

East Sussex Coast and Marshlink Strategic Study



Click to progress



Navigating this document

Welcome to the East Sussex Coast & Marshlink Strategic Study.

This document can be read linearly by clicking on the next page icon or directly into the section of interest from the contents page.

Some pages also have interactive sections, such as the buttons to see other maps on the next slide.

Keywords or references in underlined pink text will link to a particular section or glossary item.

There is a range of background information which is not included in the Study, for brevity, but this can be accessed and discussed on request.



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The Depot cinema, Lewes

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The Stakeholder Kick-off meetings were held in person at the Depot cinema, Lewes, in July 2024. At these meetings Strategic Planning colleagues presented and discussed the requirements for rail in the Study area and collated stakeholder ideas and suggestions to improve services, connectivity and modal shift.

A follow-up meeting was held in October, online, to explain how the Study is developing and to set out the strategic questions and our approach to answering them. A catch-up briefing in April explained the options and outputs from the work so far as well as highlighting the review process ahead of this final version. These meetings were supplemented by fortnightly Technical Working Groups with train operator colleagues at GTR and Southeastern.

1. Introduction



Introduction

The East Sussex Coast & Marshlink Strategic Study looks at the future of the railway east of the Brighton Main Line across to Seaford, Eastbourne, Hastings and Ashford.

This area was previously looked at as part of the Sussex Route Utilisation Strategy and [Sussex Route Study](#) (2015). However, this is the first time it has been considered in isolation, with the post-pandemic requirements understood.

By taking this approach, local issues can be considered in more detail, alongside a wider understanding of the role the railway plays in local public transport requirements.

A [map of the Study area](#) is here, with the buttons alongside it overlaying the same map with themed background information such as electrified and non-electrified sections, line speeds and other characteristics.

Working with stakeholders such as local authorities, user groups, bus operators, Gatwick Airport Ltd., Transport for the South East (TfSE), Southeastern and Govia Thameslink Railway, the baseline state of the network was understood, as well as the opportunities for improvement identified.

The ideas, suggestions and issues have been collated into Strategic Questions, which this Study endeavours to answer, resulting in a coherent strategy of options for the next 25 years, to 2050.

The approach to answering the Strategic Questions required several separate workstreams with a range of supporting specialist teams, including infrastructure feasibility, timetable analysis and demand analysis.

Strategic Questions

1. How do we improve current journey times on the East Coastway and Marshlink lines?
2. How do we make service more attractive to non-rail users and how do we bring new markets to rail?
3. What is the future rail freight provision for the study area?
4. What is the impact of climate change on the study area?
5. How do we improve First and Last Mile connectivity in the study area?
6. What are the future infrastructure requirements for the study area?

Some of the options have clear choices for future funders, whilst others are more complex with interdependencies and uncertainties. Reflecting this, the Study's approach is to consider a very high-level view asking the questions 'does it fit?' or 'would it work?', understanding that further development will be required before it becomes a project.

An incremental approach may be required for some major projects, such as the long-standing aspiration to introduce Highspeed services to the study area.

Direct Highspeed services to Hastings, Bexhill and, potentially, Eastbourne would provide a much faster direct service to London than the current Victoria service, which takes about two hours. To achieve this, redoubling, line speed improvements, signalling upgrades are required on the Marshlink line. A phased approach to delivery over the future Network Rail Control Periods and train operator business planning cycles in the form of a series of smaller interventions could mean that by the time more rolling stock is procured for domestic Highspeed services, the network is ready for the direct services.

The Strategy aligns to the Department for Transport's five pillars model (objectives for rail), which is shown to the left.

It is also cognisant of other funders' priorities and requirements, with the Strategy designed to be aligned with TfSE and East Sussex County Council transport strategies and is a precursor for local government devolution.



Click on the buttons to jump to the Strategic Questions →

SQ1

SQ2

SQ3

SQ4

SQ5

SQ6

The Study is structured to present the problem definition (or opportunities) for rail in the area against stakeholder objectives and priorities. The strategic questions then answer each identified problem in turn, setting out our methodology.

The affordability of options (both operational and capital costs) is the critical constraint to delivering improvements. Not everything will be possible, and some ideas may require more funding than is realistically likely to be granted, but a full range of options have been explored to set out what the challenges are, as well as whether some options should be discounted.

A high-level summary of the strategic recommendations is provided below, but it is important to note that **nothing is funded to be taken forward** and a business case would be required to progress these ideas further:

- Several train service specifications have been devised by Govia Thameslink Railway (GTR) for the development of this Study which are detailed in the table opposite, which includes brief details of the infrastructure and rolling stock (trains/units) required to deliver additional services.
- Falmer Platform 1 turnback (subject to third party funding).
- Step-free access bridges at Hampden Park and St Leonards Warrior Square.
- Line speed improvements Hampden Park – St Leonards Warrior Square and Ore to Ashford International.
- Bexhill additional entrances to make access to the local amenities quicker and easier.
- Signalling improvements at Hastings and Rye.
- Rolling stock replacement of current diesel units on Marshlink plus influencing the order for future domestic high speed units, aligned with electrification (or otherwise) of the Marshlink line.

Table of indicative Train Service Specifications (TSSs), detailing the proposed additional services, infrastructure & rolling stock requirements, potential timescales and likely cost range.

Cost bandings
£ is £0-10M
££ is £10-30M
£££ is £30-60M
££££ is £60-100M
£££££ is £100+M

TSS	Provides additional services	Infrastructure required	Rolling stock required	When?	Cost
2A	2tph Brighton – Lewes 1tph Eastbourne – Ore 1tph Rye – Ashford Intl	None	Three Class 377/387 One Class 171	Short to Medium term	£
3C	As TSS2A plus 1tph Hastings – Ashford International	Minimal Marshlink redoubling and line speed improvements	As above plus One Class 171 or equivalent	Medium term	££
4NR	2tph Brighton – Ore (via Willingdon Chord) 1tph Eastbourne – Ore	Willingdon Chord	One Class 171 or equivalent Six Class 377/387	Medium to Long term	££££
5	2tph Brighton – Lewes 1tph Eastbourne – Ore 1tph Eastbourne to Ashford International extended to London St Pancras International 1tph Hastings – Ashford International	Marshlink redoubling and line speed improvements Additional platform at Ashford International New switches & crossings to allow trains to operate between HS1 and Marshlink lines	Eight bi-mode/ electric Highspeed units	Medium to Long term	££££

Click on the TSS reference to see a diagram of the proposed specification.

2. Baseline analysis and problem definition

Data collection

Rail network data comes from a variety of sources; including National Rail Enquiries, online search engines, mapping tools, Network Rail and industry tools and Network Rail-published data and resources.

One such tool is Mobile Network Data (MND) which tracks mobile phone usage, and from that existing journey patterns can be estimated. This is used under licence which limits what can be published but has been powerful to explore rail market growth opportunities.

Recognising that the rail growth opportunities in this area are related to modal shift, a tool to compare rail and road journey times and costs between stations was developed as part of this Study. This has provided a wealth of information and, with the addition of the MND, has provided new insights into travel patterns.

Rail network demand forecasts have not been prepared for this study, as there are a range of non-infrastructure interventions available to increase train capacity into the longer term as required.

This section summarises the findings from this data, and comprises a suite of maps showing:

- The geographic scope area
- Colloquial names for lines of route
- Signalling
- Line speeds
- Electrification
- Level Crossings
- PlusBus Network
- Current train services
- Train Service Specifications – options for the future, showing the various ideas which have considered for this Study.

Site visits to many of the stations in the Study have been equally important in building the evidence and understanding of the problems and opportunities.

The next section demonstrates how the data has been utilised to identify, develop and justify the options considered in answering the Strategic Questions.

Travel advice at Lewes, Platform 3



The Newhaven – Dieppe ferry is being promoted as **Rail & Sail**, enabling customers to visit **Normandy and Dieppe** without a car.

East Sussex & Marshlink

Railway, stations & local geography



SOUTHERN
Strategic Planning

Brighton to Ashford International, as covered in this Study, is not the traditional end-to-end route, as it has five important interchange stations within the route, as well as feeds at each end from the Brighton Main Line, West Coastway, Hastings Line, HS1 and classic Kent lines.

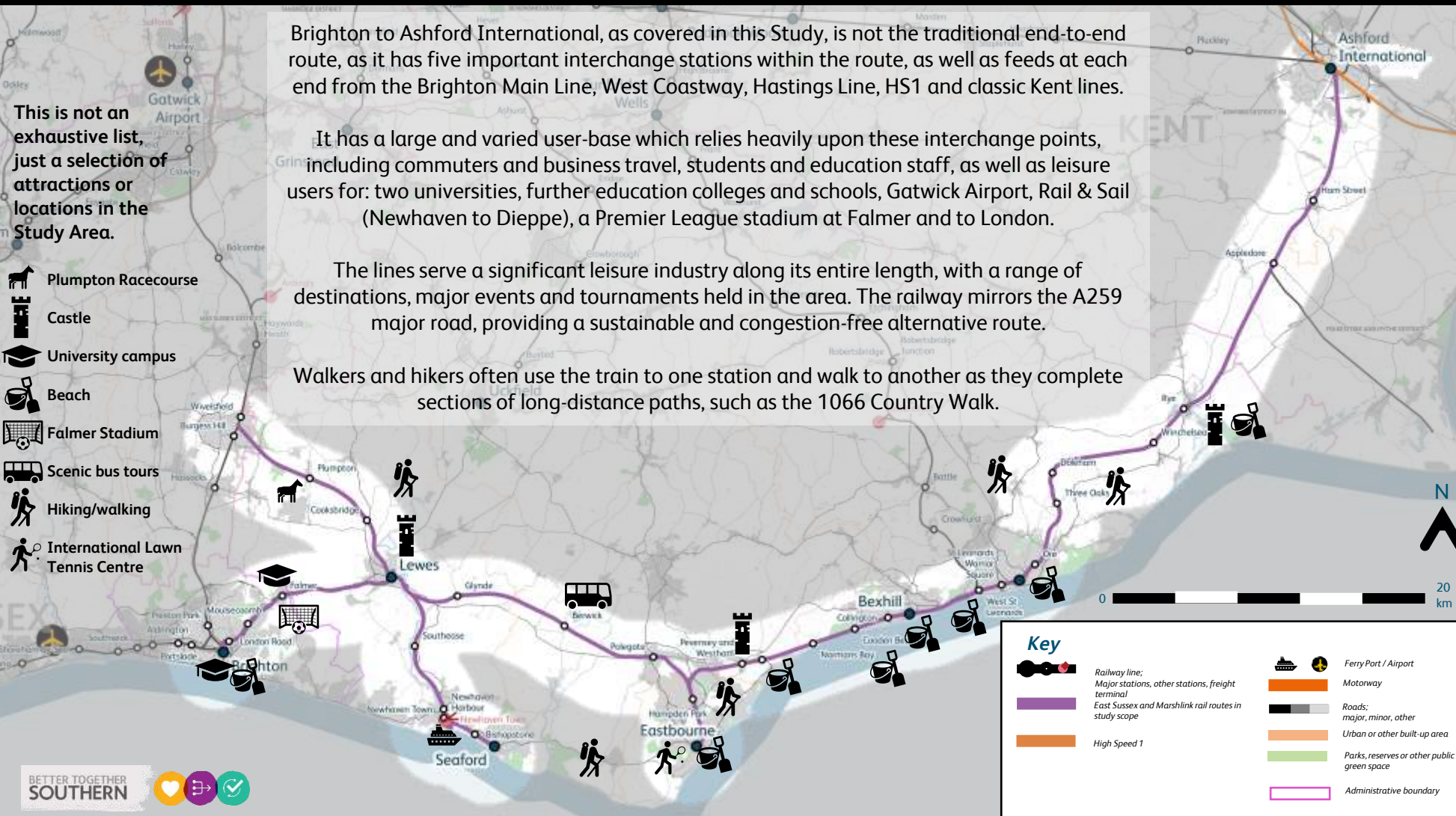
It has a large and varied user-base which relies heavily upon these interchange points, including commuters and business travel, students and education staff, as well as leisure users for: two universities, further education colleges and schools, Gatwick Airport, Rail & Sail (Newhaven to Dieppe), a Premier League stadium at Falmer and to London.

The lines serve a significant leisure industry along its entire length, with a range of destinations, major events and tournaments held in the area. The railway mirrors the A259 major road, providing a sustainable and congestion-free alternative route.

Walkers and hikers often use the train to one station and walk to another as they complete sections of long-distance paths, such as the 1066 Country Walk.

This is not an exhaustive list, just a selection of attractions or locations in the Study Area.

- Plumpton Racecourse
- Castle
- University campus
- Beach
- Falmer Stadium
- Scenic bus tours
- Hiking/walking
- International Lawn Tennis Centre



BETTER TOGETHER
SOUTHERN



Key

- Railway line: Major stations, other stations, freight terminal
- East Sussex and Marshlink rail routes in study scope
- High Speed 1
- Ferry Port / Airport
- Motorway
- Roads: major, minor, other
- Urban or other built-up area
- Parks, reserves or other public green space
- Administrative boundary

Choose a map

Geographic Map

Colloquial Names

Signalling

Line Speeds

Electrification

Level Crossings

PlusBus Network

Options

Current train services

Train service specs

Simplified map: Colloquial Names

The Study area includes all lines east of the Brighton Main Line to Ashford International via Lewes. The infrastructure (track, signals etc.) is managed by Network Rail Southern Region's Sussex and Kent Routes.

Passenger services are mainly operated by Southern (Govia Thameslink Railway - GTR) although Southeastern services from London via Tunbridge Wells also operate between West St Leonards and Hastings.

The Marshlink service is referred to in the Study, broadly referring to the Eastbourne to Ashford International service.

Freight services operate to/from Newhaven Town, Newhaven Marine and Dungeness freight facilities. GB Railfreight and Hastings Diesels also operate to/from St Leonards Depot.

Choose a map

Geographic Map

Colloquial Names

Signalling

Line Speeds

Electrification

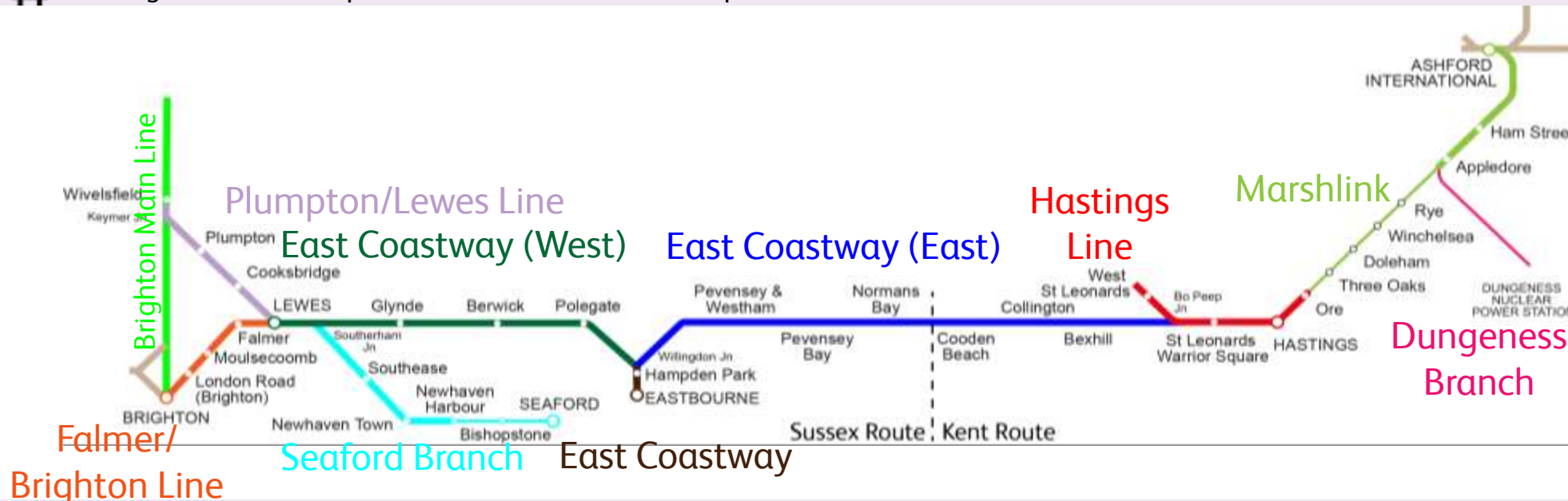
Level Crossings

PlusBus Network

Options

Current train services

Train service specs



Simplified map: Signalling

Train movements are controlled by lineside signals. In recent years, the number of signal boxes controlling these signals has reduced as Three Bridges Rail Operations Centre (TBROC) has replaced them.

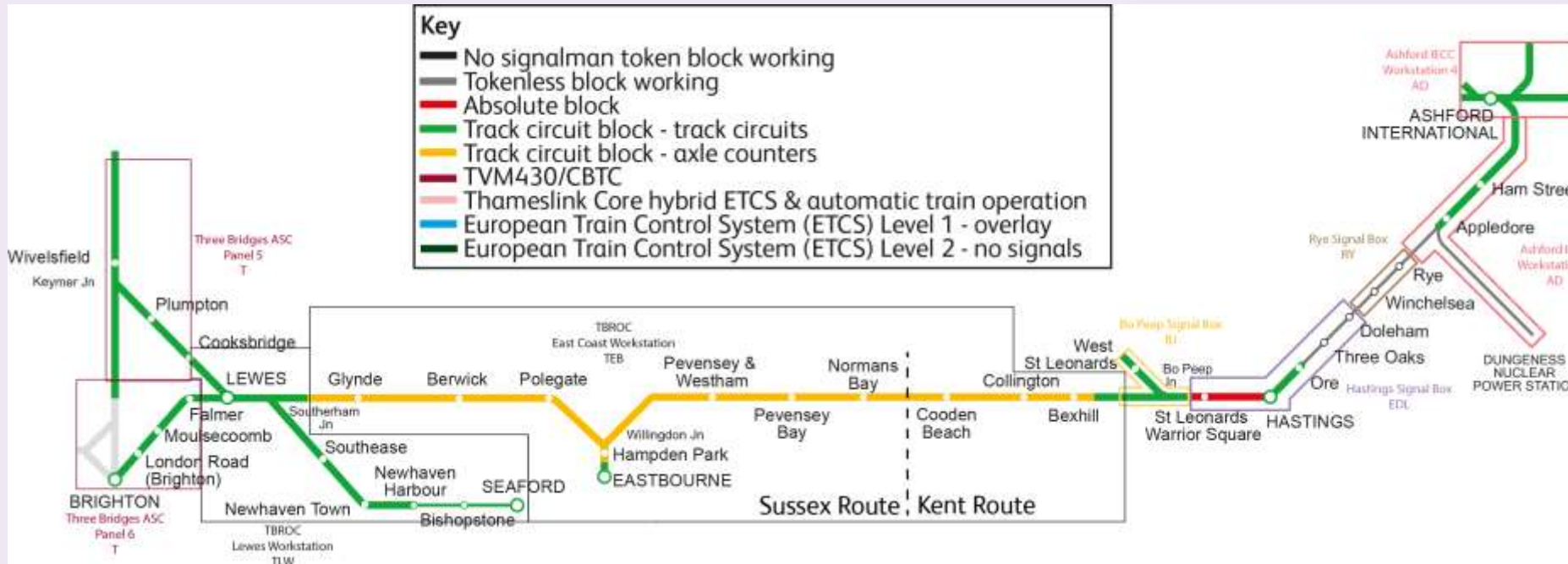
Many of the signals are colour light or ground position light but there are still some traditional, mechanical signals in operation at Hastings.

The last remaining absolute block signalled area is the Up line between Hastings and Bo Peep Jn. The rest is track circuit block, with tokenless block working on the single line between Ore and Appledore.

Starting with the south-end of the Brighton Main Line, from the early-2030s, Network Rail plans to install in-cab European Train Control System (ETCS) Level 2, which will replace signals on the ground.

Signalling control:

- Three Bridges Area Signalling Centre
- Three Bridges Rail Operations Centre
- Bo Peep Jn Signal Box
- Hastings Signal Box
- Rye Signal Box
- Ashford Integrated Electronic Control Centre



Choose a map

Geographic Map

Colloquial Names

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PlusBus Network

Options

Current train services

Train service specs

Simplified map: Line Speeds

The Lewes – Hampden Park section was raised to 90mph as part of the resignalling in 2015.

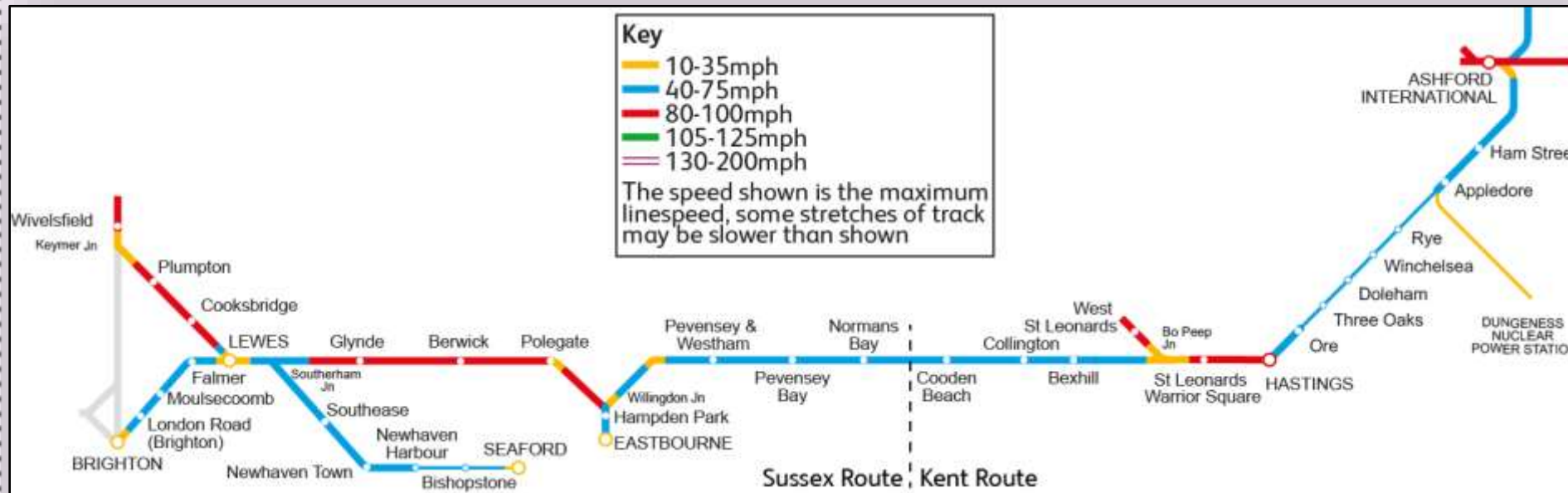
Active provision was provided for raising the linespeed between the former Stone Cross Jn and Bo Peep Jn, the signals are positioned for 90mph, but further work is required to formally raise the speed.

There are potential opportunities to raise the linespeed on the Marshlink Line which requires a project to progress further. The line between Ore and Doleham is particularly curvaceous, so the line speed is 40 mph. However, were the track to be slewed to make the best use of the width of the former double-track line, it is thought that it could be raised to 60 mph.

Alternatively, if the line were to be redoubled it would remove the single line pinch points but maintain the current 40 mph line speed. Further work is required to confirm the optimal strategy.

Lewes station is particularly slow, limited to 20 mph through Platforms 1 & 2 and 10 mph through Platforms 3-5 due to the tight geometry here. Any improvement would make a notable difference to journey times due to the severity of the speed restriction.

Raising line speeds can help to reduce the journey time but could increase risk at level crossings, particularly foot crossings, so further work will be required to understand the wider impact of line speed increases.



Choose a map

Geographic Map

Colloquial Names

Signalling

Line Speeds

Electrification

Level Crossings

PlusBus Network

Options

Current train services

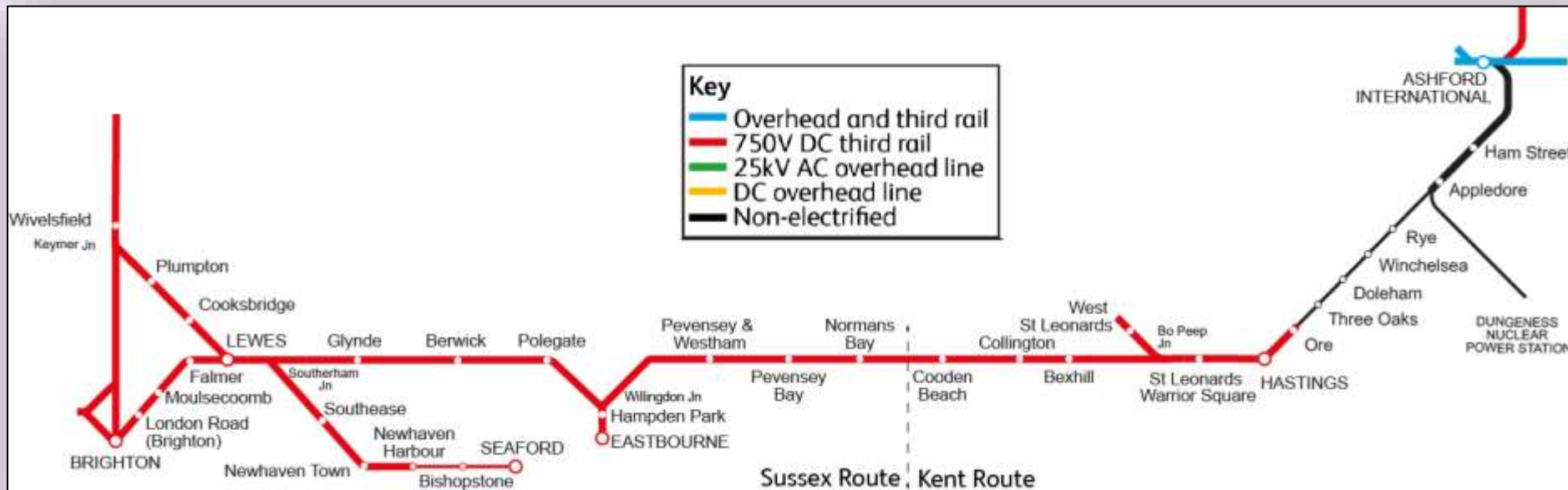
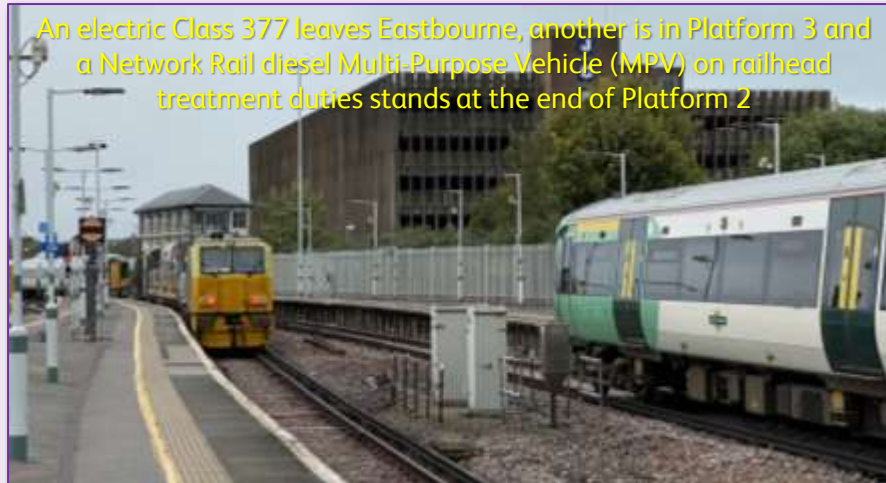
Train service specs

Simplified map: Electrification

Most lines are electrified with 750V DC third rail although Marshlink between Ore and Ashford International and the Dungeness Branch are non-electrified. Ashford International is also overhead electrified to 25kV AC in Platforms 3-6 for Highspeed services using HS1.

As a result, all passenger services are formed of electric multiple units except the Eastbourne to Ashford International Marshlink services which are formed of diesel multiple units.

Commercial freight services are diesel-hauled but some railhead treatment or engineering trains can be electro-diesel hauled, using either power mode.



Choose a map

Geographic Map

Colloquial Names

Signalling

Line Speeds

Electrification

Level Crossings

PlusBus Network

Options

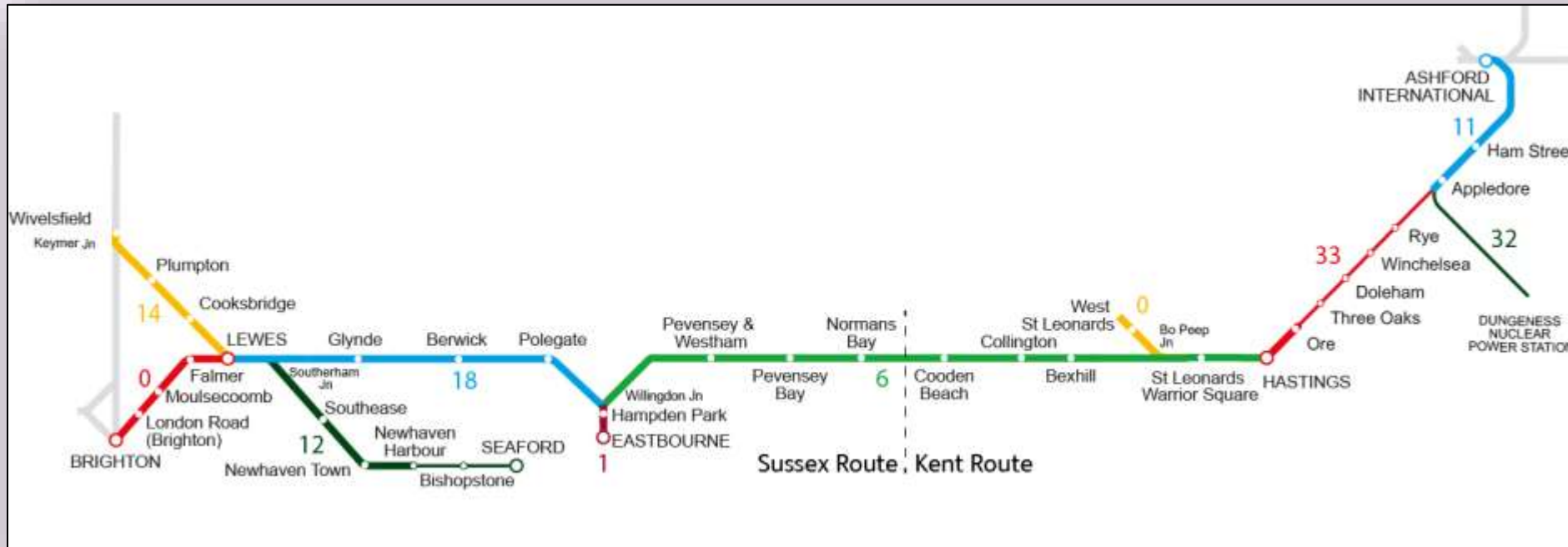
Current train services

Train service specs

Simplified map: Level Crossings

There are numerous level crossings, from wicket protected footpaths to major carriageway crossings with full barriers, across the Study area. There is a high density of crossings on the Marshlink and the Dungeness Branch with 76 crossings in total. Whilst there is an aspiration to close as many as possible, bridging is expensive and often difficult to do, these are some of the known, strategic issues:

- Hampden Park level crossing is known for the barriers being down to road vehicles more than they are up.
- One O'Clock Footpath Crossing (between Wivelsfield and Plumpton) has a high number of user incidents and is one of the most misused crossings in Southern Region.
- Two automatic half-barrier crossings called Star and East Guldeford (between Rye and Appledore) carry the A259 over the railway for about $\frac{3}{4}$ mile and then back across the railway.
- Winchelsea level crossing is an unusual automatic open level crossing with barriers which is monitored by the train drivers, which is why there is a speed restriction over it.



Choose a map

Geographic Map

Colloquial Names

Signalling

Line Speeds

Electrification

Level Crossings

PlusBus Network

Options

Current train services

Train service specs

PlusBus Network

PlusBus is currently available at Brighton & Hove, Lewes, Newhaven & Seaford, Eastbourne & Polegate, Bexhill & Hastings, Rye and Ashford, providing rail-bus ticket integration.

Wivelsfield & Burgess Hill



Lewes



Eastbourne,
Polegate &
Hailsham



Bexhill and Hastings



Ashford



Rye and
Camber Sands

Geographic Map

Source: [PlusBus website](#)



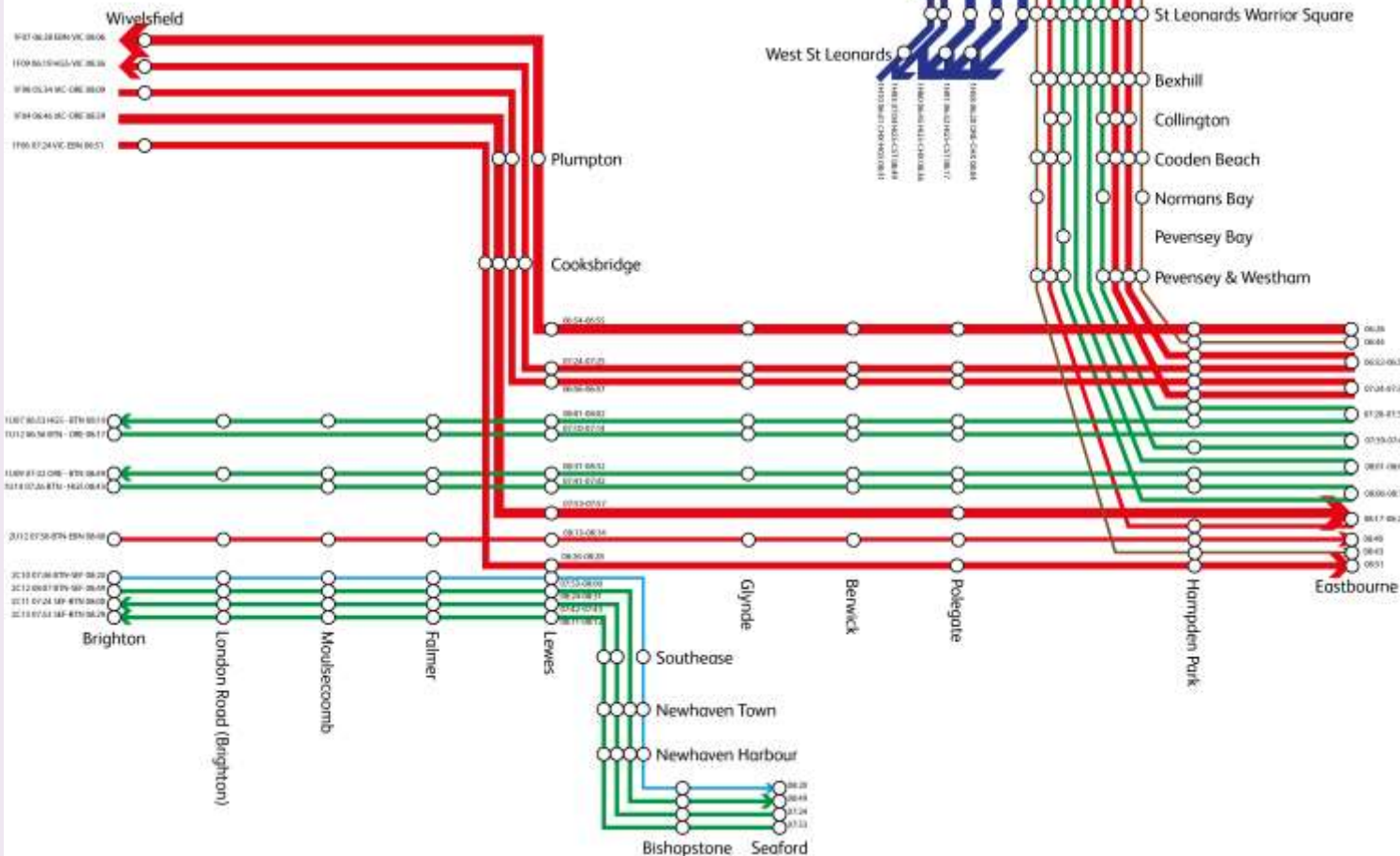
Weekday AM Peak - at Eastbourne, Seaford services at Lewes & Southeastern services at Hastings based on arrival time at destination between 08:00 and 08:59 (May 2025 Timetable)

Rolling stock

- GTR Southern Class 171
- Southeastern Class 375
- GTR Southern Class 377/1 or 377/4
- GTR Southern Class 377/3
- GTR Southern/Gatwick Express Class 387

Train length

- 3-car
 - 4-car
 - 6-car
 - 8-car
 - 12-car
- Snapshot of trains operated on Wednesday 2 July 2025



This is the first of several ‘spider diagrams’ presented in this document. It shows the train services on a simplified map of the scope area.

Each line is one train; its direction is indicated by the arrow and the station calls are the white circles. The thickness of the line represents the length of the train, and the colour shows the type of train, based on the train service operated on Wednesday 2 July 2025.

This diagram is different to train service specifications as it shows **trains arriving at destination between 08:00 and 08:59**, which is why there are more trains shown than in a typical or standard hour.

The times shown are at that location or the whole journey using the train’s ID code, start time, origin code - destination code and arrival at destination time.



Class 171 Southern



Diesel train:
very few units available, operates over the non-electrified Marshlink line



Class 375 Southeastern



Class 377 Southern



Electric train



Class 387 Southern/Gatwick Express



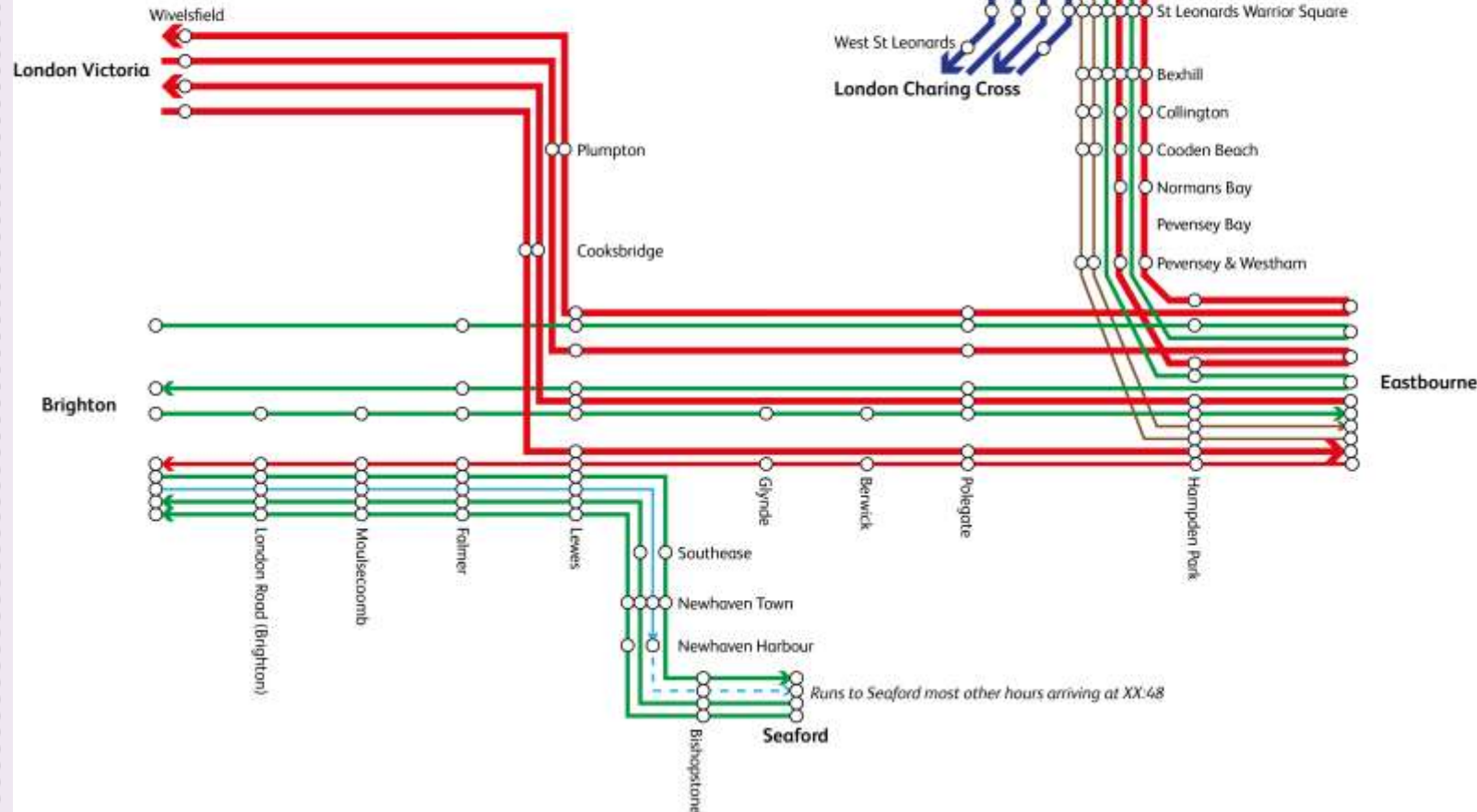
Weekday Off-Peak - at Eastbourne, Seaford services at Lewes & Southeastern services at Hastings between 12:00-12:59 (May 2025 Timetable)

Rolling stock

GTR Southern Class 171
 Southeastern Class 375
 GTR Southern Class 377/1 or 377/4
 GTR Southern Class 377/3
 GTR Southern/Gatwick Express Class 387

Train length

3-car
 4-car
 6-car
 8-car
 12-car
 Snapshot of trains operated on Wednesday 2 July 2025



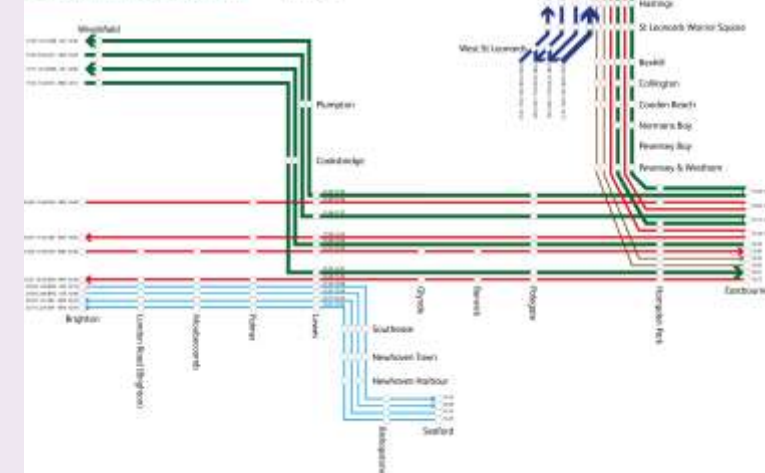
Saturdays - at Eastbourne, Seaford services at Lewes & Southeastern services at Hastings between 12:00-12:59

Rolling stock

GTR Southern Class 171
 Southeastern Class 375
 GTR Southern Class 377/1 or 377/4
 GTR Southern Class 377/3
 GTR Southern/Gatwick Express Class 387

Train length

3-car
 4-car
 6-car
 8-car
 12-car



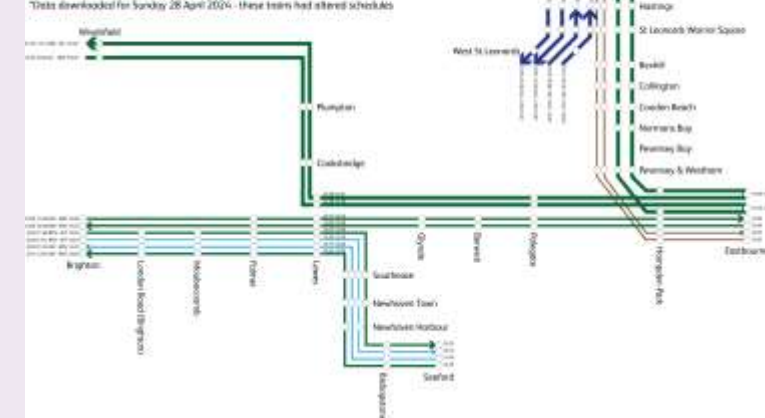
Sundays - at Eastbourne, Seaford services at Lewes & Southeastern services at Hastings between 12:00-12:59

Rolling stock

GTR Southern Class 171
 Southeastern Class 375
 GTR Southern Class 377/1 or 377/4
 GTR Southern Class 377/3
 GTR Southern/Gatwick Express Class 387

Train length

3-car
 4-car
 6-car
 8-car
 12-car



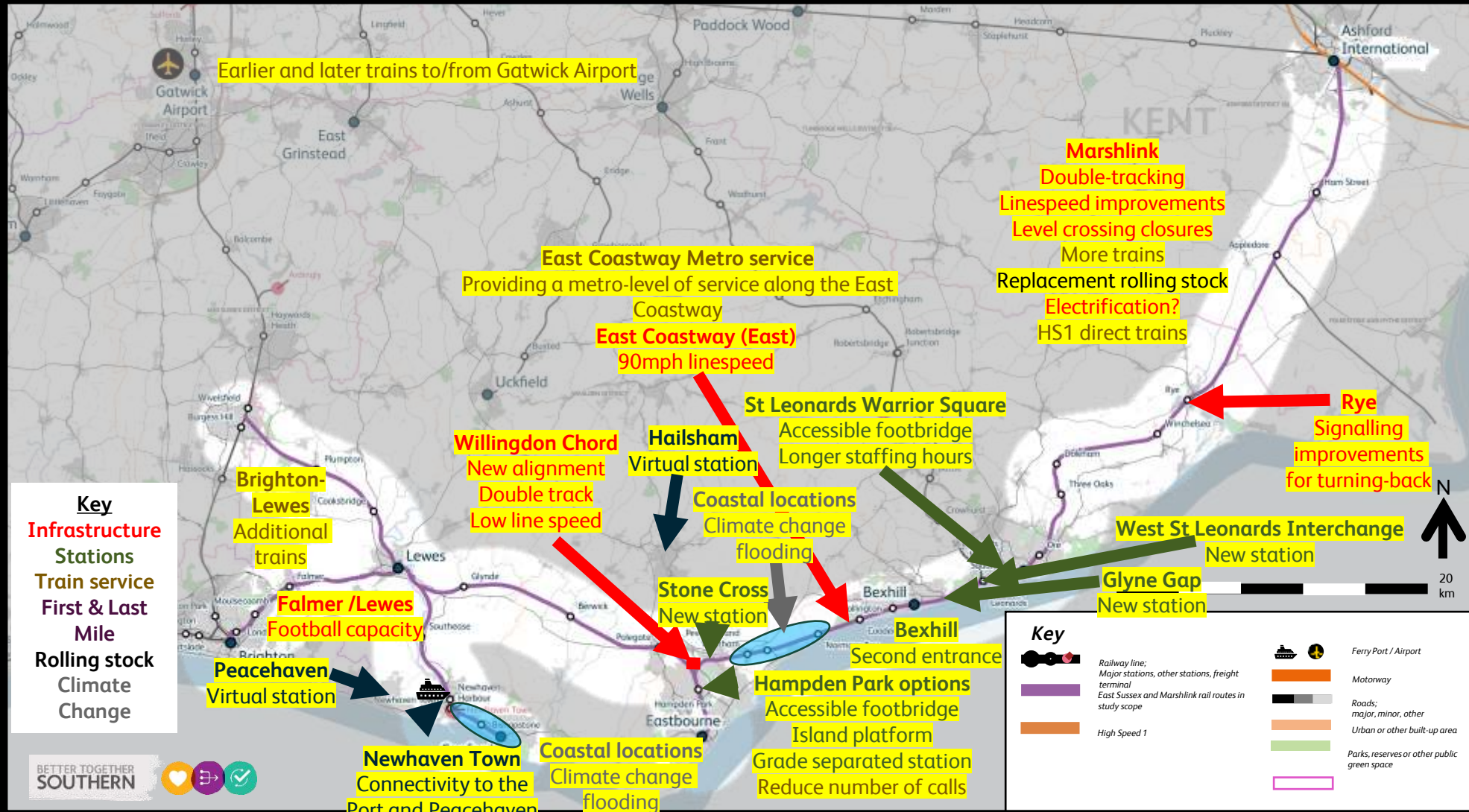
East Sussex Coast & Marshlink

Options considered



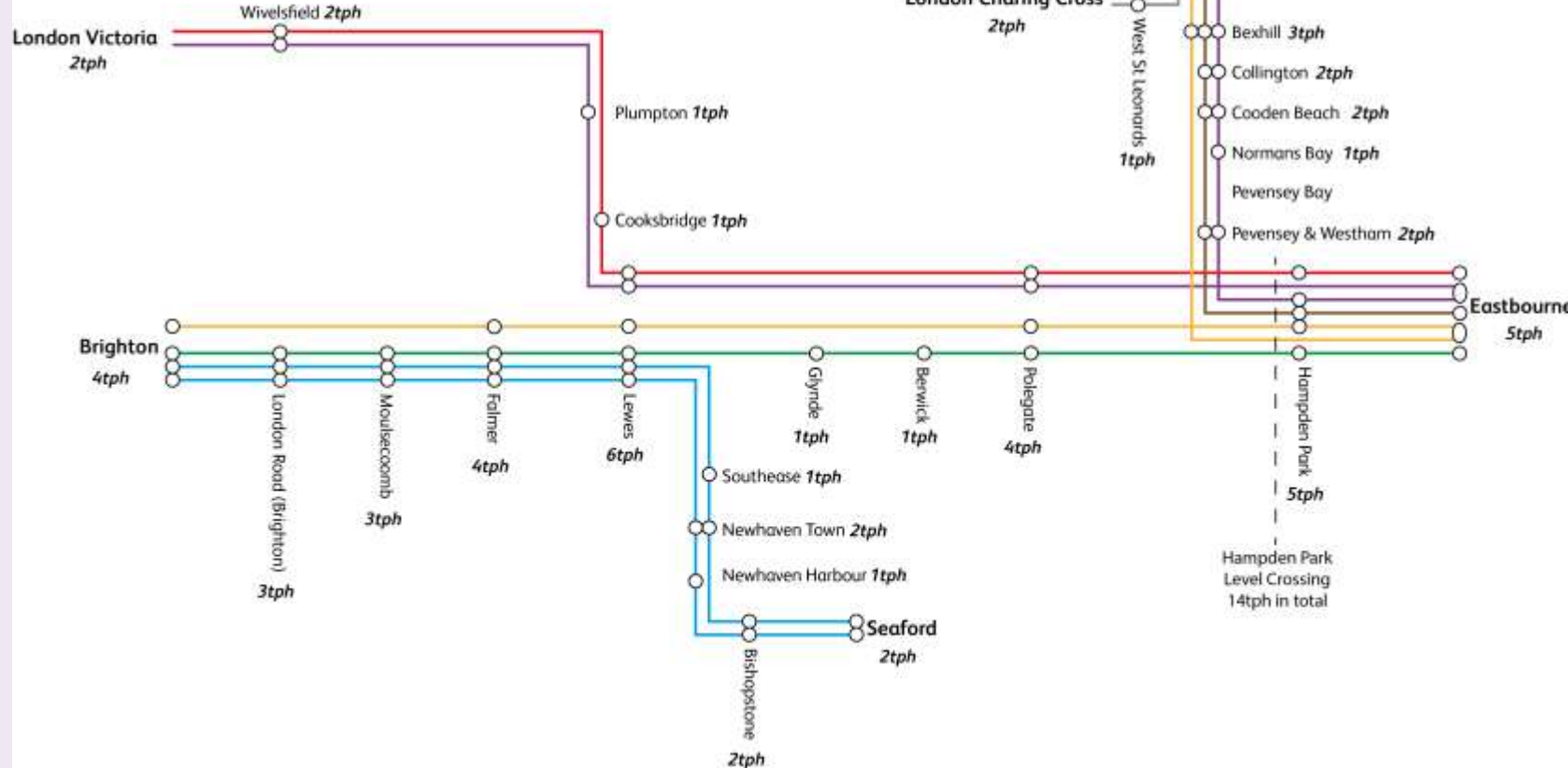
This is a visual representation of the options looked at in the development of this Study, informed by baseline analysis and stakeholder engagement.

Not everything listed is viable or required but this demonstrates the range number of options considered across the Study Area, from small to major in scale.



Geographic Map

Not in the scope of this Study



This style of spider diagram shows train service specifications, or the ‘nominal’ pattern of the train timetable in the area.

This one is the **baseline map**, showing the current standard hourly service.

Several specifications were developed by GTR as part of this Study and can be linked to by clicking the title in the list below. Multiple variations were developed but the key different options are summarised in this document.

- **Specification 2A** – the ‘do minimum’ with little or no additional infrastructure
- **Specification 3C** – an option utilising an upgraded Marshlink line
- **Specification 4NR** – considering the role of the Willingdon Chord and the turnback signal at Rye
- **Specification 5** – supporting a Highspeed service in the area, noting a new platform would be required at Ashford International, Rye-Ore linespeed improvement, redoubling Ore-Three Oaks

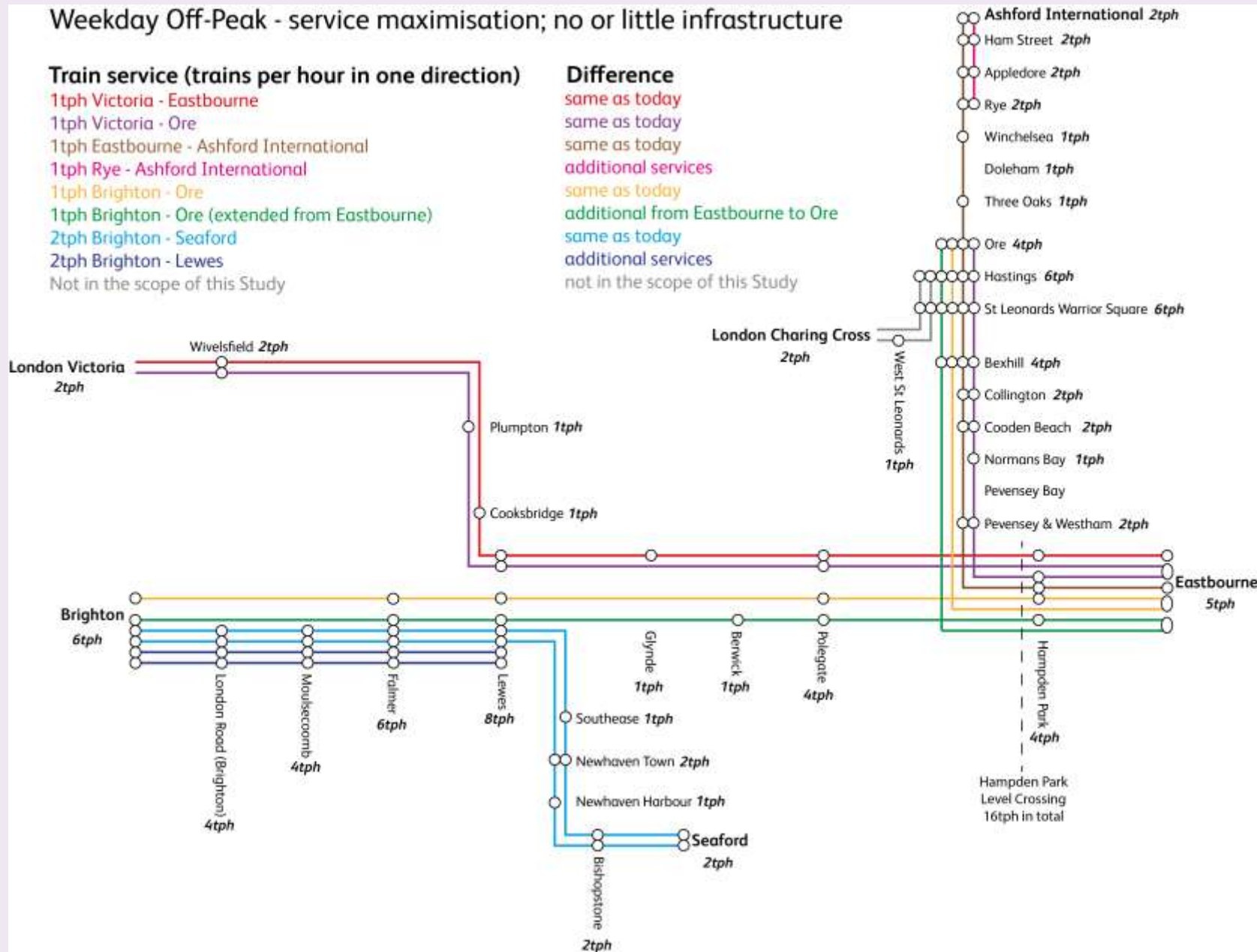
Weekday Off-Peak - service maximisation; no or little infrastructure

Train service (trains per hour in one direction)

1tph Victoria - Eastbourne
 1tph Victoria - Ore
 1tph Eastbourne - Ashford International
 1tph Rye - Ashford International
 1tph Brighton - Ore
 1tph Brighton - Ore (extended from Eastbourne)
 2tph Brighton - Seaford
 2tph Brighton - Lewes
 Not in the scope of this Study

Difference

same as today
 same as today
 same as today
 additional services
 same as today
 additional from Eastbourne to Ore
 same as today
 additional services
 not in the scope of this Study



Specification 2A

This service specification looks to maximise the train service without any additional infrastructure, in effect by restoring capacity to pre-covid levels:

- 2tph Brighton – Lewes shuttle
- 1tph Brighton – Eastbourne extended to Ore
- 1tph Rye – Ashford International shuttle (subject to rolling stock)*

This returns Hampden Park level crossing to a total of 16tph, which means the barriers will be down for 40-45 minutes per hour.

* Installing a turn-back signal in Platform 2 would reduce level crossing risk at Rye



- 2tph Brighton – Lewes shuttle
- 1tph Brighton – Eastbourne extended to Ore
- 1tph Hastings - Brighton



Geographic Map

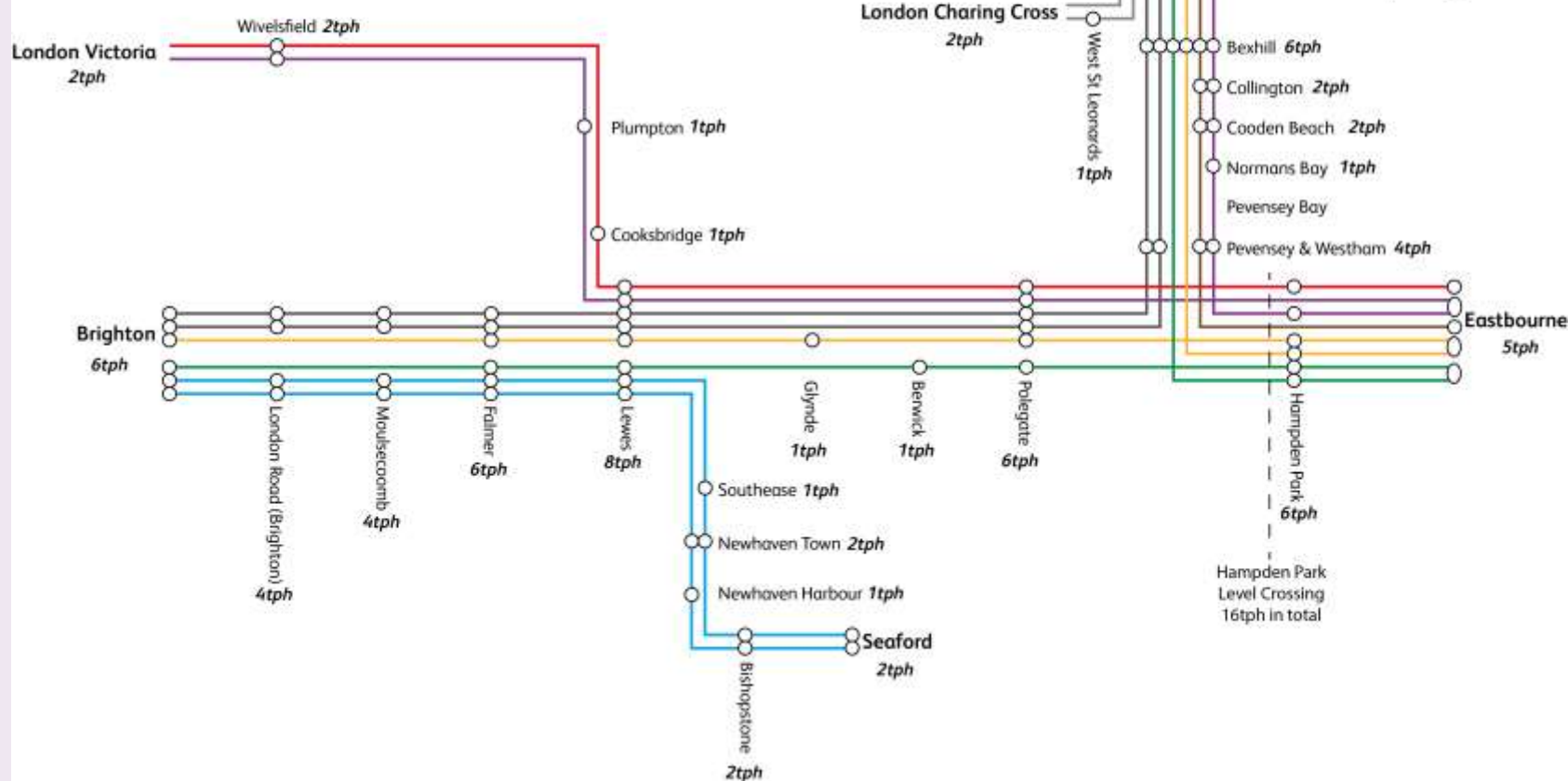
Weekday Off-Peak - service maximisation; with Willingdon Chord

Train service (trains per hour in one direction)

1tph Victoria - Eastbourne
1tph Victoria - Ore
1tph Eastbourne - Ashford International
1tph Rye - Ashford International
2tph Brighton - Ore via Willingdon Chord
1tph Brighton - Ore
1tph Brighton - Hastings (extended from Eastbourne)
2tph Brighton - Seaford
Not in the scope of this Study

Difference

same as today
same as today
same as today
additional services
additional services
same as today
additional from Eastbourne to Hastings
same as today
not in the scope of this Study



Specification 4NR

This service specification looks to provide 2tph over the Willingdon Chord by extending the Brighton – Lewes shuttle to Ore via the Willingdon Chord.

This option removes some of the station stops from the Brighton – Eastbourne services to make them faster and maintains service frequency at Eastbourne.

Standard Hour Map

Geographic Map

KENT & SUSSEX
Strategic Planning

Specification 5

This is an illustration of the potential service specification with Highspeed services operating from St Pancras International to Eastbourne.

This requires a major upgrade to the Marshlink line, including redoubling, line speed upgrades and potential electrification, along with a new platform at Ashford International.

It should be noted that the entire East Coastway & Marshlink service and the Brighton Main Line, will need to be timed around the services from HS1 which could be a strategic timetable issue.

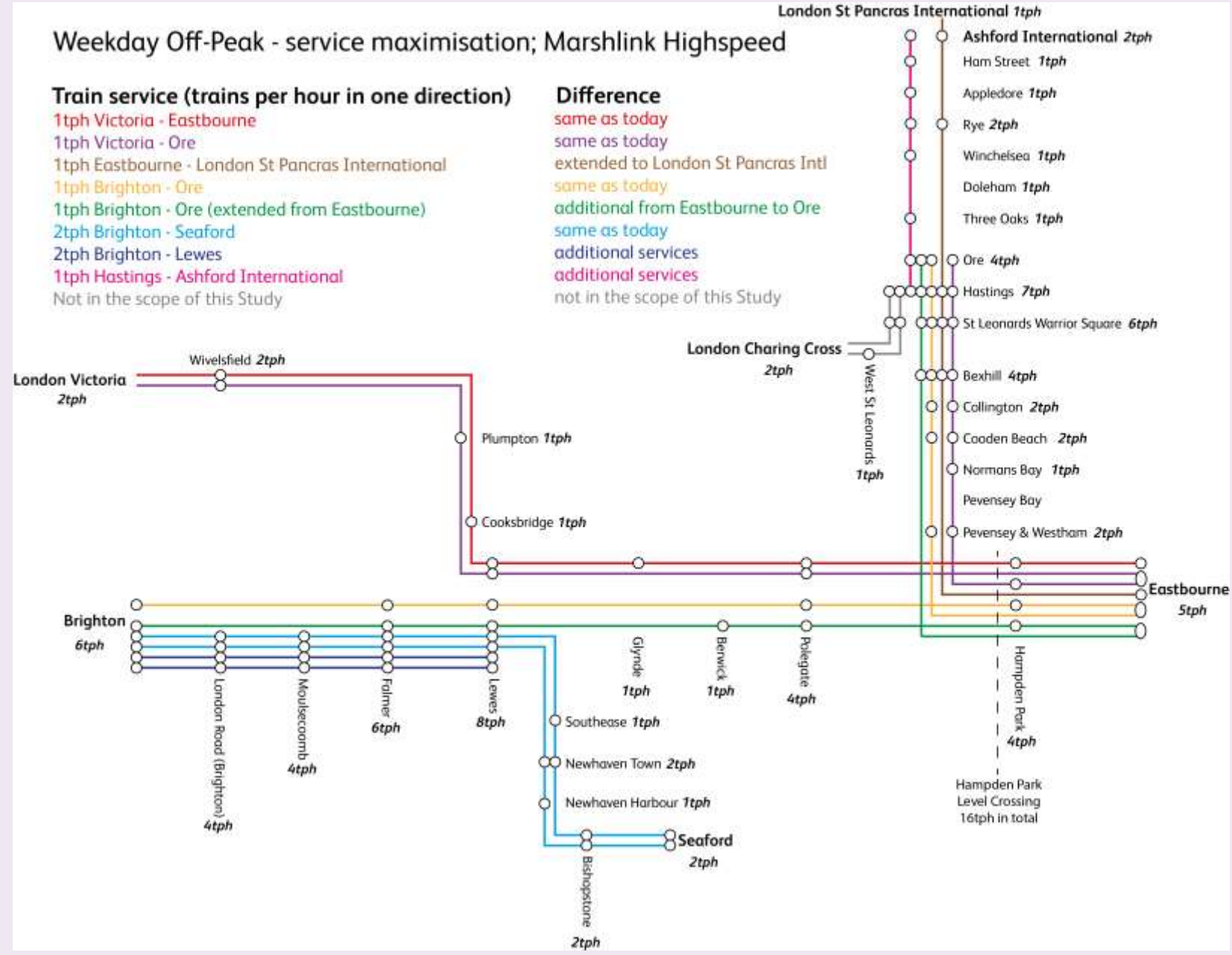
Weekday Off-Peak - service maximisation; Marshlink Highspeed

Train service (trains per hour in one direction)

- 1tph Victoria - Eastbourne
- 1tph Victoria - Ore
- 1tph Eastbourne - London St Pancras International
- 1tph Brighton - Ore
- 1tph Brighton - Ore (extended from Eastbourne)
- 2tph Brighton - Seaford
- 2tph Brighton - Lewes
- 1tph Hastings - Ashford International
- Not in the scope of this Study

Difference

- same as today
- same as today
- extended to London St Pancras Intl
- same as today
- additional from Eastbourne to Ore
- same as today
- additional services
- additional services
- not in the scope of this Study



3. Option assessment: answering the strategic questions

SQ1. How do we improve current journey times on the East Coastway and Marshlink lines?

Line speeds are dictated by various conditions – including gradient, curvature, embankment and structure strength, signal positioning, gauging, level crossings, proximity of structures, train weight and history. Where it is feasible, increasing line speed is the simplest way to speed up current journeys.

Increasing line speeds

Looking at the Study area, the section between Brighton and Lewes is relatively fast and given the mix of fast and stopping trains, limited journey time improvement would be gained from raising the line speed.

Lewes station has an unusual design and layout and suffers from its heritage in that the platforms have very low line speeds due to the curvature of the track. The signals are positioned safely away from the junctions which means trains can be longer than the platforms on the Brighton-side.

On the Plumpton Line, the line speed changes part-way through Lewes Tunnel, but it not possible to indicate where the change happens as the tunnel has very tight clearances. The longer-term transition to in-cab signalling is an opportunity to review and potentially refine this issue.

The rest of the line is also relatively fast to Keymer Jn, just before Wivelsfield, where the line curves sharply to join the Brighton Main Line and the line speed is reduced as a consequence.



Lewes station – Platform 2 looking towards Lewes Tunnel



Geographic Map

SQ1

SQ2

SQ3

SQ4

SQ5

SQ6

SQ1. How do we improve current journey times on the East Coastway and Marshlink lines?

Rye station – entrance to the platform is at line speed but the exit from the loops, in both directions, is 20 mph on to the single line sections. A train from Ashford International is arriving at Rye, the train from Eastbourne will pass it here.



The line speed on the Seaford Branch is appropriate for that type of line and the service level, particularly with the single line constraint between Newhaven Harbour and Seaford.

On the East Coastway (West) between Lewes and Polegate, the line speed was raised to 90 mph during the resignalling in 2015. From Hampden Park to Eastbourne the line speed is appropriate for approaching the end of the line and as service congestion increases.

The East Coastway (East) between the former Stone Cross Jn and West St Leonards Depot was resignalled to 90 mph but the line speed was not raised as further work was required but not funded to ensure the track, structures and geotechnical conditions had been assessed.

Bo Peep Jn is particularly slow, with the speed rising through the tunnels to St Leonards Warrior Square and Hastings.

From Hastings on to Marshlink the line speed is 70 mph which was the maximum speed of the units that used to work the line. This is no longer relevant as the trains are 100 mph capable. The passing loop exits at Rye and single- to double-track junction at Appledore are also slow at 20 mph. Ore to Doleham is a particularly curvy section of line so the speed is restricted to 40 mph. The Dungeness Branch is particularly slow as it is a freight-only line and there are numerous ungated level crossings.

The principal opportunities for line speed improvements to reduce journey times are on East Coastway (East), at Bo Peep Junction, at Lewes and on the Marshlink line. The following section explores the first opportunities in more detail, with Marshlink considered in the context of steps to Highspeed services (SQ2).

Marshlink Line vs the Uckfield Branch

When the Uckfield Branch was singled, it was designed to maximise the use of the double track sections, with the linespeeds adjusted to match the trains of the day.

The junctions are much faster than those on the Marshlink Line where one track was removed between existing slow speed crossovers to reduce the cost of the project.

Neither approach planned for future faster trains operating on the line, leading to some of today's operational issues.

Both lines are also hindered by the lack of electrification.



Line Speed Map

SQ1

SQ2

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SQ1. How do we improve current journey times on the East Coastway and Marshlink lines?

Raising the line speed – East Coastway (East)

The East Coastway was resignalled in 2015 and the signalling recontrolled to Three Bridges Rail Operations Centre (ROC).

At the time, the section between Lewes and Hampden Park was predominantly raised from 70 to 90 mph with the new signals positioned for the new, higher line speed.

Between Hampden Park and Bexhill, the project wasn't funded to raise the line speed but was able to place the new signals in the correct position for 90 mph operation. There has been no project to take this forward and raise the line speed because there was limited detailed understanding of the work required to the other assets to raise the speed.

As part of the Study, an engineering review was commissioned to look at this and highlight the risks and costs expected to be required to raise the speed.

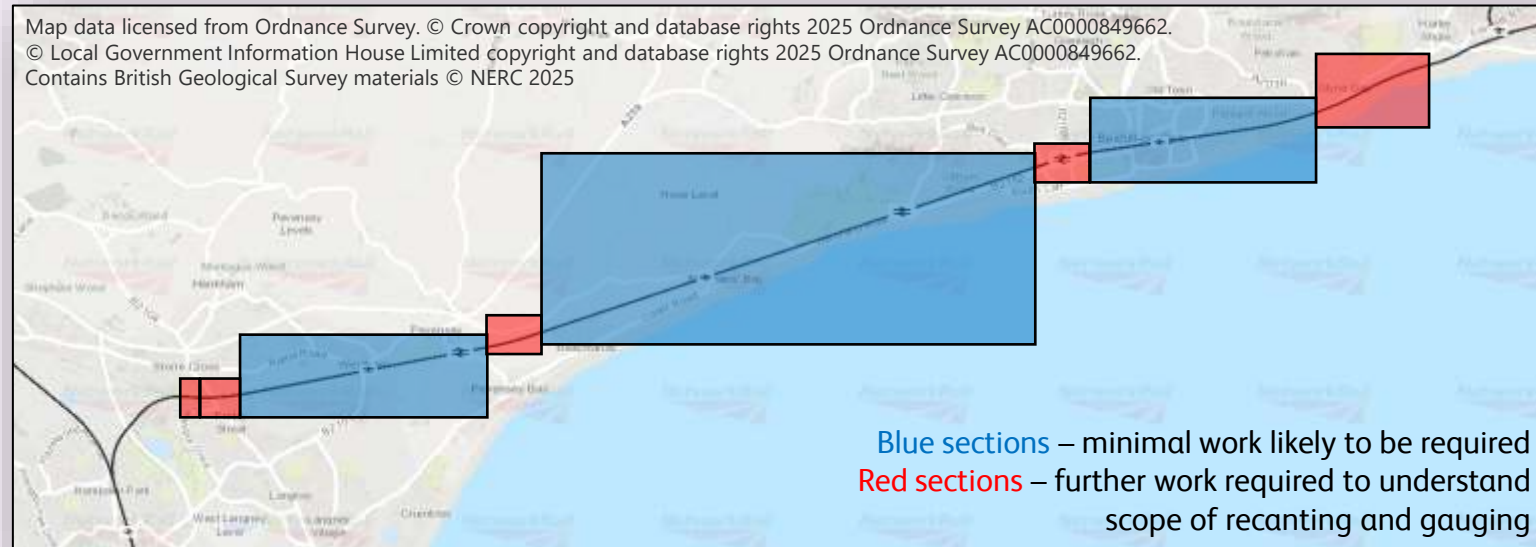
The line was split into sections (see top-right). Further work needs to be carried out in the red sections as the curvature may require track alignment changes and to check gauging in platforms at the higher speed.

The engineers highlighted that there is still a **speed restriction for the former Stone Cross Jn**, which wasn't for the junction divergence but for the straight section of track leading to/from it. Further work is needed to understand why the line speed restriction is still there.

The table shows the overall prize, in journey time reduction, if the line speed were increased to 90 mph throughout (with and without the former Stone Cross Jn). Timetabled journey time improvements can be realised in 30-second increments, but all incremental savings will improve performance by providing a few extra seconds of headroom.

Raising the line speed – Bo Peep Junction

We looked at realigning the junction at Bo Peep but there was no improvement to line speed by doing so.



Train type	Diesel (without Stone Cross Jn)	Electric (without Stone Cross Jn)	Diesel (with Stone Cross Jn)	Electric (with Stone Cross Jn)
Marshlink train	5 seconds	18 seconds	11 seconds	27 seconds
Fast train	38 seconds	1 minute, 6 secs	49 seconds	1 minute, 20 secs
Stopping train	2 seconds	4 seconds	8 seconds	13 seconds
Fast to Hastings	1 minute, 3 secs	1 minute, 34 secs	1 minute, 14 secs	1 minute, 50 secs



Line Speed Map

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SQ1. How do we improve current journey times on the East Coastway and Marshlink lines?

Additional services

There are significant benefits to be secured with faster journey times, but there are trade-offs to balance the number of stations being called at with the demand and frequency requirements for every station.

Line speed increases are a way of reducing the journey times but reviewing the stopping patterns and removing stops is another way. Every station stop adds about three minutes to the through journey, so the cumulative impact of stops can significantly extend the journey time.

Separating out station calls in 'stopping' and 'fast' services can serve both markets, but this requires additional services to run.

As well as requiring additional operating costs (such as train crew and rolling stock), additional services are constrained by the capability of the infrastructure. In the Study area, a key consideration is the impact on level crossings.

The reduction in passenger numbers, and the resulting impact on rail industry revenue, meant some services which were operated pre-pandemic were removed from the timetable. The main 'missing' services are:

- Brighton to Lewes shuttle services (2 trains per hour)
- Eastbourne to Hastings/Ore services (1 train per hour)
- Rye to Ashford International (peak only, 1 train per hour)

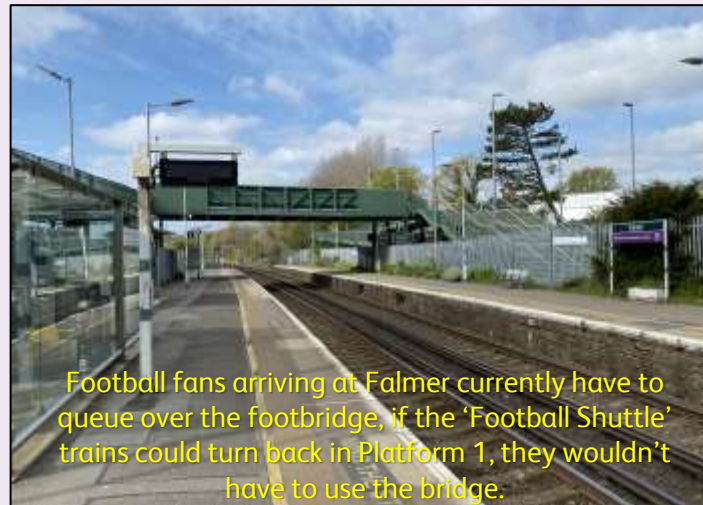
At Hampden Park the level crossing is a pertinent issue, see [Case Study: Hampden Park](#) for more detail. There are currently two fewer trains using the crossing than pre-pandemic and the barriers are lowered for around

35 minutes in the hour. The reinstatement of the two trains which ran pre-covid, whilst having greater rail passenger benefit, sees the barriers down for closer to 45 minutes per hour, as before.

It is understood that the peak Southern service from Eastbourne to London Bridge is to be reinstated in the December 2025 Timetable.

The reintroduction of these services offers an opportunity to reduce the absolute journey time between major towns along the East Coastway, by separating out stopping and fast services and improving generalised journey time through improved frequency.

Revenue and continued passenger demand growth (or third-party subsidy) would be required to financially support the re-introduction of these services.



Brighton and Hove Albion Football Club has asked the industry to improve rail access to Falmer.

One of the consequences of removing the Class 313 units from the network, is that they have been replaced by 4-car Class 377 units which means that on match days, the trains can't operate as 8-car into Platform 5 at Lewes because they are too long. Many of the 3-car Class 377s have been redeployed to the London Metro services to create 10-car formations (3+3+4).

As a result, NR explored the following options:

- Lewes – turn back on the main line, turnback siding and conversion of Platform 5 to a bay (dead-end) platform.
- Falmer – turn back crossovers to turnback in either platform or both.

The turnback options at Falmer were considered to be the most useful as it would enable trains to

terminate there and return to Brighton or Lewes, even when there are engineering works at Lewes or Brighton.

If the platforms at Falmer were extended to 12-cars and rolling stock were available, GTR could operate a 12-car 'Football Shuttle' from Brighton to Falmer where it would turn back to Brighton – a 12-car Class 700 ThamesLink unit can carry 1,776 passengers.

The platforms at Lewes are constrained by the road over railway bridge at the west-end and the junction at the east-end of the station so 12-car shuttles would not be able to operate to/from Lewes so those trains would be a maximum of 8-cars (an 8-car Class 700 being able to carry 1,160 passengers).

Both sets of options are available to potential funders. Third party funding, for example from the football club, will be required to progress these concepts.



Signalling Map

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SQ1. How do we improve current journey times on the East Coastway and Marshlink lines?

New infrastructure - Willingdon Chord

A more drastic and radical approach is to provide additional infrastructure. For the East Coastway this could be the introduction of the [Willingdon Chord](#), replicating the line which used to form the top third of triangle, linking Polegate directly to Pevensey & Westham, removing the requirement for running trains via Eastbourne.

Mobile Network Data has provided evidence which has helped our understanding of how many people are currently driving from east of Polegate to Polegate, Lewes and beyond – and therefore the potential size of the market which could be attracted to rail.

It would not be appropriate for all trains to use the proposed chord as many passengers still want to go to Eastbourne, a major destination on the East Coastway. However, the opportunity to remove around 20 minutes from the journey time of through journeys is transformational and may increase rail mode share – bringing Bexhill within a 60-minute journey time of Brighton, for example.

Some of the flows are already quite strong, suggesting there are opportunities to deliver benefits for existing passengers as well as unlocking a considerable untapped market.

Top ten flows which benefit from faster journey times if the Willingdon Chord were built

Flow	Rail demand	Car vs train journey time (mins faster by train)
St Leonards Warrior Square – Lewes	6,171	38
Hastings – Glynde	236	36
Ore – Lewes	2,252	36
Brighton – St Leonards Warrior Square	26,235	35
Hastings – Lewes	8,765	35
St Leonards Warrior Square – Glynde	125	34
Hastings – Moulsecoomb	1,429	34
Bexhill – Brighton	27,125	32
Brighton – Hastings	49,067	32
Ore – Glynde	33	32

Redoubling Marshlink

Another challenge in the Study area to achieving faster journey times is the single line sections on Marshlink between Ore & Rye and Rye & Appledore. The station dwell time at Rye is extended to allow for robust operations with trains crossing each other in opposing directions.

The section between Ore and Doleham is particularly challenging due to the curvature of the line and Ore Tunnel but if redoubling can be achieved here, it is the best place for trains to pass. The rest of the section could have the line speed raised.

Increasing capacity on Marshlink could enable a 2tph service to operate between at least Hastings and Ashford, creating the opportunity to develop new timetables which have faster journey times, as well as the increase in frequency delivering faster generalised journey times.



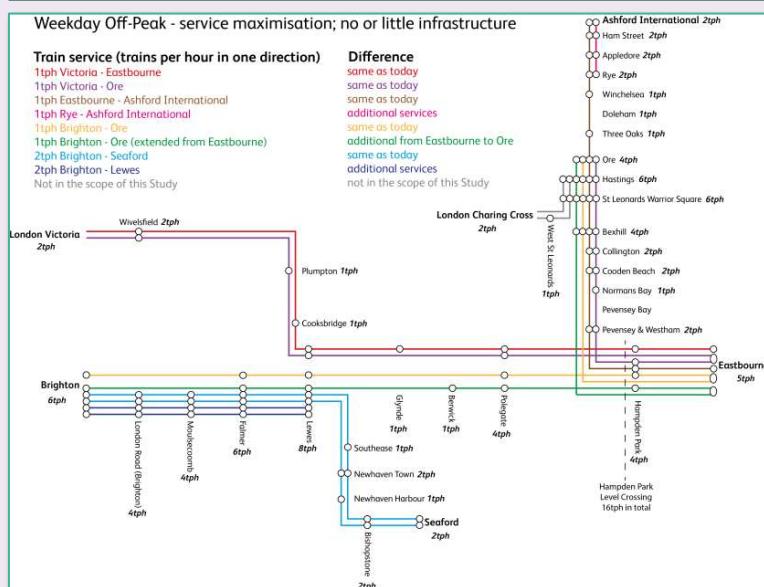
SQ1. How do we improve current journey times on the East Coastway and Marshlink lines?

Illustrative train service specifications (iTSS) have been produced to indicate the potential train service which could be operated in each scenario (see below). The strategy is highly dependent on the infrastructure assumed to be in place.

Note: increasing line speeds would reduce the journey times for all these options (including today's timetable), with benefits increasing with the number of trains operated at the higher speeds.

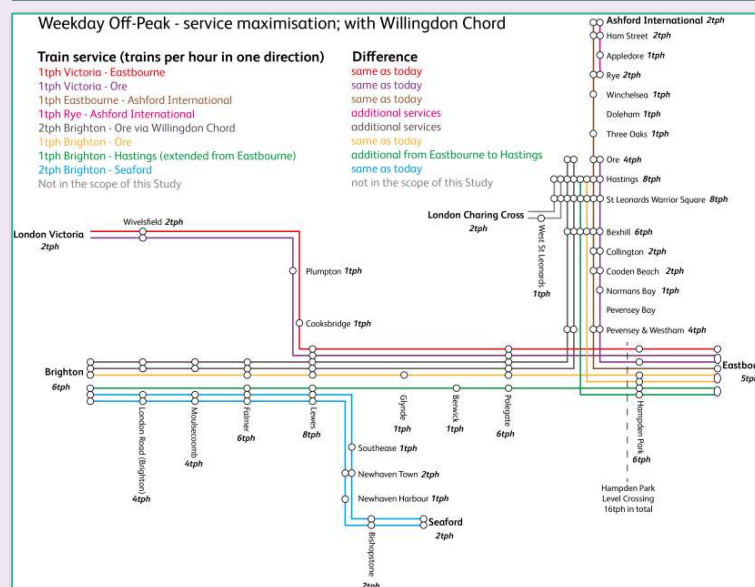
No or little infrastructure

This is, effectively, the pre-pandemic timetable with the return of the Brighton – Lewes shuttle service and the Brighton – Eastbourne service is extended to Ore. The Rye Shuttle (Rye to Ashford International) has been reinstated. This options is highly dependent on rolling stock in the short term and opex costs.



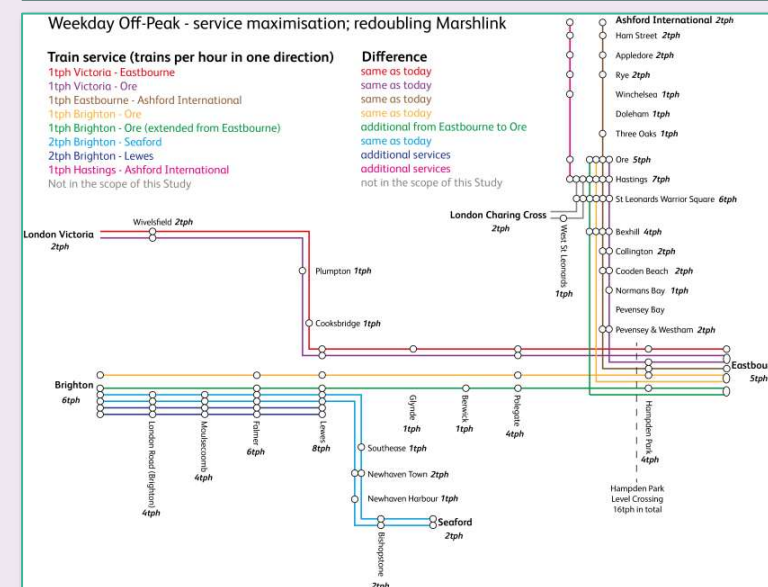
With the Willingdon Chord

Building on the *No or little infrastructure* service, the Lewes Shuttle is extended to Ore via the Willingdon Chord, the stops are rearranged so that Brighton to Eastbourne journeys are faster and the reduction of the through journeys by not going via Eastbourne makes those services quicker than today too. Marshlink sees the reintroduction of the Rye Shuttle.



Redoubling Marshlink

Building on the *No or little infrastructure* service, this provides an additional train between Hastings and Ashford International with Three Oaks and Winchelsea maintaining an hourly service whilst the rest of the stations have 2tph, delivering improvements in both absolute and generalised journey time.



Case Study: Hampden Park level crossing issues

Hampden Park is notorious for two things – the level crossing and for being the station through trains pass through twice.

The level crossing is well known locally for being down more than it is up, due to the high number of train movements over it.

The timetable is designed around the trains passing on the crossing (where possible), as the video on the next page shows. This shows a Marshlink train departing as an East Coastway train arrives.

The lists of train movements shows the train service through Hampden Park between 07:00 & 07:59 and 14:00 & 14:59 on a weekday. Because through trains run via Eastbourne and back, the barriers are lowered twice for each train, normally a train would cross a level crossing to its destination but Eastbourne both is and isn't the end of the line for trains. This also illustrates the journey time impact of running to Eastbourne, driver changing ends of the train and then returning through Hampden Park.



Hampden Park level crossing

Train movements between 07:00 and 07:59

07:00 ↓ 06:32 Ore to Brighton
 07:03 ↑ 06:19 Hastings to Victoria
 07:11 ↑ 06:32 Ore to Brighton
 07:14 ↑ 06:26 Brighton to Hastings
 07:18 ↓ 05:34 Victoria to Ore
 07:22 ↓ 06:53 Hastings to Brighton
 07:33 ↑ 07:29 Eastbourne to Victoria
 07:34 ↓ 06:56 Brighton to Ore
 07:36 ↑ 05:34 Victoria to Ore
 07:37 ↓ 06:13 Ashford International to Eastbourne
 07:40 ↑ 06:53 Hastings to Brighton
 07:42 ↓ 07:11 Ore to Victoria
 07:48 ↑ 06:56 Brighton to Ore
 07:52 ↑ 07:48 Eastbourne to Ashford International
 07:57 ↓ 07:32 Ore to Brighton

Trains shown as 07/XX do not stop at Hampden Park

↑ Northbound (from Eastbourne)

↓ Southbound (to Eastbourne)

Highlighted trains are the inward and outward working of the same train via Eastbourne.

Train movements between 14:00 and 14:59

14/08 ↑ 13:21 Ore to Victoria
 14/13 ↓ 12:54 Victoria to Ore
 14/14 ↑ 13:26 Brighton to Ore
 14:18 ↓ 13:52 Ore to Brighton
 14:27 ↑ 12:54 Victoria to Ore
 14/33 ↑ 13:52 Ore to Brighton
 14:34 ↓ 13:56 Brighton to Eastbourne
 14:37 ↑ 14:33 Eastbourne to Victoria
 14:39 ↓ 13:24 Ashford International to Eastbourne
 14:46 ↓ 13:24 Victoria to Eastbourne
 14:54 ↓ 14:21 Ore to Victoria
 14:54 ↑ 14:50 Eastbourne to Ashford International
 14:59 ↑ 14:55 Eastbourne to Brighton
 14:59 ↓ 14:26 Brighton to Ore

Trains shown as 14/XX do not stop at Hampden Park

↑ Northbound (from Eastbourne)

↓ Southbound (to Eastbourne)

Highlighted trains are the inward and outward working of the same train via Eastbourne.



Geographic Map

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Case Study: Hampden Park level crossing issues

Watch this video to see Hampden Park level crossing in action, as seen from the roadside



Hampden Park Level Crossing is a full barrier crossing, which means it has barriers which lower to fully block both sides of the road.

To mitigate for this, pedestrians can cross the track via a footbridge to the north of the crossing. There is no alternative for those with accessibility limitations, such as wheelchair and pushchair users.

The crossing is remotely controlled by the signaller at Three Bridges Rail Operations Centre, and starts by illuminating the steady yellow light on the 'wig-wags' (the traffic lights controlling road movements). After a few seconds, the red lights flash alternately, and the yellow light goes out. Then the barriers on the traffic side of the road (the

left side) lower to stop traffic entering the crossing. The trailing barriers on the right-hand side then lower - allowing anyone on the crossing to clear before the road is completely blocked.

The signaller can see the barriers are lowered and the crossing is clear on the CCTV monitor, the 'crossing clear' button is pressed/clicked and the signals change to proceed for the train driver(s).

The barriers automatically raise and the wig-wags switch off, once the last train movement has cleared the crossing.



Watch this video to see Hampden Park level crossing with two trains passing



Signalling Map

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KENT & SUSSEX
Strategic Planning

Resolving Hampden Park level crossing and interchange issues

Hampden Park has level crossing issues due to the number of trains passing over it and importance for the local road network, but it is not a good interchange station either.

Passengers who cannot use the footbridge and are changing between platforms (for example from the London – Eastbourne service to a Marshlink service) have to use the level crossing for a step-free route, following the footpath around to the station entrance. The footbridge is inadequate for modern requirements, and it would not be possible to convert it for step-free access due to its design.

The main issues are **Interchange**, the **Level Crossing** and **Train capacity**. Several options were explored to resolve these issues at Hampden Park, including an accessible footbridge, a central platform, moving the station further south and providing an elevated station with no road restrictions.

The solution that is adopted will be based on cost but also the impact on the local area. For example, the level crossing is understood to influence the bus timetable as well as wider impact to non-rail users.

All work carried out so far is at very high level and all costings are approximate. No funder or funding mechanisms have been identified or assumed, but the full suite of options are available for potential funders to consider.



Hampden Park station

Cost bandings

£ is £0-10M
 ££ is £10-30M
 £££ is £30-60M
 ££££ is £60-100M
 £££££ is £100+M

Option	Does this option resolve the issue?			
	Interchange	Level Crossing	More trains	Cost
New accessible footbridge	Yes	No - but will improve the passenger experience	No	£
Straight centre platform	Yes	No – new wider crossing required	No	£££
Tapered centre platform	Yes	No	No	££
Station relocated south	Yes	Slightly, as trains will be moving faster over the crossing	No	£££
New elevated station	Yes	Yes – no level crossing required	Yes, via Eastbourne	£££££
New Willington Chord	Mostly, depending on timetable solution, will spread the load at Lewes or Polegate	Additional trains may not be required to run via Eastbourne, avoiding an increase in down time	Yes, but not via Eastbourne; through journey time saving of 15-20 minutes	££££



Line Speed Map

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SQ2. How do we make service more attractive to non-rail passengers and how do we bring new markets to rail?

Journey times (SQ1) are a key driver of rail demand - particularly how they compare to road – but other factors such as fares, rolling stock, station location and wider transport integration are also important factors. This section explores the relevant opportunities for this Study area.

Best flows for Rail Demand based on rail mode share

Brighton – Lewes
Bexhill – Eastbourne & vice-versa
Hastings – Bexhill
Lewes – Brighton
Bexhill – Hastings
Lewes – Eastbourne & vice-versa
Brighton – Eastbourne & vice-versa
Ore – Bexhill
Brighton – Newhaven Town & vice-versa
Newhaven Town - Eastbourne

The table on the right shows the Best Journey Time (flows) - rail demand, car vs train journey time, car vs train cost and trains per hour.

Positive figures mean that train is cheaper or faster. Negative costs mean that the car is cheaper. The amount shown is the difference and does not include the cost of car parking. Car costs are estimated on 45p per mile assumption as specified by the HMRC to cover all car ownership and running costs.

It is interesting to note that Lewes – Eastbourne is cheaper by car but 20 minutes faster by train and 158k people are using the train.

The table on the left shows the top ten flows for rail demand based on Mobile Network Data. Rail mode share does not exceed 50 % on any of these flows and it is notable that none of the top 10 flows involve 'cross-Eastbourne' flows.

Trains have improved a lot since the slam-door trains were withdrawn 20 years ago. The evolution of modern trains can be experienced in the various types of Class 377 and 387 units.

During the Study period (to 2050), this generation of trains will be at the end of life and need replacing. Decisions will need to take account of the roll out of in-cab signalling as the Brighton Main Line is due to be converted in the early-2030s.

Best journey times compared with car (flows)	Rail demand	Car vs train journey time (mins)	Car vs train cost (peak return)	Trains per hour
Ore – Eastbourne	20,530	31	£9.63	3
Eastbourne – Wivelsfield	4,758	28	-90p	2
Hampden Park – Wivelsfield	764	27	-£3.15	2
Eastbourne – Plumpton	2,743	26	-£4.36	2
Ashford Intl – Hampden Park	1,560	23	£19.02	1
Lewes – Eastbourne	157,862	20	-£1.23	4
Wivelsfield – Eastbourne	4,758	20	17p	2
Wivelsfield – Hampden Park	764	20	-82p	2
Ashford Intl – Eastbourne	7,179	18	£21.27	1
Lewes – Hampden Park	13,629	18	-£2.22	5
Ore – Hampden Park	2,927	18	£8.08	4
Ore – Pevensey & Westham	1,110	18	£5.14	2 direct 2 with one change
St Leonards Warrior Square – Lewes	6,171	18	£5.15	3 direct 1 with one change



Line Speed Map

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SQ2. How do we make service more attractive to non-rail passengers and how do we bring new markets to rail?

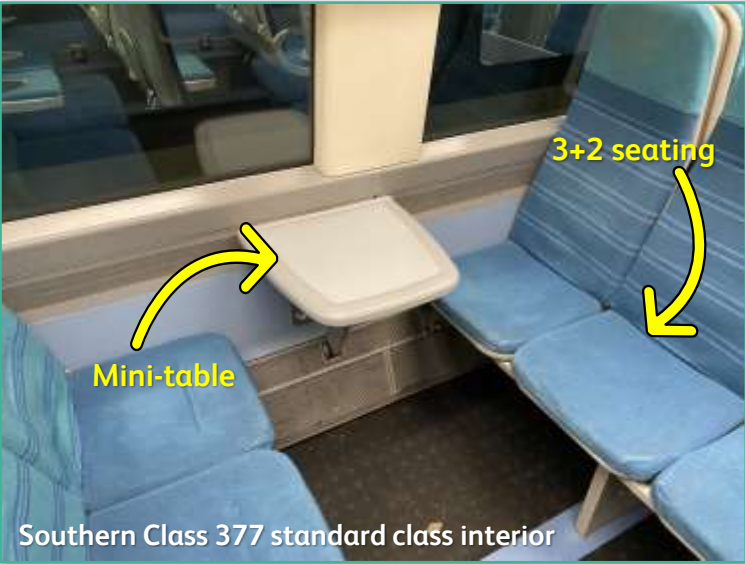


Following the withdrawal of the Class 313s, all trains in the Study Area have air conditioning, wheelchair accessible toilets, at-seat power points (3-pin and/or USB), wi-fi and some seating bays have tables, mini-tables or fold-down tables – all in the same unit.

Seating bays are centred around tables or in ‘airline’ formation. All the seating formations shown here are 2+2 (double seats either side of the aisle), some vehicles may have 3+2 seating. Antimacassars are in place to designate First Class, although priority seats may not have them. Class 171s may vary from those shown – they also have fold down seats in vestibules. Southeastern has no first class accommodation.

Priority seats are for use by the elderly, disabled, pregnant, those travelling with an infant or have difficulty standing – a [priority seat card](#) can be applied for to show to passengers to give up their seat.

Information screens and dot matrix customer information systems are standard across the fleets now.



SQ2. How do we make services more attractive to non-rail passenger and how do we bring new markets to rail?

New stations

There are two new stations proposed on the East Coastway (East):

- **Glyne Gap** – to serve a retail park and the edge of the Hastings and Bexhill conurbations on one side of the line and the beach on the other
- **Stone Cross** – to serve a large existing urban area on both sides of the track.

Using the [Datadaptive](#) 'Population within a radius' tool to find the population within a radius, Glyne Gap has a potential catchment of 7,690 people within 1.5km of the station and Stone Cross has about 17,743 people. Both of these are higher than some existing stations on the Coastway (such as 4,175 around Cooden Beach and similar, overlapping catchments for Pevensey Bay and Pevensey and Westham).

In terms of location, Glyne Gap is on the busy A259 Hastings Road, served by the 70, 98, 99 and 1066 buses every 20 minutes or so.

The picture, right, shows where the station could be located. Well over 50 % of the station catchment area is seafront or Glyne Gap Field (a greenspace barrier between Bexhill and Hastings) and therefore is not appropriate for a railway station. Much of the population catchment is also within the catchment area for Bexhill station.

At Stone Cross, there are already very well-established housing developments surrounding the site of the station which means the new station would likely impact many of our lineside neighbours. There is unlikely to be room for a car park and noise-blocking trees may need to be felled to construct the new station.

An alternative site to the east was identified which is suitable for a station but that locates it just 900 metres from Pevensey & Westham station. This location has a catchment of 15,721, many of whom are closer to Pevensey & Westham station.

Any station proposal would need to be locally supported and demonstrate a business case noting that three buses an hour go to Hailsham Roebuck Park (1X) and Beachlands (8) and Eastbourne Town Centre (1X & 8).



A London train passes Glyne Gap

Virtual stations

Virtual stations are locations that appear in the journey planning systems as a railway station (for ticketing purposes) but are actually a designated bus stop.

Rather than reopen an old line or construct a new station, through bus and train ticketing would provide the First & Last Mile parts of the journey.

They were considered a way of providing through ticketing from towns that are not directly connected to the rail network, such as Hailsham.

Avanti West Coast and Stagecoach Bus trialled this in Summer 2024 to Keswick, in the Lake District, from Penrith station. Stagecoach doubled the frequency of the X4 & X5 buses to half-hourly and the £2 flat fare was added to the cost of the rail ticket.

Great Western Railway offer add-on bus connections by searching for, as an example, 'Wantage Bus' or 'Abingdon Did Bus'.

This allows passengers to plan a journey to or from that bus stop and includes the bus and rail fares for the whole journey.

In the Study Area, there are already a few locations that appear on National Rail Enquiries when stations are searched for,

such as Southease (Church By bus) (SEZ) and A26 (SSA) but they are not integrated with walking the advised route.

Locations that could be useful to have the ability to book directly to/from include: Hailsham, Peacehaven, Stone Cross, Glyne Gap, Beachy Head and Camber Sands.

PlusBus has been available for decades and for a few pounds additional to the rail fare, passengers could take the train and then the ticket as a rover bus ticket at their destination, with the price possible to reduce the price further with a railcard discount.

Technology had progressing during the development of the Study, from April 2025, PlusBus has been expanded to include through journeys from a bus stop to the station, the rail journey and then PlusBus unlimited travel at the destination – all with one ticket which can be booked via rail ticketing apps.

In lieu of an integrated ticketing solution for the South Coast, this offers a useful interim product for bus and rail passengers and could help to encourage additional rail and bus passengers locally.



PlusBus Map

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KENT & SUSSEX
Strategic Planning

SQ2. How do we make services more attractive to non-rail passenger and how do we bring new markets to rail?



Highspeed to Bexhill and Eastbourne

Domestic Highspeed services have been operating on HS1 since 2009 and the service has revolutionised rail's appeal from Ashford and beyond to the Kent Coast. Whilst Marshlink services are timed to connect with Highspeed services to and from London, it is the aspiration of the local authorities, user groups and other stakeholders to operate Highspeed services directly to and from Bexhill and Eastbourne.

Whilst Bexhill does have a direct service to London (Victoria) now, the journey takes two hours. Via St Leonards Warrior Square, the journey to Charing Cross takes 1 hour 50 minutes. The hourly Marshlink service connects to HS1 services at Ashford International, taking 1 hour 41 minutes.

Despite the longer journey time, Victoria is the most popular destination – reflecting passenger preference for direct trains (see below).

Split of London journeys from Bexhill

London destination	Total journeys (annual)
London Victoria	22,004
London St Pancras International	5,938
London Bridge	4,540
London Charing Cross	2,568
London Waterloo East	1,028
	36,078

It was noted that the St Pancras route did not appear in the London (All Stations) search on National Rail Enquires. Adding 'via Ashford International' provided the timings and the offer of a 'Single from £20.00' with no railcard. Returning to the original search, the Charing Cross route was £15.20 and direct to Victoria was £14. Changing at Haywards Heath for a ThamesLink service to London Bridge (1hr 59 mins) cost from £23.90.

Of London terminus-bound passengers from Bexhill, the vast majority of journeys are to London Victoria with 22,004 journeys per year, London St Pancras International is second with 5,938 journeys. Eastbourne, which is closer to Victoria and served by more direct trains to Victoria has 277,821 journeys to London Victoria, 10,405 to London Bridge and just 1,432 to London St Pancras International.

From Hastings, London Bridge has 86,592 journeys, Charing Cross 60,534 then St Pancras International with 23,176. 11,630 journeys are made to Victoria.

Direct services from Hastings to Charing Cross take 1 hour 32 minutes whilst Victoria takes 2 hours 11 minutes. Even with the change at Ashford International, the journey to St Pancras International takes 1 hour 29 minutes.

There are two penalties when travelling via Marshlink to London, first is the time penalty caused by an hourly service and the other is cost as Highspeed services attract an HS1 supplement.

Wednesday 11th December 2024

View earlier trains ^ Standard from **£14.00** First Class from **£19.90**

11:26 Bexhill (BEX)	→ 13:33 London Charing Cross (CHX)	Single from £15.20	Select
2h 7m, 1 change			
11:36 Bexhill (BEX)	→ 13:35 London Bridge (LBG)	Single from £23.90	Select
1h 59m, 1 change			
11:36 Bexhill (BEX)	→ 13:36 London Victoria (VIC)	Single from £14.00	Select
2h, Direct			
Fastest			
12:13 Bexhill (BEX)	→ 14:03 London Charing Cross (CHX)	Single from £15.20	Select
1h 50m, 1 change			
Fastest			
11:13 Bexhill (BEX)	→ 12:54 London St Pancras Intl (STP)	Single from £24.50	Select
1h 41m, 1 change			
12:13 Bexhill (BEX)	→ 13:54 London St Pancras Intl (STP)	Single from £20.00	Select
1h 41m, 1 change			

↑ National Rail Enquiries search for Bexhill – London services the lower box shows the 'via Ashford International' journeys.



Geographic Map

SQ1

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KENT & SUSSEX
Strategic Planning

SQ2. How do we make services more attractive to non-rail passenger and how do we bring new markets to rail?

Marshlink enhancement strategy

In 2021, Network Rail produced a Strategic Outline Business Case on behalf of the Department for Transport, East Sussex and Kent County councils to explore the case for providing direct Highspeed services to Eastbourne via Ashford International.

Whilst this identified a potential low-medium value for money economic case, the affordability issues driven by high capital and operating costs meant that further development was paused. The potential benefits were significant, reflecting transformational connectivity from the East Coastway to Stratford International and London St Pancras Intl, and so the overall scheme remains in TfSE's Strategic Investment Plan.

Recognising the affordability challenges at the present time, as part of this Study Network Rail have proposed a more incremental approach over several Control Periods to deliver the same output over a longer time horizon, with incremental performance, frequency and capacity benefits in the interim. In prioritised order, this approach would be to deliver:

1. **Line speed improvements/re-doubling**
2. **Introduction of a second train***
3. **Through running to Brighton***
4. **Introduction of a new Highspeed service†**

* Requires additional or replacement Eastbourne to Ashford International rolling stock (mid to late 2020s)

† Requires additional or replacement Highspeed rolling stock (circa-2030s).

No further analysis was completed for this Study, other than to work out how it could be delivered over a longer period of time. This would also need to be considered against the other high-cost options identified in the production of this Study – which weren't known at the time of the previous business case.

What is a Control Period?

Network Rail is funded in 5-year blocks covering the operation, maintenance and renewal of the railway.

Network Rail is currently in CP7 (2024-29).

It is currently unknown whether this will change under Great British Railways.



1. Line speed improvements and redoubling on renewal

In addition to the line speed improvements on the East Coastway, previous studies have identified that the line speeds could be increased on the entire Marshlink line.

The biggest issue is the single-line section between Ore and Doleham because the line here is particularly curved and that dictates the current line speed of 40 mph. However, by maintaining this section as single-track and optimising the position of the track on the two-track track bed, it could be possible to raise the line speed to 60 mph. Alternatively, it may be better to reduce the amount of single line and redouble the line but maintaining 40 mph.

Most of the rest of the line is comparatively straight so it was shown that the line speed could be increased from 60 mph to 90 mph.

Improving the line speed in the shorter term would mean that trains would get to Rye faster, so services would still pass at Rye but could have a longer dwell at Ashford International, improving connectivity and service robustness.

As track and signalling renewals come up, it could be planned to re-double as an enhancement to the renewal rather than a standalone project. This would require a business case and funding to be identified to do so.

Ore/Doleham to Rye and Rye to Appledore would be the key single-track sections to re-double. This would mean that trains would no longer be required to pass at Rye so the timetable could be recast with additional services. The passing point would move between Ore and Doleham. The key pinch-point is likely to be Ore Tunnel as well as the choice between a faster, single line section between Ore and Doleham.

There are 33 level crossing between Hastings and Appledore and a further 11 to Ashford International so the impact of raising the line speed or doubling the track will have to be assessed. Service improvements may provide the opportunity to remove Star or East Guldeford level crossings by routeing the A259 road on a straight alignment as previously published in the Sussex Route Study and National Highway's Road Investment Strategy 2 strategies.



Line Speed Map

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2. Introduction of a second train

Before the pandemic, additional services, the 'Rye Shuttle' operated between Rye and Ashford International in the peak periods, to provide a half hourly service between Rye and Ashford. Today, Rye Shuttle services operate on sunny Sundays if there are crews and stock available. It is usually decided whether to operate these during the preceding week, based on the weather forecast with the services in the timetable as 'Q' or as-required services.

For this Study, it was identified that an additional signal at Rye would enable trains to turnback towards Ashford in Platform 2, avoiding the need to shunt into Platform 1, simplifying operations and avoiding a number of movements over the level crossing and foot crossings to the west of Rye station.

Further work is required to confirm if an hourly Rye to Ashford, all day service could be operated in the way that the Rye Shuttle was pre-pandemic, or if the additional signal would be required to mitigate performance and safety risks.

For the Rye Shuttle to run all day, every day an additional Class 171 diesel multiple unit would be required. Alternatively with rolling stock secured as part of a larger fleet of replacement bi-mode trains which would be powered by third rail and on-board power (diesel or battery) on the Marshlink line.

Upgrading the service to 2tph beyond Rye requires, at the very minimum, the partial redoubling/line speed upgrades described previously – as well as further additional Class 171s or alternative rolling stock.

While this Study did not consider passenger growth forecasts, there are known capacity issues with the 3-car Class 171s on Eastbourne to Ashford International services. The units were reformed from 2- and 4-car units recently to increase capacity on the Marshlink services. A longer unit may be required to provide for future growth.

3. Through running to Brighton

It has long been a stakeholder aspiration to return through running from Brighton to Ashford International. This was withdrawn because the Marshlink trains were formed of 2-car units; they were the fast trains and would quite often become overloaded between Brighton and Eastbourne. Electric units operate the Brighton – Eastbourne leg, where passengers change trains to the Marshlink service. This train is slower now, since the removal of one of the stopping services, as it now has additional calls to maintain a good level of service at several intermediate stations.

As the Class 171s will need to be replaced in the medium term (see The Class 171 Problem, on the next page), there will be an opportunity to procure enough units to operate services between Brighton and Ashford International, ideally with a half-hourly frequency (at least on the East Coastway (East)). As the Marshlink Line is unlikely to have a strong business case to electrify, the opportunity is linked to fleet strategy and business case – it is unclear whether the business case will support through-running to Brighton.

Providing longer trains, such as the equivalent of a 4-car 20m vehicle unit would require Platform 2 at Rye to be extended by 5m. All other platforms would remain as today with selective door opening at Three Oaks and Doleham, however, there may be platform sharing issues at Ashford International with Southeastern services. Double-tracking may resolve some of these issues as new platforms will be required at stations on the single line. The platform extension at Rye may help with signal sighting should the turnback signal be provided for shuttle services.

Windmill and Town Hall at Rye



Geographic Map

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SQ2. How do we make services more attractive to non-rail passenger and how do we bring new markets to rail?

The Class 171 problem

Govia Thameslink Railway (GTR) currently operate a fleet of Class 171 Turbostar diesel units, introduced in the early 2000s. They are essentially Class 170 units with Dellner couplers (the hardware that connects two units together) rather than BSI, as these are the same couplings used on the Electrostar units (Class 377s & 387s).

GTR use these units intensively, with just a few spare units each day, which means there is more likelihood of reduced length trains or cancellations if one or two of the units are out of service, for example after hitting a tree on the line.

Ideally, GTR would prefer to have a larger fleet but that is not currently possible. One of the units is sub-leased from East Midlands Railway (EMR) and is due to be refurbished in line with the rest of the EMR Class 170 fleet. This unit will no longer be able to work in multiple with the Class 171 fleet so will likely be deployed on Eastbourne to Ashford International services.

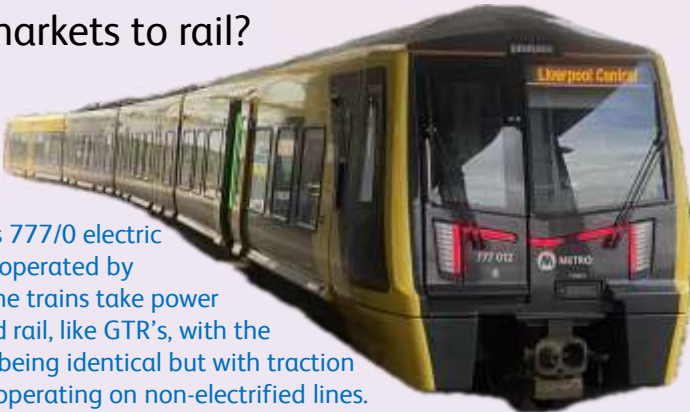
The length of the unit has an impact on the usable remaining length of Platform 1 at Ashford International which is often shared with other trains.

Looking to the medium- to long-term, as these units come up for replacement, it is hoped that either electrification of Marshlink and more electric rolling stock or, failing that, bi-mode diesel/ or battery/electric units will be secured to replace them.

The Class 755s & 777s are illustrated here to show two types of train currently in service on the network which could replace the Class 171s on Marshlink. These trains also provide level boarding at stations.

Replacement of the Class 171s also presents the opportunity for sufficient units be provided to cater for all East Coastway and potentially the West Coastway services, facilitating the cascade of Class 377 and 387 units back to main line, suburban or Gatwick Express duties.

This would also improve the flexibility and reliability of the fleet the diesel / battery operations would not rely on on a small, bespoke fleet. There would also be crewing efficiencies as all crews would know the trains.



This is a Class 777/0 electric multiple unit operated by Merseyrail. The trains take power from the third rail, like GTR's, with the Class 777/1s being identical but with traction batteries for operating on non-electrified lines.

Rolling Stock Companies (ROSCOs) and financiers

ROSCOs and financiers own units, locomotives, carriages and wagons which they lease to train operators. Typically, ROSCOs carry out major overhauls and refurbishments, as well as purchase new trains for the train and freight operating companies, such as GTR.

Comparisons	Class 171	Class 377	Class 755/3	Class 755/4	Class 777
Seats	185	241	144	202	182
Vehicles	3	4	3+PP	4+PP	4
Length (m)	70.85	80.78	63.53	78.75	65.00



This is a Class 755/3 'Flirt' bi-mode unit operated by Greater Anglia. These trains can take power from overhead line equipment or the diesel engine in the power pack (PP) vehicle. There are 3-car and 4-car versions of the units (the power pack car isn't counted as it doesn't have any seats) – could a third rail version be developed?

SQ2. How do we make services more attractive to non-rail passenger and how do we bring new markets to rail?

4. Highspeed services

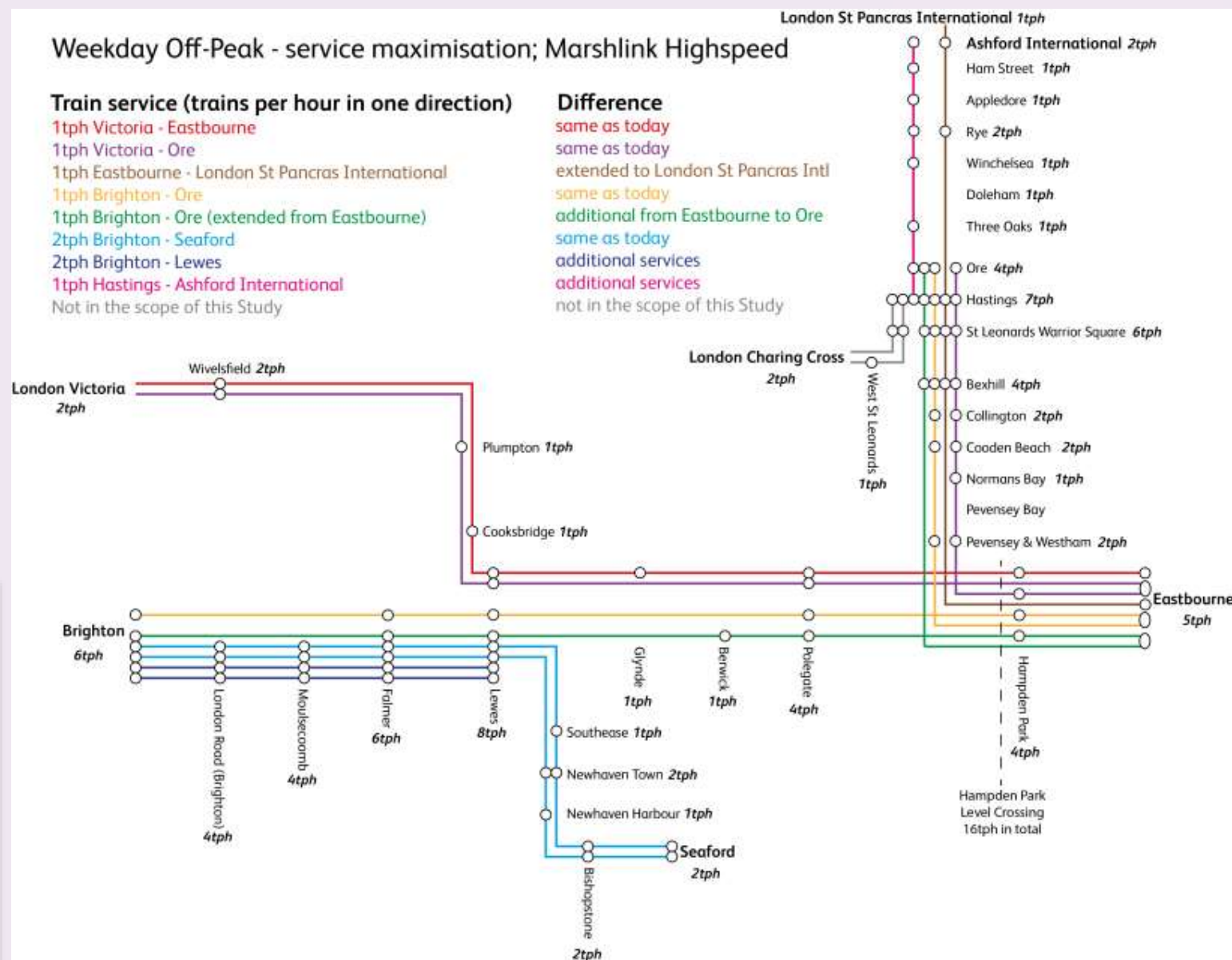
As well as the infrastructure capacity, including redoubling, a new platform at Ashford International, line speed improvements, level crossing improvements and potentially electrification, there are insufficient Class 395 units available to operate services to Hastings and Eastbourne.

The replacement of the Highspeed fleet in the medium-term is a further opportunity to review the business case for Highspeed services on this route.

The TSS to the right is an indication of how the service could be maximised, with further enhancement possible in combination with the Willington Chord which allow the Hastings to Ashford International service to start at Brighton.

There are operational constraints to consider with the introduction of Highspeed services to Eastbourne, particularly as it will interlink the timetables on HS1 and the Brighton Main Line and introduce new constraints.

A Southeastern Highspeed Class 395 unit in Platform 2 at Ashford International



Line Speed Map

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KENT & SUSSEX
Strategic Planning

SQ3. What is the future rail freight provision for the study area?

In Newhaven, there are two aggregate rail connected terminals that serve the construction industry, both terminals are located a short distance from each other and rely on the Seaford Branch to access these terminals and utilise paths from Keymer Junction on the edge of the study area, traversing the Brighton Main Line to reach their destination. There is a 40 mph speed restriction for freight trains over a bridge between Lewes and Southease on the Seaford branch.

Newhaven Marine opened in 2020 by Brett Group, DB Cargo being the prime operator for traffic serving London terminals. Marine dredged sand is processed here, arriving by vessels from Scotland to the nearby Port of Newhaven where the material is processed before being loaded onto wagons for onward transfer to terminals in the London area.

Newhaven Marine currently runs with 18 wagons, however discussions with the customer have advised that 20 wagons can be accommodated. A third party is investigating private investment in the terminal which may include the provision for longer trains – such as new sidings. Running trains beyond 20 wagons, will mean mitigating trailing load (weight) limits on the Brighton Main Line.

The site is accessed via the former Newhaven Marine station, which was formally closed in 2020, on a very short branch line from Newhaven Harbour station.

Newhaven Town Yard is close to the station of the same name and is currently running up to 17 wagons. An incrementally longer train of 18-20 wagons could possibly be accommodated with the current layout, but further feasibility work is needed.

Both terminals were analysed as part of the Southern Region Target 26 workstream. This study assessed the capability and train lengthening options for construction terminals across the Southern Region. The summary document has been [published](#) on the Network Rail Long Term Planning page on its website.

Another freight flow is waste traffic from Dungeness, running weekly from here to Crewe for onward transfer to terminals on the Cumbrian coast. The decommissioning project is expected to continue into the next decade. There is an ambition for a new facility here and whilst not committed now, might be in the future.

GBRF have recently opened a maintenance shed at their South-East satellite depot at Tonbridge. This may reduce the need for paths on the Tonbridge to Hastings Line as transfers to/from West St Leonards Engineering Depot reduce. Therefore, there may be new opportunities for freight services on this corridor.

There are no further known freight flows planned in the Study Area in the longer term.



Newhaven Marine freight terminal – a train being loaded with sea-dredged sand.



Lewes station – a Newhaven Town freight heads north.



Geographic Map

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SQ4. What is the impact on climate change on the study area?

Climate change presents a growing challenge to the railway network, which could result in the following increasing risks:

- **Rising temperatures**, increasing the risk of track buckling
- **More frequent and severe extreme weather events**, such as flooding, landslides, and falling trees
- **Sea level rise**, contributing to coastal flooding
- **Increased rainfall**, heightening the risk of landslips and localised flooding
- **Greater infrastructure stress** due to temperature and weather extremes
- **Operational challenges**, requiring more frequent and complex responses

Between 2006 and 2024, weather-related events including high winds, flooding, and ground movement resulted in nearly £193 million in Schedule 8 compensation payments to operators in the Southern Region. Approximately 10 % of these costs were attributed to the East Sussex and Marshlink areas.

To reduce future disruption, the Region is prioritising investment in resilience particularly in earthworks, throughout Control Period 7 (CP7, 2024-29).

Flooding is a key climate risk along the East Sussex Coastway. Vulnerable sections include Eastbourne to Pevensey, Newhaven, and Seaford, which are exposed to coastal flooding.

Additionally, the line between Lewes and Newhaven runs adjacent to the River Ouse, crossing multiple bridges and along embankments, making it susceptible to fluvial flooding and erosion.

The view from Normans Bay towards the sea defences



Climate adaptation

As part of CP7, the Region has committed to developing **Long-Term Climate Adaptation Pathway Strategies**.

These strategies apply a pathways approach to identify both current weather-related risks and projected future climate impacts.

They also outline potential mitigation measures and investment priorities, enhancing the Region's ability to plan for and respond to climate-related threats,

ultimately supporting a more resilient and sustainable railway network.

The first Adaptation Pathways workshop for the East Sussex and Marshlink area was held in May 2025.

It brought together key stakeholders to assess current and emerging climate risks across the geography.

For the identified climate risk hotspots, further strategy development will be undertaken as part of the ongoing Adaptation Pathways Programme.



Geographic Map

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SQ5. How do we improve First and Last Mile connectivity in the study area?

We've detailed the new opportunity to book through tickets from a bus stop at the start of the journey to a bus stop (or network) at the destination; including the rail portion of the journey and the PlusBus network.

We are also aware of the desire for more earlier and later trains to improve accessibility to Gatwick Airport station. This is something GTR has been working on for some time and should be delivered in the next year or two, from Eastbourne.

Not all stations have car parks (just 19 of the 35 stations in the Study area), so passengers are known to 'railhead', which means they drive to a station that does have a sufficiently large car park either at the station or close by.

Live onward travel information for bus users is being provided at many stations and we were delighted to see that the Depot Cinema, in Lewes, also included the station departures to help people with their next journey.

At Bexhill, Network Rail and GTR have been working with the local authorities and Bexhill Rail Action Group on additional station entrances to make access to Devonshire Square and Station Road easier, to avoid having to double back through the station building.

Bexhill station is unlikely to be awarded Access for All funding for lifts as it currently has ramps. However, the ramps within the station are quite steep and the pavements, either side of the station, are narrow and also

fairly steep, so the additional entrances could reduce that problem (in one direction at least).

East Sussex County Council have the aspiration that all stations should be step-free and easy to access. Transport for the South East identified that Brighton & Hove Council and East Sussex County Council 'have ambitious plans to reduce congestion and public health outcomes by increasing rates of cycling and walking in their areas'.

Many stations have secure cycle hubs to enable passengers to cycle to/from the station and leave their bike in a safe environment.

Station	Parking spaces
Brighton	633 / 20
Falmer	10 / 1
Plumpton	13 / 1
Cooksbridge	24 / 1
Lewes	293 / 6
Seaford	14 / 1
Berwick	60 / 2
Polegate	212 / 6

Station	Parking spaces
Eastbourne	349 / 13
Hampden Park	31 / 1
Pevensy & Westham	16 / 2
Bexhill	11 / 1
West St Leonards	20 / 2
St Leonards Warrior Square	38 / 2
Hastings	75 / 4
Rye	98 / 6

Station	Parking spaces
Appledore	17 / 1
Ham Street	20 / 1
Ashford International	616 / 30

↔ Stations with car parks, detailing total number of spaces / accessible spaces
 Source: National Rail Enquiries
 ➔ At Eastbourne, there is a customer information screen showing bus departures and where to find the buses



PlusBus Map

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SQ6. What are the future infrastructure requirements for the study area?

As well as compiling the Study's recommendations for infrastructure changes identified in previous questions, this section considers the role of interchange stations and their facilities.

The focus here is rail interchange between services. For example, a journey from A to B, such as Ashford International to Brighton, may require a change of train at another location, C, in this case Hampden Park or Eastbourne.

There are eight rail interchange stations in and immediately adjacent to the Study area:

- Brighton
- Wivelsfield or Haywards Heath
- Lewes
- Hampden Park
- Eastbourne
- St Leonards Warrior Square
- Hastings
- Ashford International.

The first thing to consider is whether these stations are accessible, as everyone should be able to change trains there. National Rail Enquiries will advise where to change trains, but it does not consider the interchange facilities at that station unless specified in the query.

None of the stations have independent boarding so Passenger Assist will be required but Hampden Park and St Leonards Warrior Square are not continuously staffed so the Passenger Assist would need to travel to site.

Once the passenger is off the train, they may have to change platform to catch their connecting train. At Brighton and Eastbourne, all platforms are at the same level and easily accessible, at Hastings, Lewes & Ashford International there are lifts and bridges between platforms but at Wivelsfield, Hampden Park and St Leonards Warrior Square there are no such facilities with only stepped access between platforms, or a longer route out of the station environment. These stations are considered in more detail on the next page.

Most northbound passengers would change at Haywards Heath rather than Wivelsfield as an interchange, but Wivelsfield will be important for journeys southbound on the BML. It was noted that some journeys have a time penalty for not changing trains at Hampden Park or St Leonards Warrior Square because you are likely to miss the connecting train.

Station Accessibility

Between Spring 2021 and Spring 2023, accessibility audits were carried out at every Network Rail station within Great Britain. In 2024, train operating companies updated their survey responses and uploaded them to 'Citadel' which has enabled a dashboard to be produced to identify gaps in the key station provision.

It also looks at the wider interchange between modes, so includes blue badge car parking provision and bus stop facilities. It gives a good comparison between station types and facilities.

DfT Station category, Footfall, CRS, Accessible ticket counter, Passenger Assists, Blue badge parking, Ac...

BY STATION

Station	CRS	DfT Station category	Footfall	Passenger Assists	Blue badge parking	Accessible toilets	Audio and visual announcements	Standard toilets	Help point	CCTV	Changing places	CIS
Ashford International	AFI	B	4,083,561	6512	XX	XX	XX	XX	XX	XX	X	XX
Brighton	BTH	B	14,946,115	13169	XX	XX	XX	XX	XX	XX	X	XX
Eastbourne	EBN	C	3,241,399	5813	X	XX	XX	XX	XX	XX	X	XX
Hampden Park (Sussex)	HMD	E	815,972	857	X	XX	XX	XX	XX	XX	X	XX
Hastings	HGS	C	1,937,794	3265	X	XX	XX	XX	XX	XX	X	XX
Lewes	LWS	C	2,586,704	2565	X	XX	XX	XX	XX	XX	X	XX
St Leonards Warrior Square	SLQ	D	954,216	1281	X	XX	XX	XX	XX	XX	X	XX
Wivelsfield	WVF	E	411,122	38	X	XX	XX	XX	XX	XX	X	XX

The framework attributes a benchmark of accessible facilities according to the three station size types, based on the DfT's A-F station categories:

- Small** (DfT categories E and F) – part-time/unstaffed
- Medium** (DfT categories C and D) – fully staffed
- Large** (DfT categories A and B) – fully staffed.

This is an excerpt from the Station Comparison dashboard with the eight interchange stations shown. The annual footfall and Passenger Assists are shown. Of note are the Platform Assists at Hampden Park and St Leonards Warrior Square.



Geographic Map

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SQ6. What are the future infrastructure requirements for the study area?

Platform interchange at Wivelsfield is via a subway under the tracks, at St Leonards Warrior Square it is a footbridge and at Hampden Park is via a footbridge or the level crossing.

At a lot of stations, interchange via the level crossing is not really an issue but the level of train service at Hampden Park means that the barriers are down longer than they are up, particularly in times of disruption. These are not the only obstacles to a fully accessible station, but they are the main ones because it just isn't accessible if it's not step-free for interchange.

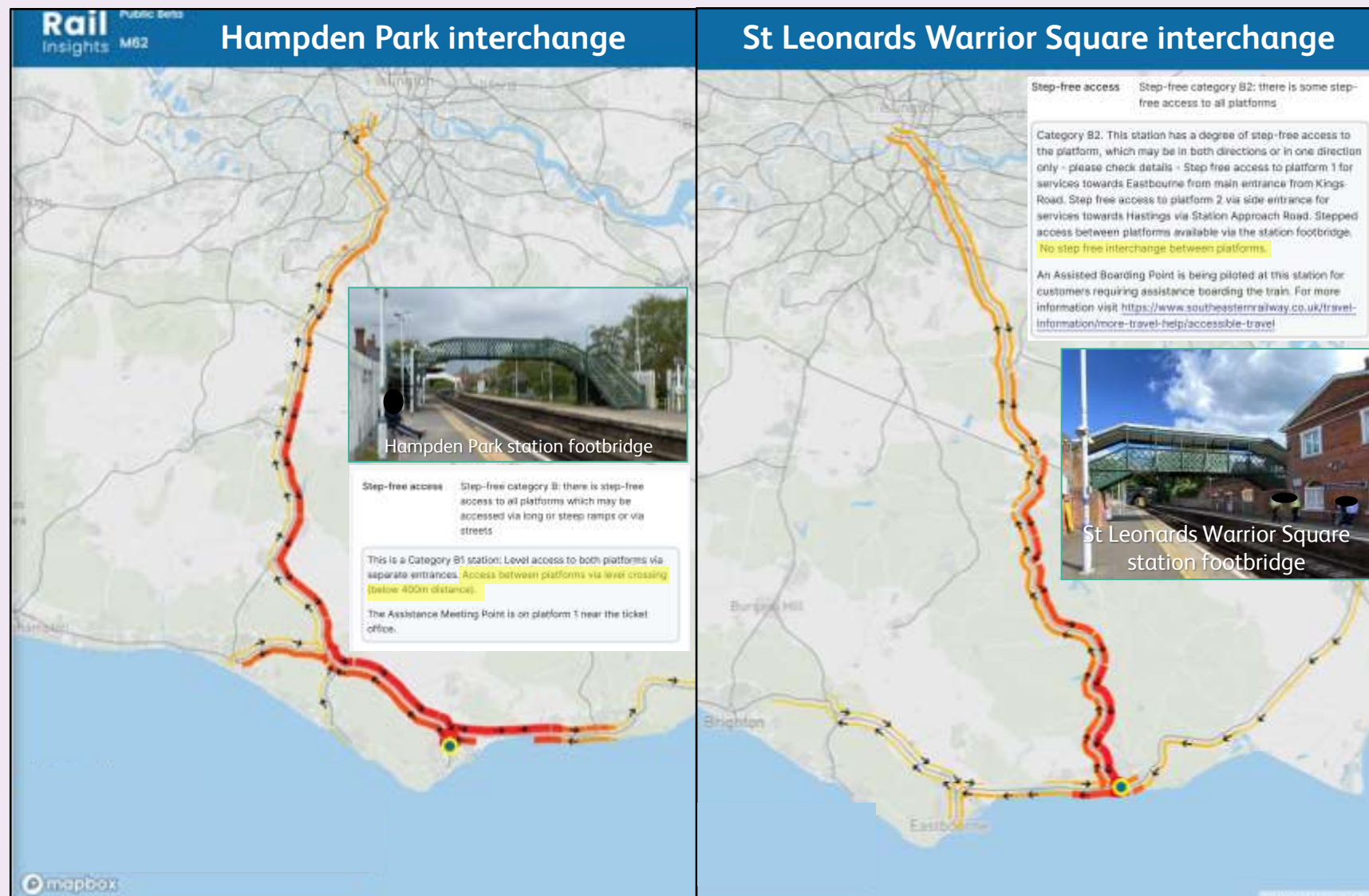
Passengers can change train at alternative local stations:

- Wivelsfield – Haywards Heath or Brighton.
- Hampden Park – Eastbourne.
- St Leonards Warrior Square – Hastings.

Although it should be noted that changing at different stations is likely to incur a significant journey time penalty, as the connecting train may leave the preceding station before the arriving train gets there.

The maps, right, show where passengers are travelling to when interchanging at Hampden Park (left) or St Leonards Warrior Square (right). The darker the red, the more passengers.

This study considered options for a new interchange station and improvements to the existing station at St Leonards Warrior Square in the form of an accessible footbridge and several options for Hampden Park.



Line Speed Map

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KENT & SUSSEX
Strategic Planning

SQ6. What are the future infrastructure requirements for the study area?

Connections to Highspeed services

Southern and Southeastern work closely to ensure a reasonable connection time between departing/arriving Highspeed and Marshlink services at Ashford International, to give interchanging passengers as long as possible to get from Platform 1 to Platforms 5 & 6 and vice-versa, whilst offering fast overall journey times.

In times of disruption, it is not always possible to hold the connection which means passengers must wait for the next hourly Marshlink service or more frequent Highspeed service to London.

Step-free interchange is possible via the lifts to/from the platforms and the subway, where other passengers are also transferring between the platforms to make connections, or to leave the station. The stairs are often congested passengers with luggage or buggies running down/up the stairs rather than using the lifts.

Improved line speeds on the Marshlink line may enable trains to wait at Ashford International longer, lengthening the interchange time without extending overall journey times.

In the longer-term, direct services to/from High Speed 1 would reduce the requirement for this interchange to Marshlink services, and additional interchange capacity may be required.



Passengers climbing the stairs to Platforms 5 & 6 at Ashford International station.



The Marshlink service waits at Platform 1 at Ashford International, as seen from Platform 5. The 'international platforms' (3 & 4) are currently unused.



East Sussex Coast & Marshlink

Options

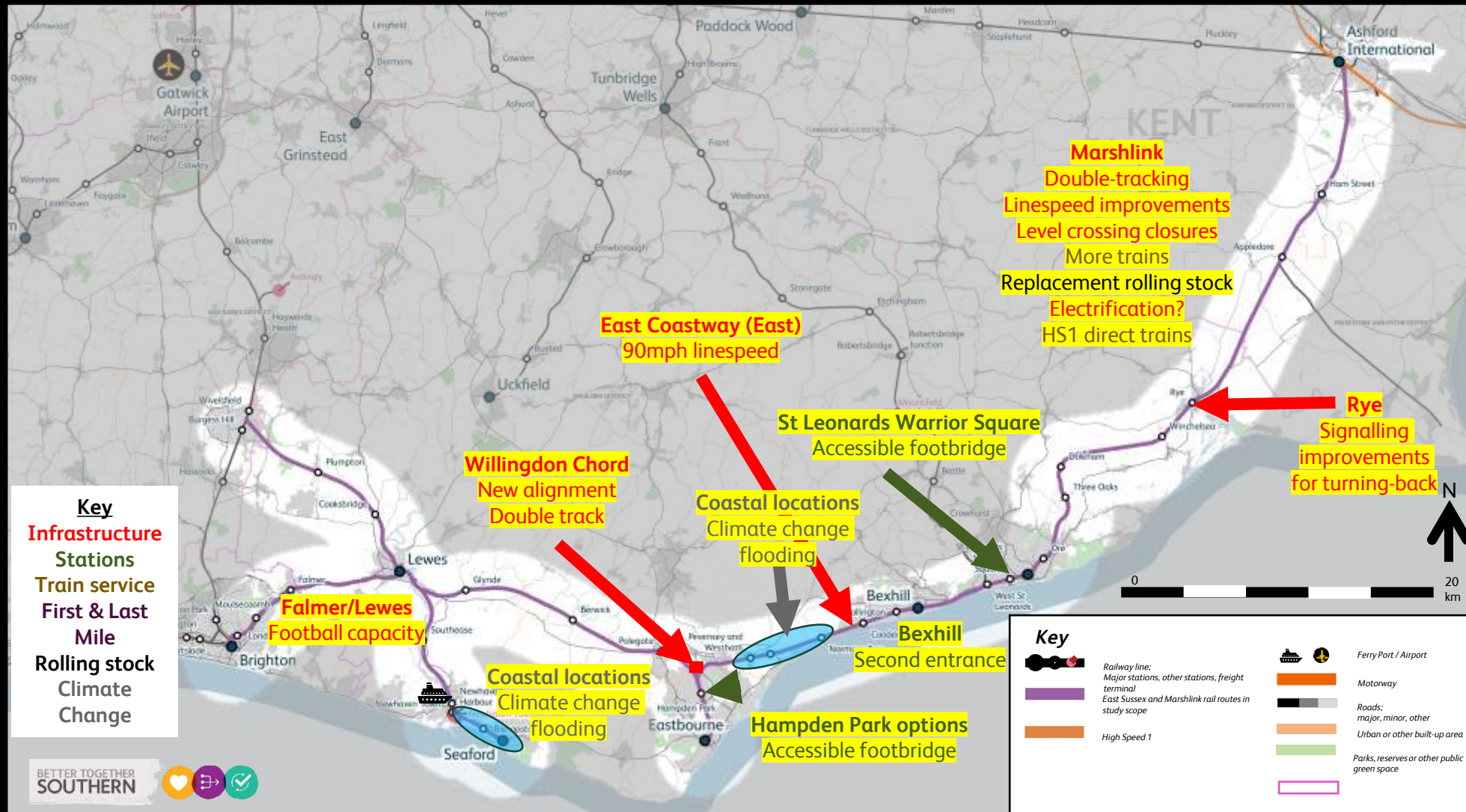


SOUTHERN
Strategic Planning



A visual representation of the future infrastructure requirements determined in the development of this Study.

Further development will require a funder, whether DfT or locally, to progress these options further.



Map data from [OpenStreetMap](#)

4. Recommendations (and discounted options)

The tables on the following pages are a list of recommendations (and discounted options) which require further development and funding but provide a list of suggested projects that could benefit passengers. The lists include brief details of the proposal, key benefits, dependencies, which train service specifications are benefitted by it, approximate high-level costs, funding streams and next steps.

No options are currently funded.





Recommendation	Key benefits	Dependencies	Train Service Spec.	Capital cost	Potential delivery timescale	Next steps
2tph Brighton to Hastings timetable	Returns the level of service to pre-pandemic levels and provides a half-hourly service.	Additional rolling stock Operational subsidy	All	None	Short	As funding allows
6tph Brighton to Lewes timetable	Returns the level of service to pre-pandemic levels, providing a metro-style service and faster long distance services.	Additional rolling stock Operational subsidy	All	None	Medium	As funding allows / demand requires
Falmer platform 1 turnback	Enables an additional 'football special' shuttle to operate, delivering supporters to the platform closest to the stadium and picking up from the same platform. Also allows trains to run when the line at Lewes is closed.	Third party funding	All	Low	Short	As funding allows
Line speed improvements: Eastbourne to Hastings	Provides additional robustness to the timetable and some trains have a journey time reduction.	Funding	All	Low	Short	NR exploring options to take this forward
Bexhill station second entrance	Provides step-free access to the town centre without having to use the steep ramps to the station building, shortens walking distance to the town centre and town hall areas.	Some local authority funding is available but additional funding is still required	All	Low	Short	NR exploring options to take this forward
St Leonards Warrior Square station lifts	Provides step-free access between the platforms to maintain connectivity.	Funding	All	Low	Short	As funding allows
Hampden Park station lifts	Provides step-free access between platforms and for pedestrians to cross the level crossing.	Funding; outside the requirements for accessible footbridge funding	All	Low	Short	As funding allows





Recommendation	Key benefits	Dependencies	Train Service Spec.	Capital cost	Potential delivery timescale	Next steps
Marshlink: Line speed improvements	Provides additional robustness to the timetable, journey time reduction and improved connections to Highspeed services at Ashford International.	Funding	All	Low	Medium	NR exploring options to take this forward
Rye starter signal to enable 2 trains per hour all day Rye to Ashford International	Removes shunt movement over three level crossings, better platform to depart from (closest to the town).	Additional rolling stock Operational subsidy	4NR	Low	Short - Medium	Post-Study follow-on work to estimate costs and confirm requirement
Rolling stock – Class 171 replacement	Removal of dedicated fleet of diesel units and replace with electric or bi-mode units which can operate more efficiently.	Additional rolling stock Operational subsidy	All	Low	Medium	DfT Rolling Stock Strategy
Marshlink: 2tph service	Provide a half-hourly service, improving GJT across the Coastway, reducing the criticality of connections at Ashford International and meeting increasing passenger demand.	Additional rolling stock Operational subsidy Marshlink Line redoubling	3C 5	High	Medium	Development funding required
Marshlink: traction decarbonisation	Remove one of the last non-electrified passenger lines in Kent and Sussex, provide trains with better acceleration and deceleration to reduce journey times, reduce the railway's impact on climate change.	Additional rolling stock Operational subsidy	All	Low	Medium	DfT Rolling Stock Strategy





Recommendation	Key benefits	Dependencies	Train Service Spec.	Capital cost	Potential delivery timescale	Next steps
Removal of Absolute Block (Hastings)	Enables more services to operate and reduces some of the restrictions of the signalling system.	Resignalling scheme / Marshlink redoubling	All	Low	Medium - Long	Likely to be resolved in future renewals
A259 re-routing	Reduces level crossing risk significantly, improves road journey times and enables the closure of at least one level crossing.	National Highways funding	All	Unknown	Medium - Long	TBC
Climate change adaptation: Seaford Branch and Eastbourne to Bexhill	Long term future of the railway is understood and mitigated against.	Environment Agency, local authorities and DfT alignment and buy in for the strategy/adaptation pathways	All	Unknown	Long	NR developing adaptation pathways
Rolling stock – Class 395 replacement or additional rolling stock	Opportunity to procure suitable additional rolling stock to enable a Highspeed service between Eastbourne and London St Pancras International via Marshlink, reducing direct journey times from Bexhill and stations east to London.	Additional rolling stock Operational subsidy Marshlink Line redoubling Ashford new platform Marshlink electrification	5	High	Long	DfT Rolling Stock Strategy
Willingdon Chord (new alignment)	Enables additional services to operate on the East Coastway, albeit not via Hampden Park level crossing, reduces journey times by 15-20 minutes, makes rail an attractive alternative to road, including to an expanded Gatwick Airport, and provides opportunities for trains to overtake each other (while one goes to Eastbourne), same platform interchange at Polegate and railhead treatment trains/test trains don't have to repeatedly run in/out of Eastbourne.	Unlikely to be a national priority for funding; opportunity for progression through devolution deals	4NR	High	Long	Development and business case funding required



Discounted options

Option	Rationale
Changing fares	Against current Government policy – structure to be reviewed by Great British Railways
Longer trains	Currently not required for most services but may be required in the medium- to longer-term
Direct Brighton to Ashford International services	Subject to class 171 replacement, traction power and Marshlink upgrade strategy
Additional platform at Brighton	Not required to deliver developed TSS options, but may be required in the longer-term to support additional trains
Lewes Platform 5 extension	Discounted as the optimum option for serving Falmer, but improvements could be progressed in the next major signalling/track renewal
Turnback east of Lewes	Discounted as the optimum option for serving Falmer due to operational complexity
Additional trains on the Seaford Branch	The half-hourly service is suitable, but there are opportunities for more services to operate as demand requires
Virtual stations (Hailsham, Peacehaven)	No longer required as tickets can now be booked from the local bus stop to another bus stop which includes rail
Operating more than 16tph over Hampden Park LX	The pre-covid capacity (road closure 45 minutes in the hour) considered to be the maximum that can be accommodated
Rebuild of Hampden Park station	Extremely expensive project to resolve an issue a compliant bridge and/or Willingdon Chord could solve
Additional platform at Eastbourne	Without additional services over Hampden Park level crossing, the existing level of usage should be maintained
Removal of direct Victoria services east of Eastbourne	This would disbenefit a lot of passengers who prefer a direct service, even if it is slower than changing trains. Would not save material costs as a replacement Eastbourne to Hastings service would need to run
Stone Cross new station	Would not promote but would support further exploration if a funding source is identified
Conversion of railway to light rail	An expensive solution and requires extensive local development and case making
Glyne Gap new station	Do not support as it would extend the journey times for more people than would use it
West St Leonards / Marina new station	Would not promote but would support further exploration if a funding source is identified
Bo Peep Junction realignment	This was considered but made no actual difference due to the physical constraints
Terminating Marshlink services at Hastings	Disbenefit to Marshlink users west of Hastings, would need additional rolling stock to replace the Eastbourne – Hastings journey
Station closures	Doleham to remain as it is until further enhancements are carried out on the Marshlink line so that the service may support an additional station stop



5. Glossary



Jargon

Word, acronym or phrase	Meaning
Control Periods	Five-year funding periods for Network Rail
East Coastway	Typically, the line between Brighton and Bo Peep Jn
Gatwick Express	GTR's branding for the London Victoria to Gatwick Airport/Brighton services (technically a sub-brand of Southern)
Govia Thameslink Railway (GTR)	This franchise amalgamated the Thameslink, Southern and Great Northern franchises into one operation – will be renationalised in 2026
Great British Railways (GBR)	The new renationalised railway, which is being set up to take over Network Rail, former franchises, parts of the Department for Transport etc.
Great Northern	GTR's branding for services north of the Thames which are not ThamesLink
Highspeed	Southeastern's high speed services which operate over HS1/St Pancras High Speed between Ashford International/Ebbsfleet International and London St Pancras International
HS1	High Speed 1 – recently rebranded as London St Pancras High Speed
Hybrid trains	Units or locomotives that are powered by multiple power sources such as overhead or third rail electric, diesel or battery
Line speeds	This is effectively the speed limit for the track, it is based on several factors such as curvature, underlying structure/ground conditions, level crossing sighting (how well level crossing users can see approaching trains), track condition etc.
Marshlink	The services between Eastbourne and Ashford International or the line between Ore and Ashford International. The line is non-electrified and consists of single- and double-track
PlusBus	On payment of a small supplement to your rail ticket you get unlimited travel on the PlusBus network from your destination station for the rest of the day
Seaford Branch	The line between Lewes and Seaford
Southern	GTR's branding for the services south of the Thames which are not ThamesLink
Southeastern/South Eastern Railway	Former franchise operating most services in Kent, East Sussex and South London, now being operated jointly with Network Rail as South Eastern Railway
Thameslink	The network of train services that operate through the 'core' between London Blackfriars and Kentish Town/Finsbury Park
ThamesLink	GTR's branding for services using the Thameslink Core
Turn back / turnback	At the end of the journey, invariably the train has to return from whence it came, with multiple unit trains, the driver walks to the other end of the train to then 'turn back', this also sometimes refers to a signal or siding which enables the turn back movement





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