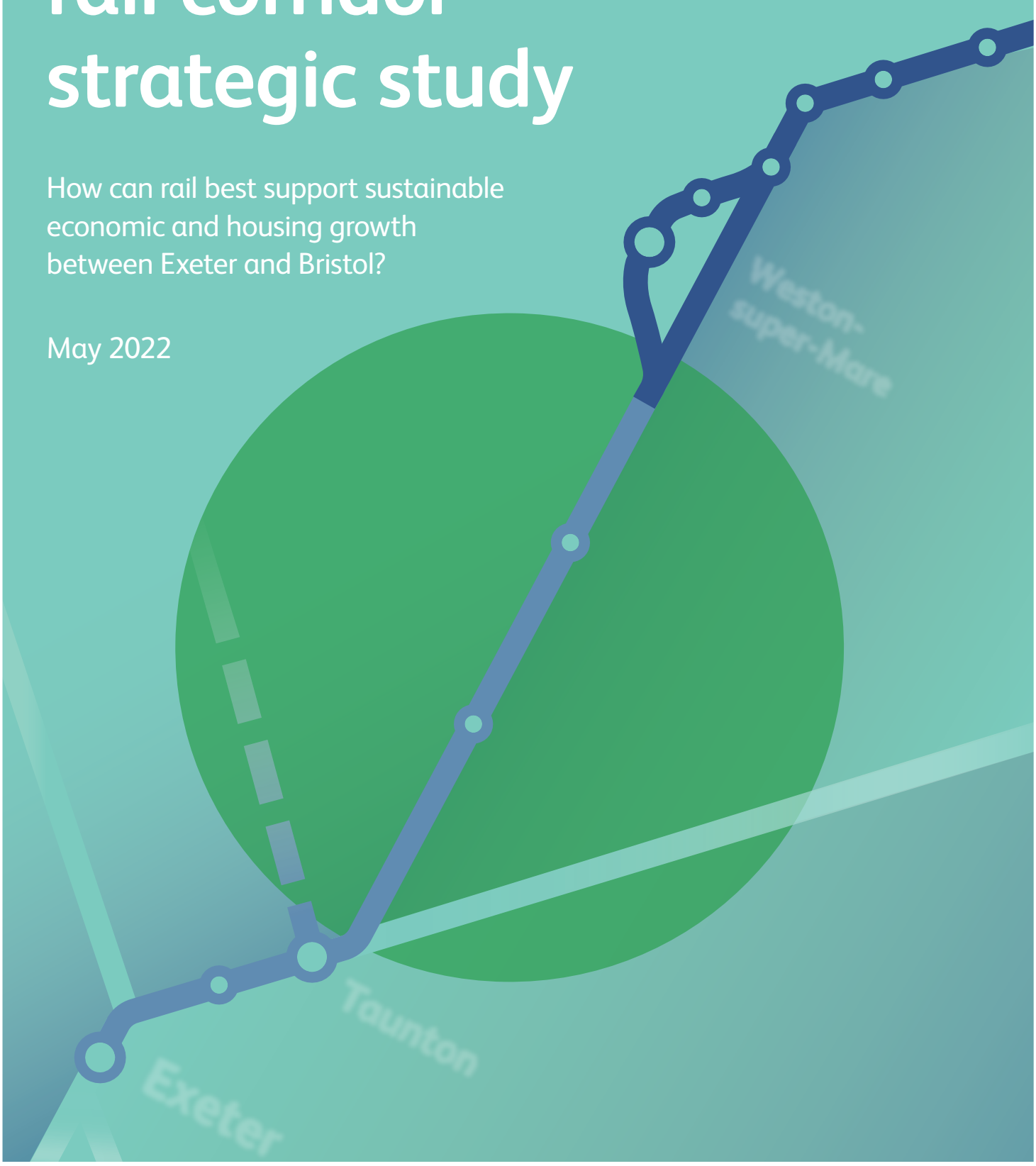
NetworkRail

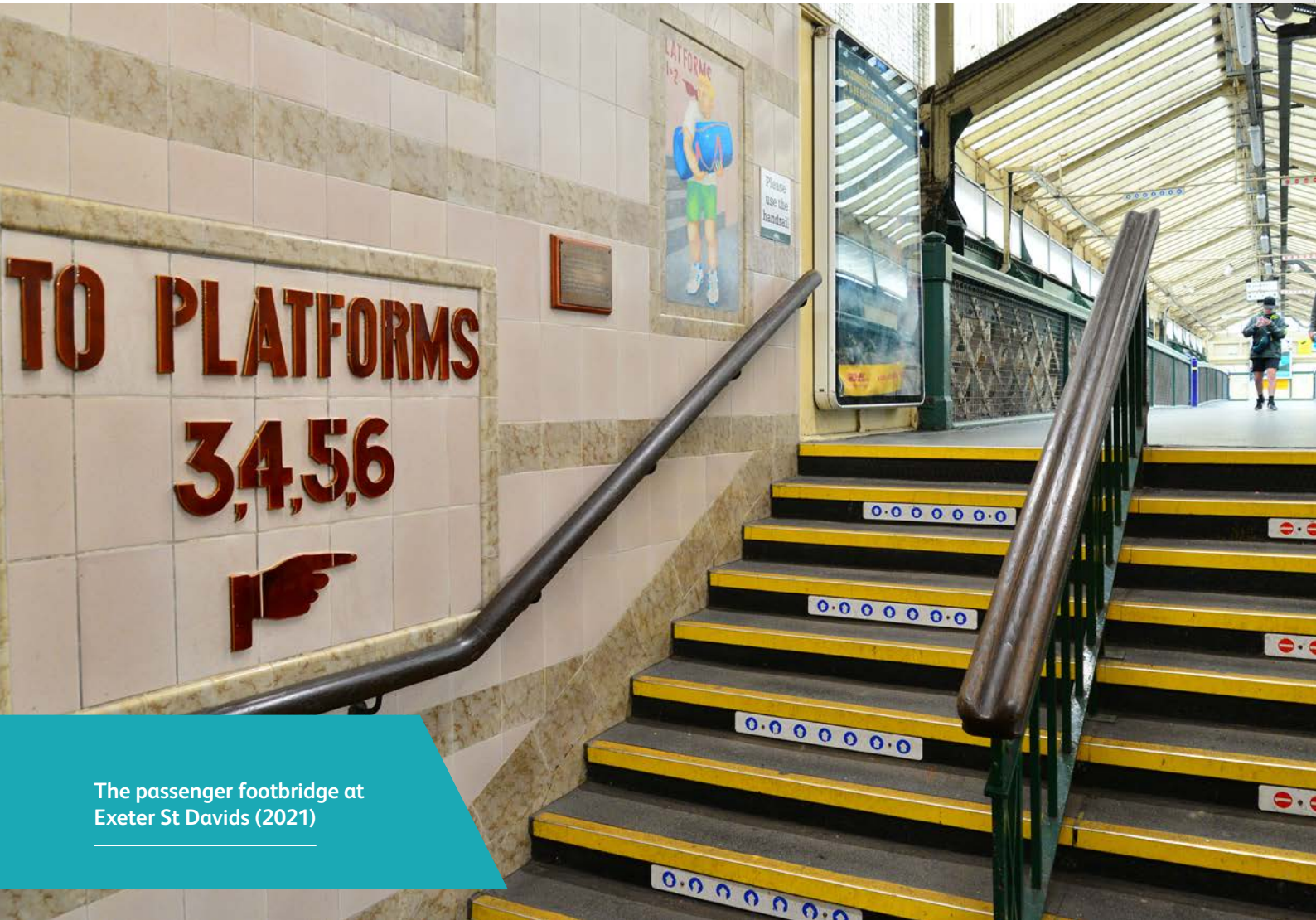
Bristol to Exeter rail corridor strategic study

How can rail best support sustainable economic and housing growth between Exeter and Bristol?

May 2022



Taunton station forecourt (2021)



The passenger footbridge at Exeter St Davids (2021)

Foreword

I am delighted to set out with our valued partners this vision for how rail services could develop to support growth in the Bristol Exeter corridor in the years ahead.

As part of our statutory activities, we have a responsibility to work with train operating and government partners to plan the future of rail growth. This is not an easy task as we go through a time like no other – the Covid-19 pandemic and Williams-Shapps plan for rail are reshaping our industry on a scale not seen in 100 years.

With that in mind, this study represents the best of joint working, sharing data and insight to reach an ambitious but evidenced and integrated strategy. We have shared our outputs with Great British Railways transition team (GBRTT) so that this valuable work can be included in their wider planning for the next 30 years.

Although it is difficult to predict how quickly growth will return to the railways, rail remains a critical lifeline for communities, businesses, and individuals across Britain; and this will only increase as we work towards achieving net zero carbon emissions by 2050.

This study sets out potential options for funders, as well as some that require little or no investment, and our vision is a long term, sustainable one that can be delivered incrementally.

The next few years will be incredibly exciting and challenging, but I know across our industry and partners we will rise to the challenge for the benefit of passengers and freight customers across our route, region and country.

Mike Gallop
Western Route and Strategic Operations Director

Within our respective strategies we recognise the need to improve rail connectivity and make rail an appealing and feasible option for journeys. Our region's vision, objectives, priorities and desired outcomes are well reflected in the Bristol to Exeter Study.

We are very pleased with this study and believe it to be an excellent piece of collaborative working which demonstrates a strategic alignment between the sub-national transport bodies and Network Rail. We welcome and support the enhanced service proposals explained in the study which will improve connectivity between people, businesses and places, and help reduce carbon emissions.

We are grateful to Network Rail for supporting our strategic priorities and look forward to further collaborative working in taking forward the suggestions in this important long term strategic study

Cllr Mike Greene
Chair of the Western Gateway STB

Cllr Andrea Davis
Chairman, Peninsula Transport

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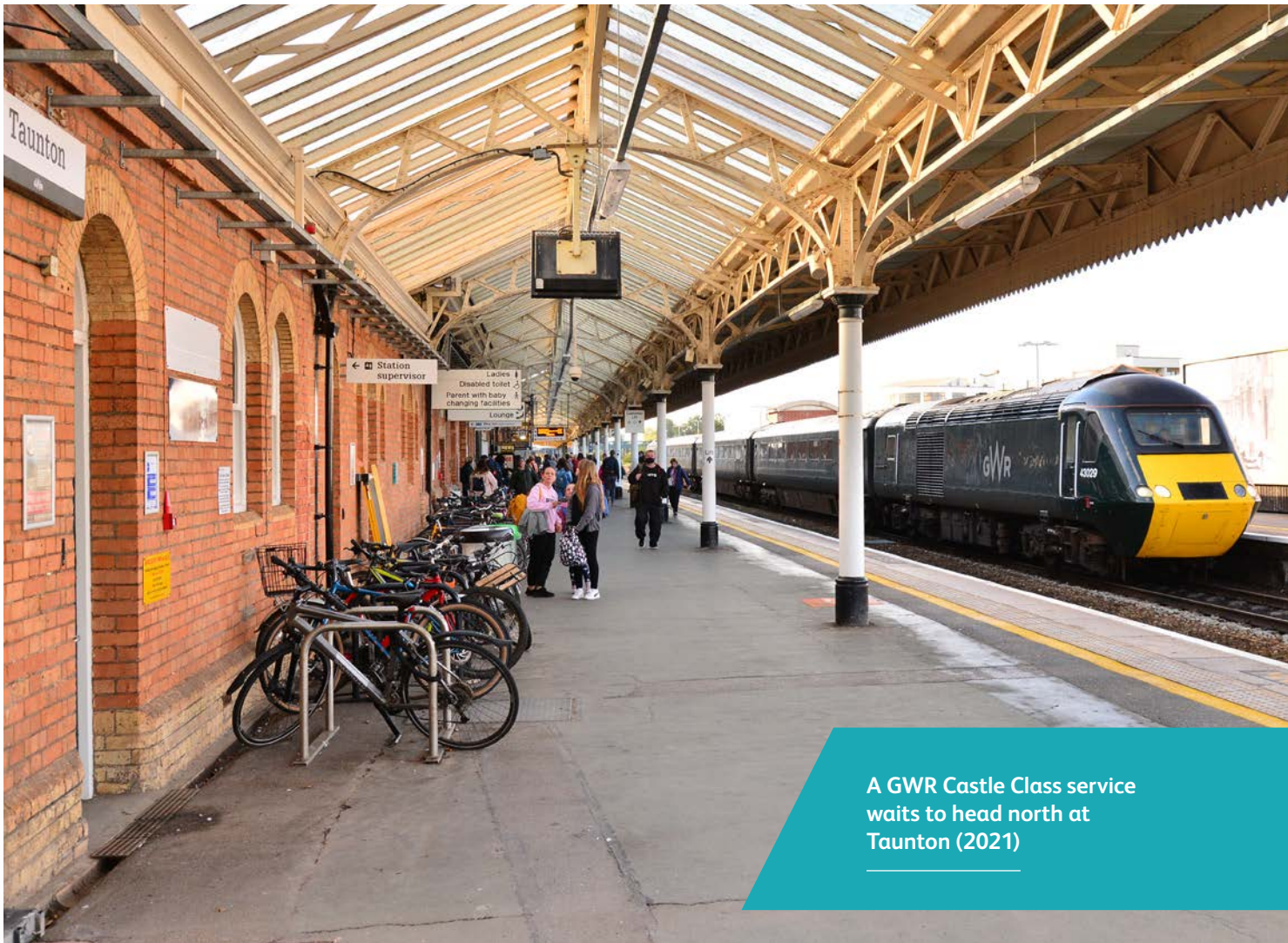
Weston-super-Mare station from the north (2021)



A GWR Castle Class service waits to head north at Taunton (2021)

Introduction

The trainshed at Bristol Temple Meads from the south (2021)

How can rail best support sustainable economic and housing growth between Bristol and Exeter?

The South West is an increasingly popular area to live in and visit. Significant volumes of housing and employment growth are planned throughout the corridor between the two regional hubs, Bristol and Exeter. Rail has an increasingly important role in transport within and through the corridor, but rail mode share is currently limited compared to the size of markets.

A greater role for rail is required to support planned housing and employment growth in the corridor, and to contribute to local, regional, and national sustainability objectives.

The Bristol to Exeter transport corridor forms the northern part of the spine of the South West region and provides links to the West Midlands, the South East, and Wales. It's a gateway to the south west peninsula from across the country, whilst also providing access to the cities of Bristol and Exeter, and growth hubs including Weston-super-Mare, Bridgwater and Taunton.

The railway in the corridor serves long distance leisure and business travel, local and regional commuting, and access to education, as well as having a social function. Consequently, a range of inter-regional, local, and urban passenger services share the corridor, alongside freight traffic. Improvements to services and infrastructure are planned. The recommendations of this study allow us to build on these.

Our key challenge is to provide an attractive rail service efficiently to grow rail's mode share of travel in the corridor, support planned growth sustainably, and promote levelling up within the corridor.

The COVID-19 pandemic has had a significant impact on rail passenger numbers across the country. Demand returned strongly throughout 2021 and reached pre-pandemic levels in parts of the South West. We expect demand to recover fully within the study timeframe of 30 years. Rail remains the most environmentally friendly way to move lots of people (and goods) long distances. The specific drivers for improved rail services (including freight) in the corridor remain. As do the major opportunities for supporting sustainable growth.

Study overview

Case for change – growth and opportunity

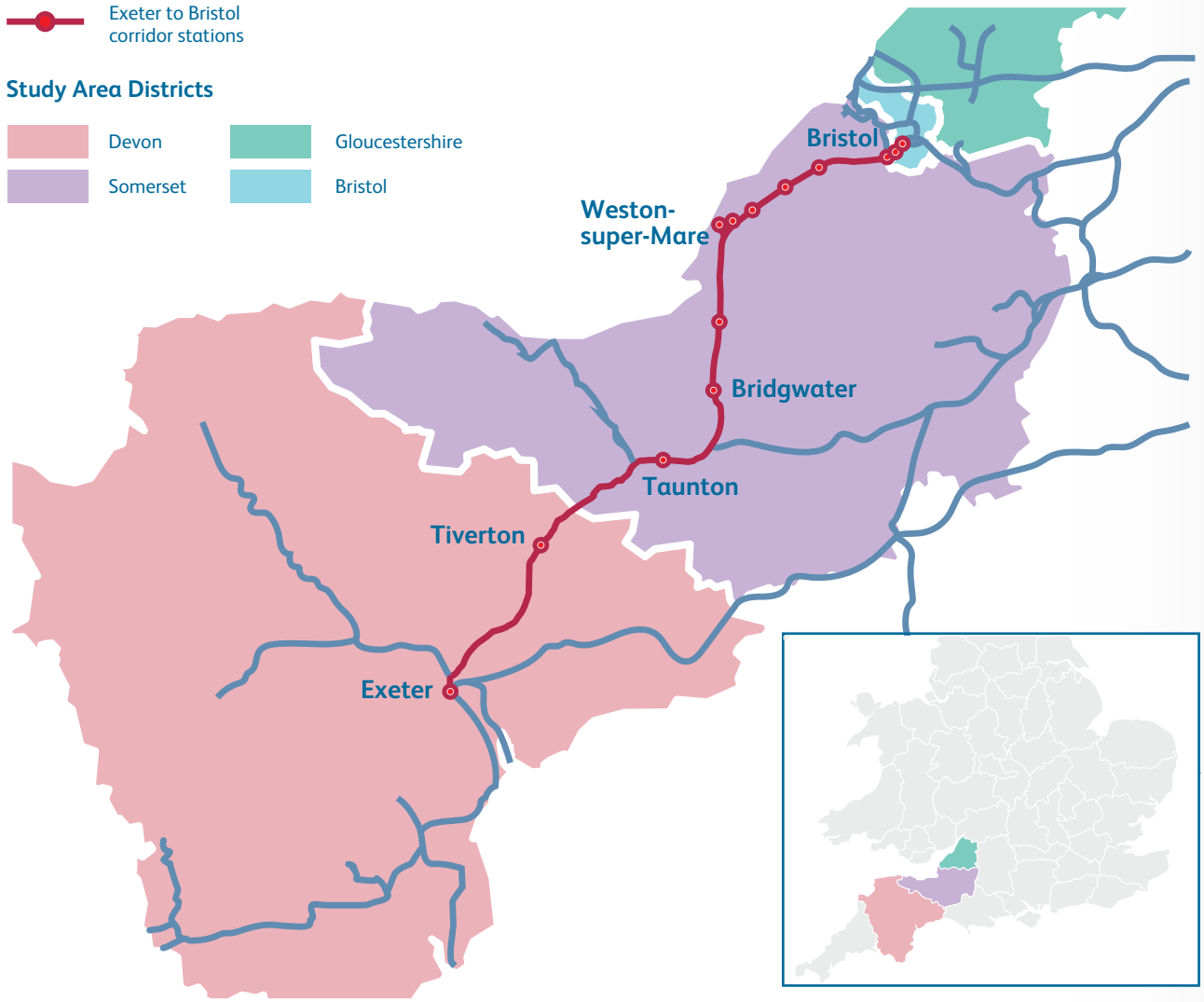
The Bristol to Exeter rail corridor runs through significant communities in North Somerset, Sedgemoor, West Somerset and Mid Devon, providing connectivity as well as links with the two major cities at either end.

These communities provide prime commuting territory to feed growing employment opportunities (including in Bristol and Exeter). Better transport links are needed to connect new homes with the major employment markets of Bristol and Exeter, as well as Bath and Bridgwater.

While Bristol and Exeter currently dominate, there are other significant employment centres along the route. These include Bridgwater and Taunton, and major growth is planned.

The main rail markets in the Bristol to Exeter corridor.

Figure 1.0



Existing connectivity gaps perpetuate historical differences in access to opportunities and limit economic productivity. Particularly in areas such as Weston-super-Mare and the wider Weston area.

Access to education is also a key need in this corridor. Large establishments sit near the railway, including universities in Bristol, Filton, Bath and Exeter, and colleges in Bristol, Weston-super-Mare, Bridgwater, Taunton and Exeter.

The tourist industry is a significant and growing driver for travel in this corridor. Historic cities (Bristol and Exeter), seaside resorts (Weston-super-Mare, Burnham-on-Sea and Minehead) and areas of Outstanding Natural Beauty (the Quantocks and Sedgemoor) attract day and extended stay trips. They also provide significant employment.

The corridor gives access to one of the region's key transport interchanges – Bristol Airport. It's a strategic priority to improve public transport access to the airport.

Both Peninsula Transport and Western Gateway Sub-national Transport Bodies identify the need for modal shift in this corridor. Rail has a key role in taking traffic off the highway network. This is essential for meeting decarbonisation targets. It's also imperative for addressing congestion issues, which increase journey times and hinder economic productiveness. The rail corridor closely follows the M5 motorway and intersects with numerous routes on the Major Road Network including the A38 and A370.

We've identified a variety of strategic priorities for improved services in the study corridor, including:

- **long-distance passenger travel (including for leisure) with origins and destinations further afield**
- **the regional travel market between Bristol, Exeter and the major urban centres**
- **commuter travel into Exeter from Cullompton, Tiverton, Wellington and Taunton**
- **commuter travel into Bristol from the Greater Weston area, including Yatton and Nailsea (plus demand from Bridgwater, though this is suppressed by the current level of service and journey time)**
- **to/from Tiverton Parkway and Taunton, acting as rail hub for North Devon, Exmoor, South Somerset, and Somerset West and Taunton**
- **freight traffic with origins and/or destinations in and beyond the study corridor (demand is currently limited).**

The corridor today – growing communities

North Somerset

North Somerset includes the towns of Weston-super-Mare, Portishead, Clevedon, Nailsea and Yatton. It's the most populated area of the corridor, and many residents travel to Bristol and Bath for employment.

Settlements across North Somerset offer affordable housing in comparison to Bristol and Bath. There has already been significant housing growth in Portishead, Nailsea, Backwell, Yatton, Congresbury and the greater Weston area. All these offer easy access to the rail network. Large volumes of new homes are planned close to several stations.

North Somerset is relatively prosperous, but it scores highly in inequality and there are areas of deprivation. Most are in and around Weston-super-Mare, the largest town in the corridor between Bristol and Exeter. Rail services to Weston-super-Mare are constrained by the town and station sitting on a single track loop off the mainline. The urban area is also served by Weston Milton and Worle stations, but service choice limits rail's attractiveness. The current size of the area and the planned growth (combined with the need to address existing deficiencies) makes a strong case for rail service improvements.

Bristol Airport is in North Somerset. As well as a major employer, the airport is a key strategic transport facility for the area. Improved access by public transport is a priority. Options using the rail corridor involve improved interchange from existing stations.

Sedgemoor

Sedgemoor district contains the towns of Bridgwater, Highbridge, and Burnham-on-Sea, as well as the Hinkley Point power station. It's predominantly rural, and connectivity by public transport is limited beyond the main north-south corridor. Reliance on private cars results in congestion and a lack of journey opportunities.

Many jobs and key services are currently provided by larger towns outside the district. There's an increasing need to plan and deliver rail services across and beyond administrative boundaries.

Currently, rail plays a limited role in Sedgemoor. There's also evidence of suppressed demand due to the low frequency and limited connectivity of rail services.

Sedgemoor has two major employment growth opportunities in which rail can play a supporting role. The Hinkley Point C megaproject will create thousands of jobs during construction and will have an expected permanent workforce of almost a thousand. The Gravity development north of Bridgwater is expected to generate up to 7,500 jobs. New connections to the major road network have been completed, but rail could also have a role to play in supporting these major growth sites.

Somerset West and Taunton

Taunton is the second largest town between Bristol and Exeter and has seen significant growth in recent years, with further growth allocated. The same is true of Wellington and smaller settlements, including Bishops Lydeard, Watchet and Minehead to the west and Chard and Ilminster to the south.

Somerset West and Taunton acts as a gateway to the southern part of the Quantock Hills AONB, Exmoor, and the West Somerset coastline, including Minehead. West Somerset coastal towns rely on tourism, with significant traffic heading towards Taunton or Bridgwater to access work and education. Again, there are high levels of car dependency, which is one aspect of the area's bottom ranking in the Social Mobility Index (England, 2016).

The planned new station at Wellington will help address some of these issues.

Mid Devon

Tiverton Parkway is the only station on the mainline corridor in Mid Devon and acts as a rail head for a large swathe of the county (and as far as North Cornwall) due to its easy access from the M5 and the A361 North Devon link road.

Major growth is planned around Cullompton, including up to 9,000 new homes. This growth supports the planned new station at Cullompton, which will allow current and new residents to make journeys sustainably, by rail.

The corridor today – services and infrastructure

The 75-mile long rail corridor between Bristol Temple Meads and Exeter St Davids is a mainly double track line connecting thirteen stations and a small number of freight facilities. The fastest route between the South West and London joins the corridor at Cogload Junction, northwest of Taunton.

It's a high performing railway, with most performance problems that affect services resulting from issues in the urban network around Bristol. All passenger and freight services that use the corridor also cover significant distances beyond the corridor. Operational resilience is a challenge, with risk of flooding affecting large parts of the low-lying corridor.

There are many level crossings in the corridor, with lots of user-worked crossings at the southern end. Some of the crossings are assigned the highest risk ratings, including three on the Weston loop. One of these (Corondale near Weston Milton) has seen two fatalities since 2018.

Highbridge & Burnham (2021)

Passenger services

Passenger services in the corridor are operated by Great Western Railway (GWR) and CrossCountry Trains. The main service groups are:

- **GWR: between Cardiff and Taunton/South West Peninsula**
- **GWR: between Filton Abbey Wood and Weston-super-Mare**
- **GWR: between London Paddington and Bristol/Weston-super-Mare**
- **GWR: between London Paddington and Taunton/Exeter St Davids**
- **CrossCountry: between the North/Midlands and Bristol/Exeter/South West Peninsula.**

Passenger service provision is similar in the northern and southern sections, although the northern section features more frequent peak hour services.

Freight services

The corridor is an important route for some freight flows (in particular minerals and construction materials) and there are some strategic flows. One is to Portbury docks, which is accessed by branch line at the northern end of the corridor. It's a key economic facility for the region and nation and provision of freight paths will remain essential. However, rail freight in the corridor is constrained by:

- **the limited number of freight facilities in and beyond the corridor, including terminals**
- **gauge limitations of the route**
- **physical constraints caused by significant gradients (including Whiteball Summit within the corridor and the South Devon banks further west).**

Constraints

Key issues likely to require intervention to accommodate additional passenger and freight services in the corridor include:

- **capacity on the two-track mainline, given the need to accommodate a mix of inter-regional, local, and freight traffic**
- **capacity between Bristol West and Parson Street**
- **capacity on the single-track Weston loop, including Worle junction where this joins the main line**
- **platform and track capacity at Exeter St Davids**
- **level crossings: further review is needed to identify the crossings most impacted by the recommended service and infrastructure changes.**

About the study

A northbound GWR Castle Class service joins the mainline at Worle Junction (2021)

Our main question is:

How can rail best support sustainable economic and housing growth between Bristol and Exeter?

To answer this, we need to answer these supporting questions:

- How can rail make a positive contribution to Peninsula Transport and Western Gateway's strategic objectives by improving capacity, journey times and connectivity?
- How can rail continue to improve resilience and provide a reliable railway?
- How can rail in the South West best support the central and local government policy objective of zero net carbon emissions?
- What interventions are necessary to deliver the rail capacity and connectivity required to best support growth between Bristol and Exeter, and at key settlements in between?
- How should the desire to improve journey times be reconciled with the need to serve new and expanding communities on the Bristol to Exeter corridor?
- What interventions are required to ensure that demands for long distance travel and freight requirements can be met on the Bristol to Exeter corridor?

The key stages and components of our process are:

- evidence gathering and market demand forecasting
- development of indicative Train Service Specifications (TSS)
- economic analysis of TSS options
- capacity testing for TSS options and associated interventions
- refinement of TSS proposals with stakeholders
- recommended approach with evidence and next steps.

Stakeholder aspirations

Our study involved close collaboration with stakeholders, including sub-national transport bodies, statutory transport and planning authorities, and passenger and freight train operators. The sub-national transport bodies (Peninsula Transport and Western Gateway) were key stakeholders, and the study aligns with their strategies and objectives.

Peninsula Transport has identified five major themes to achieve goals set for 2050:

- decarbonisation: in the short term, a modal shift from cars to walking, cycling, bus and trains to reduce emissions. In the longer term, Peninsula Transport will seek zero emission solutions for rail
- digitalisation: to reduce the cost of rail travel and increase its capacity
- flexible lifestyles: rail needs to meet changing demand patterns arising from the increase in working from home and growth of the 'gig economy'
- world of work: improving the resilience and reliability of the Peninsula's transport corridors
- urbanisation: future employment development needs to be aligned with Peninsula Transport's principle of clean growth.

The Western Gateway Rail Strategy identifies conditional outputs for rail that can help deliver these objectives:

- minimum aspirational frequency of two trains per hour on intercity routes and one per hour on regional and local routes
- direct services between national and regional hubs
- four to five paths per day on secondary freight flows (the Bristol to Exeter corridor is a secondary freight flow)
- fully accessible stations throughout the Western Gateway
- target speeds for different passenger service types
- interchange times of between 20 and 30 minutes between connecting services where direct services aren't possible
- extended hours of service with the latest hub station arrival at 7:00 (9:00 on Sundays) and the earliest last service departure from hub stations at 23:00
- decarbonise traction in the corridor.

Gathering evidence

We used committed growth allocations for each of the study areas to develop robust and locally-sensitive demand forecasts for rail journeys in the corridor that account for planned growth. We refined these into growth scenarios that also considered existing connectivity gaps, key opportunity areas, and the impacts of the COVID-19 pandemic.

We considered the current role of rail, including demand for different journey types alongside comparable parts of the network to identify existing connectivity gaps. We also factored in stakeholder expertise and information on specific opportunity areas and aspirations.

Having identified capacity and connectivity issues, we quantified the benefits of different services aimed at addressing them to identify preferred options. The optimal combination of services were assembled into Train Service Specifications (TSS).

Information on the phasing of growth and development of opportunity areas in the corridor allowed us to pinpoint when connectivity gaps arise and identify a TSS that develops incrementally in line with evidence of need.

The study has taken account of two rail schemes that are already advanced: MetroWest Phase 1b, involving the provision of passenger services to Portishead with new stations at Pill and Portishead, and new stations at Wellington and Cullompton. The connectivity benefits of both schemes, which reinstate rail access to communities that have grown significantly over the years and are continuing to expand, are clear and they are recommended for early delivery.

A southbound GWR Castle Class service dwells at Bridgwater (2021)

Findings and recommendations

A GWR local service sits in the bay platform at Exeter St Davids (2021)

The key rail priority for supporting sustainable growth between Bristol and Exeter is improving *connectivity*, including easier access by rail to employment, education, leisure and social activities.

We've identified significant connectivity gaps between local hubs that will be exacerbated as they grow. We've also identified opportunities for further improved connectivity between major hubs to allow rail to play a bigger role in transport in the corridor. Improved services can enable better access to work, education, and leisure opportunities and support sustainable growth and modal shift.

We recommend three stages of phased service improvements. These address connectivity shortfalls in and around Weston-super-Mare and North Somerset; similar growth and significant suppressed demand from Sedgemoor and Bridgwater; and identified potential travel opportunities to/from Minehead.

In addition, we recommend improvements to services at Worle station (with potential rebranding as Weston-super-Mare Parkway). These will reflect its wider strategic role with increased service frequency from two trains per hour to three and then four between Bristol and Weston-super-Mare (including Worle), and three trains per hour at Yatton and Nailsea.

In Somerset, we recommend increased service frequencies at Bridgwater, initially with existing inter-regional services between Paignton/Exeter and Manchester calling, then future extensions of the Bristol/London services to Taunton.

The provision of improved inter-regional services recognises the national strategic significance of the corridor and will deliver substantial improvements in journeys for which rail should be the natural choice.

Beyond the study corridor, improved inter-regional connectivity is required to Bath Spa, Reading and London; to Birmingham and the North; and to the South West via Taunton. The recommended TSS identify a stepped approach to meeting these strategic objectives.

Phased development of freight provision is also recommended, designed to facilitate new intermodal and express logistics flows.

The recommended vision for services includes improvements to:

- local and regional passenger services, including Bristol/Weston-super-Mare/Taunton and Exeter/Wellington and Cullompton/Taunton
- inter-regional passenger services between the South West and London/South Wales/ the North
- freight paths, including Bristol/Gravity/Taunton/Exeter and Westbury/Taunton/Exeter.

We propose that service improvements are phased to align with growth and to enable a deliverable programme of improvements.

Connectivity improvements are recommended both through limited and targeted additional calls in inter-regional (fast, limited call) for growth hubs such as Bridgwater and Worle/Weston-super-Mare Parkway, and significant upgrade of local services throughout the corridor.

Specific findings and recommendations for passenger services

Worle/Weston-super-Mare Parkway

There's clear evidence and strategic benefit for developing Worle as an upgraded and potentially rebranded Weston-super-Mare Parkway station, located on the main line and better serving the sub region. This includes:

- high level of housing growth expected close to the station location, serving the Bristol commuter market
- opportunities for rail based multi modal interchange serving the greater Weston area and Bristol airport
- opportunities for leisure and recreational travel to Weston-super-Mare as North Somerset's premier resort
- opportunities for social regeneration based on the relatively high level of deprivation affecting parts of Weston-super-Mare
- low trip rate (rail journeys per head) compared to other stations with similar sized catchments.

Bridgwater

Bridgwater could achieve significantly higher rail demand and mode share with service improvements. Bridgwater experiences a very low rate of rail patronage per head against comparable locations. Bridgwater has a similar sized population and catchment to Chippenham, but has just nine rail trips per head (2019-20) whilst Chippenham has six times as many at 54.

Rail patronage comparison of Bridgwater and similar locations

Table 1.0

Station	Population (000)	Within 2km (000)	Within 5km (000)	Within 10km (000)	Station usage (2019-20)	Trips per head
Banbury	46.9	3.1	18.1	64.4	2,870,216	61
Chippenham	35.8	2.3	13.8	55.3	1,937,240	54
Newbury	38.8	2.8	16.9	69.8	1,819,730	47
Salisbury	44.7	1.6	9.6	43.9	1,904,276	43
Grantham	42.0	1.8	10.9	42.5	1,390,648	33
Bury St Edmunds	41.1	2.0	12.2	46.9	657,942	16
Bridgwater	41.2	2.4	14.6	59.6	363,828	9

Improved services would provide better rail access to the nearby Hinkley Point C Power Station and Gravity sites, which represent the major new employment opportunities. Intermodal interchange improvements are needed to ensure that suppressed demand for rail access is realised.

West Somerset

The study looked at a high level at the case for regular services to Minehead on the West Somerset Railway. Reconnecting these communities would allow commuting, education, and leisure journeys. Restoring the connection could help address the chronic shortfall in social mobility in the area and support the Levelling Up agenda.

Specific findings and recommendations for freight services

Freight haulage across the South West is largely reliant on road transport, and rail has a limited role. Historically, there are sound geographic and economic reasons for this, but these are changing. Modal shift of freight haulage is particularly important to meet decarbonisation targets, and offers improved access to markets.

There are clear opportunities for emerging rail freight markets in the South West. The Bristol to Exeter corridor is key to helping realise these. In particular for two key traffic types:

- *intermodal services* – transporting mixed goods in containers to and from the South West
- *express logistics services* – transporting parcels and other light consumer goods to and from the South West.

Intermodal services

Throughout much of the country, rail has a large and growing role in the haulage of intermodal freight. However, there are currently no intermodal freight rail terminals in the South West, meaning that all such traffic is hauled by road. There's demand for approximately:

- **1,000 HGVs each way per day between the Solent ports and the South West**
- **2,500 HGVs each way per day between the Solent ports and Bristol/South Wales.**

Meeting this demand requires intermodal interchange facilities serving the South West, with terminals across the peninsula. The Bristol area could be the right location for an intermodal interchange, exploiting the excellent road access available via direct links with the M4 and M5 motorways.

New intermodal terminals in the South West could be operated as satellites linked to such a facility, which could see with trunk routes to/from the Midlands and South East with feeder services to/from facilities further west.

Express logistics services

As a trunk corridor between cities there's potential in this corridor for express logistics rail freight. This emerging traffic employs fast and light trains to move packages in bulk closer to end distribution, typically near urban centres.

There are unused or underused sites in or near the corridor that may be suitable for express logistics facilities including former freight terminals at Bristol Barrow Road, Bridgwater, and Tiverton Junction, and Exeter Alphington Road.

Gravity Smart Campus

The Gravity site north of Bridgwater represents an opportunity to build in rail freight services as part of a new land-use development. A new rail freight facility could enable significant commercial development, involving intermodal, express logistics, or waste-to-energy freight, for example. High level assessment of potential markets suggests there may be a viable economic basis alongside environmental benefits.

Recommended TSS

We recommend three phased stages of service improvements:

Stage 1

Passenger:

- put Bridgwater on the inter-regional service map by calling nine existing inter-regional Manchester to Exeter services per day in each direction
- improve South West to South Wales connectivity by extending Cardiff to Taunton services to Exeter St Davids every two hours
- improve inter-regional connectivity at Weston-super-Mare by realigning inter-regional calls to better reflect the leisure market (two trains per day in each direction).

Freight:

- provide one freight path every two hours between Bristol and Exeter, suggested to alternate between Class 4/6 (intermodal/bulk goods) and Class 1 (express logistics)
- provide one freight path every two hours between Westbury and Exeter, suggested to alternate between Class 6 (bulk goods) and Class 4 (intermodal).

Weston-super-Mare station from the north end of platform 2 (2021)

Stage 2

Passenger:

- improve inter-regional connectivity between Bristol, Taunton and Exeter by extending all inter-regional Manchester to Bristol services to Exeter
- put Worle/Weston-super-Mare Parkway on the inter-regional map by calling alternate inter-regional trains, delivering nine calls per day
- improve local connectivity to all stations between Bristol and Weston-super-Mare by introducing new Bristol to Weston-Super-Mare hourly service, potentially linked to Gloucester to Bristol service
- link Portishead to Bristol by rail with introduction of MetroWest 1b
- deliver cross-Exeter connectivity with a new two-hourly service between Taunton and Exeter Central
- put Wellington and Cullompton new stations on the network with calls in Cardiff to Exeter services and Exeter Central to Taunton services giving both stations an hourly service
- potential to improve London connectivity substantially by additional semi-fast service from Exeter via Westbury, with calls at Frome, to provide an hourly service.

Freight:

- increase freight paths to one per hour between Bristol and Exeter, suggested to alternate between Class 6/4 (bulk goods/intermodal) and Class 1 (express logistics).

Stage 3

Passenger:

- extend London to Bristol services to Taunton to improve connectivity between London and the Thames Valley from Worle, Weston-super-Mare and Bridgwater – initially every two hours but increasing to hourly
- provide a potential passenger service to the Gravity area by extending Bristol to Weston-super-Mare services, via Highbridge and Burnham
- provide improved hourly direct connection between Exeter and South Wales alongside hourly service at Cullompton and Wellington new stations by extending remaining Cardiff to Taunton services
- improve cross-Exeter connectivity and provide an additional service to Wellington and Cullompton new stations by extending service northwards from Exeter Central to Taunton
- potential to add Bishops Lydeard to the national network with an hourly service.

Freight:

- increase freight paths to one per hour between Westbury and Exeter, suggested to alternate between Class 6 (bulk goods) and Class 4 (intermodal)
- increase freight paths to two per hour between Taunton and Exeter comprising one Class 6/4 (bulk goods/intermodal) and one Class 1 (express logistics).

Bristol to Exeter Train Service Type Stage 1

Table 2.0

Service type	Improvement	From	To	Change
Inter-regional	Calling pattern	Manchester	Exeter	All call at Bridgwater (9 trains)
Inter-regional	Calling pattern	Manchester	Exeter	Improve existing calling times at Weston-super-Mare
Local	Extension	Cardiff	Taunton	Extended to Exeter (0.5 tph)
Freight	New path	Bristol	Exeter	Regular path every other hour
Freight	New path	Westbury	Exeter	Regular path every other hour

Bristol to Exeter Train Service Type Stage 2

Table 2.1

Service type	Improvement	From	To	Change
Inter-regional	Extension and calling pattern	Manchester	Bristol	Extend to Exeter every hour. Alternate calls at Bridgwater and Worle
Inter-regional	New service	London	Exeter	Provide hourly semi-fast service
Local	New service	Bristol	Portishead	New hourly service to Portishead
Local	Calling pattern	Cardiff	Exeter	All call at Wellington and Cullompton
Local	New service	Bristol	Weston-super-Mare	New hourly service calling all stations
Local	New service	Taunton	Exeter Central	New 0.5 tph service calling all stations
Freight	New path	Bristol	Exeter	Regular path every hour (from 0.5 tph)

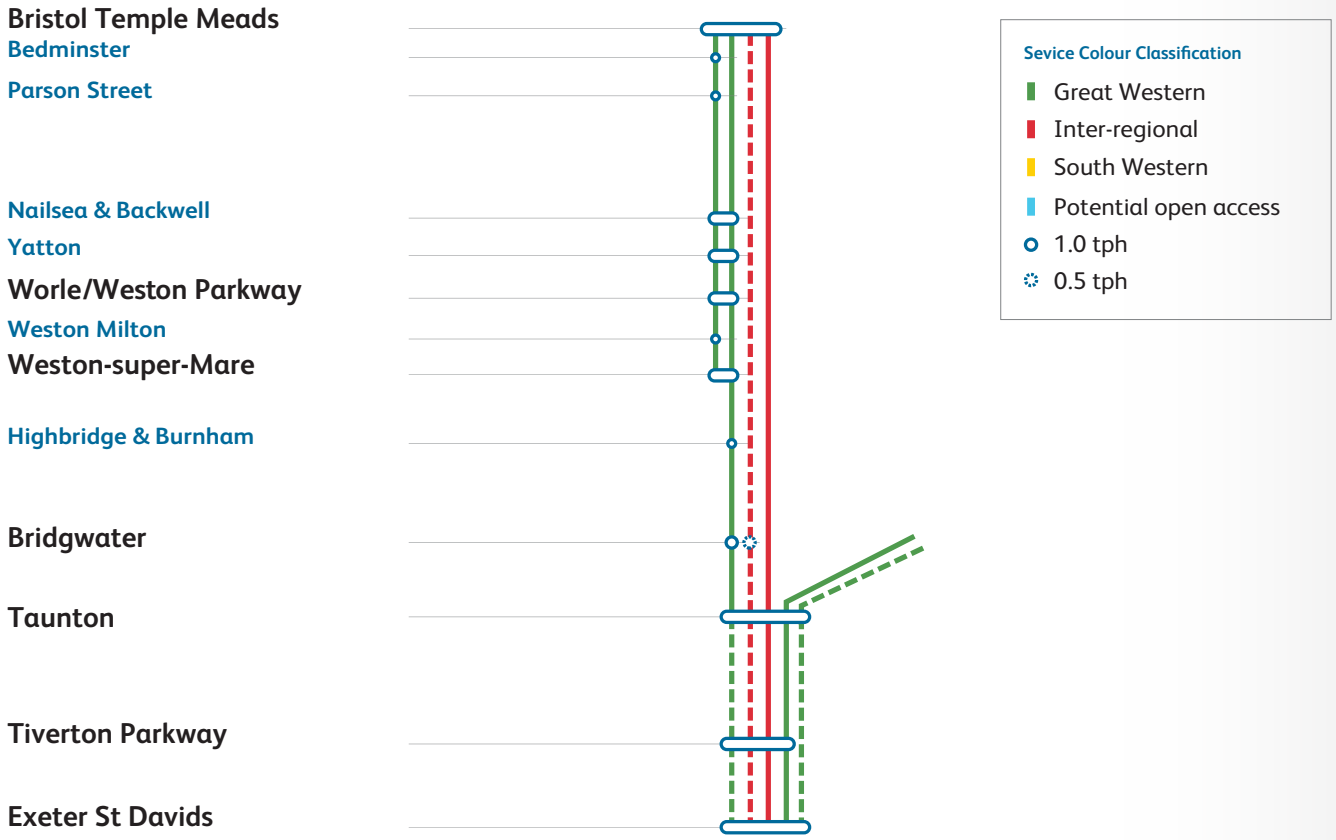
Bristol to Exeter Train Service Type Stage 3

Table 2.2

Service type	Improvement	From	To	Change
Inter-regional	Extension	London	Bristol	Extend to Taunton calling at Worle, Weston-super-Mare and Bridgwater
Inter-regional	Extension	London Waterloo	Exeter	Extended to Taunton 0.5 tph
Local	New service	Cardiff	Exeter	Increase to hourly between Taunton and Exeter (from 0.5 tph)
Local	Extension	Cheltenham Spa	Weston-super-Mare	Extend to Gravity via Highbridge and Burnham
Local	New service	Taunton	Bishops Lydeard	New hourly service
Freight	New path	Taunton	Exeter	Two regular paths per hour (from 1 tph)
Freight	New path	Bristol	Taunton	Regular path every hour
Freight	New path	Westbury	Taunton	Regular path every hour

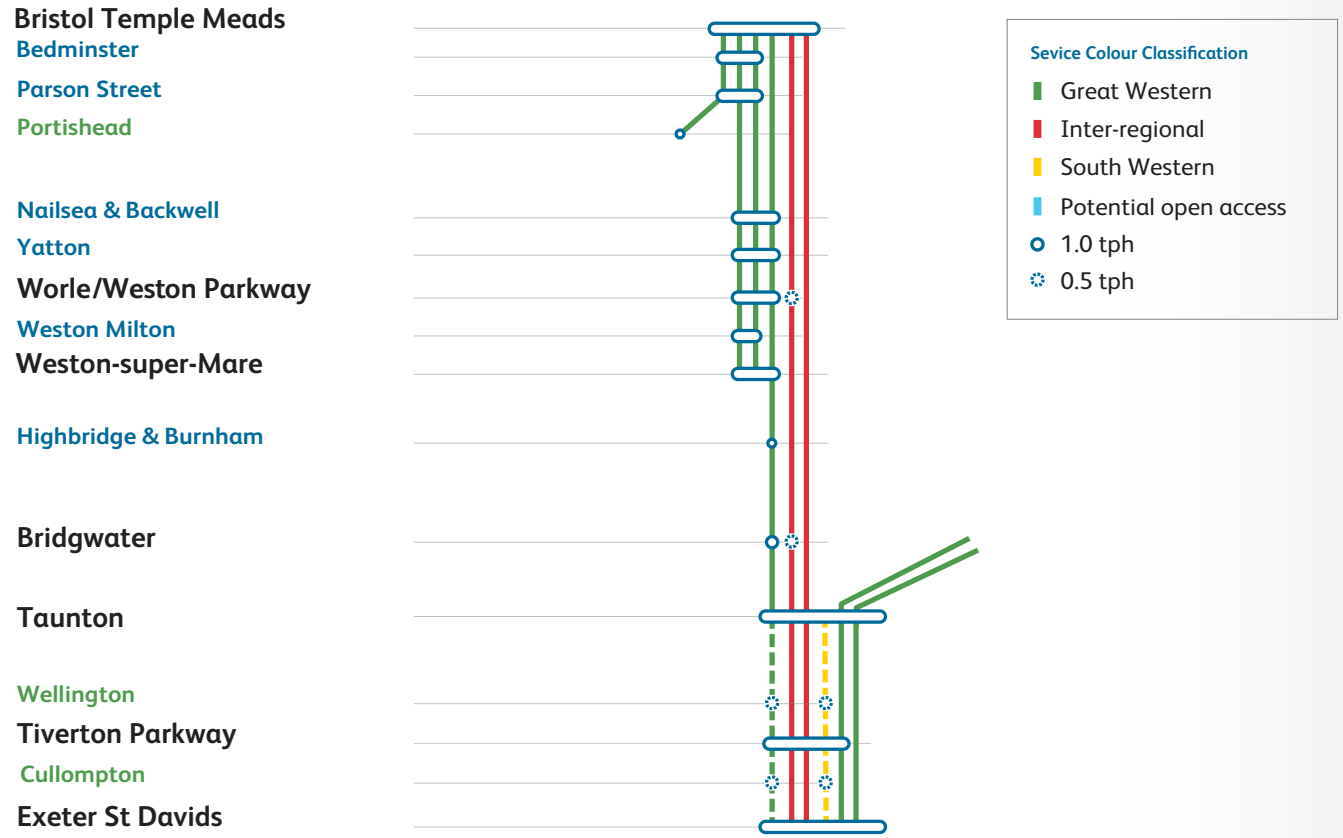
Bristol to Exeter Train Service Specification Stage 1

Figure 2.0



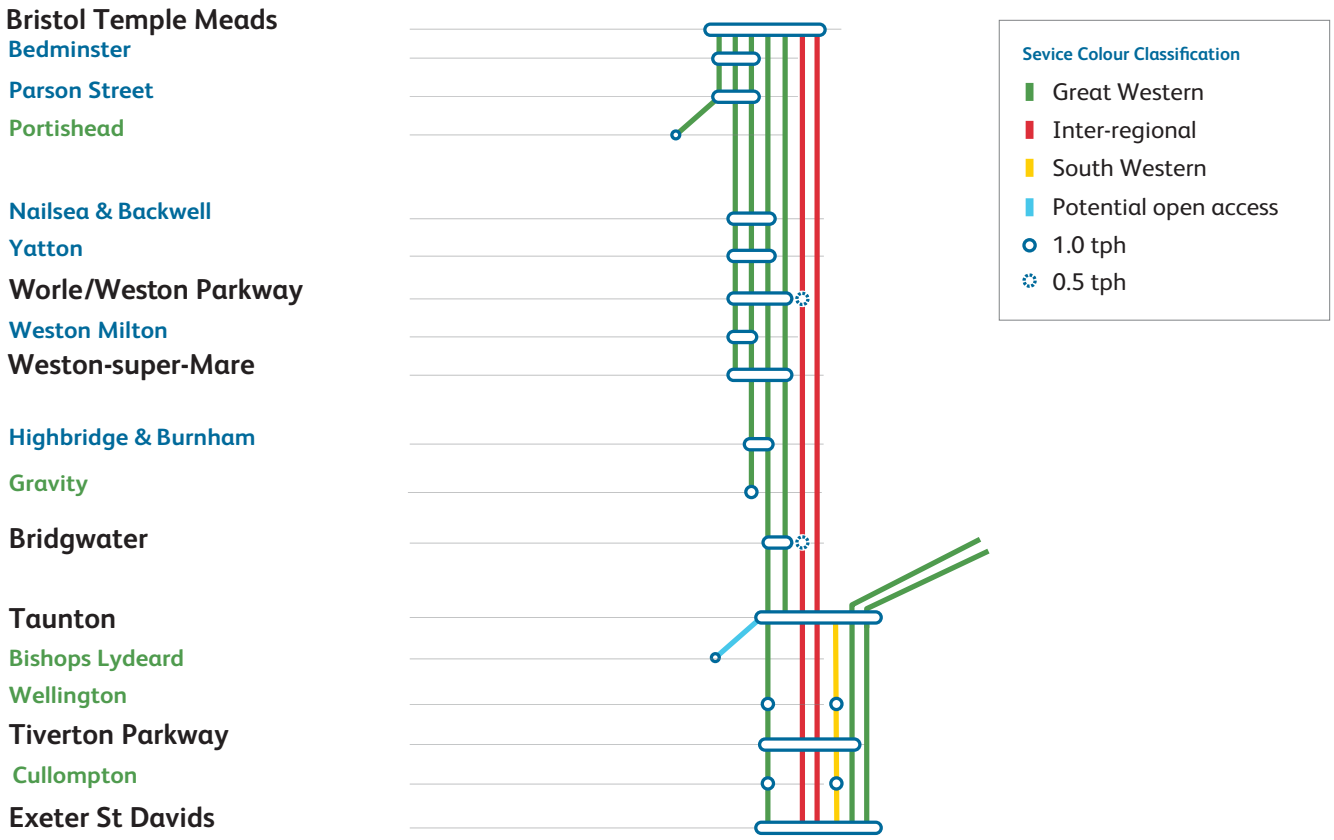
Bristol to Exeter Train Service Specification Stage 2

Figure 2.1



Bristol to Exeter Train Service Specification Stage 3

Figure 2.2



Passenger trains per hour at each station as a result of the recommended TSS

Table 3.0

Stations	Pre covid	Stage 1	Stage 2	Stage 3
Portishead	-	-	1 ↑1	1
Bedminster	1	1	3 ↑2	3
Parson Street	1	1	3 ↑2	3
Nailsea and Backwell	2	2	3 ↑1	3
Yatton	2	2	3 ↑1	3
Worle	2	2	3.5 ↑1.5	4.5 ↑1
Weston Milton	1	1	2 ↑1	2
Weston-super-Mare	2	2	3 ↑1	4 ↑1
Highbridge & Burnham	1	1	1	2 ↑1
Gravity	-	-	-	1 ↑1
Bridgwater	1	1.5 ↑0.5	1.5	2.5 ↑1
Taunton	4	4	5.5 ↑1.5	8 ↑2.5
Bishops Lydeard	-	-	-	1 ↑1
Wellington	-	-	1 ↑1	2 ↑1
Tiverton Parkway	2.5	3 ↑0.5	4 ↑1	5 ↑1
Cullompton	-	-	1 ↑1	2 ↑1

Interventions

Significant service improvements are required to support growth.

Stage 1 could be achieved without significant interventions, although the work (already identified) to develop platform 2 at Exeter St Davids would improve operational capacity.

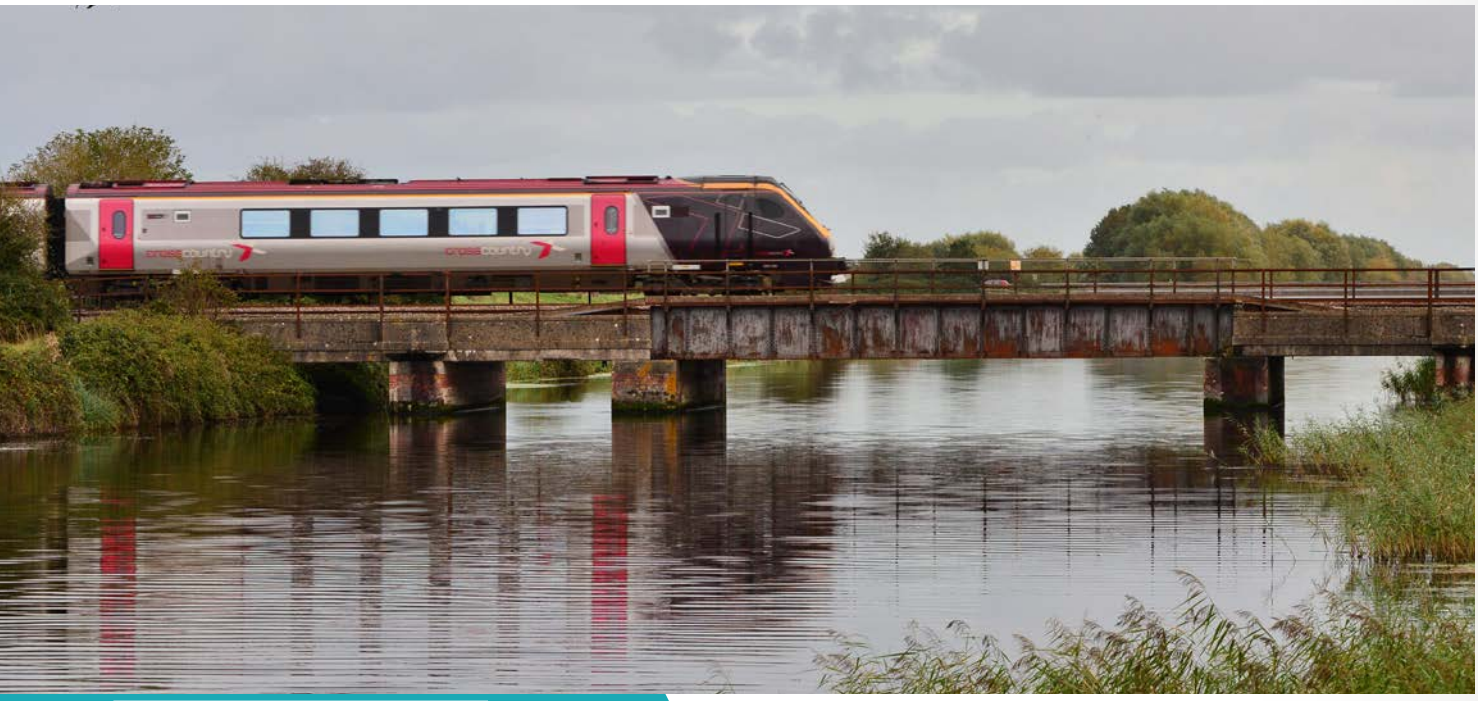
Interventions are required to accommodate the ambitious Stage 2 and Stage 3 TSS. Interventions can be phased incrementally, and many have previously been or are currently in development.

Stage 2 doesn't require intervention to accommodate additional inter-regional services, but the additional service to Weston-super-Mare requires significant interventions between Bristol and Weston-super-Mare. Stage 2 also includes the new stations at Wellington and Cullompton, and Portishead branch infrastructure.

Stage 3 requires more significant interventions including corridor wide reduction in signalling headways.

Areas where interventions are needed include:

- Bristol Temple Meads to Exeter: signalling headway reduction from four to three minutes
- Bedminster to Parson Street: reinstatement of four tracking
- Yatton Loop: extension and entry speed increase
- Worle Junction and Worle to Weston-super-Mare: double-tracking
- Worle station: upgrading and potential rebranding as Weston-super-Mare Parkway station
- Weston-super-Mare: bay platform reinstatement
- Gravity site: reconnection to the main line
- Exeter St Davids: additional platform capacity.



Interventions required for each stage.

Table 4.0

Location	Stage 1	Stage 2	Stage 3	Required for
Exeter St Davids: extend platform 2 to accommodate longer trains	●	●	●	Increase in terminating services
Bedminster to Parson Street: reinstatement of four tracking		●	●	Allowing different speed services to pass
Parson Street: access to Up Relief from Up Main west of station		●	●	Accommodating additional services
Yatton Loop: extension and entry speed increase		●	●	Accommodating freight services
Worle Jn and Weston Loop: doubling of existing single line		●	●	Increase in services on single line and lack of capacity to pass on main line
Weston-Super-Mare: bay platform			●	Accommodating additional through service means terminating service must be clear of through lines.
Gravity site: reconnection to the main line			●	Allow services to reach the Gravity site
Bristol to Exeter: signalling improvements to reduce headways to three minutes			●	Accommodating additional services. Will also aid robustness
Gravity site: additional, south-facing, connection			●	Reducing potential timetable conflicts
Taunton to Norton Fitzwarren capability improvements			●	Service to Bishops Lydeard

● - Required. ● - May be required.

Alongside interventions to allow service improvements, we recommend interventions to deliver the study's other strategic priorities.

Decarbonisation:

Decarbonisation in the corridor should be achieved by full or partial overhead line electrification to allow non-diesel passenger and freight trains. This owes to the need to accommodate a large volume of services over long distances and at high speed, including freight. A decarbonised Bristol to Exeter corridor has an important function in decarbonising rail and supporting the UK government policy objective of net zero carbon emissions.

The study also identifies opportunities for significant development of rail freight in the corridor, to support decarbonisation objectives by encouraging modal shift from road to rail.

We also support interventions to realise transport decarbonisation through modal shift, including improved multi-modal interchange at stations, accessibility improvements and extended hours of service.

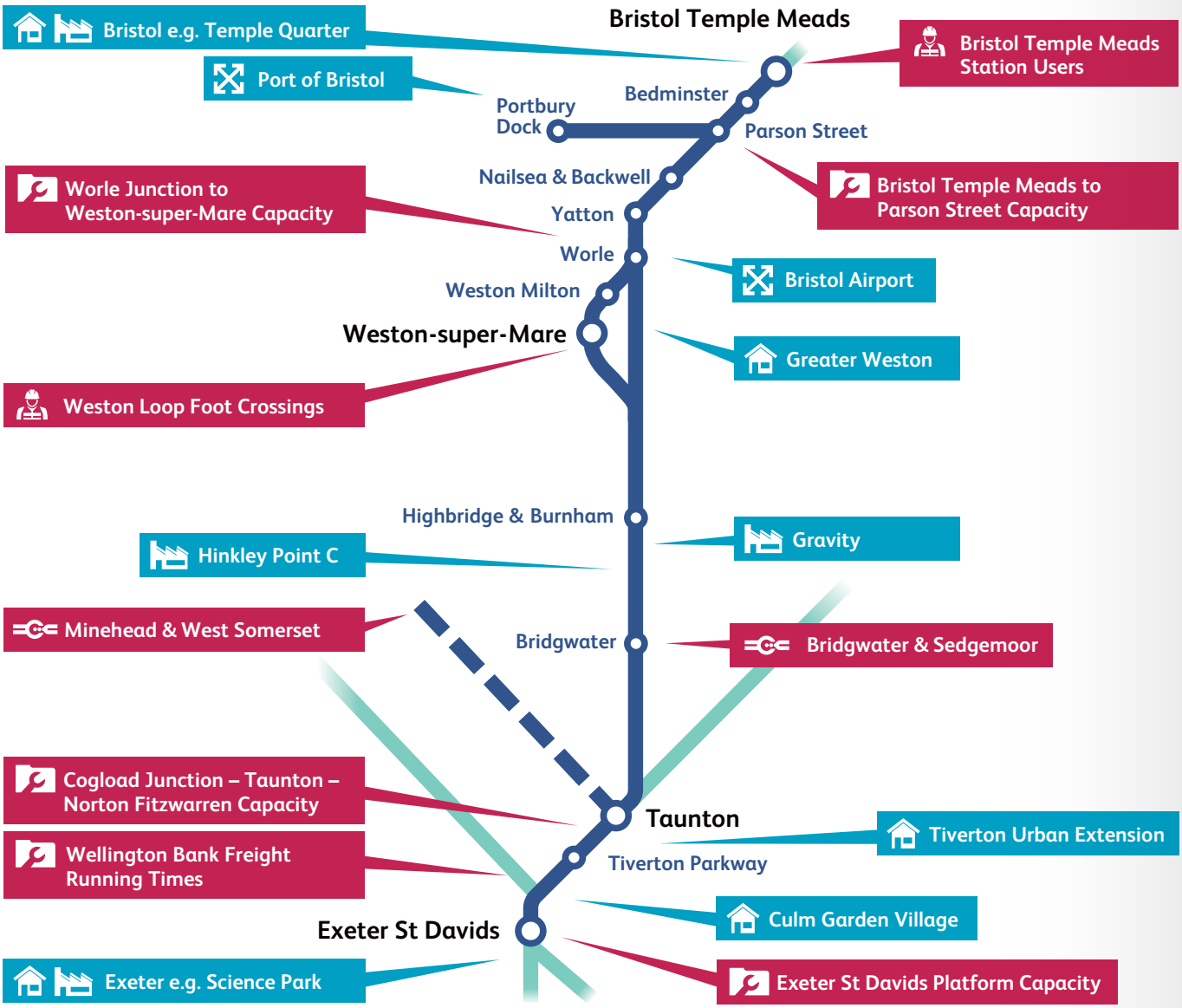
Safety and resilience:

As interventions are developed, it's critical that other strategic priorities in the corridor are addressed. There's potential to further reduce level crossing risk in the corridor and this must be considered as part of new service development.

Also, we need to address resilience challenges (including the high level of flood risk affecting large parts of the corridor) and the provision of adequate access for maintenance while demands on the network continue to increase.

Key Challenges and Strategic Growth Opportunities

Figure 3.0



Corridor Wide

- W8 Freight Loading Gauge
- Flood risk
- Level crossing risks
- Signalling headway improvements

Key

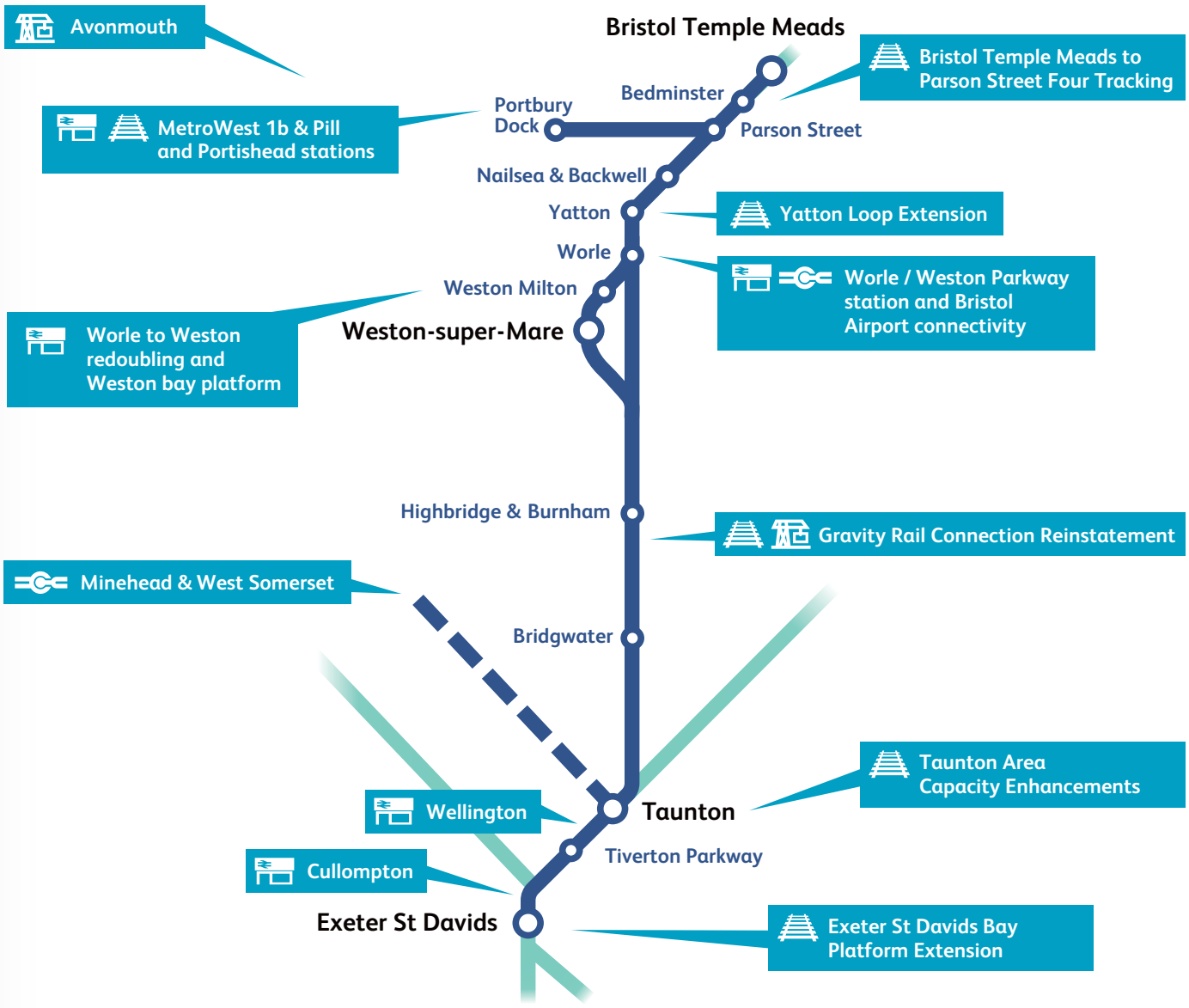
- Key Challenges
- Growth Opportunities

Legend

- Key Operational Challenges
- Key Connectivity Challenges
- Key Safety Challenges
- Strategic Housing Growth
- Strategic Transport Interchanges
- Strategic Employment Growth

Study Recommendations

Figure 3.1



Corridor Wide

- See Recommended Train Service Specification
- Train path headway reduction
- Freight Loading Gauge Enhancement
- Level crossings mitigation
- Station Accessibility and Interchange

Legend

- New/Major Service Enhancement
- New/Major Upgraded Rail Infrastructure
- New/Upgraded Station
- New/Upgraded Rail Freight Facility
- New/Upgraded Connectivity

Next steps

The report and its recommendations are intended to inform decisions by strategic planners and funders considering the further development of rail passenger and freight services between Bristol and Exeter, to 2030 and beyond.

The three broad means by which the study outputs and recommendations should be progressed are:

- **Further development of recommended outcomes.**

  We now need a detailed understanding of the feasibility and inter-dependencies of interventions. Development will need to link interventions with the service enhancements that they help deliver to help us identify business cases.

  Development should include all interventions that aren't already within planned or existing programmes. As well as the engineering aspects of interventions, it should also develop the economic case and provide further timetable validation of proposed services.

  A key part of this should be further consideration of how improvements and interventions can be delivered incrementally.

- **Supporting and influencing existing programmes.**

  Outputs should be used to support, inform, and influence existing projects, such as the Portishead line reinstatement under MetroWest, and the new station proposals for Wellington and Cullompton. Equally, they are an important input to the in-development resignalling schemes at Bristol West and Exeter.

  Study partners should champion and progress study outputs as part of rail and investment strategies, particularly where outputs align with those already identified. Examples include the Peninsula Transport Rail Strategy and the Western Gateway Strategic Corridor Partnership Group.

  We need to take opportunities to align further development of the recommendations with STB and other strategic planning partners' workstreams and available funds. This is particularly important where outputs represent significant benefits to partners, and where central government funding might be harder to secure.

- **Informing future strategic rail planning work.**

  We need to use this study as an input into our Greater Bristol and Peninsula Rail Corridors strategic studies – both of which commenced in 2021 and will answer similar strategic questions. The study outputs also form a clear input into regional decarbonisation strategies.

  It's important that the study outputs inform the strategic development work undertaken by partner organisations such as the Peninsula Transport, and the Peninsula Rail Task Force, Western Gateway, and the West of England Combined Authority. Study evidence and outputs will enrich that work and ensure that the benefits of a collaborative approach to strategic rail planning are realised.

A southbound GWR Castle Class service arrives at Weston-super-Mare (2021)

Our vision

Rail plays a crucial role in this key transport corridor as the gateway to the South West with its large, growing and diverse population and economy.

Leisure travel is a significant and growing driver. Also, commuting to employment and education will remain vitally important to regional prosperity, productivity, and access to opportunity. Improved rail connectivity is essential both to support continued and sustainable growth of the corridor's key hubs and to improve access for its under-served areas.

We need to make rail travel more attractive for more people and more journeys. This will involve continued collaboration with a variety of stakeholders, including Sub-national Transport Bodies, statutory planning and transport authorities, and passenger and freight train operators.

Our recommendations include new and improved services to target identified connectivity gaps. They also entail increased hours of service and improved interchanges. Connectivity should be improved by delivering:

- strengthened local services to both Bristol and Exeter, taking journeys into the cities off roads
- strengthened inter-regional connections between Bristol, Taunton, Exeter and London, the South West, and the Midlands
- inter-regional connections in addition to improved local services at key employment-led strategic growth hubs of Weston-super-Mare and Bridgwater
- an upgraded Worle station (potentially rebadges as Weston-super-Mare Parkway) to support major housing growth and improve rail access for greater Weston, North Somerset, and Bristol Airport
- additional services to railheads for large catchments at Taunton and Tiverton Parkway
- rail services to new stations and major development areas including Portishead, Wellington, Cullompton, and the Gravity development
- improved provision for rail freight on both the Bristol Exeter and Westbury Exeter routes.

Improvements are essential for rail to step up and support sustainable growth between Bristol and Exeter. Our recommendations will help connect new housing and employment hubs, as well as provide access to jobs and education to areas that are in desperate need of levelling up. In addition, they will make rail travel a viable option for more leisure journeys, and help create a thriving market for rail freight, growing regional prosperity and taking lorries off roads.

Study answers and recommendations summary

Table 5.0

Questions & Recommendations	Type	Next Steps
What interventions are necessary to deliver the rail capacity and connectivity required to best support growth between Bristol and Exeter, and at key settlements in between? What interventions are required to ensure that demands for long distance travel and freight requirements can be met on the Bristol to Exeter Corridor? How can rail make a positive contribution to the Peninsula and Western Gateway's economic growth agenda by improving capacity, journey times and connectivity? How should the desire to improve journey times be reconciled with the need to serve new and expanding communities on the Bristol to Exeter Corridor?		
Train Service Specification (TSS) designed to maximise benefits, accommodate stakeholder aspirations and address connectivity shortfalls, including freight. • **Local and regional services strengthened including Bristol local service and cross-Exeter service.** • **Inter-regional service improvements between the South West and London/South Wales/the North.** • **Regular freight paths connecting the South West to London, the Midlands and the North.**	P F	Further develop service improvements with stakeholders; influence existing programmes; inform future strategic planning work
Support for advanced proposals already in progress: • **MetroWest Phase 1b: Portishead** • **Restoring Your Railway: Wellington and Cullompton stations.**	P	Support and influence existing programmes
System interventions to deliver the TSS as well as operational, safety, and resilience benefits, building on planned and committed upgrades: • **Bristol West and Exeter re-signalling** • **Bristol to Exeter: headway reduction** • **Bedminster to Parson Street: four tracking** • **Yatton Loop: extension and entry speed increase** • **Worle Junction to Weston-super-Mare: redoubling** • **Worle station: upgrade. Potential Weston-super-Mare Parkway branding** • **Weston-super-Mare: bay platform reinstatement** • **Exeter St Davids: platform two extension.**	P F	Undertake feasibility studies on new interventions and inform cases for existing interventions
Interventions to complement the TSS including: • **extended hours of service** • **improved interchange times** • **accessibility improvements at Bridgwater, Highbridge & Burnham, and Nailsea & Backwell.**	P	Consider implications and options as part of development studies
How can rail in the South West best support the central and local government policy objective of zero net carbon emissions?		
First & Last Mile opportunities including Tiverton Parkway (for Tiverton and North Devon); Taunton (Minehead, Ilminster, Chard, Quantocks); Bridgwater (Sedgemoor, Hinkley Point); Highbridge & Burnham (Burnham-on-Sea, Wedmore; and Yatton (Clevedon). Opportunities involve station master-planning to include: • **integrated design for rail and bus interchange** • **new and improved provision for electric vehicle charging** • **new and improved provision for cycle parking and e-bikes/scooters car parking management measures.**	P	Review and prioritise opportunities in corridor with LTAs for early delivery (Quick Wins)
Opportunities for freight development: • **new Strategic Freight Interchange for the region at Avonmouth** • **new intermodal services and facilities, including Gravity** • **new express logistics services and facilities, including at stations** • **updated freight running times, including for Wellington Bank** • **possible gauge enhancement.**	F	Develop through partnerships with STBs and FOCs
Minimum standards for freight infrastructure, including improved passing loop lengths, entry and exit speeds.	F	Develop with rail system interventions
Decarbonisation through full or partial electrification allowing non-diesel trains and locomotives.	P F	Develop through Regional Decarbonisation Strategy
How can rail continue to improve resilience and provide a reliable railway?		
Recommendations for improving operational resilience and reliability: • **flood risk mitigation: Somerset levels and Exeter-Cowley Bridge** • **level crossing risk mitigation: throughout, especially user-worked crossings in south of corridor** • **maintenance: opportunities to accommodate extended hours of service** • **renewals: combine interventions with planned renewals, especially resignalling.**	P F	Develop as part of rail system interventions

Type: P - Passenger. F - Freight.

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