, as the franchises do not allow enough scope to set and deliver carbon targets; and
- The Taskforce will cover the areas highlighted within the D1 section of this report.

- Stage 1 (2021): The STB should build a modelling tool to calculate the emissions for each train service as it passes through the STB area; as the rail network decarbonises, the simulation inputs can be updated to measure the improvements on local emissions. This modelling should be supplemented with emissions testing data (the development of a national tool may be preferable to a regional one, but the STB should be prepared to take a lead in this area if no national tool is developed);
- Stage 1 (0-3 years): The STB should commission a strategic study across its constituent members to determine where future rail traction, railway buildings/stations supply, and future electrified local transport charging points can combine land use and grid upgrade needs, to jointly fund and deliver efficient, combined electrification proposals. As part of this study, proposals should be prioritised for phased delivery;
- Stage 2 (1-5 years): Where appropriate, STB members should work across organisational boundaries to use their collective consumer weight to work with DNOs to convert to renewable supplies; design and deliver local generation capabilities; and combine resources and economies of scale to deliver coordinated grid connection upgrades to support electrified rail and public transport modes; and
- Stage 3 (1-20 years): The STB should ensure that its constituent members and stakeholders support an ongoing programme of electrification, appropriate conversion to renewable autonomous traction fleets, and integration of rail and zero-emissions local public transport and micromobility modes, through the development of individual projects and business cases that have been prioritised by the Taskforce.

These measures can begin implementation within the next year and continue as best practice for the long term.

4.3 CONDITIONAL OUTPUT D2: CARBON FOOTPRINT

INTRODUCTION

4.3.1 This CO aims to reduce the carbon footprints of customer and freight journeys by increasing the load factors of rail services and using network capacity in the most efficient and effective way for the transportation of people, goods and services. More efficient rail network use will aid decarbonisation. Complementing CO D1, which decarbonises the rail service supply-side, the D2 ‘Carbon Footprint’ CO manages carbon emissions from the demand-side.

4.3.2 Patterns and costs of peak and off-peak flows, and some service routes, mean that there are trains on the network operating almost empty at certain times of day, whilst others are overcrowded. By balancing out customer distributions, or by filling empty passenger services with goods which need to be transported over the network, the overall carbon footprint per rail customer could be reduced.

4.3.3 Equally, it is acknowledged that capacity planning needs an industry-wide approach, incorporating future demand projections for passenger travel and freight movement and maximising use of available network capacity. This forms an integral part of the CMSP process.

EVIDENCE BASE

4.3.4 Rail travel is already one of the most sustainable forms of motorised travel, outstripping the private car and air travel by a large margin. Within the UK, 25% of carbon output can be attributed to transportation; rail comprises 1.4% in itself. Furthermore, movement of goods and people by rail is

also more efficient. In simple terms, more goods or people can be moved using the same amount of fuel when compared to any road- or air-based mode.

4.3.5 Yet, rail travel's efficiency is unevenly distributed, with high load factors in commuter peaks for two to five hours a day, whilst in off-peak periods, considerable numbers of trains operate with limited passengers. These low load factors reduce the positive role that rail plays in decarbonisation. While it is widely understood that peak demand is not binary and that spare capacity is spread unevenly across different times of the day or days of the week, there is an opportunity to better match capacity and demand.

4.3.6 Many TOCs have applied fare incentives to distribute loads more evenly, with reduced off-peak advance fares. In some cases, for example, the West Coast Mainline off-peak fare, incentive fares have resulted in some of the off-peak services in and out of London having the highest load factors. This example is, however, an exception on the overall rail network.

4.3.7 Aside from re-balancing the demand profile for rail travel using fares incentives, other models may further reduce the carbon footprint of rail. Transporting specific types of freight on off-peak passenger services has been tested and applied in the UK and worldwide. A particularly extreme example is on the Delhi Metro system in India, where peak-time commuters travel with no baggage, and later in the morning, First Mile/Last Mile delivery 'drivers' collect packed lunches from home addresses, transport them on empty passenger trains into the city centre where another delivery 'driver' will transfer it to workplaces.

4.3.8 One UK example is the transportation of fish from the Scottish Highlands or Cornwall to central London on passenger trains. Several proposals have been developed to use passenger trains to transport parcels – most recently Doddle 'click and collect', founded by ex-Network Rail Route Director Tim Robinson. However, no services have yet established a robust business model that is compliant with security regulations. Despite this, recent changes to government policy on climate change and decarbonisation have created an urgent need to shift more goods to rail. The use of vital rail network capacity to penetrate towns and city centres has the potential to unlock a more sustainable delivery model for a wide range of goods required by city centre businesses. This is also explored as an option in CO D4.

4.3.9 From the 64 documents reviewed for this Rail Strategy, no Western Gateway region-specific documents have previously linked blending or reallocating passenger and freight services, but most Local Authorities are supportive of increased rail capacities for freight, optimised with passenger services, as well as linking rail capacity to growth areas.

4.3.10 However, several of them mention either increasing capacity for rail freight and/or holistically discuss increasing the utilisation of the rail network. Specific aspects of studies which relate to this CO include:

- The South West Main Line Route Utilisation Strategy recommends peak management techniques, additional train services in peak times, and enhanced freight routes;
- The West of England Line CMSP Freight Report has a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to consider the possibility of a regular freight service on the London Waterloo to Exeter St Davids line. It also discusses diversion of freight from other routes; and
- The Bournemouth, Poole, and Dorset Local Transport Plan 3 outlines aspirations for increased rail network utilisation with reduced carbon emissions.

4.3.11 The DfT report "Carriage of Goods on Passenger Trains" June 2016 has relevant high-level models to use as the basis for a Western Gateway region-specific Freight Market Study and plan for local and regional services to carry freight.

4.3.12 The logistics, security, performance and dwell times (loading/unloading) pose barriers to passenger services to carry freight, and the potential alignment between markets or the volume of freight of the right nature is uncertain. However, the high-value, low density freight market is growing, and it is likely that as the market grows, a range of types of freight models may accommodate this market.

4.3.13 Current growing trends include retrofitted / re-purposed passenger trains carrying small freight and existing passenger services carrying small consignments. Having freight services behaving (operationally) like passenger services in terms of performance characteristics and timetabling presents an opportunity to access urban centres.

4.3.14 More recent market offerings to facilitate novel freight movements include the initiatives below; these will serve as the most relevant case studies for the Freight Market Study.

- April 2020: GB Railfreight used 200kg parcel cages on Class 319 trains to deliver NHS supplies into Euston Station;
- The Rail Operating Group is developing the Orion service to use converted passenger rolling stock and integrated first mile/last mile logistics services for freight deliveries which are emissions-free at point of use;
- InterCity RailFreight are currently operating some micro-freight consolidation projects and freight goods on passenger trains on East Midlands Railway and Great Western Railway; and
- iPort Rail is innovating the logistics and first mile/last mile arrangements to fill unused spaces on existing freight trains; this helps new customers with small volumes to achieve modal shift.

4.3.15 With the exception of re-purposed passenger trains as described above, the assumption that freight paths could be straightforwardly substituted for passenger traffic is not a given. In general the impact of freight on passenger path availability is less than feared (especially where passenger services make relatively frequent stops). Freight paths may only form part of a usable passenger path, where the constraint is station capacity, or network capacity outside the freight path geography, so it isn't simply passenger in place of freight. The intention of maximising peak time passenger capacity might be better served by optimising the lengths of existing passenger services. It is worth noting that use of electric locomotives for freight could provide more efficient paths owing to improved capability. CMSPs will inform passenger capacity pinch points and priorities when undertaken, and WG and other stakeholders will need to work with NR to ensure specific tailored questions in specific geographies are included.

HOW WILL IT BE MEASURED? (TARGETS)

4.3.16 Potential measures for this CO include:

- More even distribution of load factor on-board trains across the day;
- Increased revenue for passenger operators from new sources where space on trains is taken up by high value, low density goods being transported to towns and city centres;
- Reduction in road-based delivery traffic servicing city centre locations, to be replaced by innovative First Mile / Last Mile delivery services and centrally-based parcel pick-up locations (e.g. Amazon Lockers);

4.3.17 Network Rail's CMSP process will be required to demonstrate where additional capacity is likely to be required in the future, and where it will be necessary to increase the number of passenger services into National and Regional Hubs to meet that capacity;

This concept should be considered further through the Freight Market Study proposed under CO C4.

GAP ANALYSIS

4.3.18 While there are a few existing and pilot schemes detailed within the Evidence Base, these are bespoke designs and are not built into policy, strategic planning or other documentation. The recent prioritisation of decarbonisation across the WG STB members and stakeholders indicates a favourable environment to measure demand, deploy pilot schemes and roll out loading optimisation and combined passenger-and-freight measures across the WG network area.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

4.3.19 Due to the need to understand the market demand for high value, low density freight into urban centres, the delivery of this CO is best overseen by the Freight Taskforce; however it will also need to be considered within strategic planning considerations (see CO C1) and by the Future Ready & Resilience Taskforce described under CO D1.

4.3.20 The immediate action for this Taskforce, as described under CO C6 is a Freight Market Study. which should consider the wider freight markets and models and undertake a prioritisation of freight schemes for phased delivery. Specifically for this CO, the study should identify the additional infrastructure needed to facilitate small freight on passenger services, such as Amazon parcel lockers at stations, station car parking spaces converted to pop-up parcel hubs or roll-cage storage areas.

4.3.21 In addition, the Taskforce should consider:

- Identifying services and beginning trials of parcel cages on underutilised trains, especially during augmented operations under COVID-19 Emergency Measures Agreements and the likely augmented follow-on agreements which follow after September 2020;
- Implement the WECA Joint Local Transport Plan 4 (March 2020) commitment to a passenger train freight pilot at Bristol Temple Meads; and
- Working with the Digital Solutions Taskforce to incentivise and manage off-peak, walk-on off-peak and counter-flow demand; improve passenger loading and origin-destination data collection; and ensure that fare structures are simplified. Stakeholder feedback noted that customer demand should not have additional barriers added during and after the detrimental COVID-19 impacts on rail travel.

4.4 CONDITIONAL OUTPUT DX: NETWORK EFFICIENCY

4.4.1 Based on feedback from the stakeholder eConsultations, and in particular discussions with Network Rail regarding alignment with the CMSP process, we have determined that this CO does not warrant inclusion in its own right. Any relevant detail has been incorporated into CO D2 Carbon Footprint.

4.5 CONDITIONAL OUTPUT D3: FREIGHT GROWTH

INTRODUCTION

4.5.1 This CO targets expansion of rail freight within existing markets. It relates to CO C6 ‘Freight Capacity’, in that it requires consideration of additional aspects to enable more freight from existing markets to be transported by rail. It needs to identify and remove other barriers to the growth of rail freight, thus driving a reduction in the overall carbon footprint of the movement of goods.

4.5.2 Within the programme of this rail strategy and in the absence of a dedicated WG freight market study, only a limited understanding of the baseline position was achieveable in terms of proportions of rail freight and volumes of commodities transported by rail. A first step in the delivery plan for this strategy will be to undertake a Western Gateway Freight Market Study to develop an understanding of the baseline, as described in previous COs.

4.5.3 Network Rail has a Freight Market Study and a Freight Network Strategy with which a WG study will need to align, working in close coordination with Network Rail.

4.5.4 At the time of writing we are aware that the Rail Delivery Group is undertaking a review of how rail freight is measured in appraisal methodologies, following on from its 2019 study in Rail Freight: Deliverying for Britain. Western Gateway should monitor and align with the outcomes of this review.

4.5.5 Network Rail is also beginning to jointly work with Highways England on freight, including a cross-Region CMSP led by the Wessex route looking at freight on the Solent to Midlands corridor. This approach is valuable and intended to be rolled out across the network. The targets are based on total volumes rather than proportional volumes, which means they capture the overall market, rather than the role of rail freight; relative volumes would be a better measure.

4.5.6 Evidence of rail freight growth progress is identified in Network Rail's – Freight Network Study and highlights the enhanced capacity in the Reading Station area as part of its station redevelopment scheme. Although not within the WG boundary, the route section between Reading and Didcot is considered a key section for WG freight services due to its status on the Strategic Freight route from Southampton to the West Midlands which passes through WG.

4.5.7 The table below summarises the key freight origins / destinations and commodities from a rail perspective, obtained through consultation with Rail Freight Group. All the markets are reportedly strong and have potential for growth, with the exception of steel from South Wales.

Table 4-4 - Key freight origins and destinations and commodities

Freight Origin	Freight Destination Examples	Commodities / Markets
Southampton Ports (Eastern Docks, Western Docks, Millbrook, Marchwood, Fawley, Totton)	Beyond Western Gateway	Automotive, Intermodal Containers
Marchwood MOD (Southampton), Bovington/Lulworth MOD	Bicester MOD, Wool MOD, Ludgershall MOD, Warminster MOD	Military vehicles, ramps
Southampton / Eastleigh	Whatley Quarry	Aggregates
Hamworthy (Port of Poole)	Westbury Down	Unknown
Merehead / Whatley (Mendips)	Various: ▪ London & SE (in particular Acton) ▪ Avonmouth	Aggregates

Freight Origin	Freight Destination Examples	Commodities / Markets
Avonmouth	Various: ▪ N Wales ▪ Clitheroe, Lancs ▪ Southampton	Aggregates
Severnside SITA	Westbury Down Brentford, Essex	Biomass (Energy from Waste)
Bristol Ports (incl. Portbury and Avonmouth)	Beyond Western Gateway	Automotive, Aggregates
Tytherington	Appleford, Didcot	Aggregates
Westerleigh	Immingham Robeston (Milford Haven) Lindsey (Lincs)	Oil and Natural Gas
South Wales Ports & Power Stations, including Wentloog, Robeston (Milford Haven), Aberthaw, Cardiff and Port Talbot	Various: ▪ London & SE ▪ Felixstowe ▪ Southampton ▪ Cornwall ▪ East Midlands	Steel, Aggregates, Biomass
Former Westbury Cement Works		Cement distribution

4.5.8 The awarding of the aggregates contract for Mendips from DB to Freightliner will change some of the freight route patterns above and the Freight Taskforce will need to monitor and identify opportunities with the changing nature of freight.

4.5.9 Of the 64 documents reviewed to identify the planned interventions for local and regional areas within the Western Gateway, several of them mention either increasing capacity for rail freight and/or holistically discuss increasing the utilisation of the rail network, but they do not encompass freight market studies in themselves. Studies which relate to this CO include:

- West of England Line CMSP Freight Report: SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to consider the possibility of a regular freight service on the London Waterloo to Exeter St Davids route, as well as analysis of new and existing markets and the diversion of freight from other routes; and
- WECA Joint Local Transport Plan 4 (March 2020): commitment to investigating using the rail-served former waste terminals at Westmoreland Road (Bath) and Barrow Road (Bristol) for rail-based freight, and to improvements to the loading gauge on core rail routes to increase capacity.

HOW WILL IT BE MEASURED? (TARGETS)

4.5.10 In addition to the measures identified in C6 ‘Freight Capacity’ and P4 ‘Freight Capability’, it will be necessary to measure the step-change in the volume of freight transported by rail as opposed to road freight.

These measures could include the following:

- Increased proportion of total freight transported to, from and within Western Gateway by rail;
- Increased relative volumes of key commodities transported by rail to, from and within Western Gateway; and
- Increased usage of freight paths on the rail network.

An Action Plan should be developed as part of the Freight Market Study.

GAP ANALYSIS

4.5.11 The WG region lacks an area-specific Freight Market Study, although it can draw from existing freight studies from Network Rail and England's Economic Heartland (EEH). This CO will build the area-specific baseline and establish progressive growth from that point onward.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

4.5.12 As previously described, it is recommended that a Freight Taskforce is established and undertakes a Freight Market Study as a priority. Specific to this CO, the Market Study should include improving the understanding of what goods are currently transported by rail to and from WG, and what the potential to grow these markets is. It is important that this study does not contradict Network Rail's Freight Market Study or Network Rail's and Highway England's Freight Strategy and targets, and instead complements them by developing a better understanding of the components of the freight market specific to WG. This would include land use considerations to support rail freight viability and consideration of specific sites across WG that have rail freight potential. This study will identify and prioritise specific opportunities for rail freight to grow, and the Freight Taskforce can identify policy measures which can facilitate the growth.

4.6 CONDITIONAL OUTPUT D4: FREIGHT CAPTURE

INTRODUCTION

4.6.1 The 'Freight Capture' CO aims to increase rail freight tonnage by developing new markets for freight services. This would expand beyond traditional rail freight markets, e.g. 'heavy haul' such as coal, aggregates and steel, and container goods such as automotive parts. Some specific examples where rail has the potential to play a greater role is in long-distance movement of bulk retail goods between freight distribution centres, and better penetration into large urban centres for high value, low density goods (e.g. parcel deliveries) that can then take advantage of a more sustainable First Mile/Last Mile choice.

EVIDENCE BASE

4.6.2 Within Western Gateway there are multiple significant existing road freight flows. In general, these comprise:

- **Urban/local movements** (First Mile/Last Mile) servicing towns and cities within the area, comprising delivery & servicing activity for both commercial (B2B) customers and for consumers (B2C). An example of these movement types would be parcel carrier multi-drop operations covering business and residential within defined postcode areas.
- **Regional movements** within the area and also into South Wales for Newport/Cardiff and beyond, serviced from distribution centres in Western Gateway; these will also include delivery & servicing for commercial customers and for consumers.

- An example of these movement types would include supermarket regional distribution centres receiving full trailer loads from grocery suppliers for sortation, and then consolidating onward deliveries into stores within the catchment area.

- **Strategic national/international movements**, including trips generated within the area as origin/destination and those which travel through the area on longer distance movements to/from other regions, including further South West into the Peninsula area, as well as those heading to the Midlands, North and beyond. In addition, there are road freight flows to/from London and to/from South Wales and onwards via ferry into the Republic of Ireland (RoI) as the M4 corridor acts as a landbridge for RoI traffic to/from continental Europe).
  - Examples of these flows would include Irish Lamb heading to Paris meat markets and pallet network trunk movements from Midlands hub to network member collection and delivery (C&D) depots.

4.6.3 The M4 and M5 motorway corridors play major roles accommodating the East/West and North/South regional and strategic movements. The Western Gateway area is a popular location for regional distribution centres servicing further south west. The Western Gateway is also located within a couple of hours' maximum travel time to/from the Midlands, South Wales and along the M4 corridor towards London, so the area is strategically important for logistics operations.

4.6.4 In summary, the widest range of road freight movements are evident in the area. The range includes:

- Consumer-driven home shopping trips, generated and serviced by van fleets, to urban high street delivery and servicing. Bristol and Bath generate a particularly large quantity of retail trips, for which a freight consolidation centre was/is in use to minimise trips into central urban areas;
- Regional movements originating in/ending in the region; and
- Longer-distance strategic movements–like car movements from Royal Portbury Docks–and movements beyond to North of England, Scotland and continental Europe.

4.6.5 In the short term, the strategic road freight flows covering longer distances has the greatest potential for modal shift from road to rail. Rail would provide an alternative to road freight journeys by moving larger volumes over longer distances and delivering efficiencies of scale.

4.6.6 In the short-to-medium term, there is also the opportunity for rail freight innovation to capture some of the other road freight flows, by providing freight capacity on off-peak commuter services, right into the heart of the area's towns and cities, reducing the local and regional reliance on road freight trips within urban areas.

4.6.7 Of the 64 documents reviewed to identify the planned interventions for local and regional areas within the Western Gateway, several of them mention either increasing capacity for rail freight and/or holistically discuss increasing the utilisation of the rail network. There is limited mention of new freight markets, but specific aspects of studies which relate to this CO include:

- The West of England Line CMSP Freight Report mentions using new and existing markets for rail freight and also the diversion of freight from other routes.
- Bournemouth, Poole, and Dorset Local Transport Plan 3 notes the aspiration for increased rail network utilisation, reduced transport carbon emissions, and improved integration with other modes; these aspirations can apply to both passenger and freight rail.
- The WECA Joint Local Transport Plan 4 (March 2020) is committed to the following:
  - Creation of a multimodal freight distribution centre in the Avonmouth area, to be linked to the freight consolidation centre;

- Exploring the potential to use passenger trains to carry freight; and
- Encouraging a shift of a range of goods from road to rail.

HOW WILL IT BE MEASURED? (TARGETS)

4.6.8 This CO will combine its scope with that of CO C6 'Freight Capacity' and other COs from this section, to outline a Freight Market Study to measure freight market potential.

4.6.9 Subjects for the Freight Market Study which pertain to this CO could include the following changing markets and operational models:

- Net increase in the number of different commodity sectors transported by rail by 2030;
- Improved collaboration between potential freight customers to allow shared freight services/paths across different commodity types/customers (the inflexibility to share services is often cited as a reason why rail freight is uneconomical for potential customers such as Marks & Spencer);
- Increased use of rail distribution centres and warehouses, either outside of or within city/town centres;
- Reduction in road-based delivery traffic servicing city centre locations, to be replaced by innovative First Mile/Last Mile delivery services, partnership delivery models and centrally-based parcel pick-up locations (e.g. Doddle/Amazon Lockers); and
- Market innovation survey: capturing new and emerging models for freight movement and assessing their applicability for the Western Gateway.
  - Exemplar models include: the Orion service from the Rail Operating Group; iPort Rail, the "uber for rail freight"; and the recent GB Railfreight use of passenger trains for 200kg parcel cages on passenger trains for COVID-19 personal protective equipment deliveries into Euston.

The Freight Market Study will require a collaborative approach between distribution centres, new freight customers, passenger and freight operators, SMEs, Local Authorities and Network Rail.

GAP ANALYSIS

4.6.10 Regional assessment and capture of freight market movements is not yet well understood in the WG STB area, as freight services and markets tend to be widespread and railway freight operational models have not changed at the same pace of the change in freight markets, i.e., a rise in parcel deliveries and a fall in coal power plant usage. Net Zero targets and the wider drive for decarbonisation are largely new policy areas which have only recently been prioritised.

4.6.11 The freight market study should incorporate findings from the England's Economic Heartland's Freight Study (2018).

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

4.6.12 As previously described, it is recommended that a Freight Taskforce is established and undertakes a Freight Market Study as a priority. Specific to this CO, this should consider the potential of the future markets detailed above and understand the barriers, real or perceived, that these customers may observe towards rail freight. The Taskforce would determine the policy levers, such as land use and commercial impacts, which could engender increased freight growth and viability. Any interventions identified to facilitate freight capture, e.g. new rail connected distribution centres, will be prioritised for phased delivery.

5 PRODUCTIVITY

5.1 INTRODUCTION TO THEME

5.1.1 In the Phase 1 Report, Productivity was found to be a key policy consideration and the core message from the Industrial Strategy. Statistics have strongly suggested that the Western Gateway (WG) area is much less productive, like most regions outside of London and the South East, which is in part driven by poor transport connectivity. There is therefore an opportunity for rail to contribute more actively to improvements in productivity across Western Gateway.

5.1.2 Three priorities were identified through stakeholder engagement in Phase 1. The table below expands on what these priorities are and what addressing them will mean to WG.

Priority	Description
Improve rail journey times / speeds to make rail competitive with the equivalent road journey	Extended journey times between economic hubs is a detractor from productivity. There are several examples of slow speeds and long generalised journey times across WG, as detailed in P1 below.
Provide improved rail connectivity (passenger and freight) to international gateways – airports and ports	There are limited international gateways within WG, and those that do exist are poorly connected by rail, whether this is direct services for passengers (P3), or route capability for freight (P4). International gateways unlock both international trade and tourism, both of which are important to economic growth and productivity in WG.
Improve strategic connectivity with cross-border economic hubs	Aside from Bristol, the economic hubs in WG would not be considered to have status nationally. As such, the ability for WG businesses and residents to be connected with nationally significant hubs such as London, Birmingham and Southampton is important for productivity uplift. As well as journey time being an important part of this (P1), the ability to use time productively during a journey to cross-border hubs is important (P2).

5.1.3 Five conditional outputs were identified through stakeholder engagement in Phase 1. These are listed in the table below and this chapter adds more detail about their targets, gaps and routes to delivery.

Conditional Output	Description
P1: Journey Speed	Journey speeds appropriate for each corridor / catchment type and usage patterns
P2: On-Board Productivity	On-board capacity and facilities to enable productivity and match demand into economic centres and employment hubs (including cross-border)
Px: Station Gateways	Stations as gateways to drive transit-oriented development and economic growth
P3: International Gateways	Improving passenger connectivity to International Gateways within and close to Western Gateway
P4: Freight Capability	Freight capability to ports and rail freight terminals increased

5.2 CONDITIONAL OUTPUT P1: JOURNEY SPEED

INTRODUCTION

5.2.1 Increasing the journey speeds and therefore reducing journey times is a core component for improving the attractiveness and competitiveness of rail, encouraging modal shift from road, as well as increasing productivity because more journeys are made between two economic hubs (agglomeration effect).

5.2.2 The use of speed as a metric was discussed in length across the engagement and consultation process particularly given journey time measures such as generalised journey time (GJT) are more commonly used in demand forecasting exercises and economic analyses. Based on positive feedback from Midlands Connect and the fact that journey speed has been one of the more valuable conditional outputs for driving change in their STB, we have retained this metric as it (along with other conditional outputs in this strategy) decouples GJT into its constituents (speed/time, frequency and interchange) so that the components can be investigated in isolation and the level of which they are considered a barrier to rail. In this manner, WG, in conjunction with Network Rail (NR) CMSP teams, can identify where the network underperforms for the types of services it carries (e.g. the extent to which the speed of a line carrying Intercity services is suboptimal and impacts economic productivity because the journey time does not promote business to business collaboration).

EVIDENCE BASE

5.2.3 We have analysed journey speed on point to point direct flows in WG based on target levels similar to those used by Midlands Connect. The gaps in this conditional output are significant in WG: on one hand this positively highlights the shortcomings of journey speeds, especially because many of the regional hub to hub flows are across the North-South axis of the geography which has been identified as a known barrier, but on the other hand this may raise concern about the applicability of the Midlands Connect targets that may not be fit for purpose in WG. That said, we have reported these gaps below.

5.2.4 It should be noted that, in isolation, journey speed is not considered a priority for all passengers: Transport Focus research indicates that journey speed was ranked 11th (12th in the South West) in passenger priorities, however our use of journey speed in this strategy is for identification and investigation purposes to illustrate where on the network the hotspots of slow journey speeds are.

5.2.5 Across the 64 documents reviewed, improvements to speed was identified in 48 of them. Specific interventions include electrification of lines and are explained further in the following sections.

HOW WILL IT BE MEASURED (TARGETS)

5.2.6 Speeds on direct links in the network will be assessed by dividing journey time by miles between origin and destination pairs. Target speeds have been set for each service designation based on those used by Midlands Connect as follows:

- Intercity: 61+ mph
- Regional: 51 – 60 mph
- Local: 41 – 50 mph
- Urban: 31 – 40 mph

5.2.7 There are a range of challenges related to the balance between achieving better journey times and improved connectivity such as the addition of new station stops on route. In broad terms, a 'best for industry' approach is advocated, which can be established by the Strategic Planning Taskforce.

5.2.8 The timescale for the interventions required will vary as there will be infrastructure constraints to be addressed in the long term but there are also timetable changes which can occur in the short term that can be delivered on existing infrastructure.

GAP ANALYSIS

5.2.9 Gap analysis has been undertaken on National and Regional Hub pairs (including the cross-border hubs identified earlier in the report) representing Intercity, Regional and Urban journeys where speed is the main contributing factor to rail as a mode of choice. Results from the analysis show that Intercity and Regional services are below target with only 16.2% and 7.8% respectively of hub flows meeting the targets set out above.

Service Type	% point to point hub flows which meet the targets above
Intercity	16.2
Regional	7.8
Urban	75.0

5.2.10 The table below lists the top and bottom stations in terms of percentage of flows achieving the targets. All the stations where over above 20% of flows achieve the target are listed, along with the stations with the lowest percentage of flows meeting targets (i.e. below 5%).

Stations with the highest % of flows which meet the target (20% and above)	Stations with the lowest % of flows which meet the target (below 5%)
▪ Birmingham New Street ▪ Reading ▪ Bristol Temple Meads ▪ Bath Spa ▪ Bristol Parkway ▪ Cheltenham Spa ▪ Swindon ▪ Didcot Parkway ▪ Exeter St Davids ▪ Chippenham ▪ Taunton	▪ Southampton Central ▪ Basingstoke ▪ Bournemouth ▪ Salisbury ▪ Gloucester ▪ Worcester Foregate ▪ Poole ▪ Westbury ▪ Weymouth ▪ Yeovil Junction ▪ Yeovil Pen Mill

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

5.2.11 Improvements to journey speed will be overseen by the Strategic Planning Taskforce, and need to be considered as part of the strategic planning exercise outlined under CO C1. This way, opportunities for increased linespeeds leading to faster journey times, either with or without infrastructure upgrades can be identified, prioritised and built into one of the 'configuration states'.

5.3 CONDITIONAL OUTPUT P2: ON-BOARD PRODUCTIVITY

INTRODUCTION

5.3.1 On-board capacity and facilities such as Wi-Fi, charging points and luggage space can have an impact on a passenger's productivity and propensity to choose rail. Currently, an incentive which rail travel has over car travel is that time on-board can be used productively. However, certain services and routes have constrained on-board capacity making it a challenge to be productive on-board whereas for other routes inappropriate rolling stock with insufficient table or luggage space is deployed on longer distance and discretionary journeys (e.g. Cardiff to Portsmouth) where the ability to be productive and comfortable drives the modal choice.

EVIDENCE BASE

5.3.2 Several studies and documents have been reviewed to determine the current situation of on-board productivity within the Western Gateway. Only 20% of the documents reviewed have identified on-board productivity suggesting that this conditional output is of lower priority than others.

5.3.3 However, on-board facilities are of great importance when passengers are considering rail travel. In their 2017 'Rail Passengers Priorities for Improvement' study, Transport Focus asked passengers to rank several station and on-board attributes in order of priority for improvement. Seat availability and free Wi-Fi on board are considered the second and tenth most important factors for passengers choosing to travel by rail. By improving the seat capacity, passengers will be encouraged to switch from private car to rail as a mode of transport.

5.3.4 As an example, the West of England line experiences capacity issues such as overcrowding towards London Waterloo and towards Exeter St David's which has a negative impact on passenger experience and productivity. This issue has been identified in the Dorset Passenger Transport Strategy published in 2016.

5.3.5 The 2020 Draft Strategic Plan published on the Western Gateway STB website identifies problems with internet connectivity on board and the need to increase the capacity of services. Many rail routes in the Western Gateway suffer from poor digital 4G and Wi-Fi connectivity which reduces productivity during time in transit. However, during the consultation period, SWR confirmed that all their trains were now fitted with on-board Wi-Fi.

HOW WILL IT BE MEASURED (TARGETS)

5.3.6 Several factors will be considered when measuring a train service's impact on productivity such as the length and nature of journeys taken, capacity utilisation and facilities such as tables, free Wi-Fi and charging points. Targets for each service designation are presented below. It is considered that for local and urban journeys, with journey purpose commonly being for commuting and leisure, the availability of any seat is the most important factor – hence the inclusion of a target relating to this.

Table 5-1 – On-Board Productivity Targets

Measure	Target
Availability of seats	For all service designations: End-to-end < 20mins: 75%

Measure	Target
	End-to-end 20-29mins: 80% End-to-end 30-59mins: 90% End-to-end > 60mins: 100%
Proportion of seats at tables and with charging points	Intercity: 40% (Standard Class) Regional (End-to-end > 60 mins): 30% (Standard Class) Regional, Urban and Local (End-to-end 30 – 59 mins): 25% (Standard Class)
Free Wi-Fi	100% across all service designations

5.3.7 Clearly, an implication of making more seats available with tables is that the overall seating capacity is therefore reduced, so a balance must be struck between journey purpose, capacity requirements and productivity. Western Gateway should seek to influence future deployment of rolling stock alongside strategic planning to make sure that rolling stock is **Fit for Purpose** for the most common type of journey being made on any particular route.

5.3.8 Other aspects of the on-board environment have also been flagged as important to make rolling stock fit for purpose – including luggage space (particularly for discretionary travel), cycle storage and air-conditioning. We have not undertaken detailed analysis on these aspects, but it is recommended that these are considered as the strategy progresses into the delivery phase.

GAP ANALYSIS

5.3.9 Information on capacity and table seats have been collated from relevant train operator websites as set out in the table below. Those highlighted in red are currently not achieving the targets above.

Figure 5-1 - Table seats on rolling stock

Route	End-to-end JT	Standard Rolling Stock	Standard Class Seating	Table Seats	% Table Seats
INTERCITY					
Cardiff – Gloucester – Cheltenham – Birmingham – Leicester / Nottingham	2h to BHM 3h20m to NOT	Class 170 (3-car)	200	86	43
Cardiff – Bristol – Bath – Westbury – Salisbury – Southampton – Portsmouth	2h25m	GWR Class 166 (3-car)	232	24	10
Bournemouth – Southampton – Birmingham (- Manchester)	3h to BHM 4h40 to MAN	Cross Country Class 220/221	250	40	16
Plymouth - Exeter – Taunton - Westbury – Reading – London	3h15m	GWR Class 80x	598	200	33
Bristol - Westbury – Salisbury	1h20m	SWT Class 159	186	80	43
(Plymouth -) Exeter – Taunton – Bristol – Cheltenham – Birmingham (- Edinburgh)	2h20m	Cross Country Class 220/221	250	40	16

Route	End-to-end JT	Standard Rolling Stock	Standard Class Seating	Table Seats	% Table Seats
Bristol – Bath – Chippenham – Swindon – Reading - London	1h35m	GWR Class 80x	598	200	33
REGIONAL					
Westbury – Chippenham – Swindon	40m	GWR Class 165 (2-car)	156	0	0
Weymouth – Yeovil – Westbury – Bath – Bristol	2h20m to BRI 1h40m to WSB	GWR Class 166 (3-car)	232	24	10
(Cardiff -) Bristol – Weston-super-Mare - Taunton	30m	GWR Class 166 (3-car)	232	24	10
Bristol - Gloucester – Cheltenham – Worcester	1h35m	GWR Class 166 (3-car)	232	24	10
Weymouth – Poole – Bournemouth	55m	SWT EMU (Class 444)	302	80	26
Cheltenham / Gloucester – Swindon – Reading - London	2h	GWR Class 80x	598	200	33
Bristol – Gloucester	1h	GWR Class 166 (3-car)	232	24	10
Bristol - Westbury – Salisbury	1h20m	SWT Class 159	186	80	43

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

5.3.10 Beyond franchise commitments on rolling stock and WiFi in both the GWR and SWT franchise which are in delivery at present, limited work has been undertaken to consider possible interventions to deliver this CO. In the longer-term, better quality rolling stock as a result of electrification will give an improved working environment for passengers.

5.3.11 The best delivery route for this CO is through the Future Ready & Resilience Taskforce. However, WiFi and seat reservations could fall under the responsibility of the Digital Solutions Taskforce. Through the Strategic Planning Taskforce, CMSP outputs alongside passenger survey data will be valuable to reinforce which routes and services would benefit from a more productive on-board environment, and which must put capacity maximisation first. This would also incorporate an assessment of where luggage space is an important factor.

5.4 CONDITIONAL OUTPUT PX: STATION GATEWAYS

5.4.1 Based on feedback from stakeholder eConsultations and our own professional judgement, we have made the decision that this CO does not deliver sufficient benefit on its own, and the detail has been incorporated into CO M1 Station Access.

5.5 CONDITIONAL OUTPUT P3: INTERNATIONAL GATEWAYS

INTRODUCTION

5.5.1 International gateways such as airports and ports are able to provide competitive journey times to a wider range of customers and are therefore pivotal in agglomeration and productivity. For a region such as the Western Gateway which has a large visitor economy, the ability for 'customers' to arrive in the region and readily make onward travel arrangements is pivotal in their decision to travel.

5.5.2 Collaboration will be critical in the delivery of this CO given many international gateways which serve WG residents are in the geography of other STBs and therefore cross-border connectivity is key.

EVIDENCE BASE

5.5.3 Ease of access by train to/from International Gateways (IGs) which serve the WG is varied, from those with direct connections (e.g. stations adjacent to Birmingham, Gatwick and Heathrow airports), to those where the connection relies on local service buses and taxis (e.g. Exeter and Bournemouth airports, Portsmouth ferry terminal). Bristol Airport is connected to the city centre and Temple Meads station by Airport Flyer express buses, which operate 24/7 and are fully integrated into national rail ticketing and information systems.

5.5.4 Some airports within the Western Gateway and those which serve WG residents and visitors have surface access strategies with specific targets for increasing rail or public transport use by arriving and departing passenger; others have targets or aspirations elsewhere (e.g. Strategic Plan). Some are more current than others. These are investigated further below in the Gap Analysis section.

5.5.5 Ports and ferry terminals tend not to have surface access strategies the same way that airports do therefore data is more difficult to access. Specifically, the Port of Poole suffers with connectivity issues as there are no motorway connections and the existing strategic road network has resilience issues. It is reported in the Draft Strategic Plan published by the Western Gateway STB that significant growth is planned with the Port of Poole opening its new £10m South Quay cruise berth and increasing the capacity for conventional cargo and cruise ships. Similarly, Portland Port has seen an increase in annual freight volumes to almost 500,000 tonnes of cargo as well as an increase in visiting cruise ships each year.

5.5.6 From 64 local and regional documents reviewed, the importance of International Gateways was identified in only 25% of them.

HOW WILL IT BE MEASURED (TARGETS)

5.5.7 Two key measures are proposed for this CO

- Increase in rail travel to and from International Gateways (IGs), measured as proportion of passengers arriving to WG by train from cross-border gateways, or arriving in Western Gateway by air or sea and continuing their journey by train, using CAA Passenger Survey and similar data for port/cruise passengers, in line with individual IGs' surface access strategies; and
- Increase in proportion of inward tourism visits made by train, using data from Visit Britain/Visit England Inbound Transport Research and ONS International Passenger Survey

Many aspects of the passenger network, including services, timetables, fare offers and user experience, as well as marketing and promotional activities, combine to encourage international visitors to the region, and residents travelling abroad, to choose rail over other modes. Many of these factors are covered by other Conditional Outputs.

5.5.8 Other important factors include:

- Ongoing development of the rail network and services, to improve connections between IGs and key visitor destinations in the Western Gateway, as well as connections for WG residents to access IGs for their trips outside the UK. For example the Western Rail Link to Heathrow due to be completed by 2030 will reduce rail journey times between Reading and Heathrow eliminating the need to travel into central London and enabling interchange at Reading for access to and from the WG with four trains per hour in each direction;
- Marketing of rail options (to international visitors and to local residents);
- Joined-up ticketing and fares offer, including ease of purchase and use;
- Wayfinding at airports, ports and international hub stations, including multi-lingual provision and real-time information, including disruption alerts and journey re-planning; and
- Step-free access routes from airport/port to train, adequate space for luggage on trains and shuttle buses.

GAP ANALYSIS

5.5.9 Some airports within the Western Gateway, and used by WG residents have Surface Access Strategies in place, as listed below, which provides targets for increasing the proportion of arrivals via rail or public transport. As seen below, some airports are lacking a planned strategy and this should be addressed to help ensure that airports are easily accessible and that a full effort is being put in to encourage access by public transport.

Airports

Airport	Access to rail network	% of passengers arriving/leaving by train	Surface Access Strategy in place	Target % of passengers arriving/leaving by train
Birmingham	Birmingham International station (directly connected)	19% by train (CAA Passenger Survey 2018)	Yes (2018 – 2023)	26% by 2023
Bournemouth	Bournemouth station (via infrequent bus link, 40 mins)	2% by bus (CAA Passenger Survey 2005)	Unclear	Unclear
Bristol	Bristol Temple Meads station (via frequent Airport Flyer Express bus link, 24/7, 30 mins; integrated ticketing)	23% by public transport (CAA Passenger Survey 2015)	New strategic plan currently in development	15% by public transport when airport has 10 million passengers p.a. Recognises potential for significant role for rail by 2040 if light rail is developed
Cardiff	Rhoose Cardiff International	16% public transport (CAA	In development	Tbc

Airport	Access to rail network	% of passengers arriving/leaving by train	Surface Access Strategy in place	Target % of passengers arriving/leaving by train
	Airport station (via shuttle bus, 10 mins)	Passenger Survey 2015)		
Exeter	Exeter St Davids station (by frequent bus; 35 mins) or Cranbrook station (by taxi)	5% public transport (CAA Passenger Survey 2012)	Part of Airport Master Plan	Tbc
Gatwick	Gatwick Airport station (directly connected)	39%	Yes (May 2018)	45% by 2030
Heathrow	Heathrow stations (directly connected, national rail and underground)	9% national rail (Plus 11% Underground) 33% of travel to/from Heathrow to/from the West of England is by public transport (train, coach)	Yes	22% by 2030 25% by 2025 (national rail including Crossrail / Elizabeth Line) (Plus 18% / 20% Underground)
Southampton	Southampton Airport Parkway station (directly connected)	17% (2016 Q1)	Yes (for 2017 – 2021)	18% (2021) 21% (2031) 22% (2037)

5.5.10 Since ports don't generally have plans which are as robust as those for airports, it can be harder to access the data required. As seen below some of these ports can only be accessed by walking which causes a problem to those with mobility issues such as physical disabilities or heavy luggage.

Ports

Port	Access to rail network
Avonmouth (Bristol Cruise Terminal)	Avonmouth station is 3 miles from the Terminal and walking inside the dock estate is not permitted. Pre-book taxi (8 minutes)
Poole Harbour	Poole station (30-minute walk)
Portsmouth Ferry Terminal	Portsmouth & Southsea station (via local bus services, taxi, 10-minute cycle ride or 25-minute walk)

Port	Access to rail network
Southampton Cruise Terminals	Southampton Central station (generally via free bus + walk, or taxi, depending on terminal)
Weymouth	Weymouth station (20-minute walk)
Portland	Weymouth station (via local bus services, 25-min cycle ride or >1-hr walk)

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

5.5.11 It is considered inappropriate at the current time to consider building fixed rail links to IGs, with the exception of Bristol Airport which is the current subject of the WECA Mass Transit Study. Instead, it is recommended that where IGs are currently not rail connected, the focus should be on making rail part of an end-to-end journey, using buses or other modes to complete the route. As such, this CO is best incorporated into the remit of the Stations & Access to Rail Taskforce. The initial actions will therefore be an access audit and Station Travel Plan that links to Ground Access Strategies. Marketing of the rail offer including multi-modal ticketing to arrivals at IGs will also be a key aspect of delivery of this CO, which will fall under the Digital Solutions Taskforce.

5.5.12 Where named stations are identified as the direct links to IGs, it will be important to consider frequency and journey times to those stations through the Strategic Planning Taskforce, to incorporate service uplifts into future 'configuration states'.

5.5.13 It is noted that a western access to Heathrow Airport via Reading, which will be of direct benefit to travellers from Western Gateway, is committed and scheduled for completion within 10 years.

5.6 CONDITIONAL OUTPUT P4: FREIGHT CAPABILITY

INTRODUCTION

5.6.1 For rail to become a truly viable mode for freight transport, not only does there need to be capacity on the network (as mentioned in CO C6), but the network needs to be capable of accommodating the length, weight, width and height (gauge) of trains required. In recent years, we have seen a change in the nature of rail freight away from 'heavy haul' goods such as coal to intermodal containers containing a wide range of goods being transported from ports to container terminals for onward transport. These intermodal containers require a larger gauge, with a minimum of W10 or ideally W12, than the more traditional heavy haul wagons which can operate on W7 and W8 gauge.

5.6.2 Objectives of the Trans-European Transport Network (TEN-T) include the length of trains that can operate. European standards require 740m for a route to be considered 'interoperable', and 'Route Availability', which is an assessment of the total weight of trains that can operate (22.5 tonne axle load = RA8). Electrification and line speeds are also considerations.

5.6.3 Network Rail identified a Strategic Freight Network (SFN) with an objective to make the whole SFN interoperable by 2030. This CO assesses progress towards that within Western Gateway, as well as examining other key freight routes that are not part of the SFN. These are shown in Figure 5-2.

Figure 5-2 - Strategic, Primary and Secondary Freight Routes within the Western Gateway

EVIDENCE BASE

The West of England Line which runs through Wessex plays an important role in terms of freight by operating regular freight services and providing a diversion route for other freight services. For example, when freight traffic cannot use the route via Winchester to Basingstoke, the West of England Line via Andover becomes a significant diversionary route.

5.6.4 There is significantly more freight movement towards the Eastern boundary of WG, linked with the Strategic Freight Route from Southampton to the West Midlands, with less significant freight movement in the central and western part of the Western Gateway.

5.6.5 Network Rail's West of England CMSP report suggests that accommodating freight and passenger services on the line west of Salisbury and towards Exeter is extremely challenging due to the extent of the single track therefore using the line for regular freight is not an active consideration. Improving the capacity of the tracks so that they can easily accommodate freight trains will help to improve freight within the area.

5.6.6 Currently none of the proposed primary routes in the Western Gateway have the capacity to accommodate 775m length trains and are therefore not meeting some of the targets set out below. Details of the routes not meeting targets are explained further in the Gap Analysis section.

5.6.7 Of other 60 documents reviewed, only 25% of the documents identified this conditional output in their ambitions and planned interventions.

HOW WILL IT BE MEASURED (TARGETS)

5.6.8 The key metrics and targets for this conditional output are set out in the table below.

Route Grading	Route Availability	Gauge	Train Length	Line Speed & Traction Power
Primary	RA10 by 2030	W12 by 2030	775m by 2030	90mph by 2030 (Electrified)
Secondary	RA8 by 2025	W10 by 2030	740m by 2030	60mph by 2030 (Non-electrified)

GAP ANALYSIS

5.6.9 The current route capability of the routes identified above and additional connections to hubs which cannot be immediately accessed from the routes are set out below. Targets for connections will need to be the same as the grade of route they are connecting to.

Route	Route Availability	Gauge	Train Length	Line Speed (Non-Electrified unless stated otherwise)
Totton to Salisbury & Westbury	RA8	W12 to Salisbury W8 to Westbury	Not cleared for 775m	85mph
Westbury to Swindon	RA8	W8 to Thingley Jn W12 to Swindon	Not cleared for 775m	40 – 75mph to Thingley Jn 110 – 125mph to Swindon
Frome and Westbury to Reading	RA8	W7 to Westbury W8 to Reading	Not cleared for 775m	80 – 105mph to Heywood Road Jn 110 – 125mph to Reading
Westbury to Bath Spa and Bristol	RA8	W8 to Bradford Jn W6 to Bathampton Jn W8 to Bristol	Not cleared for 775m	40 – 75mph to Bathampton Jn 80 – 105mph to Bristol
Bristol to South Wales	RA8	W10	Not cleared for 775m	90 – 125mph
Bristol to Gloucester and the Midlands	RA8	W8	Not cleared for 775m	80 – 100mph
Bristol to Exeter and beyond	RA8	W8	Not cleared for 775m	80 – 110mph

Dorset Coast from Southampton to Bournemouth and Poole	RA8	W6	Not cleared for 775m	90mph (DC Electrification)
Frome to Whatley Quarry	RA6	W6	Not cleared for 775m	35mph
East Somerset Jn to Merehead Quarry	RA8	W6	Not cleared for 775m	30mph
Severn Beach Branch (to Avonmouth and Bristol Bulk Handling Terminal)	RA7	W6	Not cleared for 775m	15 – 50mph
Bristol Parkway / Filton to Bristol Bulk Handling Terminal	RA8	W8	Not cleared for 775m	10 – 60mph
Parson Street to Portbury	RA8	W9	Not cleared for 775m	20 – 30mph
Yate to Tytherington	RA8	W6	Not cleared for 775m	20mph
Yate to Westerleigh	RA8	W8	Not cleared for 775m	20mph

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

5.6.10 In line with other freight COs already discussed, this CO will fall under the Freight Taskforce. The Freight Market Study can be utilised to develop an evidence base for where improving freight capability to supplement Network Rail's SFN plans adds value to Western Gateway. This may include the identification of new and enhanced freight connections, and a number of sites have already been identified within the evidence base documentation. These include:

- Improvements to Henbury Line to better serve Portbury Docks and a proposed new container terminal at Avonmouth;
- Local Distribution Centre in southern Cotswolds; and
- Electrification between Bath, Westbury and Newbury.

5.6.11 These and other interventions will be prioritised for phased delivery.

6 GROWTH

6.1 INTRODUCTION TO THEME

6.1.1 This theme facilitates sustainable growth across Western Gateway through better connecting development to rail and making sure the rail network is resilient to change, and is centred on the importance of the link between housing and industrial growth as identified in Local Plans, and transport policy. It is directly linked to all four other themes due to its alignment with land use and planning policy and practice and aims to provide sustainable travel options for population and employment across the Western Gateway, aligning rail investment, including in new stations and lines, with future growth areas – and influence the selection of those growth areas towards locations which can be served by rail, where appropriate. The rail network must also be resilient to change and shock events so that economic growth is sustainable.

6.1.2 Three priorities were identified through stakeholder engagement in Phase 1. The table below expands on what these priorities are and what addressing them will mean to WG.

Priority	Description
Align rail investment, including new stations / lines with future growth areas	This priority recognises the importance of considering transport and planning policy alongside each other, and making sure, as far as possible, that large developments give consideration to sustainable transport. This priority is specifically addressed by CO G1.
Identify opportunities to develop and invest in Transit Oriented Communities	As with priority 1, this emphasises the importance of building communities around transit hubs, and the social and economic benefits this brings. This is addressed by COs G1 and G2.
Promote and maximise resilient design principles to protect the region against the implications of climate change	In the current climate emergency, all growth, whether it is housing development or new / increased capacity transit links, must be both sustainable and resilient to shock events which might be climate or health related (such as Covid-19). This priority, and the associated CO G3 focuses on making Western Gateway's rail network as resilient as possible.

6.1.3 Three conditional outputs were identified through stakeholder engagement in Phase 1. These are listed in the table below and this chapter adds more detail about their targets, gaps and routes to delivery.

Conditional Output	Description
G1: Transit Oriented Growth	Planning and transport policies aligned: rail as a transport option for all major new developments
G2: Mobility Hubs	Mobility hubs: stations providing for customers' wider needs (e.g. retail, medical, childcare) to place stations at heart of communities
G3: Network Resilience	Network resilience to disruption and severe weather events, to reduce delays and cancellations.

6.1.4 The first conditional output is targeted specifically at the alignment of transport and planning policies. The strategy encourages planning authorities to consider at all stages how Local Plan allocations can be effectively connected to the wider transport network, especially sustainable modes, including rail where appropriate. The strategy also promotes the development of Transit Oriented

Communities, by placing sustainable transport interchange at the very heart of an existing or new community.

6.1.5 The second conditional output under the growth theme is the development of mobility hubs. In this context this means making the railway station a key facility at the heart of the community, where residents and visitors can access services and facilities beyond the train.

6.1.6 Our third priority under this theme is about making infrastructure resilient to climate change. Transport infrastructure – especially on the rail network – is designed to operate for decades, so taking us into a future when it is realistic to expect that global temperatures have risen, bringing major changes in weather patterns and the frequency and intensity of extreme weather events. Designing resilient networks is therefore a critical part of planning for sustainable growth. If we are considering where people will live and work (and travel between the two) in the future, then the locations and routes between them must be resilient to climate change emergencies, such as river and coasting flooding, extreme heat and cold and sea level rise. Thus, a resilient rail network is at the core of sustainable growth.

6.2 CONDITIONAL OUTPUT G1: TRANSIT ORIENTED GROWTH

INTRODUCTION

6.2.1 Historically, the link between Planning Policy and Transport Policy has been disjointed, and many developments have progressed through the Planning process with little consideration given to wider transport and connectivity issues the development might face in the future. With the decarbonisation agenda, it is becoming more critical that new developments can be served by a sustainable transport network, including rail where appropriate. Without this deeper connection, developments are likely to be designed – implicitly or explicitly – with a primary focus on road access, generating higher traffic volumes with associated greenhouse gas emissions, air quality problems, public health consequences and congestion.

6.2.2 At the time of writing, the UK Government is consulting on proposed reforms to the planning system under the name “Planning for the future” involving a focus on design and sustainability, improving the system of developer contributions to infrastructure, and ensuring more land is available for development where it is needed. Western Gateway should monitor the outcomes of this consultation and the resultant changes to look for opportunities to use this reform to benefit this (and other) conditional outputs.

EVIDENCE BASE

6.2.3 The Western Gateway is covered by Local Plans for:

- four unitary authorities: Bath and North East Somerset, Bristol, North Somerset, South Gloucestershire. Three of these (Bath and North East Somerset, Bristol and South Gloucestershire) are looking to work together as the West of England Combined Authority, and coordinating planning work with North Somerset unitary authority;
- the six constituent local councils in Gloucestershire County (Cheltenham, Cotswold, Forest of Dean, Gloucester, Stroud, Tewkesbury);
- Wiltshire Council working with Swindon Borough Council;
- Bournemouth, Christchurch and Poole (three separate Local Plans) while the unified BCP Local Plan is developed (with adoption planned for 2024); and

- East Dorset and Christchurch (part); North Dorset; Purbeck; West Dorset, Weymouth and Portland (four separate Local Plans) while the unified Dorset Council Local Plan is developed (with adoption planned for 2023).

6.2.4 Many of these Local Plans are in development or currently subject to review.

HOW WILL IT BE MEASURED (TARGETS)

6.2.5 If this Conditional Output is met:

- Land use planning and transport planning will be aligned in Local Plans in the Western Gateway, with an emphasis on sustainable transport. Where relevant in the specific geography, rail is identified as a key sustainable transport mode within the region's transport networks;
- The land use planning process takes account of the proximity of sites to rail access points, where this is relevant to the local geography and appropriate to the sites and developments under consideration; and
- Planning policies recommend that masterplans for new strategic developments have sustainable transport at their heart, which includes access to rail where relevant and appropriate.

GAP ANALYSIS

6.2.6 Current good practice identified in a desktop review includes Bristol City Council's Local Plan. This Plan sets out the ambition to create 'a city of sustainable travel' with an aspiration to improve rail services. Policy BCS10 targets significant transport infrastructure improvements including rail schemes and policy DM23 requires development to provide adequate access to public transport.

6.2.7 Outside the Western Gateway, local plans which include explicit links between land use planning and transport planning, with a focus on sustainable transport, include the West Northamptonshire Joint Core Strategy, which places a strong emphasis on promoting sites with existing links to sustainable transport networks, or sites which could be connected to those networks in advance of occupation. In an urban setting, Croydon's transport strategy is closely aligned with spatial and economic development strategies and plans.

6.2.8 As noted above, many Local Plans in the Western Gateway are under review or development. Although the importance of links between land use and transport planning has been recognised for many years, the different timescales for these different strands of work – sometimes to align with central government requirements or funding opportunities, as well as the historical separation of the activities into different professions and local authority portfolios and departments can form barriers to their integration.

6.2.9 Examples of transit-oriented developments in and outside Western Gateway, include:

- Cranbrook new town, 5 miles east of Exeter, was masterplanned as a low-carbon community with an emphasis on sustainable transport. It includes a new station on the Exeter-Yeovil line. Delivery was planned so that the station opened during phase 1 of the new town – before even half of the phase 1 new homes had been completed. Devon County Council are pursuing plans for a second new station to support the potential expansion of the town with an additional 5,000 homes. On a smaller scale Newcourt station was built in part to serve a new urban extension on the south of Exeter;
- The Brewery Square mixed-use development, adjacent to Dorchester South station, is held up as a case study of masterplanning to take advantage of proximity to a transport hub;
- Emerging plans for Tewkesbury Garden Town show a new settlement of 10,000 homes, centred on Ashchurch for Tewkesbury station with an emphasis on sustainable transport;
- Northstowe new town in Cambridgeshire will see up to 10,000 homes at relatively high density. The town is served by the Cambridgeshire guided busway, giving excellent access to Cambridge

city centre and Cambridge North railway station, and residents are encouraged to choose active travel through a travel plan, including taster bus tickets; and
- The Kirkstall Forge development in Leeds, a mixed-use redevelopment of a brownfield site, was the catalyst for a new station with regular services to Leeds and Bradford. The site features 1,050 homes, office space, retail, leisure and community facilities.

6.2.10 A key feature of many successful developments is the implementation of a high-quality travel plan with accompanying funding support for staff as well as physical measures, which has been built in from the beginning of the development and design of the site.

6.2.11 Where potential sites are close to rail lines development can take advantage of existing services, and can contribute to the business case for new stations and enhanced services. Similarly, existing and improved rail services can help to open sites up for development. It is recognised that rail does not reach all areas of the Western Gateway so for many sites an emphasis on sustainable transport will be focused on other modes.

6.2.12 A particular category of potential development sites are those owned by Network Rail but surplus to operational requirements. Network Rail carefully considers the disposal of non-operational land that could be redeveloped for housing or other uses.

6.2.13 Some stakeholders identified barriers to aligning land use and transport planning, and to bringing forward transit oriented development, including:

- the typical timescales for planning and constructing new rail stations and services are perceived by some as a barrier to the successful integration of rail services into land use planning;
- influence required over land held by agencies of national Government which would be prime sites for transit oriented developments. In particular, city region authorities in England need the same veto powers over Network Rail land sales that the Scottish Government currently enjoys. More devolution of powers over stations;
- promotion of transit oriented development principles required within the National Planning Policy Framework to allow for collaboration of residential/commercial developments with infrastructure projects;
- some franchise agreements specify levels of car parking which train operating companies must provide at stations, which are sometimes in tension with local authorities' policies and aspirations;
- inconsistent policies on securing and using developer contributions across Western Gateway local authorities; and
- inconsistent approaches to travel plan requirements and monitoring arrangements.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

6.2.14 The delivery of this CO will fall under the Stations & Access to Rail Taskforce, who will specifically:

- consider approaches to share good practice in connecting land use and transport planning and bringing forward transit oriented development;
- identify potential measures to remove hurdles from current processes; and
- consider where there may be opportunities to increase consistency across local authorities, for example in respect of developer contributions.

6.3 CONDITIONAL OUTPUT G2: MOBILITY HUBS

INTRODUCTION

6.3.1 The principle of Mobility Hubs is to place the rail station at the heart of the community it serves, and allow it to perform a wider, outward-looking function beyond boarding and alighting trains. New or expanding stations could be redeveloped with these purposes in mind. The aim is to eliminate the

need for additional trips, allowing customers to satisfy all or most of their daily or periodic needs within or near the station, so as to encourage modal shift and sustainable lifestyles.

6.3.2 Despite their integral mobility function for communities, stations sit within a “liminal space” in terms of how their value is defined and maximised. Customers, Network Rail, TOCs and Local Authorities represent a mix of stakeholders, users, owners and/or operators of stations which varies across the Western Gateway, with a wide range of needs and expectations from the station environment. And yet, these needs and expectations have not fundamentally changed from when the railways were built and the communities formed around or next to them: the stations have always been economic drivers and assets for essential public services.

6.3.3 This fundamental station role will remain the same but the way it fulfils its communal public purpose must change: it must efficiently integrate into the fabric of public life and the future mobility landscape, to increase its customer and community value and play an active role in modal shift to reduce overall transport emissions.

6.3.4 This strategy represents the best opportunity to achieve the necessary integration, as it binds the stakeholders together into a shared, progressive purpose to co-deliver station enhancements for all users, operators and communities. This shared purpose is the Mobility Hub.

6.3.5 The proposed Mobility Hub provisions for the Western Gateway represent the needs of the typologies and personas across the WG area. The wide area means that mobility hub classifications must span the full range of personal activity needs that communities need access to, e.g. employment, education, health care, childcare, retail, leisure, tourism, and social interaction. These activities have been applied to the WG hub definitions, e.g. National, Regional and Local, identifying a standard range of locally available personal activity and utility needs appropriate to the scales of communities served.

6.3.6 The Mobility Hub concept presented below shows a list of “components” which satisfy complementary economic, social and community utility functions. When these components are integrated into hubs, they:

- Support wider customer needs, adding to the utility, efficiency and value of rail journeys;
- Support community needs, providing new, enhanced, or localised essential functions;
- Eliminate additional trips, reducing emissions and the use of private vehicles; and
- Support mobility capabilities, including micromobility and active travel, in line with local, regional and national transport, environmental and health ambitions.

6.3.7 The proposed Mobility Hub outline specifications have three categories: Customer and Community Amenities, Facilities, and Co-mobility Provisions.

6.3.8 The Customer and Community Amenities category represents the wider needs for rail customers and the communities they serve. This captures the heart of the station as a public space and asset, with the potential to support community and social functions such as libraries, healthcare and retail. Items in this category can also help to eliminate additional trips, by providing spaces and services for Post Office/Amazon parcel lockers, convenience food retail, healthcare, childcare, community space and other services. This category also benefits from the fact that, while high streets may struggle in the current environment, station retail often remains steady due to its high footfall and captive environment.

6.3.9 The Facilities category represents the travel-related needs and expectations for customers, to support the full range of customer journeys and enhance the quality of time spent waiting in the

stations. This includes travel information and, ideally, ticketing and payment for all relevant modes of travel.

6.3.10 The Co-mobility Provisions category captures a long list of mobility modes and services which are relevant for the Western Gateway area; stations must support interchanges, spaces and/or provisions for these in order to support current and future mobility needs. These will range from Bristol's ambitions for Mobility as a Service (MaaS) within its Future of Transport Zone (formerly Future Mobility Zone) funding, to the necessary shift to walking, cycling and micromobility modes necessary in every location to achieve Net Zero. The long list includes potential traditional, new and community transport modes and services; car parking and EV car charging, along with cycle parking, is covered separately in M1 – Station Access. The Mobility Hubs themselves may also influence the demand, operation and commercial viability of these co-mobility provisions, as stations serve as vital economic gateway and intermodal interchange roles.

Table 6-1 - Mobility Hub Specifications

Station Designation	National Hub	Regional Hub	Local Hub
Customer and Community Amenities			
Food retail (mini-supermarket)	Yes	Desirable	Desirable
Food vending (take away food to eat on journey)	Yes	Yes	Yes
Café (sit-in and take-away)	Yes	Desirable	
Parcel lockers	Yes	Yes	Yes
Parcel delivery	Possible	Possible	
Food delivery	Possible	Possible	
Community use (community health centre, meeting space, creche)	Desirable	Desirable	Possible
Art and Community Wall/Space	Yes	Yes	Yes
Covered space and seating	Yes	Yes	Yes
Concourse for pop-ups	Yes	Yes	Desirable
Meeting rooms and co-working facilities	Possible	Possible	
Facilities			
Toilets	Yes	Yes	Yes
Showers	Desirable	Desirable	
Free Wifi	Yes	Yes	Yes
Information station	Yes	Yes	Yes
USB charging	Yes	Yes	Yes

Station Designation	National Hub	Regional Hub	Local Hub
220V mains charging	Yes	Yes	Yes
Charging area for wheelchair/mobility scooter	Yes	Yes	Yes
Co-mobility Provisions			
Local bus	Yes	Yes	Yes
Long-distance coach	Desirable	Desirable	
Demand-Responsive Transport	Desirable	Desirable	Desirable
Cycle repair facility/services (pump, parts vending)	Yes	Yes	Desirable
Secure cycle parking	Yes	Yes	Yes
Cycles for hire	Yes	Yes	Yes
e-Bike	Yes	Yes	Desirable
e-Cargo bike	Yes	Yes	Desirable
e-Scooters	Desirable	Desirable	Desirable
Car clubs	Yes	Yes	Yes
Ridesharing/ ride-hailing pick-up	Yes	Yes	Yes
Links to cycle and walking routes	Yes	Yes	Yes
Charging for e-micromobility modes	Yes	Yes	Desirable

6.3.11 These Mobility Hub needs may also be met if the requisite facility is within a well-signposted five-minute walk to the station; although this is not as effective as co-location, it reflects the fact that not every station has enough footprint within its grounds to support many wider uses. Similarly it is possible that unused railway land or redundant station buildings could expand the range of facilities offered beyond those specified here. Facilities need not be permanent: the provision of utilities (electricity, water) can allow for flexible, pop-up or semi-permanent uses, such as coffee carts or plug-and-play containerised units.

6.3.12 The Mobility Hub classifications apply to the following hub categories within the WG area:

- National hubs within WG:
  - Bristol Temple Meads
  - Bath Spa
  - Bristol Parkway
- Regional hubs within WG:
  - Bournemouth

- Cheltenham Spa
- Chippenham
- Gloucester
- Poole
- Salisbury
- Westbury
- Weston-Super-Mare
- Weymouth

- Local hubs: the remaining stations within the WG area

6.3.13 Key aspects of all of these facilities and services are the quality of provision, including maintenance and renewals, and the quantity available, including the flexibility to scale up or down as demand changes over time. Where facilities increase on-site staffing this can support vulnerable users and deter anti-social behaviour.

Challenges / Hurdles

- The Covid-19 pandemic has introduced considerable uncertainty into planning for mobility hubs. It is unclear whether patronage will recover to pre-Covid levels, how enthusiastic or reluctant people will be reluctant to use shared vehicles (e.g. shared cycles or e-scooters, car clubs), and how different patterns of office and home working will shape up. There is a risk that some train and bus services may be unviable, reducing footfall at stations and undermining the business case for some components of the mobility hub. On the other hand, some components or locations may see an increase in demand: with fewer workers travelling to city-centre jobs, there may be higher demand for some services in residential communities; if some employers choose to down-size their offices, there may be higher demand for ad hoc meeting rooms and working spaces;
- Some services included in the mobility hub concept are likely to remain commercially responsive (food vending, parcels etc) and the existing ownership and management model would need amending to make these viable;
- Space requirements may require new buildings and land acquisition in some locations – and in some cases the station may not be the best place for a mobility hub. Where a new station is planned, for example to serve a new town or strategic development, it must be planned in from the earliest stages of masterplanning and delivered early to embed sustainable transport choices;
- To function as effective mobility hubs, stations must be accessible within coherent networks of safe routes for walking, cycling and e-scooters. It must be easy and convenient to move through the station, including, for example, accessing all platforms with cycles.

EVIDENCE BASE

6.3.14 National Rail Enquiries provides information which covers the presence of some, but not all of the Mobility Hub facilities. These facilities vary within stations within each Hub category and between Hub categories. Variation from site to site means that the delivery of the mobility hub concept must be tailored to each individual setting.

6.3.15 Sites across the WG area show the following variations and potential applications of the Mobility Hub specification:

- Stations in the heart of the community, either on the high street or within the town centre, e.g. Bristol Temple Meads, Bath Spa: these locations allow Mobility Hub amenities to be spread between the station and the adjacent community and public realm;
- Stations at the edges of communities, removed from the main pedestrian environments to high streets, shopping centres and business centres, e.g. Bournemouth: these locations increase the

potential to deliver Mobility Hub amenities directly on-site or in adjacent car park/public realm environment to enhance the utility and value of customer journeys, as the additional services and facilities located on-site will save customers time and increase convenience; or
- Stations outside of their primary communities, which have no immediate local amenities, e.g. Bristol Parkway: These Mobility Hub amenities can be delivered directly on-site and enhance placemaking so that the hubs serve as destinations in their own rights. This both enhances local community amenities and reduces car trips by agglomerating services. These sites also often have large footprints for urban realm and integrated transport provisions, potentially enhancing wider community connectivity.

HOW WILL IT BE MEASURED (TARGETS)

6.3.16 Success in achieving this Conditional Output will be measured by:

- Number of stations developed as mobility hubs with services and facilities appropriate to their hub category and their specific setting;
- Increased footfall through and around redeveloped stations;
- Increased retail revenue from additional services provided;
- Increased patronage of rail, shared mobility and bus services at hubs; and
- Achievement of business plan targets at individual stations.

GAP ANALYSIS

6.3.17 National hub stations have seen an increase in facilities offered over recent years. Bristol Temple Meads, for example, has cycle hire, a cycle shop, various food offers, free wifi and other facilities – with most other services available within a 5-minute walk in the city centre. Many stations have Station Travel Plans considering routes to the station including for walking and cycling (e.g. Wiltshire carried out a travel planning exercise in 2013), but adequate resources have not always been available to implement these in full. Most stations in the Western Gateway do not meet the aspirations set out here – although this is unsurprising, given the novelty of the mobility hub concept.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

6.3.18 As with CO G1, this CO will fall under the Stations & Access to Rail Taskforce. The initial action is the development of a Mobility Hub Blueprint and prioritised plan for delivery. The sequence of tasks is suggested as follows:

- Apply the Mobility Hub Specification to each site within the WG, tailoring appropriately to the local contexts;
- Develop the operator and stakeholder framework through which Mobility Hub enhancements can be delivered;
- Agree an indicative schedule for developing joint business cases and delivery plans for each station Mobility Hub;
- Develop exemplar joint business cases and delivery plans for stations in each hub category to be selected based on opportunities to tie in with other developments (e.g. Local Plans or town centre redevelopment plans); and
- We expect business cases and delivery plans for all stations to be developed and implemented over the following 20 years.

6.4 CONDITIONAL OUTPUT G3: NETWORK RESILIENCE

INTRODUCTION

6.4.1 This conditional output supports modal choice, building and keeping customer confidence about rail's ability to deliver their journey needs in the face of climate change and the increasing number of environmental effects and severe weather events which it will engender.

6.4.2 It encompasses both route resilience, the ability to keep open particular routes in the face of major disruptive events, and operational resilience, which is the ability to provide the travel capability even when the railway is disrupted.

6.4.3 Incorporating a network resilience strategy will ensure that the railway has dynamic flexibility to maintain network functionality to the greatest possible extent, and to continue to grow, despite the impacts of climate change.

6.4.4 It complements other conditional outputs including C3 Performance and D1 Decarbonisation.

6.4.5 Route devolution, the Government's projected future of a "more joined-up" track-and-train partnership, or any other systemic changes which emerge from the Williams Review or post-COVID-19 Emergency Management Agreements will likely have implications for collaborative working between Network Rail and the TOCs and FOCs. However, to the customer and the public, nothing will change—they just want reassurance that the railway will deliver their journey.

6.4.6 Climate change will increase the frequency and severity of extreme weather events and climate conditions which affect the railway in the Western Gateway, especially as more overhead line infrastructure is installed across the routes.

6.4.7 Developing a Network Resilience Strategy across the Western Gateway, as well as the Peninsula Transport area, will ensure that the railway has dynamic flexibility to maintain network functionality to the greatest possible extent, and to continue to grow, despite the impacts of climate change.

6.4.8 The table below shows future climate change-related trends which will affect the railway and the ways which the railway must adapt to cope.

Future Ready Trend	Action Needed
1.1 Heavier rainfall could cause local surface water and river flooding: ▪ 5-10% heavier from 1990 by 2010-39 ▪ 20% heavier by 2040-59 ▪ 20-40% heavier by 2060-2115	Assess route infrastructure against flood risk map, upgrade or build in preventative measures as needed, or develop alternative routes
1.2 Drier summers could cause droughts and ground shrinkage.	Could impact, inter alia: rail stress; switch detection; earth resistance; tunnel deformation; risk of lineside fires; increasing rail wear (and noise) on curves
1.3 Water table changes could mean that soakaways don't work as designed.	Drainage of railway assets may be affected; tunnel temperature could increase because of a lower water table

1.4 Global sea levels could be between 12 and 76 cm higher than today by the end of the century.	Assets near to the coast could experience changes in: scour; drainage/flooding; corrosion; insulation/creepage from saline atmosphere
1.5 Peak temperatures in towns and cities could be up to 6˚C hotter than today by 2050, with fewer very cold days	Impact on rail stress free temperature and electrical conductor properties (including movement range); increasing reliance on forced ventilation and cooling on trains or in stations Impacts on passenger and employee comfort, health and safety
1.6 Peak wind speed gusts could be stronger.	Could impact: OLE structure spacing; OLE structure design; rolling stock (and pantograph) sway; passenger safety; radio mast design; station design vis-à-vis OSD; noise barrier design
1.7 'Multi hazard' events could become more frequent (storms bringing wind, rain and flooding).	For example: snow and wind resulting in drifting; freezing rain resulting in conductor rail icing
1.8 Lightning strike events likely to increase	Potential disruption to energy and signalling/telecoms networks
1.9 Future climate change could be greater or less than projected, requiring adaptation	Designs will need to be adaptable to accommodate a range of possible change outcomes

The table below shows future railway resource-related trends which will affect railway resilience and costs, and the ways which the railway can use these trends to plan for resilience and positive growth.

Future Ready Trend	Action Needed
2.1 Grid energy prices are forecast by DECC to be 40% higher than 2014 (in real terms) by 2030 [and may become subject to variable pricing]	Investigate opportunities to reduce power demand (e.g. lighter trains, lower speed, coupled trains), reduce system losses, recover waste energy (e.g. regenerative braking, heat recovery from tunnels); consider opportunities for Demand Side Response to minimise peak demand using, for example, energy storage
2.2 Renewable energy prices could decline rapidly. In the medium- to long-term, every flat surface becomes an opportunity for solar panels.	Investigate opportunities for energy storage, which is becoming cheaper, performing better and enables effective use of renewable energy, which could include assets on railway owned land; increased use of natural resources, e.g. cooling systems using ground water; power purchase agreements that maximise renewable energy

2.3 UK summer river flows could be 50-80% lower by 2050, while the Water Framework Directive restricts river and groundwater abstraction	Maximise the use of recycled water, e.g. for train washing; rainwater harvesting at stations and depots
2.4 Long term projects could have to operate in a very low or near zero net greenhouse gas emission UK.	Examples include: removal of SF_6 as an insulant for switchgear; introduction of previously unfeasible technologies (e.g. hydrogen fuel cells) or “green” combustion engines, such as biodiesel; electrification, evolved for lower cost implementation; refrigerant choice
2.5 The circular economy could become mainstream: products designed for re-use; landfill waste becomes much less common (and much more expensive)	Investigate opportunities to refurbish rather than renew, use of recyclable materials, such as steel and (some) plastic rather than concrete
2.6 Just in time factory assembled products could replace just in time delivery. e.g. Pre-assembly / Modular manufacturing	Design and use modular replacement units, investigate in-house printing for components
2.7 Embodied carbon and water could become a normal part of design decisions. All projects could have a contracted embodied water and carbon budget.	Use of suitable tools as part of design development to demonstrate compliance/achievement of targets, such as Rail Safety and Standards Board's (RSSB) Rail Carbon Tool. Increasing focus on whole of life consideration to avoid “burden shifting”. Tools and processes (and associated expertise) are available.

EVIDENCE BASE

6.4.9 Network Rail have detailed contingency plans to cope with disruption and carry out resilience and climate change adaptation planning. Local authorities land use and transport strategies and policies are increasingly taking account of climate change and the need to develop long-term resilience.

6.4.10 TOCs have well established processes for reacting to disruption, including alterations to train services, making alternative travel arrangements (e.g. rail replacement buses, taxis), paying compensation to passengers and providing updated information. However, Transport Focus’s most recent National Rail Passenger Survey (spring 2020) 2019 Passenger Survey found 38% of respondents nationally were satisfied with how TOCs deal with delays (also see CO C3 Performance), with individual TOC results for Western Gateway operators as follows:

- CrossCountry 54%
- Great Western Railway 47%
- South Western Railway 33%
- Transport for Wales 34%

HOW WILL IT BE MEASURED (TARGETS)

6.4.11 The success of the Conditional Output will be measured by:

- Delay minutes from service affecting failures, highlighting attribution to the type of severe weather event, so that severe weather trends from climate change can be tracked over time; and
- Capturing the specific travel arrangement changes required for customer journeys, or the conditions for Do Not Travel alerts, also highlighting attribution to the severe weather events, to refine solutions over time.

DELIVERY PLAN – IDENTIFIED INTERVENTIONS

6.4.12 This CO will fall under the Future Ready & Resilience Taskforce, and specific actions are recommended as follows:

- Network Rail conducting a Resilience Study for key flood-risk and climate event-risk areas in the Western Gateway, in the manner of the “West of Exeter Route Resilience Study”;
- Identify the additional monitoring and maintenance needs required;
- Identify alternative rail route options and other preventative investments which may be required for long-term sustainability, e.g. depot or substation relocations, redundant supply systems;
- Joining up efforts across the interconnected Western Gateway and Peninsula Transport STB areas;
- Operational Impact Working Groups will need to develop the cross-industry scenario planning for unplanned and planned disruptions due to climate events; and
- Incorporate Network Rail’s Resilience Study.

6.4.13 The outputs of these actions will then be prioritised and delivered through the Rail Network Enhancements Pipeline (RNEP) or as part of Business As Usual (BAU)over the short, medium and long terms.

6.4.14 Other measure address operational resilience (the ability to continue to operate during disruption):

- Develop a matrix of procedures for ticket cross-acceptance and rail replacement bus strategies for unplanned and planned disruptions due to climate events;
- Develop the communications strategy and plans for extreme weather events; and
- TOCs may need to develop new agreements with coach and bus companies and Local Authorities for periodic provision of rail replacement buses during climate events and high-risk weather periods.

7 DELIVERY OF THE STRATEGY

7.1 INTRODUCTION

7.1.1 It is evident from the details presented in Chapters 2-6 that the delivery of the strategy will require all relevant stakeholder groups to collaborate and leverage their influence to deliver this strategy and realise the identified Conditional Outputs. Figure 7-1 shows the full range of stakeholders who will be involved in and affected by this Rail Strategy.

Figure 7-1 - Western Gateway Rail Strategy Stakeholders

7.1.2 A critical success factor in the successful delivery of the strategy is a shared vision in sustainable public transport delivering social and economic benefits to all residents, visitors and businesses in Western Gateway.

*To be a region that is **sustainably connected** and provides **high quality** and **value for money** travel opportunities for all its businesses, residents and visitors*

7.2 FUTURE ROLE OF WESTERN GATEWAY

7.2.1 At present, although Western Gateway is one of 7 Sub-National Transport Bodies (STB) in England, it does not hold any statutory powers. Since legislation was passed in 2016 under the Cities and Local Government Devolution Act, only Transport for the North has achieved statutory status (in 2018). Recently, DfT has given the 6 other STBs a clear steer that at present, any further applications for statutory powers will not be welcomed.

7.2.2 Regardless of its non-statutory status, Western Gateway is expected to develop its own Strategic Transport Plan, of which this Rail Strategy is an integral part. This is a key part of its role to oversee and influence transport investment across the region, along with liaising with DfT regarding funding opportunities, so far specifically in relation to major road network plans. This will allow the establishment and growth of a Western Gateway 'identity' which, given the disparate nature of the STB geography, has been more of a challenge than other regions have experienced.

7.2.3 However, it remains reliant on DfT to make decisions about what funding is allocated and how it is spent, including assuring value for money is delivered in line with Transport Appraisal Guidance (TAG) principles. It is expected that DfT will continue to allocate annual funding to STBs, with Western Gateway has recently received notification of its 2020-21 budget. Beyond this, Western Gateway has an ambition to secure a devolved funding deal for the region for the delivery of its Strategic Transport Plan, and undertake its own assurance as schemes within the delivery plan mature. Funding that is currently allocated should be directed to the Taskforces detailed below to undertake the further studies and strategy development work required.

7.2.4 From a rail perspective, governance of rail franchises also remains with DfT, leaving Western Gateway with limited influence over decisions made about services or rolling stock to best serve residents and businesses in the region. It is anticipated that this Rail Strategy will increase the power of influence held by Western Gateway over franchising and other decisions affecting the railway in the region.

7.2.5 The structure and timeline of this delivery plan is based around a more formal governance structure, with 5 Taskforces reporting to the Western Gateway Board. Each CO is linked to at least one of these Taskforces, and their role will include determining the specific interventions required to deliver each CO, and to take proposed investments through the HMT Green Book Business Case process, and, where applicable, through the parallel Rail Network Enhancements Pipeline process. Taskforces will all be cross-industry, which will give Western Gateway a much stronger influence over policy and investment decisions made in relation to the rail network.

7.3 A FUTURE RELATIONSHIP WITH NETWORK RAIL

7.3.1 The Western Gateway region bridges 2 Network Rail routes: Bournemouth, Christchurch & Poole, Dorset and parts of Wiltshire sit in Wessex Route, while the northern part of the region aligns with Western Route. This alone presents a challenge to Western Gateway in cross-boundary working although a cross-route process has become established through the development of this strategy that it is hoped will continue throughout the delivery stages.

7.3.2 Network Rail's System Operator function looks to the future through its Continuous Modular Strategic Planning (CMSP) process. The CMSP is designed to:

- explicitly put passenger and freight users at the heart of the process;
- better address the route's business needs;
- feed refranchising, capacity allocation, development and delivery, and sale of access rights;
- employ a more effective, focussed means of consultation;
- provide more granular, targeted market insight;
- develop a 'service change' pipeline for future configuration state; and
- demonstrably focus on incremental opportunities and service trade-offs

7.3.3 Throughout the development of the rail strategy, the team has worked closely with Network Rail System Operator from both a Route Management perspective (Wessex and Western) along with

aligning with the CMSP teams for two upcoming programmes: the Bristol to Birmingham CMSP and the Dorset CMSP. The timing of both the development of the rail strategy and the two CMSP programmes provided a unique opportunity to align and interface with both the Wessex and Western System Operator teams to set forward a way of working for future CMSPs. It is intended that this Rail Strategy will set a framework that allows the CMSP process to be part of the next step for developing the evidence base and justification for investment decisions. The ongoing programme of CMSPs is shown in Table 7-1.

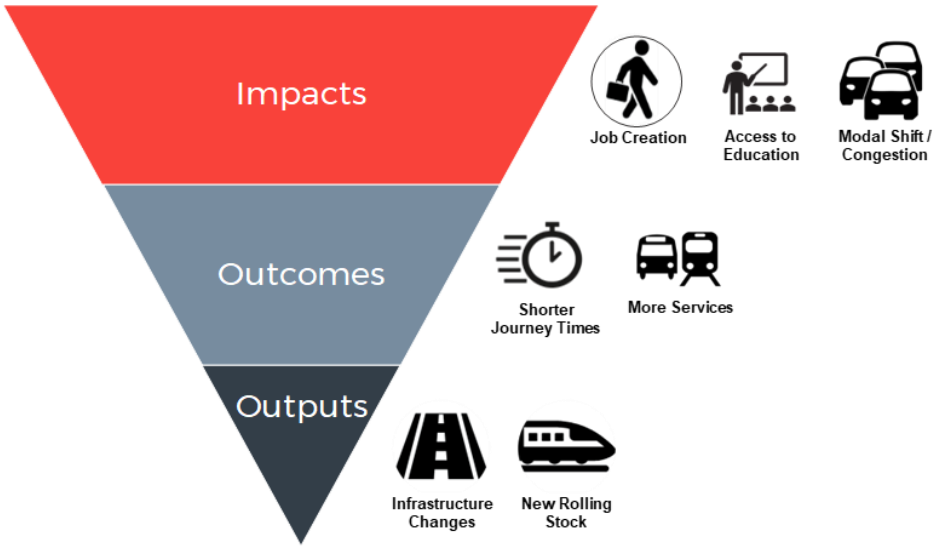
Table 7-1 - Upcoming CMSP programmes

Year	Western Route	Wessex Route
2019		▪ West of England line (**completed**) ▪ Solent Connectivity (**completed**) ▪ Resilience (**completed** – internal only)
2020	▪ Bristol – Birmingham (**ongoing**) ▪ Bristol – Exeter (**ongoing**) ▪ Bristol - South Wales (**ongoing**) ▪ (Wales System Operator leading)	▪ Dorset Connectivity (**ongoing**) ▪ Solent to Midlands Freight (**ongoing**) ▪ (in conjunction with Highways England) ▪ South West Main Line Capacity (**ongoing**) *(London Waterloo to Woking)*
2021	▪ West of England (Bristol travel to work area)	▪ South West Main Line Capacity ▪ (Woking and beyond)
2022	▪ Western route decarbonisation ▪ Swindon corridors	
2023	▪ Bristol to South Coast ports ▪ Taunton to Reading	

7.4 DELIVERY PLANS AND GOVERNANCE

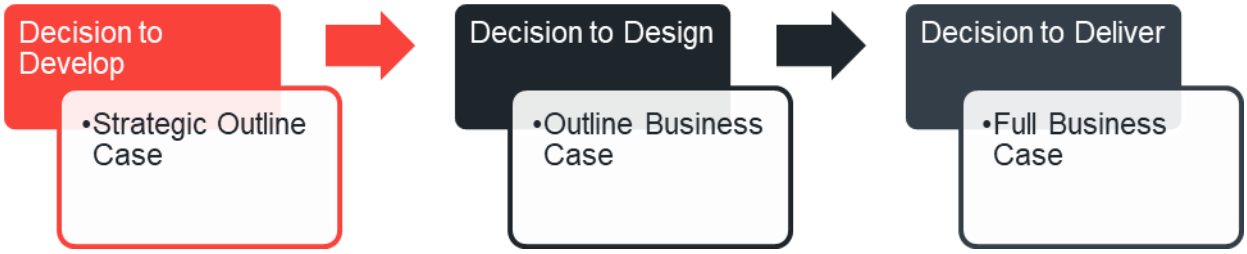
7.4.1 In order to continue the progression of turning this strategy into tangible change for Western Gateway, it is necessary to set out a milestone programme. At this stage of strategy development, it has not been possible to identify specific infrastructure interventions to deliver the COs, as there is still further work to do to understand the future requirements of the network, e.g. through the CMSP programme described above. The COs and associated priorities describe the desired ***outcomes***, and the next stages of strategy development will develop the ***outputs***, as illustrated in Figure 7-2.

Figure 7-2 - Hierarchy of Outputs, Outcomes and Impacts



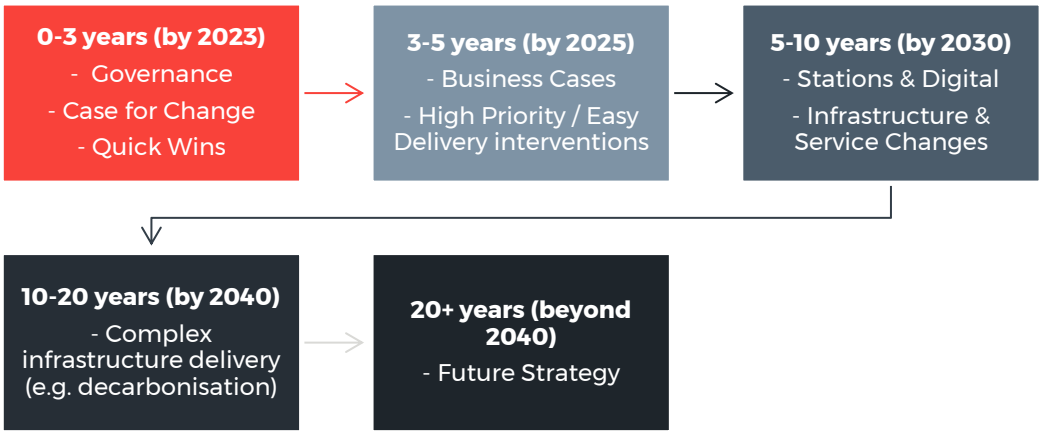
7.4.2 This process aligns with both HMT Green Book and the Rail Network Enhancements Pipeline, where the next stage of strategy development (0-3 years) will establish a more detailed Case for Change for each CO through the compilation of additional evidence, and identify outputs in the form of specific interventions that deliver the CO outcomes in a value for money way.

Figure 7-3 - Green Book & Rail Network Enhancements Pipeline Business Case process



PHASED DELIVERY

7.4.3 In order for progress to be effectively monitored, the delivery of the strategy is proposed to be phased. We have broken timescales down into 4 periods, with a evolution and refresh of the strategy at the end of each period that is likely to recognise the need to extend the strategy further into the future (beyond 20 years):



7.4.4 As discussed throughout the report and above, the governance structure for the delivery of this strategy is through 5 Taskforces, who will each oversee the delivery of the strategy in their specific area. These Taskforces are:

7.4.5 The allocation of COs against each Taskforce is set out in Table 7-2 below. Note that some are shared between Taskforces.

Table 7-2 - CO allocation to Taskforces ***(italics indicates a secondary Taskforce)***

Strategic Planning	Digital Solutions	Stations & Access to Rail	Freight	Future Ready & Resilience
C1 Frequency	M4 Fares Influence	M1 Station Access	C6 Freight Capacity	C3 Performance
C2 Interchange	M5 Ticketing Solutions	M2 Modal Integration	D2 Carbon Footprint	C4 Extended Timetable
C4 Extended Timetable	P2 On-Board Productivity	M3 Regional Catchment	D3 Freight Growth	D1 Carbon Emissions
C5 Direct Services	*M1 Station Access*	M6 Accessibility	D4 Freight Capture	P2 On-Board Productivity
P1 Journey Speed	*M2 Modal Integration*	P3 International Gateways	P4 Freight Capability	G3 Network Resilience
P3 International Gateways		G1 Transit Oriented Growth		
M3 Regional Catchment		G2 Mobility Hubs		
D2 Carbon Footprint				

7.5 ROUTE MAPS TO DELIVERY

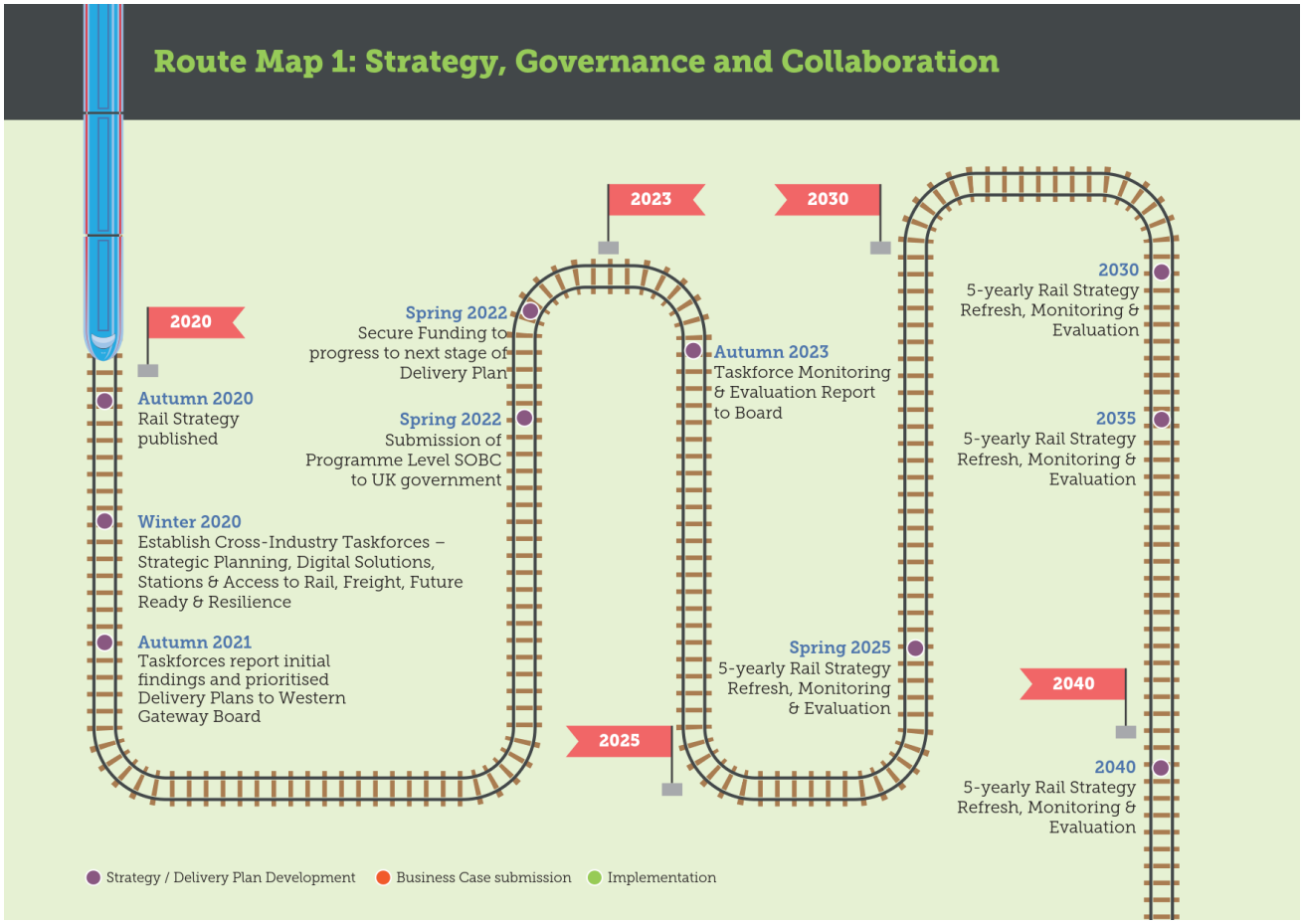
The Western Gateway Board and each of the 5 Taskforces will have a series of actions and tasks to undertake within designated timescales to progress towards delivery of the strategy. This is clearly defined for the 0-3 year phase of the strategy, with actions and tasks for later phases being defined by deliverables and decisions made by the Board in the first phase. We set out below 6 individual Route Maps to Delivery, which can be used as a blueprint for the Board and Taskforces to procure and deliver the necessary studies, business cases, and, in later stages of the strategy, design and construction.

Route Map 1: Strategy, Governance and Collaboration

Owner: Western Gateway Board

This route map is the core part of the strategy and sets out the overarching governance arrangements for strategy delivery, alongside reporting requirements for each of the Taskforces and the Monitoring & Evaluation process to ensure the strategy is delivering the anticipated outcomes.

Figure 7-4 - Strategy, Governance and Collaboration Route Map



Route Map 2: Strategic Planning and Configuration States

Owner: Strategic Planning Taskforce

Using inputs from Network Rail's CMSP process, this Taskforce and Route Map will consider what the future needs of the railway are from a capacity and connectivity perspective, and plan service and infrastructure changes required to meet those needs. This could include projects identified for the Restoring Your Railway Ideas Fund as detailed in CO M3. As discussed under the Choice theme, this will include the establishment of an Indicative Train Service Specification (ITSS) and a number of 'Configuration States' as infrastructure changes are delivered to facilitate new service patterns. The timescales proposed for this are illustrated in Figure 7-4 below.

Figure 7-5 - Route Map 2: Strategic Planning & Configuration States

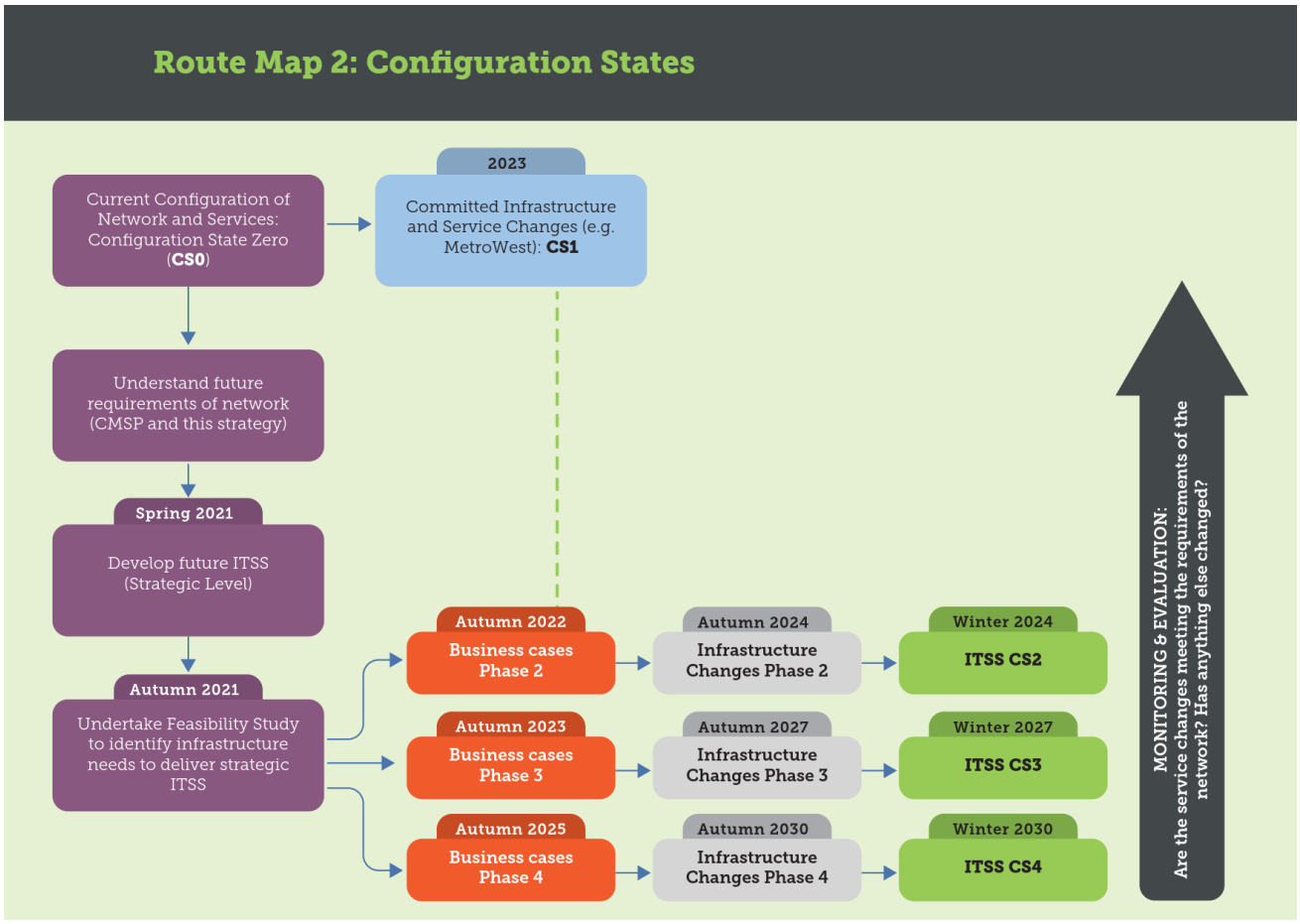


Table 7-3 summarises how each of the CO's under this Taskforce will be measured and what outcomes and impacts are expected to be derived.

Table 7-3 - Strategic Planning Taskforce CO Monitoring & Evaluation

CO	How will success be measured?	Outcomes and Impacts
C1 Frequency	Frequency of services meets targets Improved Generalised Journey Time	Higher % Modal Share Farebox Revenue Reduced congestion and carbon emissions Economic Growth (GVA uplift) driven by improved connectivity
C2 Interchange	Where journeys require interchange, these are no shorter than 10mins and no longer than 20mins wait Improved Generalised Journey Time	
C5 Direct Services	More direct journey pairs / through services will be	

CO	How will success be measured?	Outcomes and Impacts
	available on Western Gateway network Improved Generalised Journey Time	
P1 Journey Speed	End-to-end journey speeds on routes to achieve: ▪ Intercity: 61+ mph ▪ Regional: 51 – 60 mph ▪ Local: 41 – 50 mph ▪ Urban: 31 – 40 mph Improved Generalised Journey Time	

Route Map 3: Digital Solutions

Owner: Digital Solutions Taskforce

The focus of this Taskforce and Route Map is the application and introduction of relevant technological advances to make rail travel and access to rail to, from and within Western Gateway easier, without disadvantaging those who do not understand or wish to use the technology. In many ways, this is an overarching taskforce, as digital solutions will cut across many other COs; however, there are some specific identified deliverables allocated to this group, subject to deliverability and business case. These are:

1. Integrated Journey Planning App
2. Digital Wayfinding App
3. Integrated Ticketing Programme

The delivery of these aspects is illustrated in Figure 7-5 below.

Figure 7-6 - Digital Solutions Route Map

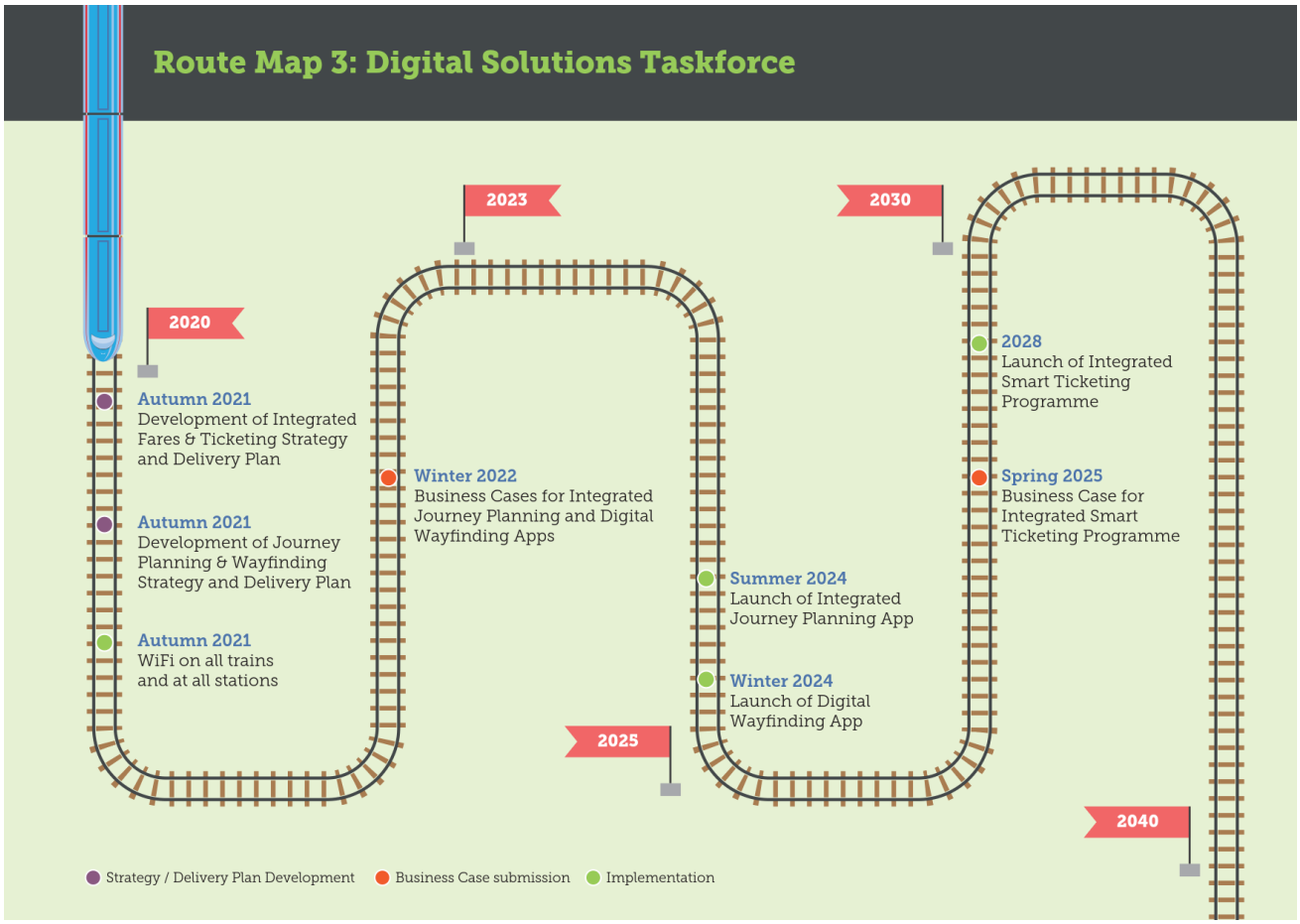


Table 7-3 summarises how each of the CO's under this Taskforce will be measured and what outcomes and impacts are expected to be derived.

Table 7-4 - Digital Solutions Taskforce CO Monitoring & Evaluation

CO	How will success be measured?	Outcomes and Impacts
M4 Fares Influence	Improved NRPS Value for Money scores	Higher % Modal Share, particularly from disadvantaged parts of society
M5 Ticketing Solutions	Multi-modal paperless (app-based) ticketing available for all journeys and passenger uptake of App high	Improved ranking on Indices of Multiple Deprivation driven by higher levels of education and employment for socially disadvantaged areas

Route Map 4: Stations & Access to Rail

Owner: Stations & Access to Rail Taskforce

Due to the identified importance of stations and access to the rail network as part of the strategy, particularly under the Mobility, Productivity and Growth themes, it is appropriate to establish a Taskforce and Route Map specifically for these aspects of the strategy. Of all the plans, this one is likely to deliver the quickest wins through the development of Station Travel Plans and low-risk interventions around stations that can be delivered by Local Authorities. With the target of making all stations accessible by 2030, this plan currently does not extend beyond a 10-year plan. The timescales are shown in Figure 7-6.

Figure 7-7 - Stations & Access to Rail Route Map

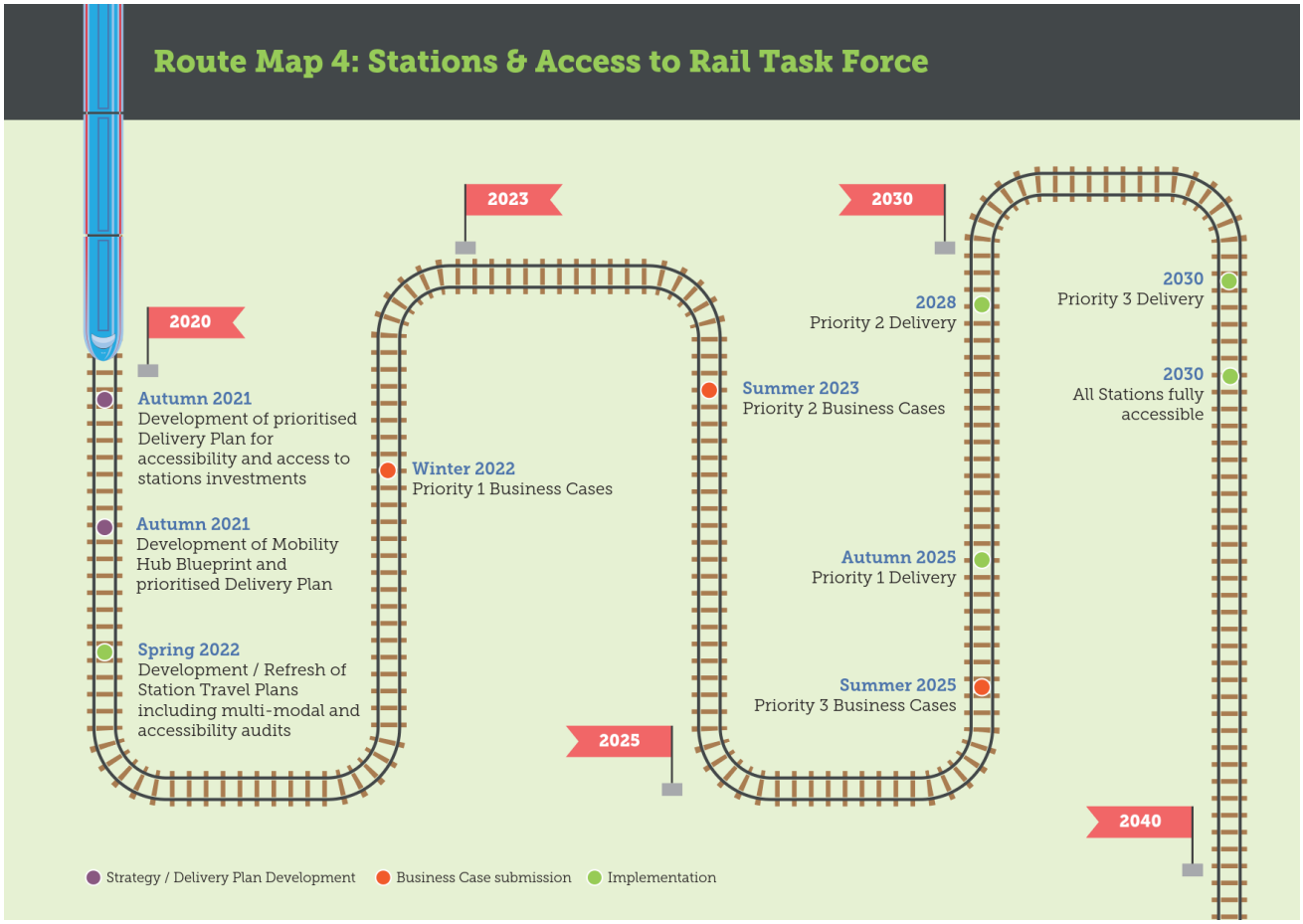


Table 7-5 – Stations & Access to Rail Taskforce CO Monitoring & Evaluation

CO	How will success be measured?	Outcomes and Impacts
M1 Station Access	Increased levels of car, cycle and EV charging parking at stations 100% compliance with DfT CoP for Accessible Stations by 2030	Higher % Modal Share Reduced congestion and carbon emissions

CO	How will success be measured?	Outcomes and Impacts
	Reduced number of crimes and accidents reported when accessing rail	Economic Growth (GVA uplift) driven by improved connectivity
M2 Modal Integration	Where journeys require interchange, these are no than 20mins wait Bus Stops are with 200m of station Bus+Rail journey times are competitive with the equivalent car journey Improved Generalised Journey Time	
M3 Regional Catchment	Increased % of Western Gateway population living within 15 minutes of a railway station	Higher % Modal Share, particularly from disadvantaged parts of society Improved ranking on Indices of Multiple Deprivation driven by higher levels of education and employment for socially disadvantaged areas
M6 Accessibility	100% compliance with DfT CoP for Accessible Stations by 2030	Rail network provides equal access opportunities for all Increased % of disabled people in employment and education
P3 International Gateways	▪ Increase in rail travel to and from International Gateways (IGs), measured as proportion of passengers arriving to WG by train from cross-border gateways, or arriving in Western Gateway by air or sea and continuing their journey by train; and ▪ Increase in proportion of inward tourism visits made by train.	Economic Growth (GVA uplift) in Visitor Economy Higher % Modal Share for international tourists, leading to reduced congestion and carbon emissions

CO	How will success be measured?	Outcomes and Impacts
G1 Transit Oriented Growth	▪ Land use planning and transport planning will be aligned in Local Plans in the Western Gateway, with an emphasis on sustainable transport. Where relevant in the specific geography, rail is identified as a key sustainable transport mode within the region's transport networks; ▪ The land use planning process takes account of the proximity of sites to rail access points, where this is relevant to the local geography and appropriate to the sites and developments under consideration; and ▪ Planning policies recommend that masterplans for new strategic developments have sustainable transport at their heart, which includes access to rail where relevant and appropriate.	Creation of Transit Oriented Communities that are less reliant on car travel Reduced carbon emissions Health and Social Wellbeing improvements
G2 Mobility Hubs	▪ Number of stations developed as mobility hubs with services and facilities appropriate to their hub category and their specific setting; ▪ Increased footfall through and around redeveloped stations; ▪ Increased retail revenue from additional services provided; ▪ Increased patronage of rail, shared mobility and bus services at hubs; and Achievement of business plan targets at individual stations.	Higher % Modal Share Reduced car miles as journeys have multiple purposes Reduced carbon emissions Health and Social Wellbeing benefits Rejuvenation of under-used built assets, leading to land value uplift

Route Map 5: Freight

Owner: Freight Taskforce

Throughout the development of the strategy, freight has been highlighted as a key aspect. This is recognised in 4 freight specific COs, as well as several others where freight is a key part of achieving that CO. More so than other Taskforces, there is an urgent need to understand the freight market in Western Gateway better before determining detailed interventions – hence why the immediate deliverable is a Freight Market Study. This will include a detailed gap analysis of freight capacity and capability, usage and availability of paths, commodities (current and future potential), rail freight terminals and distribution centres (current and future potential) and First Mile Last Mile opportunities offered by rail freight. As illustrated in Figure 7-7, only once this is complete will it be possible to identify and prioritise interventions.

Figure 7-8 - Freight Route Map

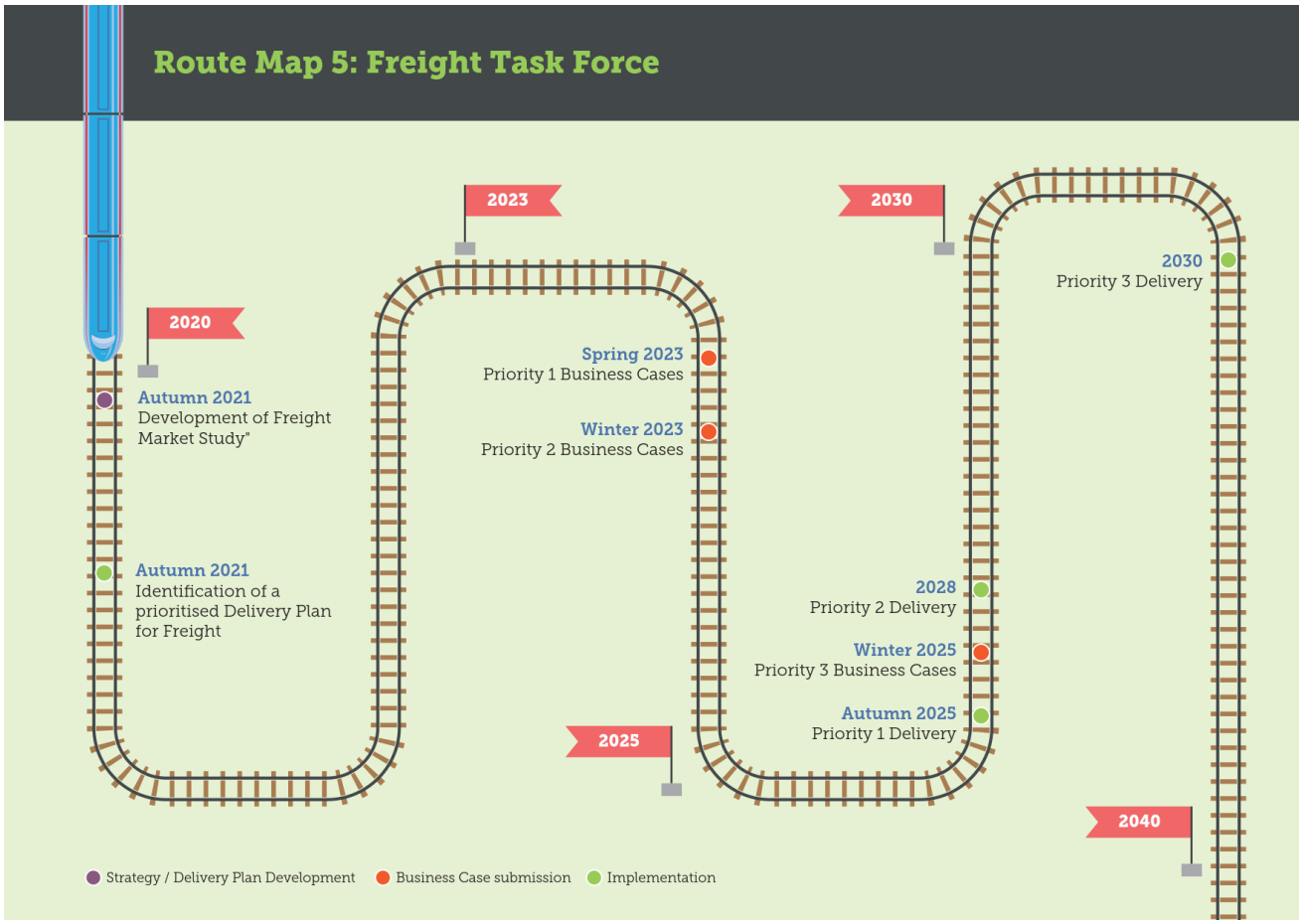


Table 7-6 - Freight Taskforce CO Monitoring & Evaluation

CO	How will success be measured?	Outcomes and Impacts
C6 Freight Capacity	Increased number of freight paths available on network in line with Freight Aspirational Service Plan (F-ASP)	Higher % freight modal share

CO	How will success be measured?	Outcomes and Impacts
D2 Carbon Footprint	▪ More even distribution of load factor on-board trains across the day; and ▪ Increased revenue for passenger operators from new sources where space on trains is taken up by high value, low density goods being transported to towns and city centres. Reduction in road-based delivery traffic servicing city centre locations, to be replaced by innovative First Mile / Last Mile delivery services and centrally-based parcel pick-up locations.	Reduced highway congestion and carbon emissions Economic Growth (GVA uplift) through improved logistics connectivity
D3 Freight Growth	▪ Increased proportion of total freight transported to, from and within Western Gateway by rail; ▪ Increased relative volumes of key commodities transported by rail to, from and within Western Gateway; and ▪ Increased usage of freight paths on the rail network.	
D4 Freight Capture	Net increase in the number of different commodity sectors transported by rail by 2030 ▪ Improved collaboration between potential freight customers to allow shared freight services/paths across different commodity types/customers; and ▪ Increased use of rail distribution centres and warehouses, either outside of or within city/town centres. Reduction in road-based delivery traffic servicing city centre locations, to be replaced by innovative First Mile/Last Mile delivery services, partnership delivery models and centrally-based parcel pick-up locations	
P4 Freight Capability	More routes achieving key freight capability targets of RA10, W10/12 gauge, signalled for 775m trains and higher linespeeds	

Route Map 6: Future Ready & Resilience

Owner: Future Ready & Resilience Taskforce

Following the Climate Change emergency declarations and the publication of Network Rail's Traction Decarbonisation Network Strategy (TDNS) in September 2020, the need to think about what function rail may perform within a sustainable transport network of the future is essential. This Taskforce and Route Map pull together a number of strands linked to this overarching theme, with a view to preparing Western Gateway to be both sustainable and resilient to shock events, whether they be climate-related (e.g. coastal flooding) or socio-economic, such as the current Covid-19 pandemic.

As well as developing a Western Gateway specific response to TDNS, a key first action for this Taskforce is to develop a wider Future Ready & Resilience Strategy. This should cover topics including performance improvement, 7-Day Railway, wider decarbonisation initiatives (such as stations, depots and micromobility), green and blue infrastructure, renewable energy sources and high risk locations for climate-related shock events. Similar to Route Map 5, until this strategy is developed, it is difficult to identify any specific interventions. However, the development of a Decarbonisation Modelling Tool and the target to make all rail power supplies renewable by 2025 are identified on Figure 7-8 below.

Figure 7-9 - Future Ready & Resilience Route Map

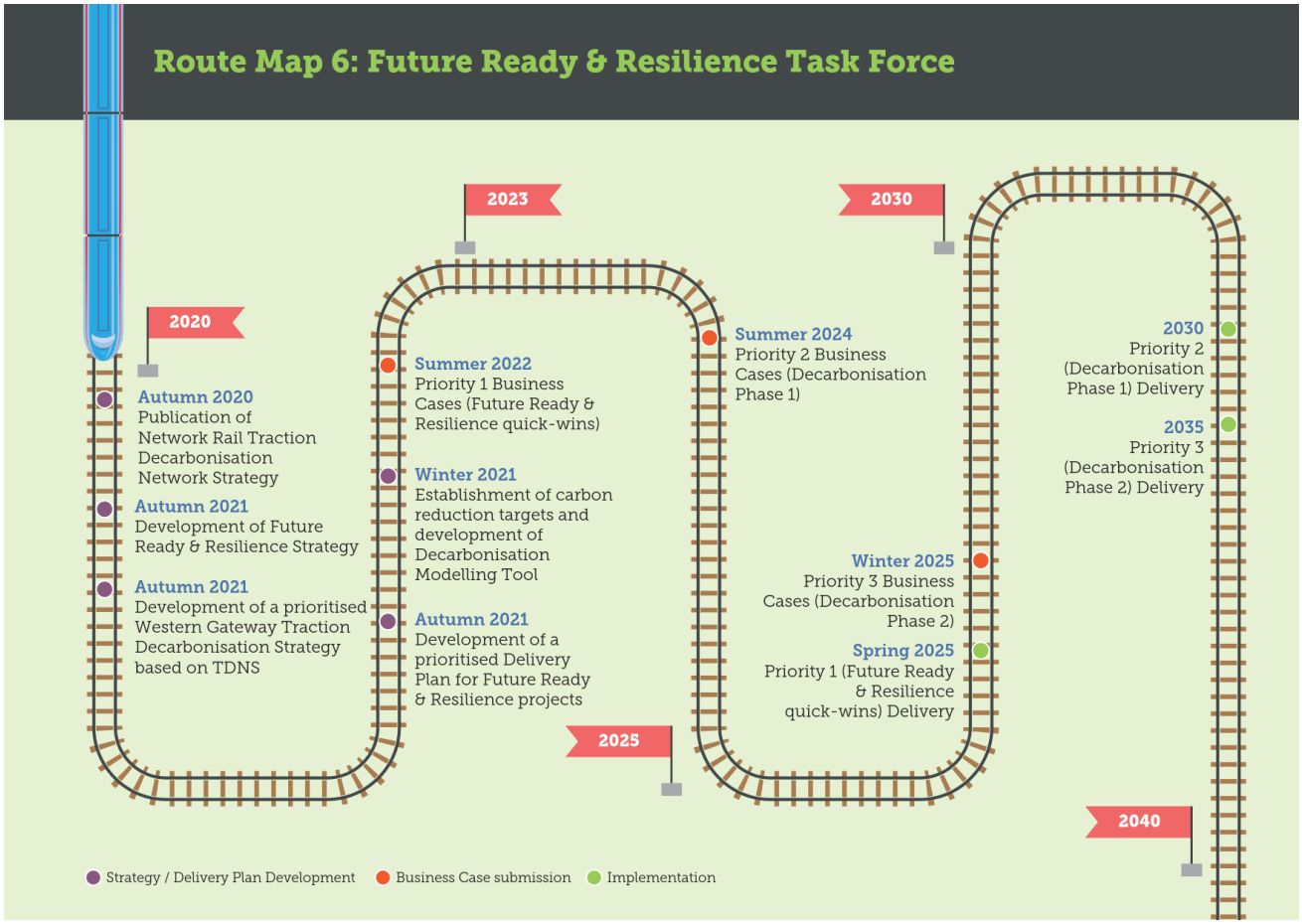


Table 7-7 - Future Ready & Resilience Taskforce CO Monitoring & Evaluation

CO	How will success be measured?	Outcomes and Impacts
C3 Performance	▪ Improvement in Right Time Arrivals; and ▪ Improvement in NRPS Punctuality / Reliability scores.	Higher % Modal Share linked to passenger confidence in reliability Reduced industry compensation costs / events
C4 Extended Timetable	Earlier / later trains at evenings and weekends	Higher % Modal Share, particularly for discretionary travel Improved journey opportunities leading to social equality Economic Growth (GVA uplift) from improved connectivity
D1 Carbon Emissions	Gradual decarbonisation of the Western Gateway rail network through the transition away from diesel rolling stock and non-renewable energy sources for other network assets A decarbonisation calculator tool is recommended	Reduced carbon emissions and improved air quality
P2 On-Board Productivity	Rolling stock to be fit for purpose for journey requirements, including: ▪ Availability of seats; ▪ Proportion of table seats and charging points; ▪ Availability of WiFi; and ▪ Luggage Space.	Higher % Modal Share Economic Growth (GVA Uplift) from improved connectivity and productivity
G3 Network Resilience	▪ Delay minutes from service affecting failures, highlighting attribution to the type of severe weather event, so that severe weather trends from climate change can be tracked over time; and	Higher % Modal Share linked to passenger confidence in reliability Reduced industry compensation costs / events

CO	How will success be measured?	Outcomes and Impacts
	▪ Capturing the specific travel arrangement changes required for customer journeys, or the conditions for Do Not Travel alerts, also highlighting attribution to the severe weather events, to refine solutions over time.	

7.6 SUMMARY AND NEXT STEPS

This report has presented detailed analysis of the 23 Conditional Outputs identified as part of the Western Gateway Rail Strategy and developed delivery plans for 5 Taskforces sitting within a Western Gateway governance structure led by the Board.

The Rail Strategy presents an ambitious yet deliverable vision for making rail a vital part of a sustainable transport network both within Western Gateway and across to its neighbouring authorities which has the support of all stakeholders who have been involved in its production.

A clear next step following the endorsement of both this report and the parallel published strategy by the Western Gateway Board is the establishment of the 5 identified cross-industry Taskforces and allocation of funding to those Taskforces to proceed with the next stages of development. The next stage, to be specified and led by these Taskforces, is focussed upon more detailed collation of evidence and identification and prioritisation of a long list of schemes based on this evidence. This will lead to the submission of a programme level Strategic Outline Business Case to government by early 2022.

Kings Orchard
1 Queen Street
Bristol
BS2 0HQ

wsp.com