Heart of Wessex Line Enhanced Services Strategic Outline Business Case (SOBC)

Summary Document

Western Gateway
Sub-national Transport Body

GWR Great Western Railway

Scope Area

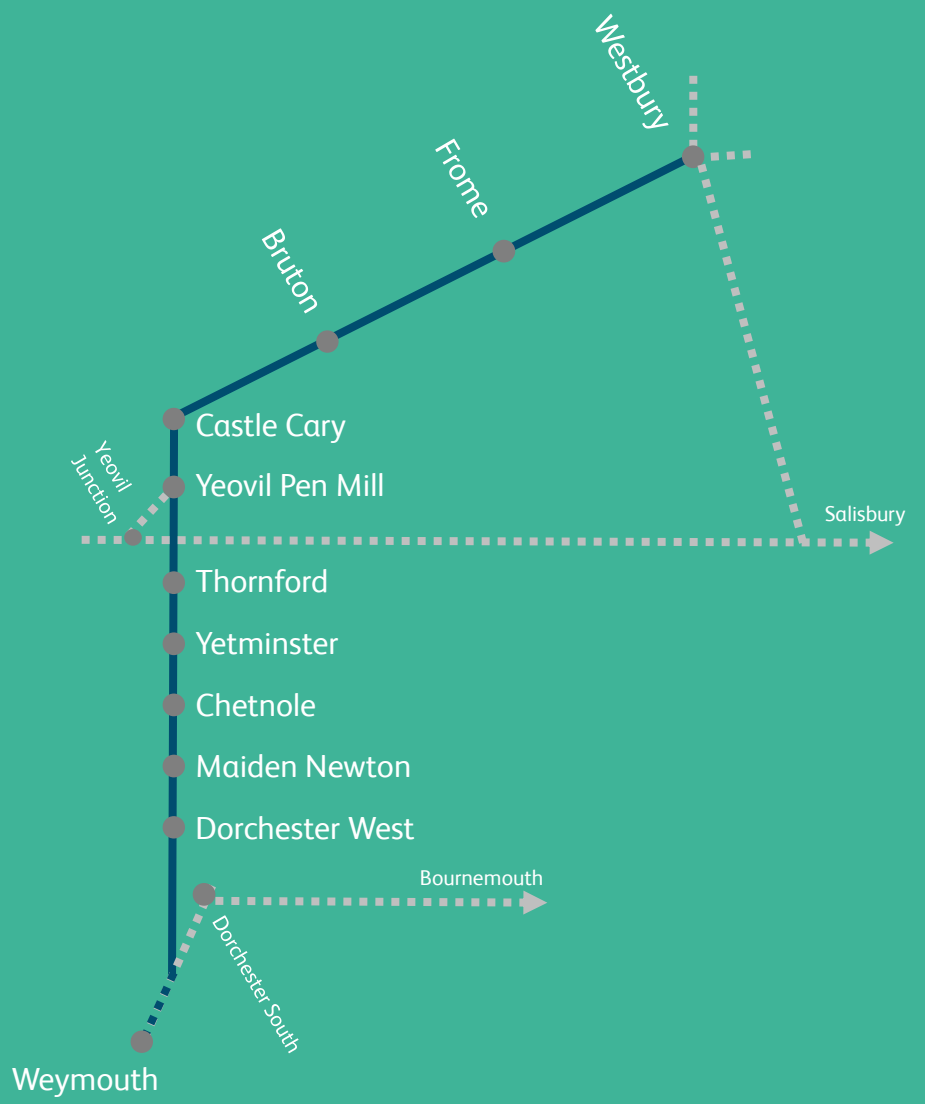
Geographic

- The Heart of Wessex Line spans Bristol Temple Meads to Weymouth, running across five counties, with 20 stations in total.
- The route links with the West of England line at Yeovil Junction via a single-track link from Yeovil Pen Mill to the North of Yeovil Junction station.
- The section of line between Westbury and Weymouth is the focus of this SOBC

Background

- The line is an important provider of north/south connectivity for residents and visitors to the five counties through which the line passes, connecting coastal, rural, and urban areas of the region.
- The line caters to several markets, including commuting, leisure, tourism, and access to education.
- Historically, the service level on this line has been infrequent and irregular, with only eight trains per day.
- As of May 2023, GWR has improved the service to operate one train every two hours throughout the day

Heart of Wessex Line: Westbury - Weymouth

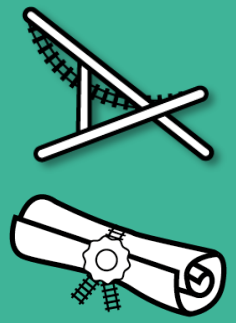


Context – Economy & Demographic

- The majority, 69.1 %, of households in the selected Heart of Wessex Line corridor are either one or two person households compared to 64.1 % in England as a whole.
- 50 % of households are classed as deprived on one or more of the mutiple indices of deprevation.
- Areas of Yeovil are within the 20 % most deprived nationally.

- In March 2024, leisure travel reached 131 % of 2019 levels, while commuting was at 69 %.
- Background growth is expected to increase passenger demand by 1.74 % between 2024 and 2029.

- The selected catchment area of the SOBC from Weymouth to Westbury contains a population of 221,300 residents made up of 98,000 households.



The Heart of Wessex Line serves several key markets including:

- Commuting (including to Dorchester, Yeovil and Weymouth)
- Leisure and tourism (including Weymouth, Dorchester, Yeovil, Bath and Bristol)
- Education (including Yeovil College, Weymouth College and Kingston Maurward Agricultural College)

- Private car ownership is very high in the scope area, and bus services are limited.
- 53 % of people along the Heart of Wessex Line drive to work, this compares to the England average of 44.5 %.

- Significant housing and employment growth are planned across Dorset, Somerset and Wiltshire.
- Homes: 5000 in Yeovil and 3500 in North Dorchester
- Jobs: 10 hectares in North Dorchester and 34 hectares in Yeovil

The case for change

Choice: The existing 0.5tph frequency on the Heart of Wessex Line hinders passenger choice and rail-to-rail interchange.

A reliable and frequent rail service is crucial for enhancing residents' quality of life, reducing social isolation, and providing access to education, employment, healthcare, and leisure.

Decarbonisation: Residents heavily rely on private vehicles along the Heart of Wessex Line

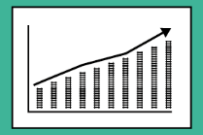
Improving the rail service, integrating with other modes, and encouraging modal shift can contribute to climate change and decarbonisation goals.

Social Mobility: The current rail service limits social mobility, especially for the rural nature of the line.

A lack of inter-urban bus services exacerbates the situation, hindering access to essential destinations.

Productivity: The Heart of Wessex Line serves areas with lower GVA and labour productivity.

Enhancing connectivity can boost regional productivity, by creating jobs and stimulating economic growth.

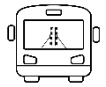
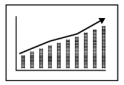


Growth: The current rail service limits sustainble growth and access to key new and emerging housing and employment sites

Strong public transport infrastructure and services play a crucial role in attracting housing development, investment, and fostering economic growth

Objectives

The following objectives have been established through the development of the strategic case and are closely aligned to Western Gateway Rail Strategy Themes.

Theme		Objective	Output
Choice		To provide a reliable 1pth all day service along the Heart of Wessex Line, the provides greater flexibility to passengers, and gives confidence in rail as a mode of choice.	A doubling in railway frequency, closely aligned to 60-minute gaps between services which provides improvements to arrival times at key regional destinations and better interchange oppourtunties.
Decarbonisation		To make rail travel along the Heart of Wessex Line more attractive, encouraging modal shift and reducing road congestion along parallel routes.	A potential rail mode shift increase from 0.65 % to 2.0 %. In addition, the proposal will deliver several 'non user' benefits, such as road decongestion, and local air quality changes.
Social Mobility		To increase rail access and reduce social related transport exclusion within the project's geography.	Increased rail frequency and improved timings supporting better peak access to education and work and off-peak access to social activities and healthcare appointments.
Productivity		To increase productivity through improved rail journey times and reduced GJT and improve connectivity to international gateways and economic hubs, within the project's geography.	Rail service frequency improvements on the SWML, Heart of Wessex Line and West of England Line to provide improved links to other regional economic hubs.
Growth		To promote higher levels of employment and housing growth near to the Heart of Wessex Line.	Rail service frequency improvements on the SWML, Heart of Wessex Line and West of England Line that align to areas of housing and employment growth providing alternative sustainable transport options to private car use.

Scope and Options

The core scope of the proposal is the delivery of a 1tph service along the Heart of Wessex Line (along the current route between Weymouth to Westbury – not via Yeovil Junction).

Shortlisted options

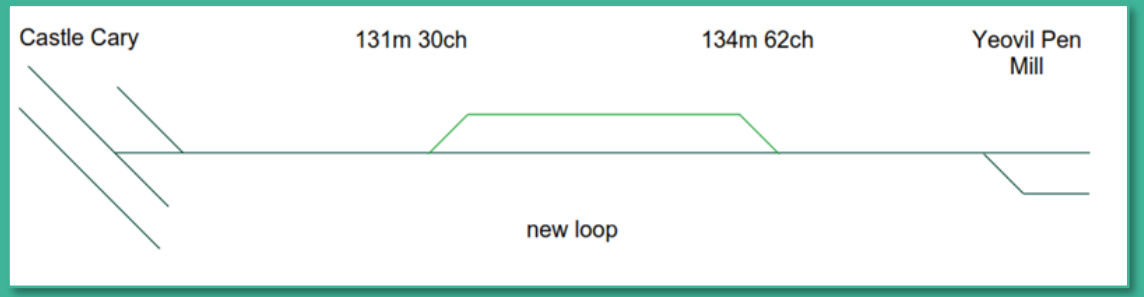
- 4 options were shortlisted and developed in detail as part of the SOBC.

	Improved Choice	Decarbonisation (Carbon)	Social Mobility	Productivity (GJT)	Economic Growth	Capital Cost (Millions)	BCR
Option 1A (All stations not via Yeovil Jcn)						£51.82	0.84
Option 1B (Skip stop not via Yeovil Jcn)						£28.66	1.11
Option 2A (All Stations via Yeovil Jcn)						£66.76	0.51
Option 2B (Skip stop via Yeovil Jcn)						£63.48	0.52

- Option 1B has been selected as the preferred option. This option performs very similarly to Option 1A in terms of objective attainment; however, the capital costs are significantly lower and therefore the BCR performs more strongly.

Preferred option - Option 1B

- Provision of a 1tph hour service between Westbury and Weymouth, with a skip stop pattern meaning services stop at Chetnole and Thornford every other hour.
- The skip stop pattern enables trains to cross in the current loop at Maiden Newton and therefore the only piece of additional track infrastructure required is a new loop between Castle Cary and Yeovil Pen Mill



- Option 1B has been internally estimated by Network Rail at a total cost of between £27.8 – 31.2 million, excluding any costs associated with the upgrade of signalling

Economic Case

The Economic Case for the Heart of Wessex Line SOBC assesses value for money calculated from the total benefits to society and the private sector against the cost to government of the scheme over a 60-year appraisal period, in accordance with DfT Transport Analysis Guidance (TAG) .

Forecasted Demand

Scenario	Option 1A	Option 1B	Option 2A	Option 2B
Standard Demand	102,000	99,000	89,000	88,000
Uplifted Demand	143,000	141,000	126,000	127,000

- Option 1a & 1b, without the chord at Yeovil Junction, would yield the highest demand.
- The additional connectivity benefits provided by Yeovil South Chord are not enough to offset the additional journey times disbenefits incurred.

Economic Appraisal Results

	Central Case (High OPEX)				Sensitivity (Low OPEX)			
	Option 1A (Standard demand)	Option 1A (Uplifted Demand	Option 1B (Standard demand)	Option 1B (Uplifted Demand	Option 1A (Standard demand)	Option 1A (Uplifted Demand	Option 1B (Standard demand)	Option 1B (Uplifted Demand
Benefit Cost Ratio (BCR)	0.54	0.84	0.69	1.11	0.74	1.19	1.07	1.83

- Option 1B performs strongest with a BCR of 1.11 under an uplifted demand scenario and BCR of 0.69 under a standard demand scenario.
- If a lower OPEX cost was confirmed feasible this would result in Option 1B increasing to a BCR of 1.07 under the standard demand scenario and up to BCR of 1.83 under an uplifted demand scenario.

Appraisal scenarios			
Standard Demand	Uplifted Demand	Low Operating Expenditure (OPEX)	High OPEX
• MOIRA will be used to model the timetables against the do-minimum (May 2023 timetable).	• Utilises Mobile Network Data (MND) and applies an uplift factor to demand based on analysis of mode share of comparator lines, with a similar geography and train service level as proposed.	• Sensitivity • 1 additional unit is required • Only achievable if the SWR services operating between Weymouth and London Waterloo can be amended	• Central case • Presumes 2 extra units are required

Recommendations & Next Steps

Recommended Service Option

Option 1A – all stations with no call at Yeovil Jn	✗
Option 1B – skip stop with no call at Yeovil Jn	✓
Option 2A – all stations with a call at Yeovil Jn	✗
Option 2B – skip stop with a call at Yeovil Jn	✗

Option 1B: Summary

1tph service with a skip/stop pattern

Requires one piece of infrastructure costing between £27.8 – 31.2 Million

BCR of between 1.11 and 1.83 depending on OPEX scenario

Generalised Journey Time improvement of 7.2 %

Alignment to 5 Government Missions

Get Britain Building Again	• Support and encourage housing and employment growth • Generalised Journey Time improvements to support productivity
Switch on Great British Energy	• Reduction in emissions • Reduction in private car movements
Get the NHS Back on its Feet	• Provides a viable travel option for key workers • Public health benefits of reduced emissions
Take Back Our Streets	• Safe interchange opportunities at key station locations
Break Down Barriers to Opportunity	• Improves opportunities for rail travel to connect people to employment and education

Further Development & Next Steps

1. Produce the Dorset Metro SOBC to identify opportunities for a lower OPEX scenario through a focus on the Weymouth area
2. Identify appropriate funding opportunities to progress the Option 1B scheme beyond SOBC
3. Explore phase 2 opportunities to connect services to Yeovil Junction