

WESTERN GATEWAY RAIL STRATEGY

Western Gateway
Sub-national Transport Body



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Foreword

Part of our STB's overall Strategic Transport Plan is to develop a mode specific Rail Strategy which outlines how rail will help to deliver the overall vision and objectives for transport in the Western Gateway area.

Our Rail Strategy sets out 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.

Our Rail Strategy includes a clear vision, with five themes supported by focussed objectives and priorities and also sets out clear outcomes that the Western Gateway STB wants from the rail network.

I believe the need for change is clearly explained in this document and the base line conditions of existing services are equally well defined. I am very grateful for the support provided by Network Rail in developing this strategy and their commitment to continue close partnership working as we take the strategy forward.

I'm very pleased that despite current difficulties, we have developed our Rail Strategy with significant input from industry stakeholders by holding workshops

across the Western Gateway area as well as through e-consultation with our constituent authorities, Network Rail, Train Operating Companies and Freight Operating Companies.

The delivery of the Rail Strategy has been structured into five 'route maps' in order to focus and align actions and interventions to relevant bodies and themes. These five route maps include: **Strategy, Governance and Collaboration, Digital Solutions, Stations & Access to Rail, Freight, and Future Ready & Resilience.**

The publication of this Rail Strategy marks an important step in the development of our STB, and is the result of a truly collaborative effort from Western Gateway and its stakeholders.



CLLR BRIDGET WAYMAN

Chair - Western Gateway Sub-national Transport Body (STB)



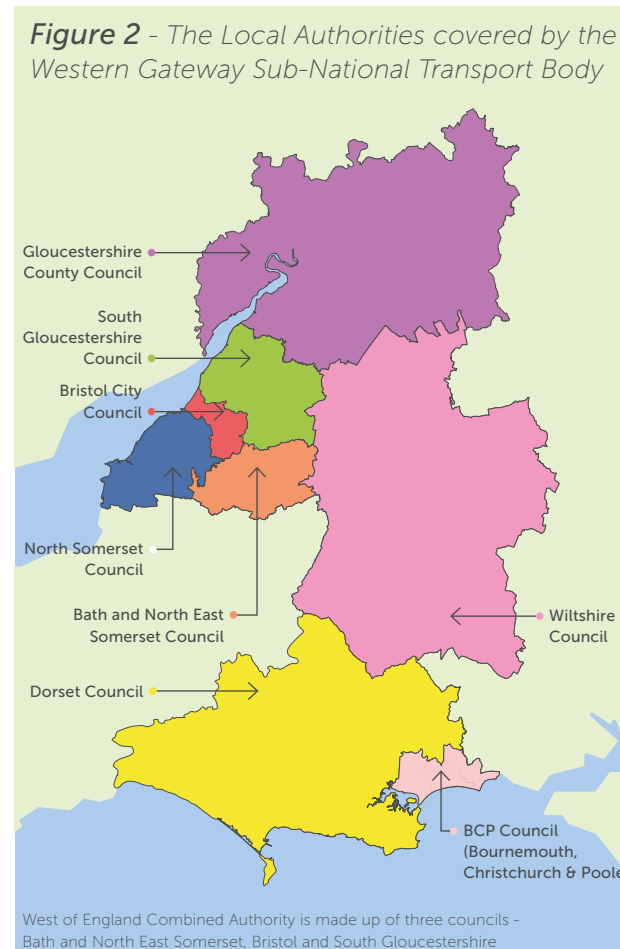
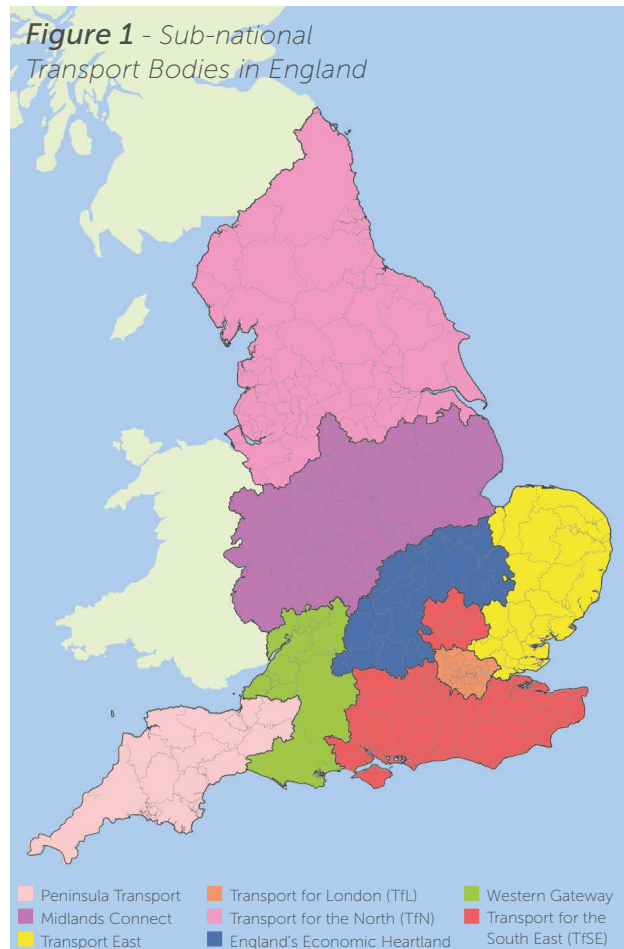
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Introduction



1.1 | Introduction

Western Gateway is one of 7 Sub-National Transport (STB) bodies across England and is formed of the 9 local authorities that sit within Gloucestershire, Bristol, parts of Somerset, Wiltshire 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.**



The Western Gateway STB is home to over 3 million people, and although there are pockets of deprivation in the larger towns and cities, it is generally considered to be a reasonably affluent region of the country. The region is largely rural in nature, including several world-renowned locations such as Stonehenge, Cheddar Gorge and the Dorset Coast, making Tourism a key industry sector alongside Advanced Manufacturing, Aerospace, Financial and Professional Services and Military.

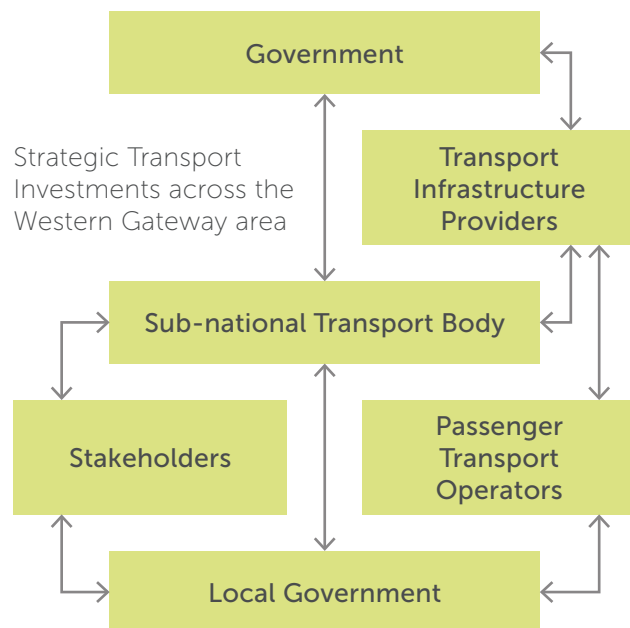
It has ambitious targets to deliver over 300,000 new homes and over 190,000 new jobs by 2036. To achieve this vision, the alliance is predominantly focused on maximising capacity and resilience of the transport network, prioritising transport investment that will improve connectivity at a local, national and international geographical scale. By investing in strategic level corridors, the Western Gateway will connect:

- **Local centres** through ambitious public transport networks such as Metrobus and MetroWest;
- **National markets** through strategic crossroads of highway and railway links; and
- **International markets** through Airports and Deep-Sea Ports.

1.2 | Western Gateway Sub-National Transport Body

Western Gateway STB was established in 2018 to respond to the government’s devolution agenda, and with objectives to work together to drive innovation, maximise sustainable economic growth, improve industrial productivity by strengthening travel connections to local, national and international markets and support social mobility by enhancing strategic travel connectivity across South West England.

Figure 3 - The role of the Western Gateway STB in the decision-making process



The Western Gateway STB Board, comprised of elected members from each constituent local authority, as well as representatives from DfT, Highways England, Network Rail, Peninsula Transport STB and Western Gateway Transport & Business Forum, is committed to working together to provide a single voice to government on strategic transport matters affecting the region. The Board is established to provide strategic leadership and direction to the material advantage of the Western Gateway region.

This strategic leadership role will include:

- Representing its members in discussions with Government, Strategic Infrastructure Providers and neighbouring STBs (including Transport for Wales);
- Agreeing strategic investment priorities for road, rail and cycling; and
- Leading on significant matters that require strategic solutions, including decarbonisation, digital connectivity and multi-modal ticketing.

In June 2020, Western Gateway issued a draft Strategic Transport Plan for consultation. The Strategic Transport Plan focuses on short-term delivery to 2025 and includes an approach to developing a Long-Term

Strategic Plan (2025-2045). This Rail Strategy forms an integral part of that Transport Plan, embracing the same principles and priorities for change and growth, although our horizons extend towards 2045, aligning with the recognised Long-Term Planning Process (LTPP) adopted by the rail industry.

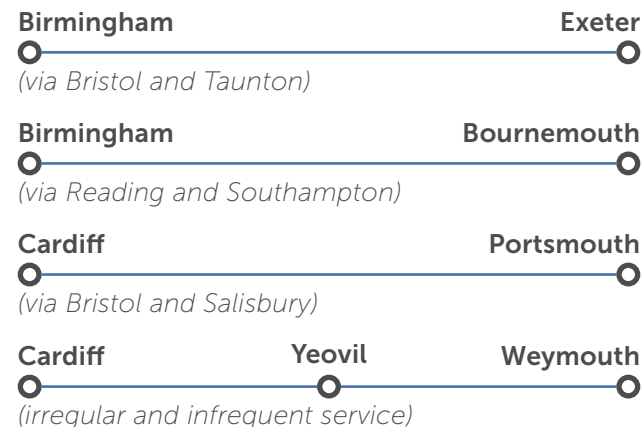
The Strategic Transport Plan identifies 3 hubs and 4 corridors, that are recognised within the Rail Strategy. These are:



1.3 | Western Gateway Existing Rail Network

The rail network in Western Gateway, like many other parts of the national rail network, was developed piece by piece by my multiple private companies in the 19th and early 20th centuries. This was dominated by the parallel Great Western and London & South Western Railway companies providing the east-west connectivity to the region from London. The railway was nationalised under British Rail in 1948, and decline in passenger numbers due to competition with the private car led to widespread closures in the 1960's and 70's.

This history has led to the shape of the network today, retaining the strong east-west, London-centric connectivity, with much poorer provision on local routes and in the north-south axis. The main routes that provide north-south connectivity are:



The region spans 2 Network Rail (NR) Routes and includes 4 Train Operating Companies (TOCs) as shown on the map on the next page. Western Route predominantly aligns with Great Western Railway operated services, while Wessex Route aligns with South Western Railway operated services. Transport for Wales operates a handful of services between Cardiff and Bristol / Cheltenham, and as described above, CrossCountry operates the North & Midlands to South West services.

Frequency and quality of services is variable across the route, ranging from a turn-up-and-go service level on the Great Western route between Swindon, Bath and Bristol, and to some extent between Southampton and Bournemouth, to infrequent and irregular service patterns, in particular between Weymouth, Yeovil and Bristol.

Direct connectivity and journey speeds are also poor across much of the region. The direct services matrix on Page 10 shows which of the key stations can be reached directly and what average speed this can be achieved in. Later in the strategy, we discuss the use of journey speed instead of journey time to highlight particularly uncompetitive connections or routes along the network.



Direct Services Matrix

N National
 R Regional
 ↓ Within WG boundary
 ↑ Outside WG boundary

			↑	↑	↓	↑	↑	↑	↓	↓	↓	↑	↓	↓	↑	↓	↑	↑	↓	↓	↓	↓	↓	↑	↑	↑	↑
			N	N	N	N	N	N	N	R	N	R	R	N	R	R	R	R	R	R	R	R	N	R	R	R	
			XBH	RDG	BRI	OXF	SOU	BSK	BTH	BPW	CNM	SWI	BMH	SAL	DID	GCR	EXD	XWT	POO	CPM	WSB	WEY	WSM	CDF	TAU	YVJ	YVP
↑	N	Birmingham New Street XBH																									
↑	N	Reading RDG	60																								
↓	N	Bristol Temple Meads BRI	64	71																							
↑	N	Oxford OXF	58	66																							
↑	N	Southampton Central SOU	55	48	40	48																					
↑	N	Basingstoke BSK	52	42	46	45	53																				
↓	N	Bath Spa BTH		76	53		39	46																			
↓	N	Bristol Parkway BPW	68	93	36				27																		
↓	R	Cheltenham Spa CNM	62	54	69				46	78																	
↑	N	Swindon SWI		89	62				71	94	41																
↓	R	Bournemouth BMH	53	47		53	49	52																			
↓	R	Salisbury SAL			42		43	55	41																		
↑	N	Didcot Parkway DID		69	67	42			75	68	50	97															
↓	R	Gloucester GCR	52	55	40		43		34	42	43	40		34	42												
↑	R	Exeter St Davids EXD	66	70	70			48	55	63	66			47													
↑	R	Worcester Foregate XWT	34	49	37	45			33	36	44				35	26											
↓	R	Poole POO					38	45					35														
↓	R	Chippenham CPM		81	61				70			77			82												
↓	R	Westbury WSB		47	38		48	37	35	29	41	35		50		35	45	35		22							
↓	R	Weymouth WEY			29		41	43	27	28			38			31			40		27						
↓	R	Weston-Super-Mare WSM		53	37				34	30		44			48		51			36							
↑	N	Cardiff Central CDF	53	77	39		44		38	59	50	70		44	64	50					39		37				
↑	R	Taunton TAU	65	74	66				46	59	64	53			58		74			49	38		55	46			
↑	R	Yeovil Junction YVJ			26			48	24					47		48				42							
↑	R	Yeovil Pen Mill YVP			33			31	31	33				29		37				48	34					3	

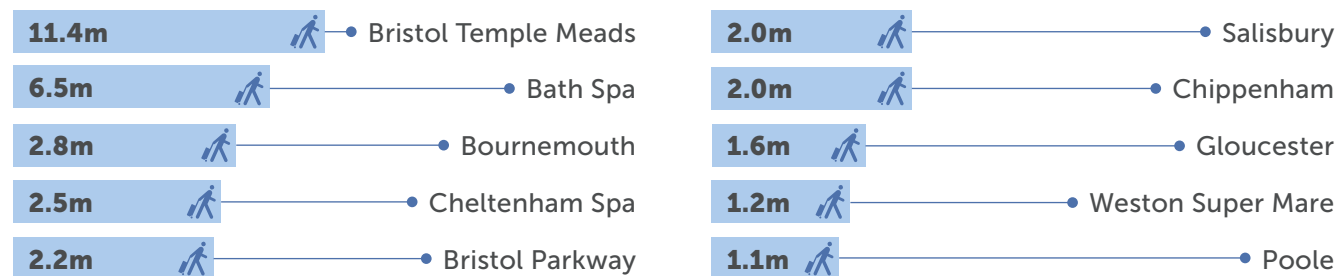
Figures in cells indicate average point to point journey speed in miles per hour between each hub pair.

1.4 | Stations

There are 70 stations on the National Rail Network in Western Gateway. Using DfT's Stations Classification system, these can be broken down as follows:

Station Category	Number of Stations	Western Gateway Examples
A National Hub	1	Bristol Temple Meads
B Regional Interchange	1	Bristol Parkway
C Important Feeder	9	Bournemouth, Cheltenham Spa
D Medium Staffed	10	Stroud, Kemble, Pewsey
E Small Staffed	11	Pokesdown, Yatton, Moreton-in-Marsh
F1 Large Unstaffed	12	Keynsham, Lydney, Patchway
F2 Small Unstaffed	26	Clifton Down, Weston Milton, Chetnole

The 10 most-used stations (according to ORR Station Usage data from 2018-19) are:



The least-used stations are Pilning and St Andrews Road (WECA) and Chetnole, Thornford and Yetminster (Dorset). All 3 Dorset stations and Pilning suffer from an infrequent service. St Andrews Road, whilst served regularly, is a request stop.

Based on facilities detailed on the National Rail Enquiries website, only 21 of the 70 stations are classified as fully accessible (with accessible ticket purchasing, customer assistance and compliant step-free access between station entrance and boarding the train).

1.5 | Traction Power

Although there are sections of route that are currently electrified – generally 750V DC Third Rail in Wessex Route and 25kV AC Overhead Line in Western, there are significant lengths of railway that still rely on diesel traction power.



In September 2020 Network Rail published their Traction Decarbonisation Network Strategy (TDNS), which identifies which non-electrified routes across the UK are most suitable to be decarbonised via electrification or the use of battery or hydrogen rolling stock. The relevant routes in the Western Gateway are discussed later in this strategy.

1.6 | Freight

Nationally, in recent years, the nature of rail freight has changed – away from ‘heavy haul’ goods such as coal (to power stations) to intermodal containers containing a wide range of goods from automotive to biomass, being transported from ports to container terminals for onward transport. Intermodal containers require a larger gauge – W10 minimum, and ideally W12, than the more traditional heavy haul wagons which can operate on W7 and W8 gauge.

Other metrics that are objectives of the Trans-European Transport Network (TEN-T) include the length of trains that can operate, with European standards requiring 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 (as above) and linespeeds (previous page) are also considerations.

The map on the right shows the current freight routes in the Western Gateway by gauge and route availability.



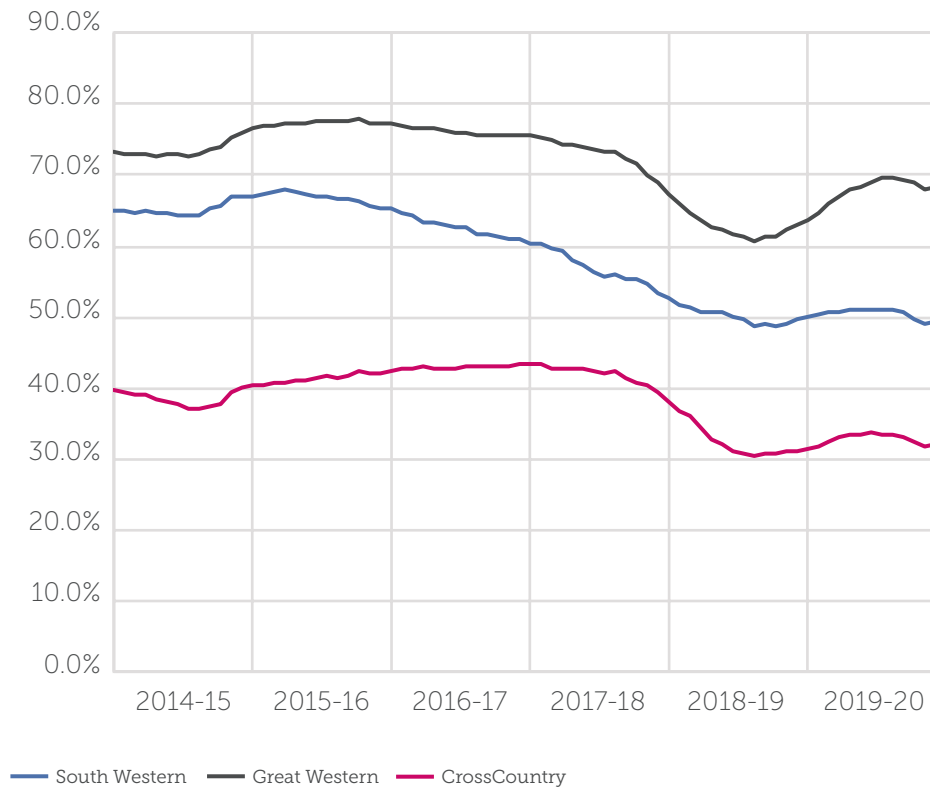
Freight origins, destinations and commodities

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
Avonmouth	Various: N Wales, Clitheroe, Lancs, Southampton	Aggregates
Sevenside 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

1.7 | Performance

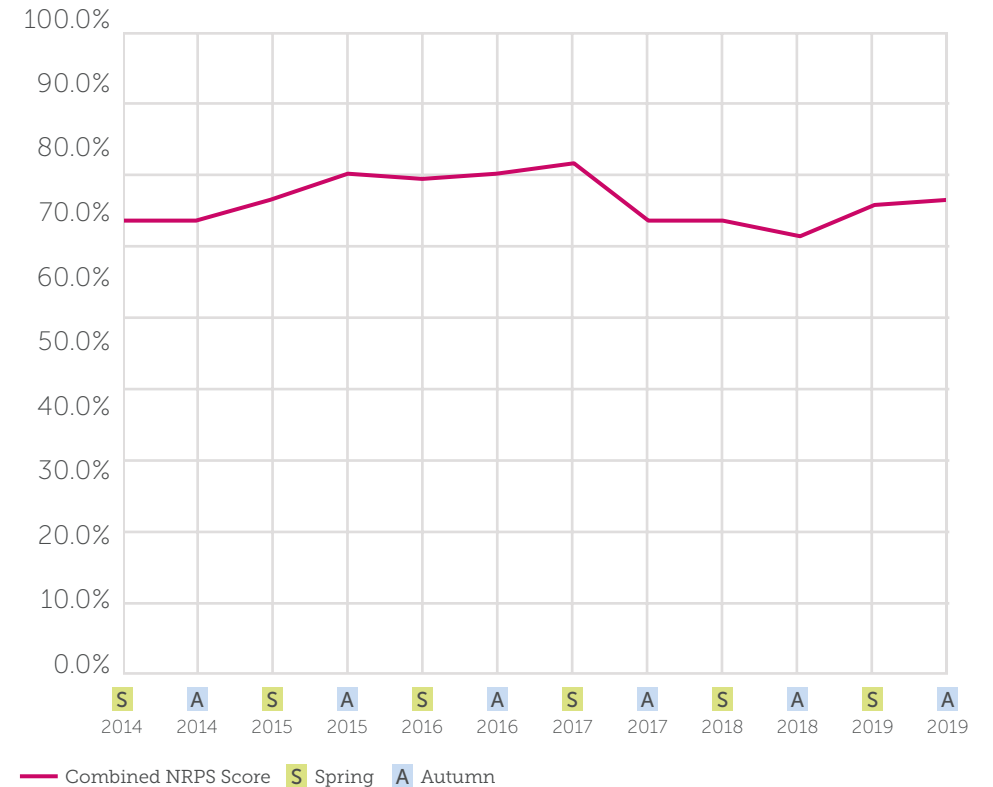
Performance is one of the most important factors in passenger choice making and the level of confidence that users have in rail as a mode. With the industry moving away from the Public Performance Measure (PPM) due to its end-station nature, Right Time Arrivals and T-3 metrics by TOC will be used within this strategy. Customer satisfaction of punctuality and reliability (through the National Rail Passenger Surveys (NRPS)) also provides a good measure of confidence in rail's performance. Figure 4 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. From a customer satisfaction point of view, Figure 5 indicates that over the past 6 years, the highest satisfaction score in any wave was 83% (in Spring 2017).

Figure 4 - Periodic right time arrivals by sub-operator (2015-2020)



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

Figure 5 - NRPS Satisfaction with punctuality and reliability (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.

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The Case for Change



2.1 | Policy Context

For this Rail Strategy to be robust and deliverable, it is critical that it is set in the context of the current socio-economic, spatial and political environment. The last 5 years has seen unprecedented change in government policy on planning, transportation and funding for infrastructure projects, alongside a period of political uncertainty associated with Brexit. This is evolving even further with recent policy change on climate change and decarbonisation, setting the UK an ambitious carbon-neutral target of 2050

Specific policy considerations are:

- DfT's position on Sub-National Transport Body (STB) role;
- Network Rail's Traction Decarbonisation Network Strategy (TDNS);
- Williams Review of Franchising; and
- The short and long-term impacts of Covid-19.

STB Role

DfT views the role of STBs as being to:

- Provide strategic consideration of transport needs at a pan-regional level aligning with economic and industrial strategies for the region
- Provide advice to Government on prioritisation of schemes at the sub-national level
- Undertake agreed activity on behalf of Government in their region, for example connectivity studies
- Support other Departmental priorities (e.g. MRN)

To be successful STBs will need to:

- Speak with 'one voice' for partners in the region
- Base all proposals in evidence
- Operate at a strategic cross-boundary regional level, not replicating the functions of local transport authorities
- Work collaboratively across their region
- Work collaboratively across the STB community, sharing best practice and avoiding duplication
- Work openly and transparently with Government
- Be able to take and defend tough decisions

Traction Decarbonisation Network Strategy

In light of nationwide carbon net-zero targets by 2050, Network Rail has published a Traction Decarbonisation Network Strategy (TDNS) which sets out the preferred option for achieving this net-zero target for every line in the country. As well as electrification being an option, alternative technologies are being considered, including battery and hydrogen-powered rolling stock.

Williams Review of Franchising

At the time of writing, the outcomes of the ongoing Williams Review of Franchising had still not yet been published. The review, designed to look at the structure of the whole rail industry and the way passenger rail services are delivered, will provide a series of recommendations to UK Government about how to proceed with the mechanisms of rail franchising. While a competitive process is likely to remain, it is understood that an element of devolution may occur, married with an ongoing fares reform which is designed to enable local government to have more control of their service provision. Western Gateway should be aware and ready to adopt the outcomes of these reviews to help meet its long term goals.

Covid-19

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-19 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.

Wider Policy Considerations

Policy Area	Consideration for Western Gateway
The Climate Emergency	Remains at the forefront of all policies, regardless of scale, scope, or vision. The need to deliver a sustainable and resilient transport system.
An Integrated Transport Response	Emphasis on a multi-modal, sustainable transport system that is accessible by all, that will allow re-balancing of the economy and closing of the skills gap.
Interconnected UK-wide Transport Network	Maintaining cross-border relationships through strategic discussion and communication with neighbouring areas, with specific reference to an uplift in productivity.
An Evolving Railway Network	A railway network that is forward thinking and innovative, maximising the opportunities that technological advancements offer, whilst in parallel considering the future of mobility and needs of different types of passenger (See Section 3.6 below).
A Strategic Transport Network	Maximising capacity, connectivity and journey opportunities to keep up with the growing demand for rail, in line with the UK's decarbonisation targets and Clean Growth Challenge.
A Customer Focused Network	A system that consistently and transparently puts the needs of its customers (passengers and freight) first and makes best use of tax-payers' and customers' money to optimise the network.
Sustainable Growth	Aligning planning and transportation policy to ensure that future residential and commercial developments have sustainable transport at their hearts.

2.2 | Challenges and Opportunities

STRENGTHS

- Good urban and intercity journey times, notably the new services as part of the December 2019 Great Western Railway timetable change (eg. Swinton and Bristol Parkway)
- Good mix/balance of journeys including urban, sub-urban and intercity (eg. along the South Coast but also in and around Bristol)
- Good bulk passenger movement
- High quality station hubs and new rolling stock (GWR)
- London connectivity is strong on both Wessex and Western routes.
- Reasonable price point for non-London journeys
- Bus interchange is strong combined with good station access
- Strong cross boundary links and geographic spread, notably into Peninsular Transport (Taunton and Exeter), Wales (Cardiff and Swansea) and Midlands Connect (Birmingham).
- Efficient local connections and exits
- Network aligns well with jobs/housing development

OPPORTUNITIES

- Fares and ticketing offering including multi-modal integration
- Maximising capacity, understanding and unlocking demand, and not only in the off-peak
- Modal integration potential - increase use within urban areas
- Working with neighbouring areas
- Re-thinking rail and its perception
- Review of Local Plans of each authority
- Refocussing priorities given the climate emergency (technology, renewals, signalling, future mobility)
- The current timing given the development of other STBs
- Rolling stock renewal
- Sustainable tourism
- Harnessing current changes to franchising
- Aligning decision making (jobs/housing) with rail
- Freight utilisation and growth (e.g. Poole docks, logistics/deliveries)

Intercity Quality

Strengths included the new rolling stock, intercity journey times, strong cross-boundary links and the quality of station hubs



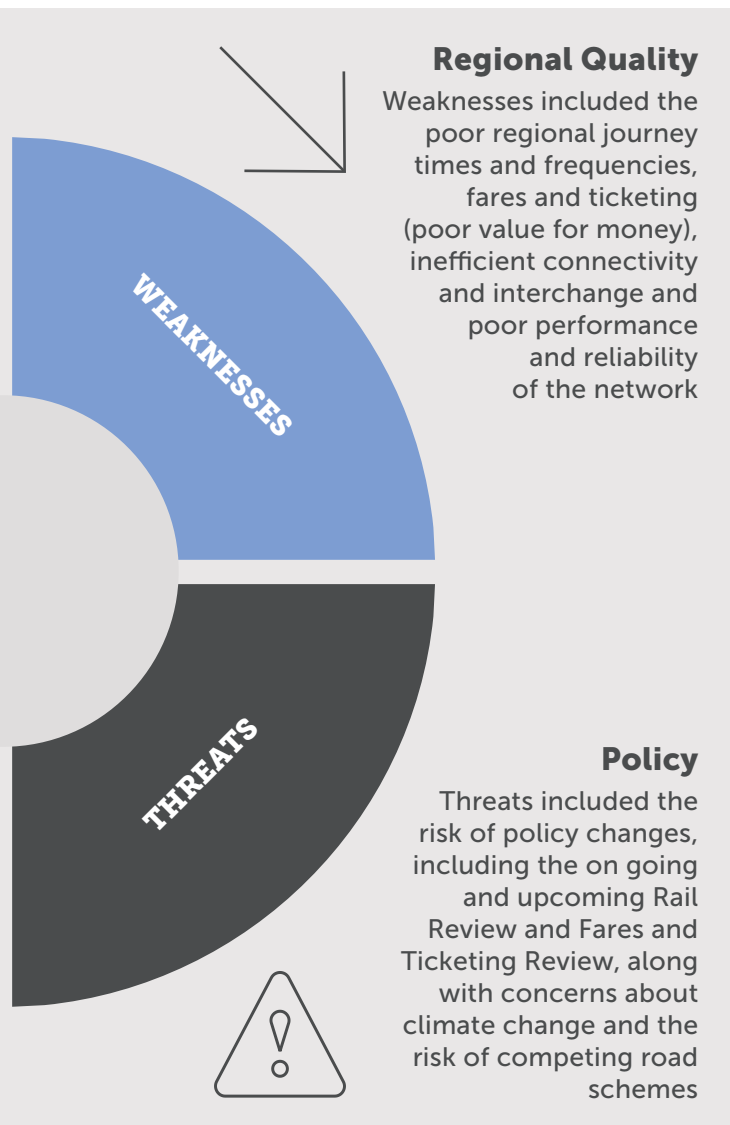
STRENGTHS

OPPORTUNITIES

Efficiencies

Opportunities included maximising capacity, efficiency of the network, enhancing the perception of rail, modal integration and new fares and ticketing offering





WEAKNESSES

- Poor regional journey times and frequencies, specifically North-South between Wessex and Western routes
- Uncompetitive journey times compared to road traffic, specifically North-South
- Fares and ticketing options are limited, particularly in urban areas
- Perception of high cost, often due to lack of fare information and integration
- Poor interchange, both in terms of wait times but also multi-modal options
- Connections with buses, airport and freight services are all weak
- Regional stations low quality, including attractiveness, safety, facilities, accessibility
- Infrastructure capacity constraints including line speeds, resilience, single track lines, junctions
- Service reliability and performance / punctuality
- Service capacity including crowding
- Station accessibility both from the point of view of first/last mile access but also regarding reduced mobility
- Power supply issues, particularly on the South Coast

THREATS

- Policy changes, including the Williams and Fares Reviews
- Policy changes, such as electric vehicles, fuel taxes, future mobility
- The funding and promotion of road schemes undermining goals to shift journeys to rail
- Climate change and what this will mean to resilience, particularly coastal routes
- National priorities overlooking sub-national ones (political recognition, business case methodologies, rail costs, funding routes and timescales)
- London centricity continuing to reduce regional connectivity
- Safety concerns including level crossings
- Lack of public engagement
- Inertia of the industry, lack of innovation
- Removal of Severn tolls and road competition
- Conflicts in freight timetabling/capacity processes

2.3 | Themes, Objectives, Priorities and Conditional Outputs

Building on the vision for 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, the 5 themes of **Choice, Decarbonisation, Social mobility, Productivity & Growth** emerged as those of most important to Western Gateway members, officers and stakeholders.

For each theme, an objective and three priorities were initially identified, which were subsequently used to inform and shape the Conditional Outputs (described later in this report). A conditional output (CO) establishes a target or goal for the rail network which, if realised, will help deliver one or more of the objectives and priorities developed by this strategy and address the need for change in the Western Gateway. The conditionality of COs is dependent upon interventions required to deliver them being proven to be deliverable, affordable and economically viable.

THEME	OBJECTIVE	PRIORITY 1
CHOICE	To make rail a realistic and viable option for journeys to, from and within Western Gateway	Improve frequency of services to provide more flexibility in travel options
DECARBONISATION	To enable rail to contribute more actively towards the decarbonisation of the Western Gateway	Identify ways to reduce the carbon emissions per passenger of rail journeys on diesel rolling stock
SOCIAL MOBILITY	To provide equal journey opportunities by rail for all residents of Western Gateway	Improve multi-modal interchange to rail through improving access to stations by car, bus and active modes
PRODUCTIVITY	To enable rail to contribute more actively to improvements in productivity across Western Gateway	Improve rail journey times/ speeds and Generalised Journey Time (GJT) to make rail competitive with the equivalent road journey
GROWTH	To enable rail to provide sustainable travel options for housing and job growth across Western Gateway	Align rail investment, including new stations/lines with future growth areas

PRIORITY 2**PRIORITY 3**

Make rail to rail interchange (where direct services not possible) as seamless as possible

Improve operational reliability of the network to give confidence in rail as a mode of choice

Identify alternatives to diesel rolling stock including priorities for electrification

Identify ways in which more freight can be transported by rail rather than road, in particular to deep-sea ports

Create new direct journey opportunities by rail between places that are not currently rail-connected, particularly north – south and rural areas

Make rail travel more affordable through fares management and incentives

Provide improved rail connectivity (passenger and freight) to international gateways – airports and ports

Improve strategic connectivity with cross-border economic hubs

Identify opportunities to develop and invest in Transit-Oriented Communities

Promote and maximise resilient design principles to protect the region against the implications of climate change

2.4 | Hub Designation

Stations perform an important role on the rail network, and across Western Gateway, different types of station perform different functions within their communities.

To inform CO development, a Hub Designation has been established and endorsed by stakeholders. **3 levels of hub have been identified.**

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. Regional Hubs 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.

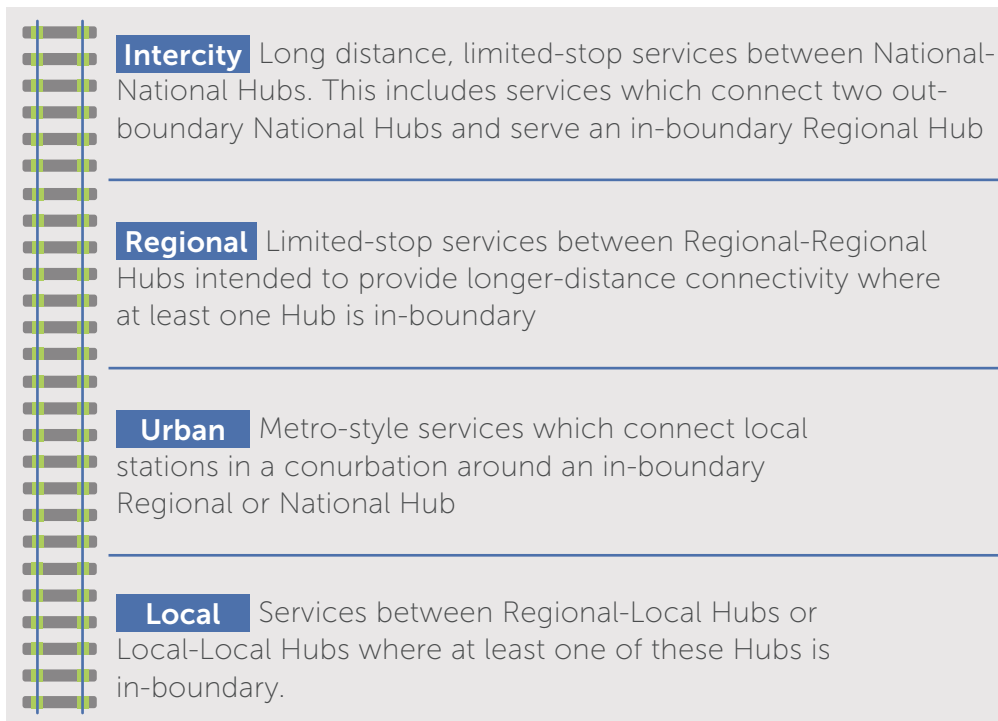
Allocation to a specific designation at this stage does not fix a station in a specific category in the future. Where stations aspire to fulfilling a different role on the network in the future to better serve its population (residential, employment or leisure), key characteristics such as service frequency (and destinations), catchment or station facilities that hold it back can be identified as part of a gap analysis and a case put forward to change the role of the station on the network.

There are a handful of Regional and National Hubs outside the WG boundary (“out-boundary”) that facilitate cross-border connectivity for stations within the WG boundary (“in-boundary”).



2.5 | Service Designation

Linked to the hub designation, a service designation has been developed to inform the designation of services and flows between hubs with regards to relevant COs. This will ensure that the specific nature of services is taken into consideration to target interventions in locations where current services are demonstrated to be inadequate to achieve the objectives, priorities and COs. Allocations of routes into one the four service categories below will depend on origin/destination, corridor catchment type, usage patterns and train service specification. The designation has achieved cross-authority and cross-operator consensus at this stage of strategy development.



It is recognised that the designation of a service can change en route, for example some intercity trains have a more regional nature further away from London or Birmingham as stopping patterns adapt to the specific route requirements. A specific example would be the London – Weymouth service (which becomes Regional beyond Bournemouth). Again, here, this designation is not fixed and is closely linked to any given timetable and is designed to be a tool to support decision-making. The basis of this designation has been the December 2019 off-peak standard hour timetable.



| 3

Conditional Outputs



Theme 1 | Choice

OBJECTIVE

To make rail a realistic and viable option for journeys to, from and within the Western Gateway

The **Choice** 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, aspects such as infrequency of services, on-train journey times and the need to interchange, push them to choose their cars. Coupled with the association that rail is unreliable and expensive, there is a real need to improve both the reality and the perception of rail travel.

PRIORITY	DESCRIPTION
Improve frequency of services to provide more flexibility in travel options	<p>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.</p> <p>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.</p>
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.

CONDITIONAL OUTPUT

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 service times and frequencies

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

CO C1 Frequency

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.

Governance / Delivery

Strategic Planning Taskforce alongside Service Specifiers (DfT) and Train Operating Companies (TOCs)

Minimum Aspirational Frequency

INTERCITY	2 TPH	URBAN	4-6 TPH
REGIONAL	1+ TPH	LOCAL	1 TPH

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. 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 routes and corridors in the Gateway (even though it is clear that many services originate from or terminate there).

INTERCITY MINIMUM ASPIRATIONAL FREQUENCY – 2 TPH	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.

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.

REGIONAL MINIMUM ASPIRATIONAL FREQUENCY – 1+ TPH	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 <i>Aspirational frequency of 2tph by way of a second direct hourly service</i>	1 direct + 1 indirect	0
Bristol ↔ Gloucester <i>Aspirational frequency of 2tph by way of a second direct hourly service</i>	1 direct + 1 indirect	0
Westbury ↔ Salisbury <i>Timetable irregularity to be prioritised in next timetable planning process</i>	2 irregular	0

*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 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. The table below provides frequencies of disaggregated lines in the Bristol area based on MetroWest aspirations (which cumulate in the core line) and an aggregated aspirational frequency for the Dorset area.

URBAN MINIMUM ASPIRATIONAL FREQUENCY: 4-6 TPH	CURRENT FREQUENCY	GAP
Wareham ↔ Brockenhurst (<i>Dorset Metro</i>) <i>Aspirational frequency 6tph across route (at most stations)</i>	1-3 Lower at local hubs	min 3
Bristol ↔ Portishead (<i>MetroWest Phase 1</i>) <i>Aspirational frequency 2tph</i>	0	2
Bristol ↔ Severn Beach (<i>MetroWest Phase 1</i>) <i>Aspirational frequency 1tph to Severn Beach</i> <i>Aspirational frequency 2tph to Avonmouth</i>	0.5 to Severn Beach 1.5 to Avonmouth	0.5 0.5
Bristol ↔ Weston-Super-Mare Stopper Service* <i>Aspirational frequency 2tph</i>	1	1
Bristol ↔ Weston Super Mare Stopper Service (<i>MetroWest Phase 1</i>) <i>Aspirational frequency 2tph</i>	1	1
Bristol ↔ Yate ↔ Gloucester (<i>MetroWest Phase 2</i>) <i>Aspirational frequency 2tph</i>	1	1
Bristol ↔ Henbury (<i>MetroWest Phase 2</i>) <i>Aspirational frequency 1tph</i>	0	1

*Bristol to Weston Super Mare is already 2tph when including the fast services.

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.

LOCAL MINIMUM ASPIRATIONAL FREQUENCY – 1 TPH	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

CO C2 Interchange

What?

Minimum and maximum interchange time at stations on hub-to-hub routes

Why?

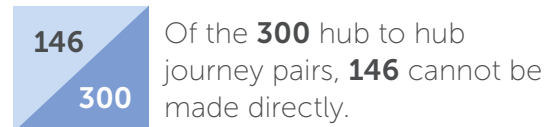
A key stakeholder concern involves long wait times at some interchange stations where direct journeys are not available, and passengers are required to change trains. In general, an optimum connection time appears to be no less than 10 minutes and no more than 20 minutes to allow achievable connections without an impact on journey times (recognising the large weighting applied to wait time by passengers in business case development).

Governance / Delivery

Collaboration between Operational Solutions Taskforce and the Stations & Access to Strategic Planning Taskforce

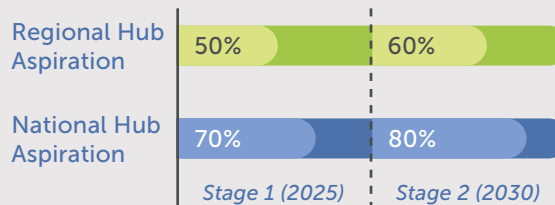
This conditional output will be supported by an increase in Frequency, an improvement in Performance and the development of new direct services

Targets



Key Aspiration - Interchange

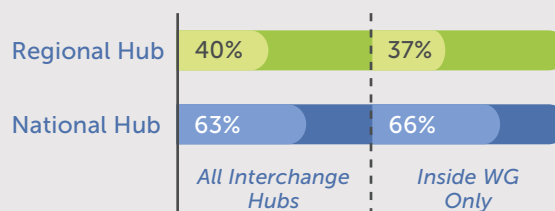
10 minutes (minimum) - 20 minutes (maximum)



Gap Analysis

Many journeys within and across the Western Gateway require interchange at hubs outside the Gateway (especially Reading, Didcot, Swindon, Yeovil, Southampton Central).

Current Compliance



CO C3 Performance

What?

An improvement 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).

Governance / Delivery

Future Ready & Resilience Taskforce

Performance is variable across the Western Gateway area across the three main TOCs: the inconsistency instills distrust in the network and therefore is a barrier to mode choice. The charts on **Page 14** indicate current Performance levels.

Targets

The monitoring of performance will be part of the responsibilities 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. Through engagement during the strategy development process, the setting of quantifiable performance targets was deemed unsuitable and risks conflicting with existing industry metrics and contracted benchmarks: the productive way forward is the monitor and influence performance measures where possible based on observed delay causes and the subsequent recovery process.

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.



CO C4 Extended Timetable

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.

Governance / Delivery
Future Ready & Resilience Taskforce

Gap Analysis

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
Current	Weekday + Saturday	Sunday
Latest Arrival	33% ¹	21%
Earliest Departure	31%	20%

¹For 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.

Targets

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.

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.

CO C5 Direct Services

What?

Increased number of direct passenger services through Hub stations

Why?

Direct, inter-regional connectivity is at the essence of this strategy. 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.

Governance / Delivery

Strategic Planning Taskforce alongside Service Specifiers (DfT) and Train Operating Companies (TOCs)

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: [see Direct Service Matrix on Page 10]. We have set a threshold of a minimum of 4 services a day for it to be classed as a direct service. We have considered the two Yeovil stations separately in this analysis.

Targets

Category	Suggested routes to investigate
Category A1 <i>(New direct services that connect at least one National Hub)</i>	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 <i>(New direct services that connect Regional hubs)</i>	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 <i>(Direct service options which could also be achieved through interchange improvements)</i>	Poole ↔ Bournemouth ↔ Salisbury <i>(interchange improvements at Southampton Central, will require working together with TfSE and NR Wessex)</i> Bournemouth ↔ Poole ↔ Yeovil ↔ Castle Cary/Westbury ↔ Bath ↔ Bristol <i>(interchange at Weymouth paired with regularised Heart of Wessex Line service)</i> Weymouth ↔ Salisbury <i>(interchange improvements at Southampton Central, will require working together with TfSE and NR Wessex)</i> Salisbury ↔ Birmingham <i>(service and interchange improvements at Reading or Basingstoke, will require working together with TfSE and NR)</i> Westbury ↔ Birmingham <i>(service and interchange improvements at Reading, Swindon or Bristol, could be part of Salisbury – Birmingham service or extension of Chippenham – Cheltenham listed above)</i>
Category C <i>(Direct service options which will require infrastructure investment)</i>	Bournemouth ↔ Poole ↔ Yeovil ↔ Exeter <i>May be better achieved through interchange improvements at Weymouth to a regularised Heart of Wessex Line service (but would also require infrastructure interventions)</i> Weymouth ↔ Exeter <i>May be better achieved through a regularised Heart of Wessex Line service (but would also require the infrastructure interventions)</i>

CO C6 Freight Capacity

What?

Enabling sufficient capacity and access to the network for freight services to allow existing and new markets to develop.

Why?

Enabling sufficient capacity and access to the network for freight services to allow existing and new markets to develop. 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.

Governance / Delivery

Freight Taskforce

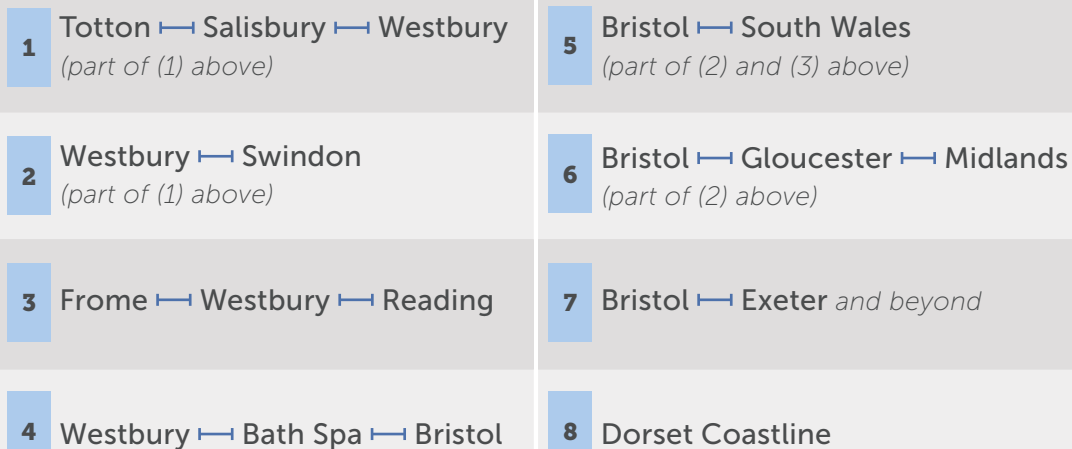
Targets

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 to the right and shown on the map on the next page.

Three national strategic freight routes:



Key routes in Western Gateway:



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

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.



Theme 2 | Decarbonisation

OBJECTIVE

To enable rail to contribute more actively towards the decarbonisation of the Western Gateway

The **Decarbonisation** theme acknowledges that rail will be a positive contributor to the Climate Change Emergency, Net Zero targets and the national decarbonisation agenda. This theme is important in the Western Gateway because most transport in the area uses combustion engine road vehicles. Successful delivery of this objective will reduce emissions and improve air quality, while also reducing railway operational costs.

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.

CONDITIONAL OUTPUT

D1 – Carbon Emissions

Reduce “at source” carbon emissions to zero

D2 – Carbon Footprint

Reduce carbon footprint by increasing load factor of underutilised 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

CO D1 Carbon Emissions

What?

Reduce “at source” carbon emissions to zero

Why?

The rail sector must meet Net Zero ambitions, and rolling stock, infrastructure and technology choices will dictate the majority of the direct emissions from railway operations.

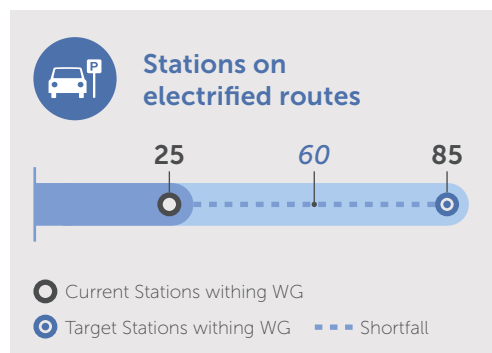
Governance / Delivery

Future Ready & Resilience Task Force

Targets

Type of Provision	How provided / measured?
Decarbonise rail infrastructure	100% of WG stations to be electrified and/or zero-emissions routes; delivery timing in line with the Network Rail Traction Decarbonisation Network Strategy. NR strategy and TOC strategies for local power generation/storage, i.e. solar and wind, as well as purchasing and supply agreements with utility providers, for station and office buildings.
Decarbonise fleets	Plans for fleet and plant trains to transition to zero-emissions-at-source technology, such as overhead line/third rail supply, hydrogen, battery, etc. Convert maintenance vehicles to electric vehicle technology
Decarbonise processes	Target embedded carbon across processes, procurement, projects and waste management
Decarbonise supply chain	Set and measure carbon targets within franchises and procurements; co-develop emissions reduction innovations in-life with suppliers, with shared incentives

Gap Analysis

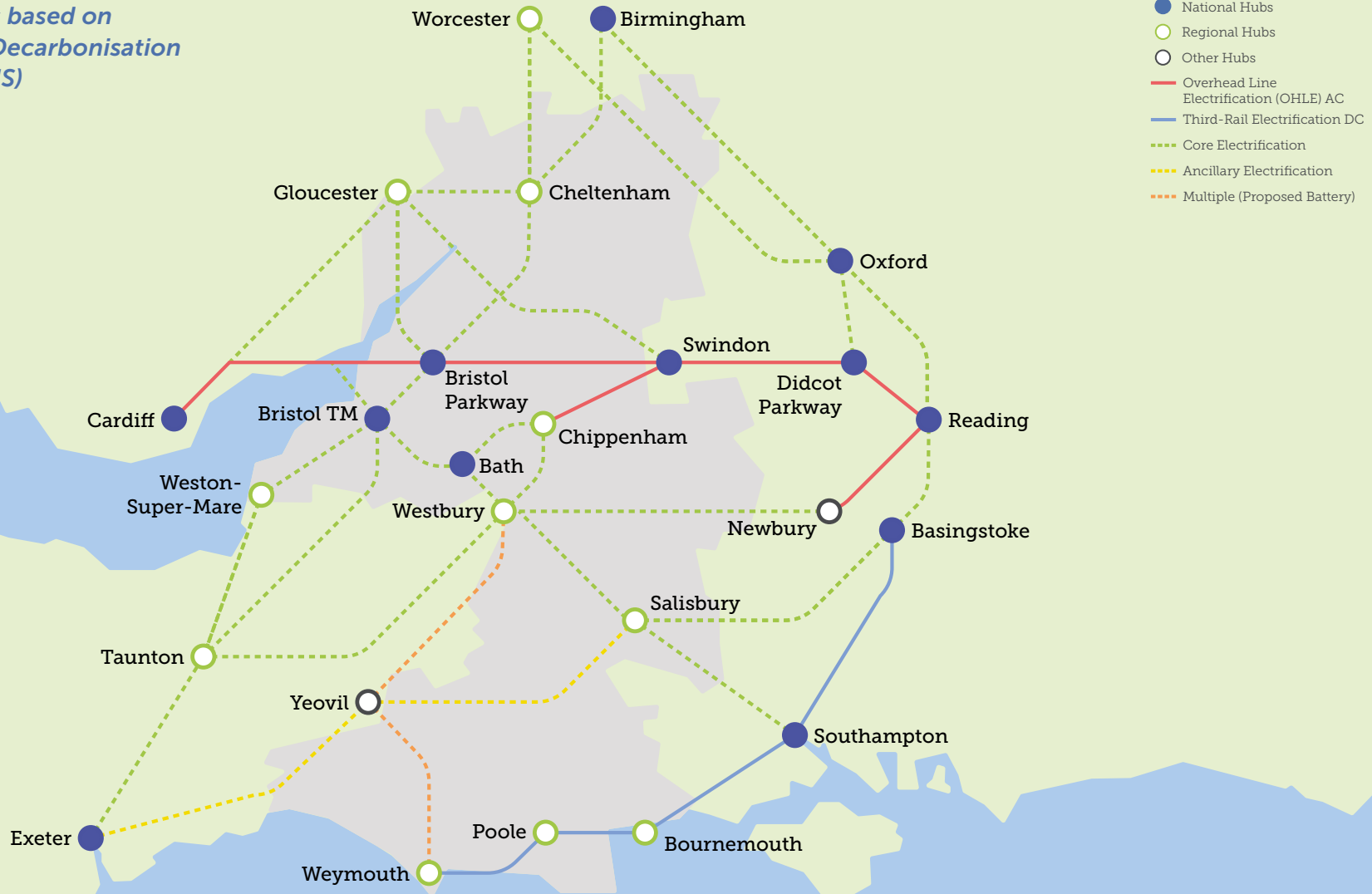


Traction Decarbonisation Network Strategy (TDNS)

Network Rail published their TDNS in September 2020 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. These can be seen on the map on the next page. This will support Western Gateway in identifying interventions to pursue alongside Network Rail and CMSP processes across the region.

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).

Future traction options based on Network Rail Traction Decarbonisation Network Strategy (TDNS)



CO D2 Carbon Footprint

What?

Reduce carbon footprint by increasing load factor of underutilised services

Why?

CO D1 partially reduces the carbon footprint per passenger from a supply perspective, whereas this CO addresses the demand aspects of the carbon footprint of the rail network.

Patterns (and cost) of peak and off-peak flows, and some service routes, mean that some trains on the network operate at low capacity at certain times of day, whilst others are overcrowded. By balancing out this distribution of passengers or filling empty passenger services with other things that need to be transported round the network, the overall carbon footprint per passenger could be reduced. This needs to be balanced alongside future demand projections established through the CMSP process.

Governance / Delivery

Freight Taskforce and the Future Ready & Resilience Task Force

Targets

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).

Gap Analysis

From a passenger perspective, many TOCs have applied fare incentives to distribute loads more evenly, with reduced off-peak advance fares. This has seen variable levels of success, including examples where some off-peak services on the West Coast mainline are the most overcrowded.

In terms of freight, there are several pilot schemes in operation at the present time, including:

- 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.

All of these pilot schemes are established on the concept of re-purposing passenger trains for freight use, allowing freight services to behave like passenger trains for timetable planning purposes.

CO D3 Freight Growth

What?

An increase in rail freight in existing markets

Why?

Building on CO C6 (Freight Capacity), this CO needs to consider 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 reducing the carbon footprint of freight.

Governance / Delivery

Freight Taskforce

Targets

Increased proportion of total freight transported to, from and within Western Gateway by rail

Increased volumes of key commodities transported by rail to, from and within Western Gateway; and

Increased usage of freight paths on the rail network.

Gap Analysis

The baseline for freight will need to be determined by a Freight Market Study which 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. This study should seek to complement Network Rail's Freight Market Study and Network Rail's and Highway England's Freight Strategy and targets, 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.



CO D4 Freight Capture**What?**

An increase in rail freight through development of new markets

Why?

In addition to the markets traditionally served by rail ('heavy haul' such as coal, aggregates and steel, container goods such as automotive), there is opportunity to expand rail freight into new markets. 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 also 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.

Governance / Delivery

Freight Taskforce

Targets

Proposed target measures for this new initiative include:

- 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
- Increased use of rail distribution centres and warehouses
- 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. Doodle / Amazon Lockers).

Gap Analysis

The Freight Market Study will need to capture the extent of freight movements within the Western Gateway. Significant existing road freight flows that have potential for modal shift include:

- Urban/local movements (First Mile / Last Mile) servicing towns and cities within the area, for both commercial (B2B) customers and for consumers (B2C).
- Regional movements within the area and also into South Wales for Newport/Cardiff and beyond, serviced from distribution centres in Western Gateway.
- 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.
- 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).

This CO links directly to CO D2, and should consider the re-purposing of passenger trains to provide 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.



Theme 3 | Social Mobility

OBJECTIVE

To provide equal journey opportunities by rail for all Western Gateway residents

The **Social Mobility** theme focusses specifically on addressing the needs of the remote, less connected and/or deprived parts of the Western Gateway, with the priorities set to unlock access to rail in its widest sense – physical, social and financial. The target is to make rail an integral part of connecting those remote and often deprived communities. Successful delivery of this objective will lead to a rebalancing of the regional economy, providing equal opportunities to all Western Gateway residents.

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.	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.

CONDITIONAL OUTPUT

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

CO M1 Station Access

What?

Improvements to car and active modes access to stations, including safety, routing, signposting and parking.

Why?

To drive modal shift and promote rail as an integral part of a sustainable transport network, passengers need 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.

Governance / Delivery

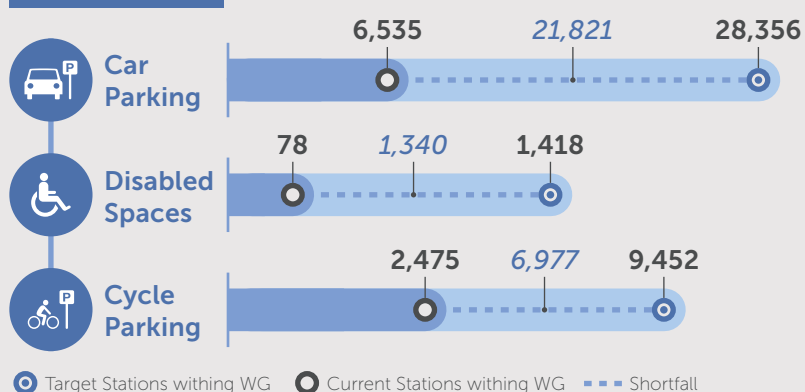
Stations & Access to Rail Taskforce

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 (including 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		

TYPE OF PROVISION	HOW PROVIDED / MEASURE?
Access and Signposting	100% compliance with DfT Design Standards for Accessible Railway Stations – A Code of Practice
Wayfinding	All stations have a physical and digital wayfinding strategy as part of a wider Station Travel Plan
Safety	A reduction in road traffic collisions close on station approaches
Security	A reduction in reported crimes on station approaches

Gap Analysis



CO M2 Modal Integration

What?

Integration of sustainable modes through alignment of bus and rail timetables / maximise bus to rail interchange

Why?

To 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 tolerable. This needs to include consideration of proximity of bus stops to the rail station, as well as mode to mode wait time.

Governance / Delivery

Stations & Access to Rail Taskforce

Targets

Type of Provision	Measures
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
Bus stops for local bus services close to station	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 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

Gap Analysis

Experience of multi-modal integration in Western Gateway is mixed. There are some exemplar bus services that connect well with rail, but equally 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.

CO M3 Regional Catchment

What?

Uplift in % population within rail catchment

Why?

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) 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.

Governance / Delivery

Stations & Access to Rail Taskforce

Targets

Increase proportion of population living within **15-minute drive, walk or cycle ride** from a rail station.

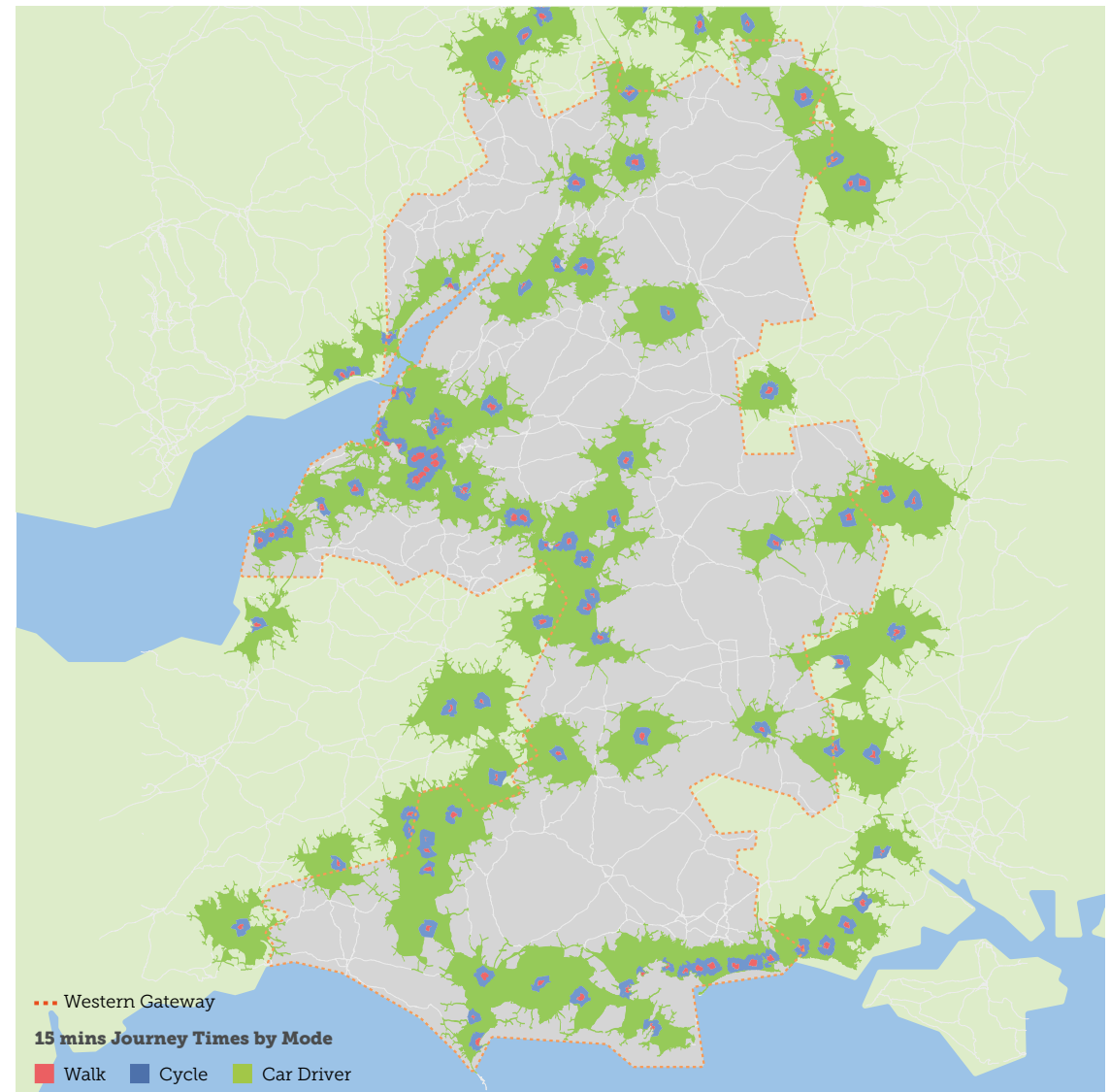


Gap Analysis

There are large centres of population in Western Gateway without easy access to rail, although the relationship between proximity to a station and rail usage is not a simple linear one.

The DfT's Restoring Your Railway Fund is recognition of the importance that rural rail connectivity plays in Social Mobility, and a number of Western Gateway 'Ideas' have been put forward to better connect places including Devises, Shepton Mallet, Radstock, Cirencester, Swanage and Wootton Bassett by rail.

The map on the right shows the 15 minute walk, cycle and car drive times from each station on the network, highlighting the significant gaps in coverage.



CO M4 Fares Influence

What?

Transparent, flexible and affordable fares structure or other financial incentives (push / pull)

Why?

The fares structure of the UK Rail Industry is notoriously complex and is full of restrictions and regulations. Changes to fares and pricing primarily occurs during franchise competitions and rarely in-life of a franchise with the exception of promotional (often Advance) fares, and the interaction is typically between TOC, DfT and ORR. There is an opportunity to bring the Local Authority on board with fares discussions and leverage as much influence that can be afforded. This primarily involves multimodality, and looking beyond the rail network in isolation but integrating it to enable rail to be used as part of a wider journey. Feedback from Passenger 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. 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.

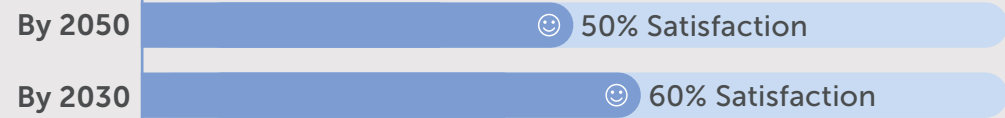
Governance / Delivery

Digital Solutions Taskforce

Targets

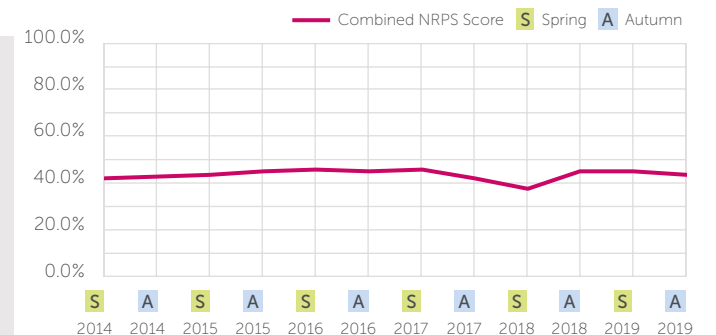
Alongside the ongoing industry-wide Fares Reform, the role of Western Gateway is to influence decisions regarding both the affordability of fares and a framework within which multi-modal ticketing can be facilitated as part of a value for money offer. The fitness-for-purpose of fares will only be achieved if Western Gateway, 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.

The best way of measuring progress against this CO is using NRPS data:



Gap Analysis

National Rail Passenger Survey (NRPS) results for the Value for money of price of ticket metric for the last 6 years (2014-2019) indicates that the highest satisfaction score in any wave was 45%.



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.

CO M5 Ticketing Solutions

What?

Multi-modal ticketing that encourages sustainable end-to-end journeys, including Mobility as a Service (MaaS)

Why?

In addition to challenges about fares as previously described, 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, more often than not, 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.

Governance / Delivery

Digital Solutions Taskforce

Targets

The following factors are a key consideration to drive the desirable standards below:

- Introduction of end-to-end journey planning
- Smart Ticketing schemes, e.g. in Greater Bristol and BCP
- E-ticket capability
- Through ticketing capability across modes
- Contactless pay-as-you-go capabilities across modes
- Uplift in sustainable mode usage and offerings at/near stations

The desirable standards for this conditional output are based on low barriers for both the journey planning and ticketing experiences - One Ticket One App maximum - being:

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

Gap Analysis

Ticketing solutions currently struggle to achieve full potential in attracting increased demand 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.

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 barrier to achieving the target of a shift of customers to One Ticket One App is in part due to the large numbers of operators – both rail and other modes, each of which has its own commercial model and ticketing process.

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 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.

CO M6 Accessibility

What?

All stations in Western Gateway fully accessible, in line with the definition of Accessibility

Why?

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).

Governance / Delivery

Stations & Access to Rail Taskforce

Targets

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.

CRITERIA / MEASURE	PROPOSED TARGET
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

Gap Analysis

Using data from National Rail Enquiries (extracted May 2020) there is a shortfall of accessible facilities at a number of stations, with only 21 of the 70 stations meeting all the criteria required to be classified as accessible. This includes:



Stations with step-free access to platforms | 62¹



Customer Help Points | 69



Stations with platform-to-train access ramps | 45



Staff Assistance available | 28



Stations with accessible ticket facility (adjustable height counter/window or TVM) | 44

¹Out of which only 16 are fully compliant with standards

It is equally as important to cater for individuals who have hidden disabilities. Sunflower branded lanyards have been introduced on many parts of the rail network as a means of identifying passengers with hidden disabilities, including by Western Gateway TOCs.

Theme 4 | Productivity

OBJECTIVE

To enable rail to contribute more actively to improvements in productivity across the Western Gateway

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 area is much less productive in comparison to most regions outside of London and the South East, which is in part driven by poor transport connectivity.

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).

CONDITIONAL OUTPUT

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)

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

CO P1 Journey Speed**What?**

Journey speeds appropriate for each corridor / catchment type and usage patterns

Why?

Speed is a contributing factor to journey time and an increase in speed will improve the attractiveness and competitiveness of rail by reducing journey times. This will further enable modal shift from road (relating to conditional outputs in the Choice theme) and thus also support commuters and business travellers to be more productive by working on the train (relating to other conditional outputs in these theme).

Governance / Delivery

Future Ready & Resilience Taskforce

The use of *speed* as a metric was discussed in length across the strategy development 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).

We have analysed journey speed on point to point direct flows in WG based on target levels similar to those used by Midlands Connect. These are indicated in the Direct Services Matrix on *Page 10*. 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.

Targets by Service Type

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

A 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

GWR
FIRST CLASS

CO P2 On-Board Productivity

What?

On-board capacity and facilities to enable productivity and match demand into economic centres and employment hubs (including cross-border)

Why?

Building further on the productivity gains achieved by delivering competitive journey times by rail, a further aspect of productivity is the ability to maximise use of available time. One incentive that rail travel has over car travel is that (subject to space availability), time can be used productively. However, on certain services and routes across Western Gateway and onwards to neighbouring economic hubs (e.g. London, Birmingham), on-board capacity is so constrained that time on the train cannot be productive. On other routes (e.g. Cardiff – Portsmouth), rolling stock is inappropriate for the type of journeys being made (i.e. high-density commuter seating with no tables) and also drives unproductivity. Finally, on-board facilities such as Wi-Fi and charging points are important to drive productivity.

Governance / Delivery

Collaboration between Digital Solutions Taskforce & the Future Ready + Resilience Taskforce

Targets

In order to measure the ability of a train service to provide a productive environment for passengers, a number of factors should be taken into consideration. These are:

Length and nature of journeys taken	Overall seating capacity against peak demand	Proportion of seats with tables and charging points for laptops/mobile devices	Availability and reliability of Wi-Fi
Service Designation	Measure	Target	
Intercity	Seating Capacity Utilisation into National / Regional Hub at peak times	No greater than 75%	
	Proportion of seats at tables with charging points	40% (Standard Class)	
	Free Wi-Fi	100%	
Regional (End-to-end > 60mins)	Seating Capacity Utilisation into National / Regional Hub at peak times	No greater than 80%	
	Proportion of seats at tables with charging points	30% (Standard Class)	
	Free Wi-Fi	100%	
Regional (End-to-end 30-59mins)	Seating Capacity Utilisation into National / Regional Hub at peak times	No greater than 85%	
	Proportion of seats at tables with charging points	25% (Standard Class)	
	Free Wi-Fi	100%	

CO P3 International Gateways

What?

Improving passenger connectivity to International Gateways within and close to Western Gateway

Why?

International Gateways such as airports and ports are pivotal to agglomeration and productivity, as they are able to provide competitive journey times to a wider range of customers. Similarly, for a region such as Western Gateway that has a large visitor economy, the ability for 'customers' to arrive in the region and make onward travel arrangements is pivotal in their decision to choose this destination in the first place.

Governance / Delivery

Stations & Access to Rail Taskforce

Gap Analysis

We propose two key measures for this CO:

- 1 | Increase in rail travel to and from International Gateways (IGs), measured as proportion of passengers arriving to the gateway 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.
- 2 | 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.

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.

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

Step-free access routes from airport/ port to train, adequate space for luggage on trains and shuttle buses

Airports

	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, 40mins)	2% by bus (CAA Passenger Survey 2005)	Unclear	Unclear
Bristol	Bristol Temple Meads Station (via frequent Airport Flyer Express bus link, 24/7, 30mins; 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 Airport Station (via shuttle bus, 10mins)	16% public transport (CAA Passenger Survey 2015)	In development	TBC
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)

Ports

Data for ports is more difficult to access. Ports and ferry terminals tend not to have surface access strategies in the same way as airports do.

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)
Port of Poole	Poole station (30-minute walk)
Portsmouth Ferry Terminal	Portsmouth & Southsea station (via local bus services, taxi, 10-minute cycle ride or 25-minute walk)
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-minute cycle ride or >1-hour walk)



CO P4 Freight Capability

What?

Freight capability to ports and rail freight terminals increased

Why?

In order for rail to become a truly viable mode for freight transport, not only does there need to be capacity on the network (see CO C6), but the network needs to be capable of accommodating the length, weight, width and height (gauge) of trains required. In recent years, the nature of rail freight has changed – away from ‘heavy haul’ goods such as coal (to power stations) to intermodal containers containing a wide range of goods from automotive to biomass, being transported from ports to container terminals for onward transport. Intermodal containers require a larger gauge – W10 minimum, and ideally W12, than the more traditional heavy haul wagons which can operate on W7 and W8 gauge.

Other metrics that are objectives of the Trans-European Transport Network (TEN-T) include the length of trains that can operate, with European standards requiring 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 linespeeds are also considerations.

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.

Governance / Delivery

Freight Taskforce

Routes and Hubs

The freight routes considered within this strategy were described and classified in CO C6 Freight Capacity. These connected key hubs including:

- Southampton Ports: Intermodal Freight
- Smaller South Coast Ports at Bournemouth and Poole
- Multiple MOD sites including Bovington/Lulworth, Ludgershall and Wootton Bassett
- Mendips Quarries (Merehead and Whatley): Aggregates
- Bristol and Avonmouth Ports: Mixed Goods including Intermodal, Aggregates and Biomass
- Tytherington and Westerleigh: Aggregates
- South Wales Ports and Power Stations: Steel, Aggregates and Biomass

How Measured?

The key metrics and targets are set out in the table below -

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

Information about gauge and route availability is provided in Section 1.6 on Page 12.

Gap Analysis

In the table below we set out the current route capability of the 8 routes identified above, as well as additional connections to the hubs where they are not immediately accessed from the routes. Targets for connections will need to be the same as the grade of route they are connecting to.

Route	Route Availability	Gauge	Train Length	Linespeed 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



Theme 5 | Growth

OBJECTIVE

To enable rail to provide sustainable travel options for housing and job growth across Western Gateway

The **Growth** theme picks up the importance of the link between housing and industrial growth as identified in Local Plans, and transport policy. It is directly linked to all 4 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 climate change so that economic growth is sustainable.

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.

CONDITIONAL OUTPUT

G1 – Transit Oriented Growth

Planning and transport policies aligned: rail as a transport option for all major new developments

G2 – 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.

CO G1 Transit Oriented Growth

What?

Planning and transport policies aligned: rail as a transport option for all major new developments

Why?

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.

Governance / Delivery

Stations & Access to Rail Taskforce

Targets

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

The Western Gateway is covered by Local Plans for:

- Four unitary authorities: Bath and North East Somerset (B&NES), Bristol, North Somerset, South Gloucestershire. B&NES, Bristol and South Gloucestershire working together as the West of England Combined Authority (WECA), and coordinating planning work with North Somerset;
- 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)
- 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)

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

Two Western Gateway 'best practice' exemplars are:

- 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.

However, 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;
- 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.

CO G2 Mobility Hubs

What?

More stations to provide for wider needs of today's passengers (e.g. retail, medical, childcare) to place stations at heart of communities.

Why?

Beyond the principal of Transit-Oriented Growth described at G1, 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.

Governance / Delivery

Any stations identified for redevelopment where its location is suited to performing a wider function.

A Mobility Hub is a centrally located community asset, based around a transit node or hub (in this case a rail station) that provides a wider range of community services alongside the core transport purpose of the station. These services or facilities can be mapped to the individual and community needs – such as employment, education, health care, childcare, retail, leisure, tourism, and social interaction. This enables the rail station (as a Mobility Hub) to 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.

The Mobility Hub concept includes a number of “*components*” which satisfy these 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;
- Support mobility capabilities, including micromobility and active travel, in line with local, regional and national transport, environmental and health ambitions.

Gap Analysis

As a relatively new concept, it is neither relevant nor appropriate to measure the current state of the Western Gateway rail network against a Mobility Hub specification. However, there are some stations that already, to some degree, act as Mobility Hubs with ancillary facilities such as supermarkets, community space and cycle hubs within the station curtilage or in close proximity.

Targets

The long-term vision is that every station in Western Gateway performs a wider community function as well as simply providing access to the rail network. This will lead to:

- 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.

Initially, a Mobility Hub Blueprint will need to be developed to establish how the concept can be realised at each of the 70 stations on the network.

CO G3 Network Resilience

What?

Network resilience to severe weather events (to reduce delays and cancellations).

Why?

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.

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.

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.

Governance / Delivery

Future Ready & Resilience Taskforce

Targets

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
- 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

Future Ready Trends affecting the railway

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.

Developing a Network Resilience Strategy across the Western Gateway is essential to 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. Western Gateway has a key co-ordination role to play in this, to make sure that the procedures and processes put in place for a wide variety of scenarios are right for its residents, businesses and visitors. This will facilitate confidence in rail as a climate-resilient mode of transport.

Examples of climate-related 'Shock Events' and the railway's response –

FUTURE READY TREND	ACTION NEEDED
<p>Heavier rainfall could cause local surface water and river flooding:</p> <ul style="list-style-type: none"> • 5-10% heavier from 1990 by 2010-39 • 20% heavier by 2040-59 • 20-40% heavier by 2060-2115 	<p>Assess route infrastructure against flood risk map, upgrade or build in preventative measures as needed, or develop alternative routes</p>
<p>Drier summers could cause droughts and ground shrinkage.</p>	<p>Could impact, inter alia: rail stress; switch detection; earth resistance; tunnel deformation; risk of lineside fires; increasing rail wear (and noise) on curves</p>
<p>Global sea levels could be between 12 and 76 cm higher than today by the end of the century.</p>	<p>Assets near to the coast could experience changes in: scour; drainage/flooding; corrosion; insulation/creepage from saline atmosphere</p>
<p>Peak temperatures in towns and cities could be up to 6°C hotter than today by 2050, with fewer very cold days</p>	<p>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</p>
<p>Peak wind speed gusts could be stronger</p>	<p>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</p>

Examples of Resource Trends and Challenges and the railway's response –

FUTURE READY TREND	ACTION NEEDED
<p>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]</p>	<p>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</p>
<p>Renewable energy prices could decline rapidly. In the medium- to long-term, every flat surface becomes an opportunity for solar panels.</p>	<p>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</p>
<p>UK summer river flows could be 50-80% lower by 2050, while the Water Framework Directive restricts river and groundwater abstraction</p>	<p>Maximise the use of recycled water, e.g. for train washing; rainwater harvesting at stations and depots</p>
<p>The circular economy could become mainstream: products designed for re-use; landfill waste becomes much less common (and much more expensive)</p>	<p>Investigate opportunities to refurbish rather than renew, use of recyclable materials, such as steel and (some) plastic rather than concrete</p>

| 4 Delivery



4.1 | Delivery of the Strategy

Delivery of this strategy will require collaboration between all interested stakeholders, and a governance structure has been recommended within which this collaboration can be framed and successful delivery achieved.

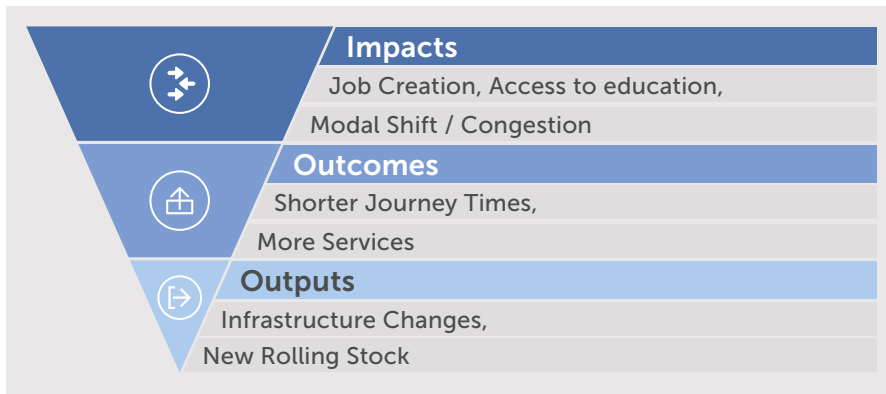


All stakeholders will hold a shared vision in sustainable public transport delivering social and economic benefits to all residents, visitors and businesses in Western Gateway.

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

Although Western Gateway is not being encouraged by DfT to apply for statutory status, it 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.

At this stage of strategy development, it has not been possible to identify specific infrastructure interventions to deliver the COs, which describe the desired **outcomes**. The next stages of strategy development will develop the **outputs**.

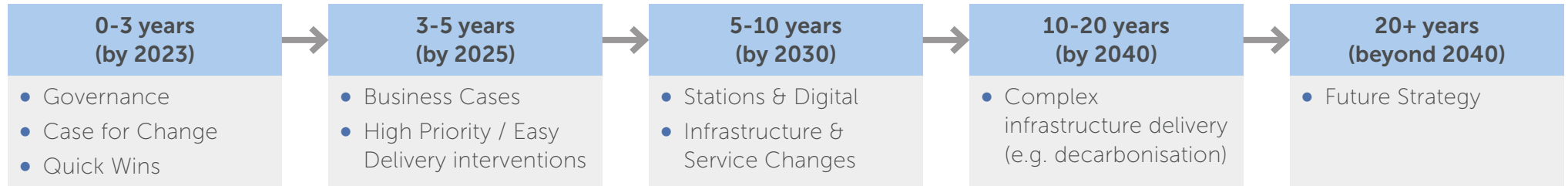


This process aligns with both HMT Green Book and the Rail Network Enhancements Pipeline, where the next stage of strategy development (0-3 years) will establish a more detailed Case for Change for each CO through the compilation of additional evidence, and identify outputs in the form of specific interventions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



4.2 | Phased Delivery

In order for progress to be effectively monitored, the delivery of the strategy is proposed to be phased across **4 time periods**.



COs are allocated to one of the 5 Taskforces identified in the governance structure.

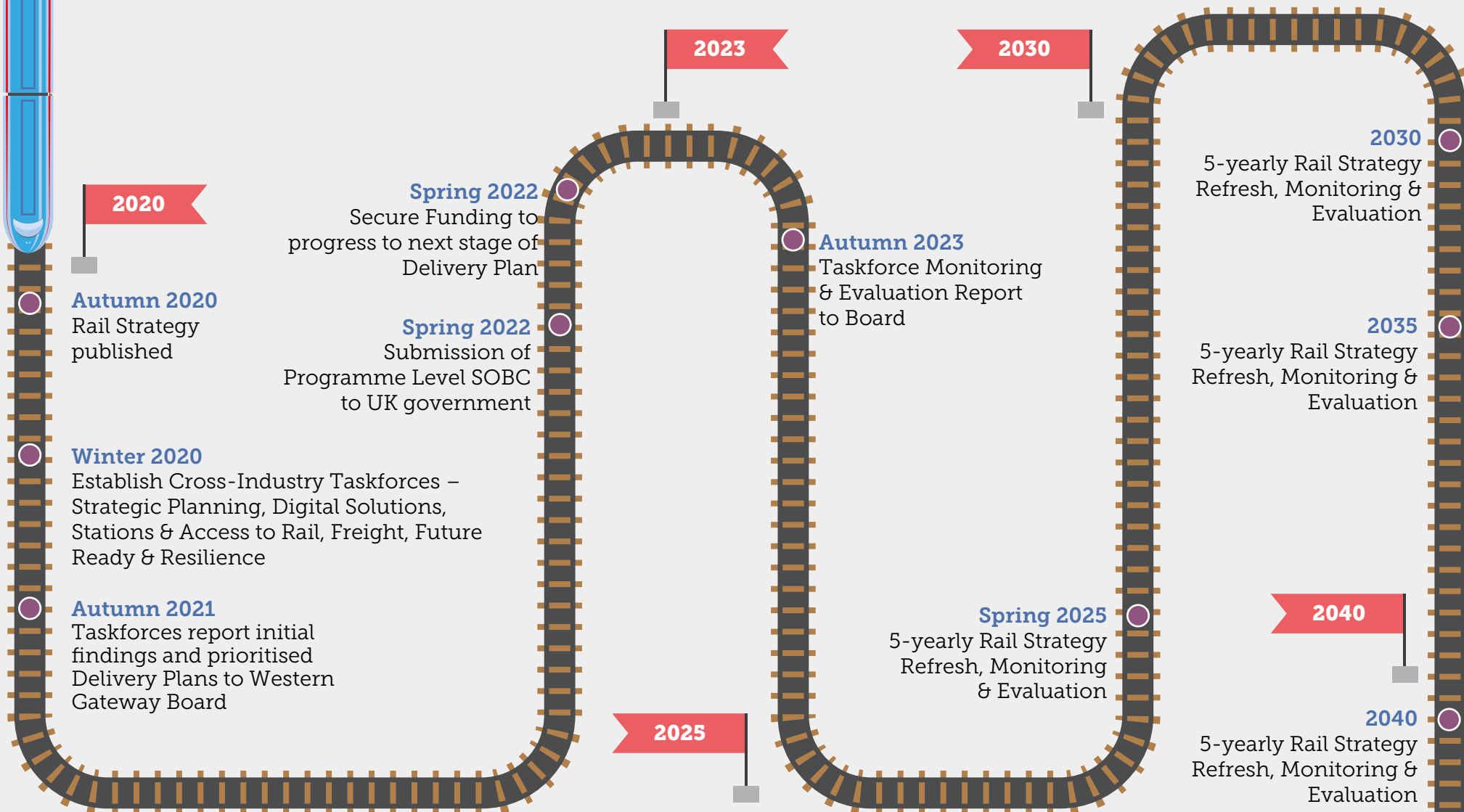
Strategic Planning	Digital Solutions	Stations & Access to Rail	Freight	Future Ready & Resilience
C1 Frequency	M4 Fares Influence	M1 Station Access	C6 Freight Capacity	C3 Performance
C2 Interchange	M5 Ticketing Solutions	M2 Modal Integration	D2 Carbon Footprint	C4 Extended Timetable
C4 Extended Timetable	P2 On-Board Productivity	M3 Regional Catchment	D3 Freight Growth	D1 Carbon Emissions
C5 Direct Services	<i>M1 Station Access</i>	M6 Accessibility	D4 Freight Capture	P2 On-Board Productivity
P1 Journey Speed	<i>M2 Modal Integration</i>	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				

Note: italics indicate a secondary taskforce

The outcomes and impacts, which will be quantified at the next stage of strategy development, are expected to be:

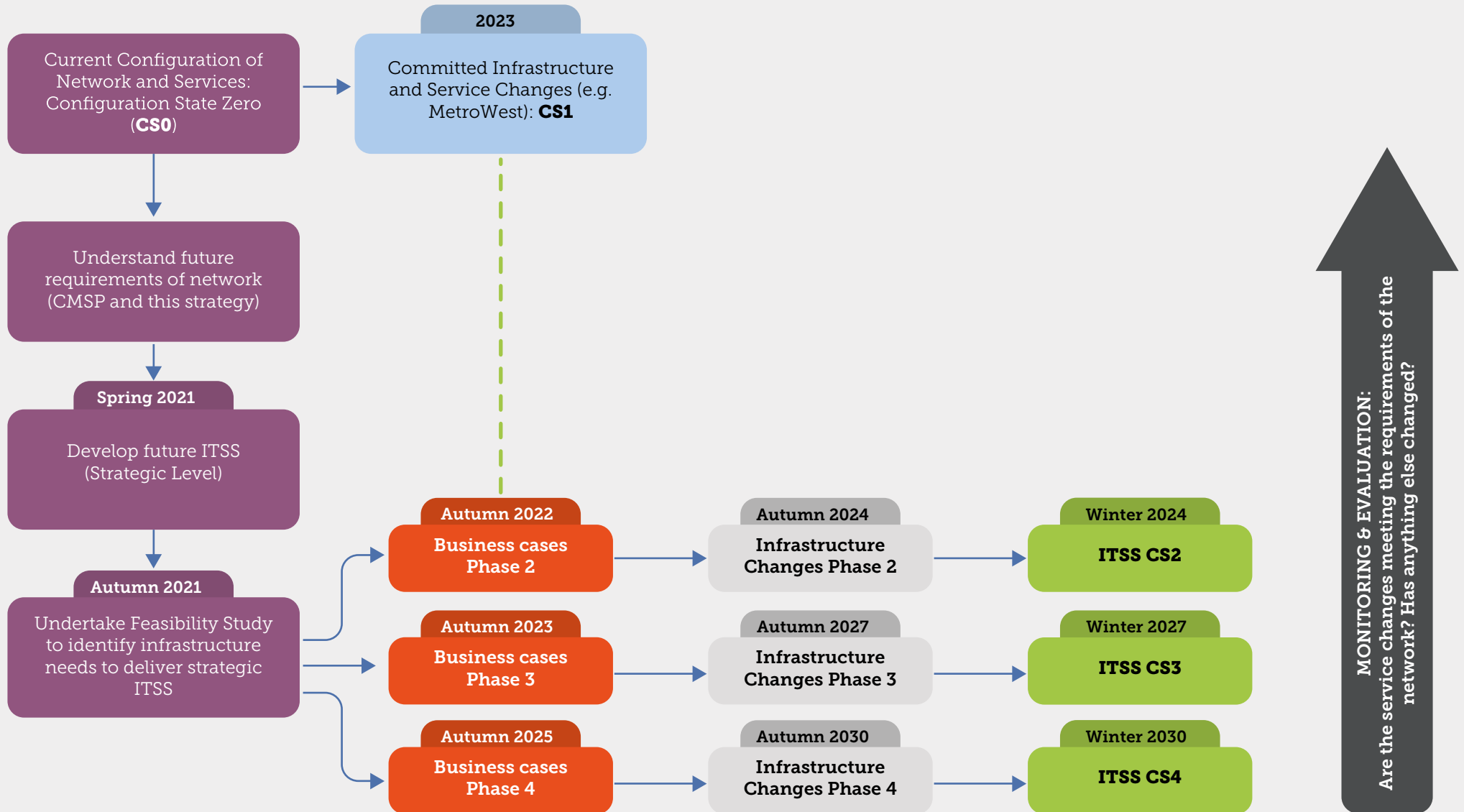
Strategic Planning	Digital Solutions	Stations & Access to Rail	Freight	Future Ready & Resilience
<ul style="list-style-type: none"> • Higher % Modal Share • Farebox Revenue • Reduced congestion and carbon emissions • Economic Growth (GVA uplift) driven by improved connectivity 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Higher % Modal Share, particularly from disadvantaged parts of society and international tourists • Reduced congestion and carbon emissions • Economic Growth (GVA uplift), especially in visitor economy driven by improved connectivity • Improved ranking on Indices of Multiple Deprivation driven by higher levels of education and employment for socially disadvantaged areas • Rail network provides equal access opportunities for all • Increased % of disabled people in employment and education • Creation of Transit Oriented Communities that are less reliant on car travel • Health and Social Wellbeing improvements 	<ul style="list-style-type: none"> • Higher % Freight Modal Share • Reduced highway congestion and carbon emissions • Economic Growth (GVA uplift) through improved logistics connectivity 	<ul style="list-style-type: none"> • Higher % Modal Share linked to passenger confidence in reliability • Improved journey opportunities leading to social equality • Reduced carbon emissions and improved air quality • Reduced industry compensation costs / events

Route Map 1 | Strategy, Governance and Collaboration

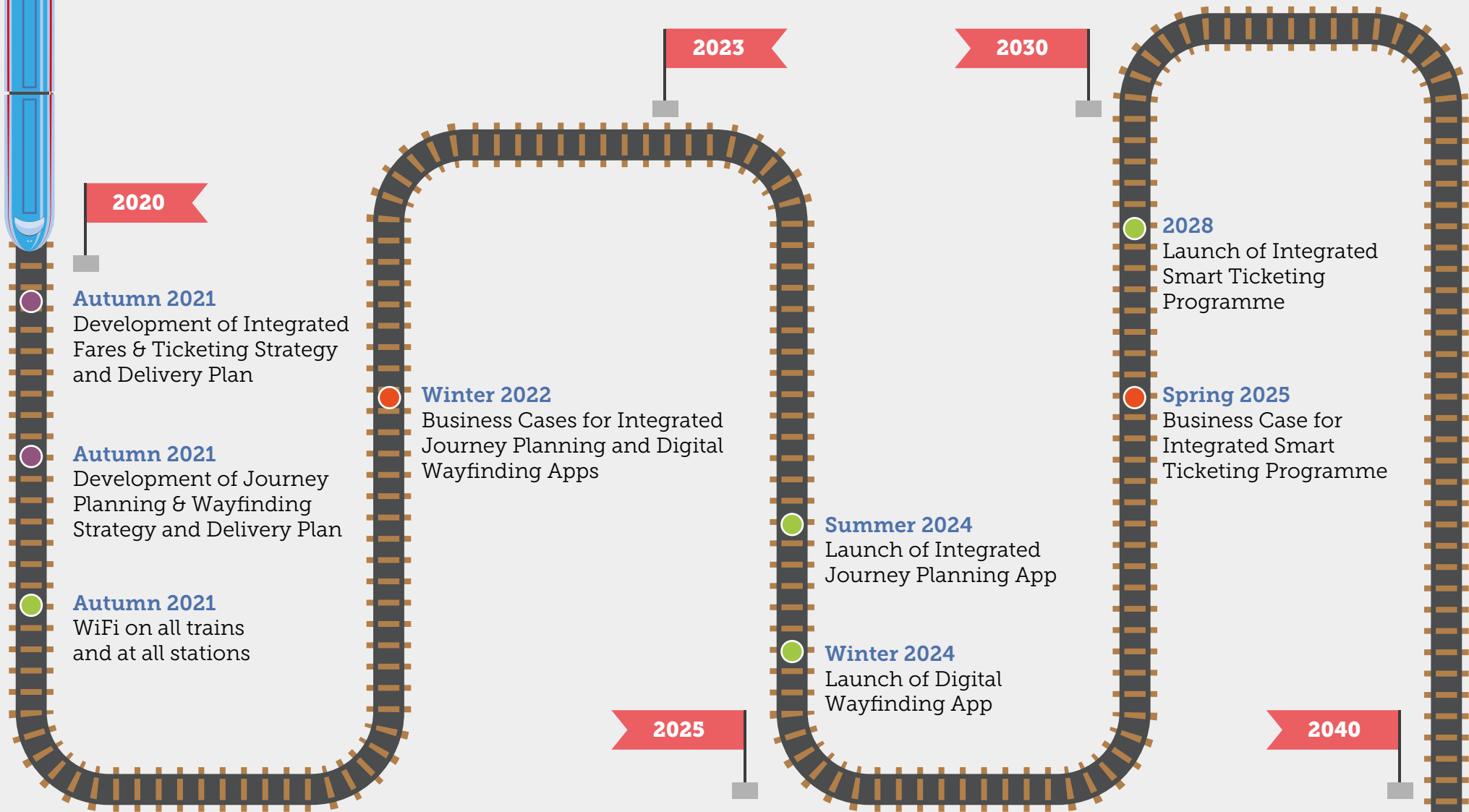


● Strategy / Delivery Plan Development ● Business Case Submission ● Implementation

Route Map 2 | Configuration States

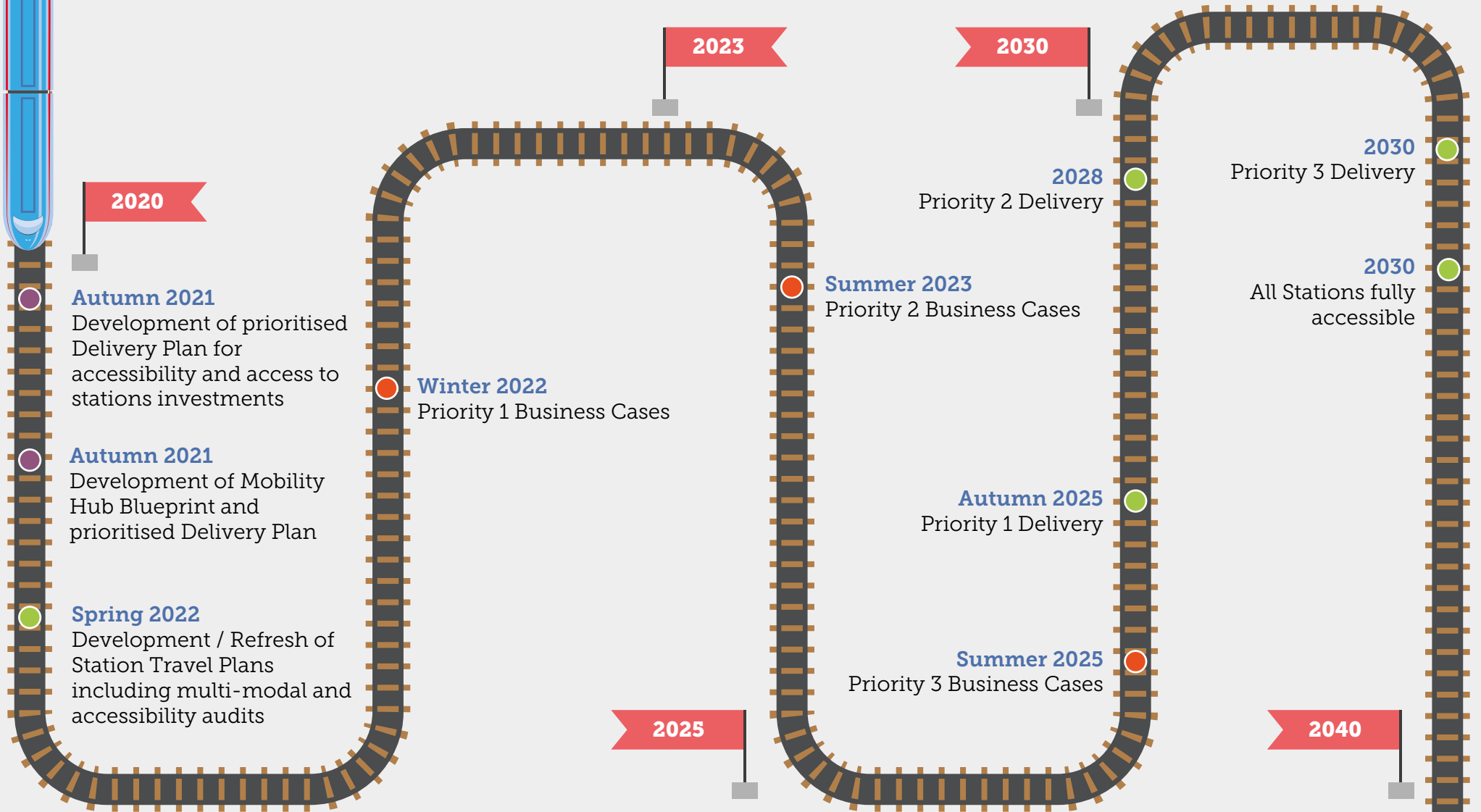


Route Map 3 | Digital Solutions Taskforce



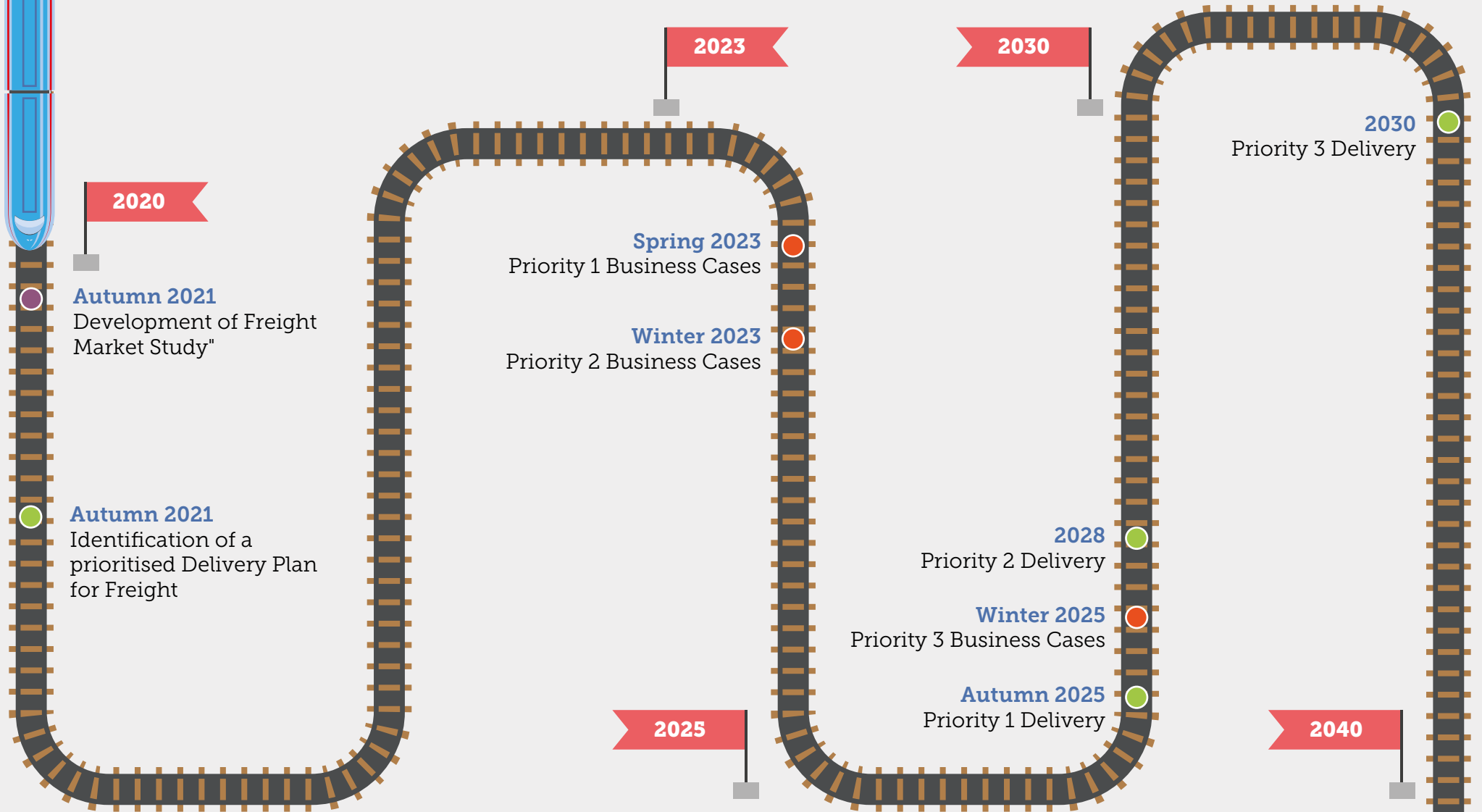
● Strategy / Delivery Plan Development ● Business Case Submission ● Implementation

Route Map 4 | Stations & Access to Rail Task Force



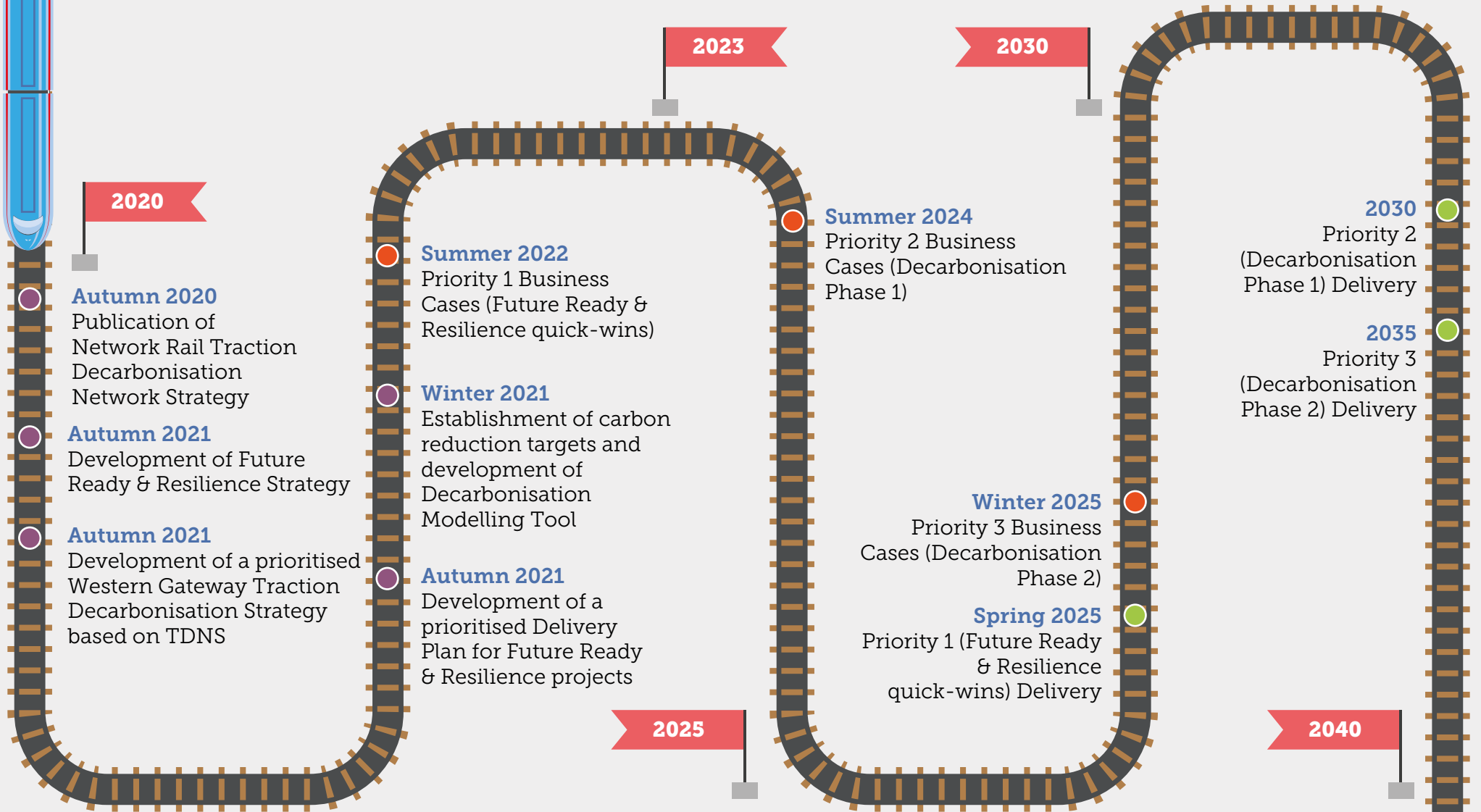
● Strategy / Delivery Plan Development ● Business Case Submission ● Implementation

Route Map 5 | Freight Task Force



● Strategy / Delivery Plan Development ● Business Case Submission ● Implementation

Route Map 6 | Future Ready & Resilience Task Force







● Strategy / Delivery Plan Development
 ● Business Case Submission
 ● Implementation



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