Faster, busier, fuller

Branch lines, commuter lines and Britain's fastest commuter trains

Looking forward to 2024 and 2044

Making the best use of capacity

Improving connectivity

Introducing new technology

NetworkRail

South East Route: Kent Area Route Study summary document, March 2017

THE RAILWAY IN KENT

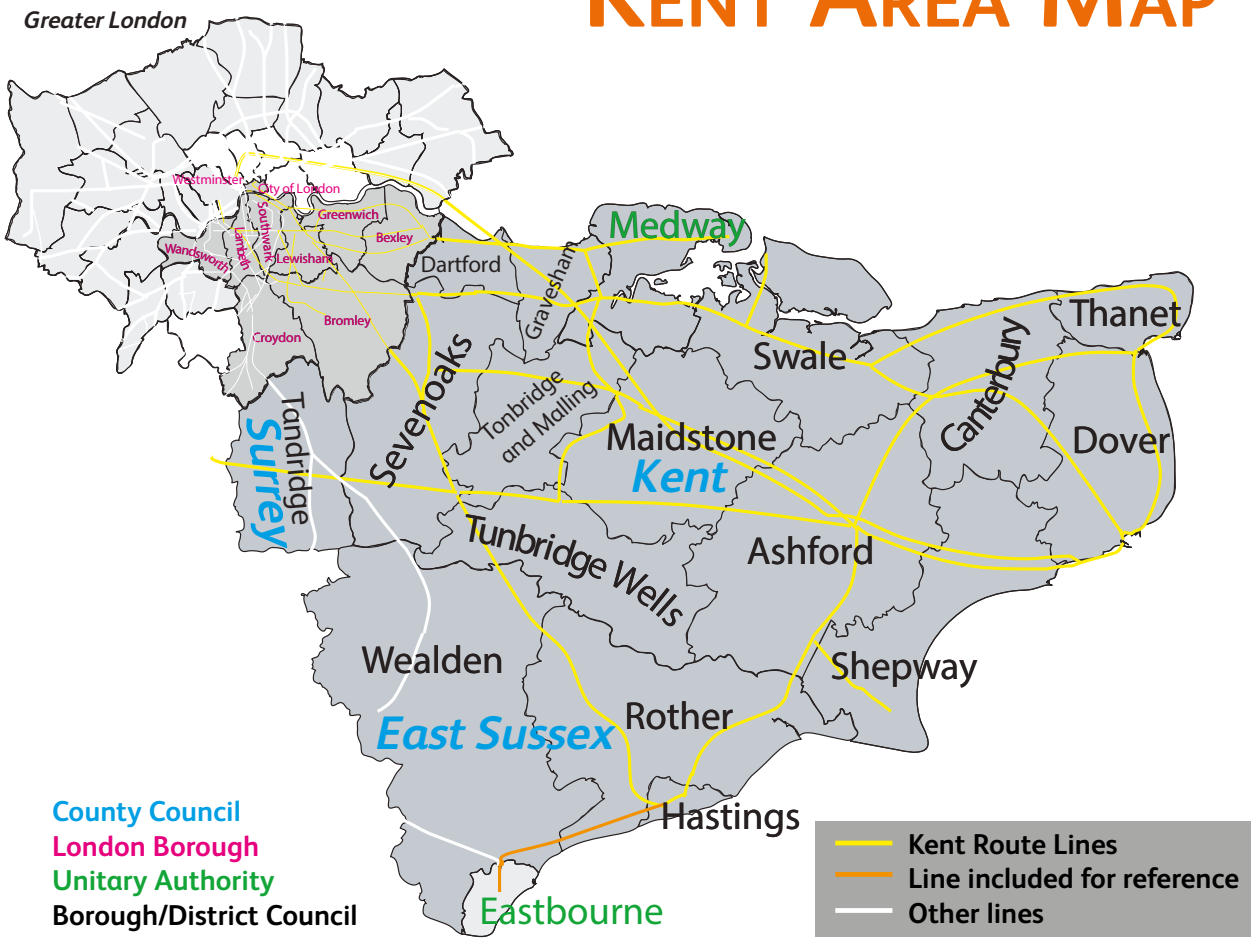
The railway in Kent plays a vital role in the region's economy, providing links between communities and employment, industry and markets, and conveying essential freight flows supporting the construction sector in London and the South East.

The rail industry has delivered more trains, longer trains, faster trains and improved safety, at the same time as improved efficiency and value over the last 20 years.

Over the next 30 years more and more people are expected to travel by train, and more freight is forecast to come off the road and onto the railway.

This presents significant challenges as the trains and network become faster, busier and fuller – these challenges and options to address them are presented in the South East Route: Kent Area Route Study at www.networkrail.co.uk

Kent Area Map



The Route Study process involves representatives from the various train operating companies, Department for Transport (DfT), Transport for London (TfL), Rail Delivery Group (RDG), HS1, local authorities (county, unitary, borough and district), Port of Dover, Ebbsfleet Development Corporation and rail user groups.

The local authorities provided the latest information on new housing forecasts which were fed into the Market Study model to produce the updated anticipated passenger growth figures. From the passenger growth figures, the required number of additional rail vehicles was calculated.

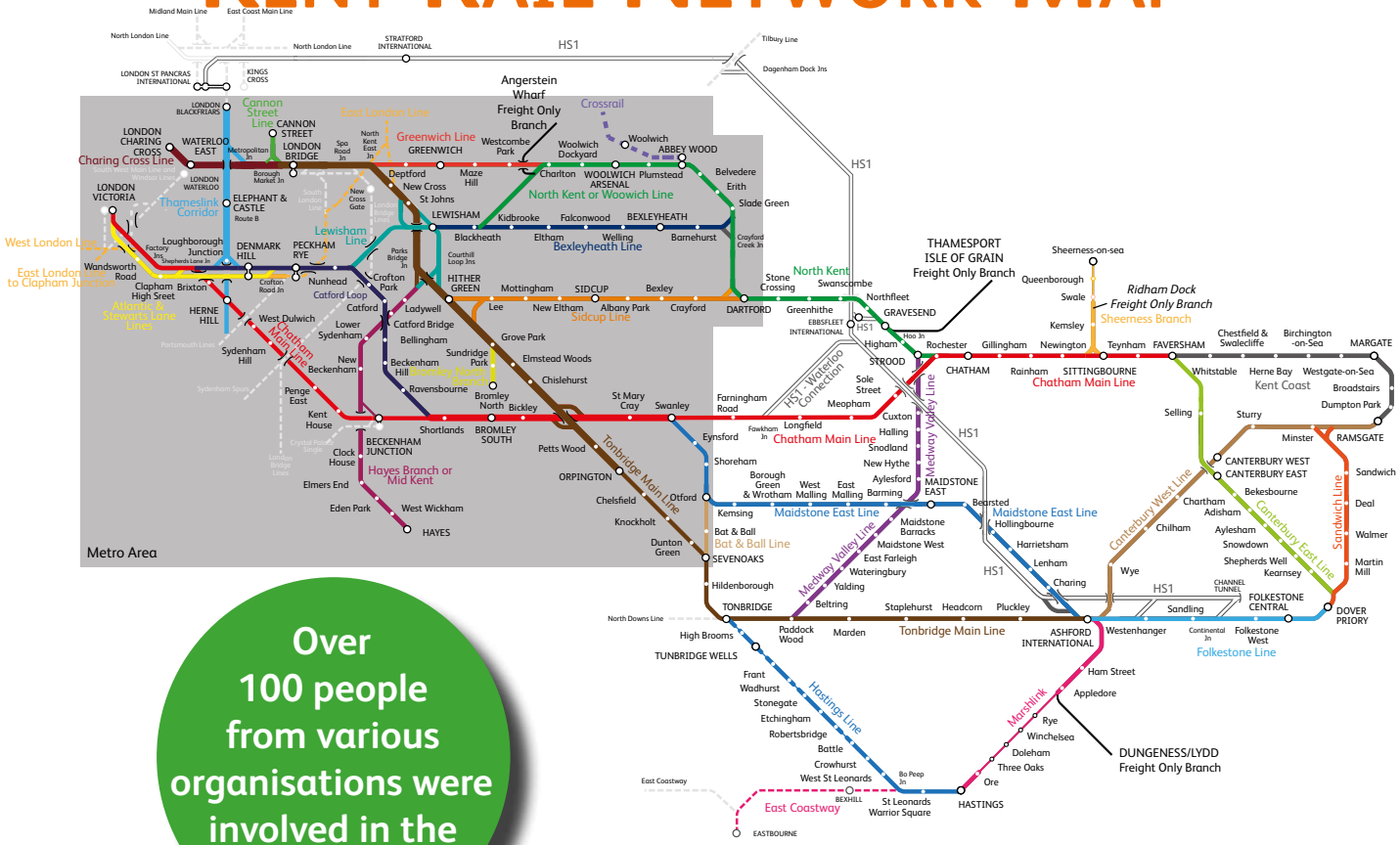
Challenges and constraints were identified so that the Choices for Funders could be worked out based on all of these factors.

The main Route Study and Technical Appendix documents show the process, constraints and Choices for Funders in greater detail.

Local Authority	New households by 2031	Annual growth rate
Ashford	14,000	1.29 %
Bexley	30,733	1.15 %
Bromley	10,065	0.39 %
Canterbury	16,200	1.19 %
Dartford	18,551	1.92 %
Dover	10,000	0.95 %
Eastbourne	5,022	0.66 %
Ebbsfleet	14,000	
Gravesham	7,100	0.81 %
Greenwich	40,095	1.77 %
Hastings	3,400	0.47 %

Local Authority	New households by 2031
Lewes	6,900
Maidstone	18,560
Medway UA	22,100
Rother	5,700
Sevenoaks	3,600
Shepway	8,600
Swale	11,300
Thanet	12,000
Tonbridge and Malling	13,300
Tunbridge Wells	6,000
Wealden	9,440

Kent Rail Network Map



Over 100 people from various organisations were involved in the Route Study

The Kent Route Study examines options to improve the railway in the Kent Area, setting out a long term strategy to meet growing passenger and freight demand from 2019 onwards.

The Route Study sets out a vision for the next 10 to 30 years of a much busier railway, with investment enabling faster, longer, more frequent and more reliable journeys. It presents choices for funders to meet this future demand.

The benefits of these potential investments will flow far beyond the railway, leading to:

- Economic growth
- Reduced environmental impact
- Regeneration of communities.

The Route Study forms part of a suite of Studies for the UK rail network, which represent a crucial component of the railway's Long Term Planning Process.

The choices set out in the Route Study have been developed together with industry partners to deliver a railway that offers value to taxpayers, users and funders.

PLANNING FOR GROWTH

Annual growth rate
0.76 %
1.29 %
0.95 %
0.77 %
0.37 %
0.84 %
0.93 %
0.92 %
1.23 %
0.60 %
0.88 %

Services	Anticipated passenger growth	
	2011-2023	2011-2043
London Bridge Metro	15 %	47 %
London Victoria Metro	15 %	47 %
London Blackfriars	11 %	21 %
London St Pancras High Speed	61 %	105 %
London Bridge & Victoria Main Line	15 %	47 %
London Orbital	178 %	407 %
Strood - Paddock Wood/Tonbridge Sittingbourne - Sheerness	15 %	47 %

Number of vehicles required to cater for forecast growth

2014 → 2024 → 2044

These are shown on the maps on the following pages

Challenges & constraints

These are a mix of network and train capacity constraints, conflicting movements at junctions, signal positions, number of tracks, timetable rules etc.

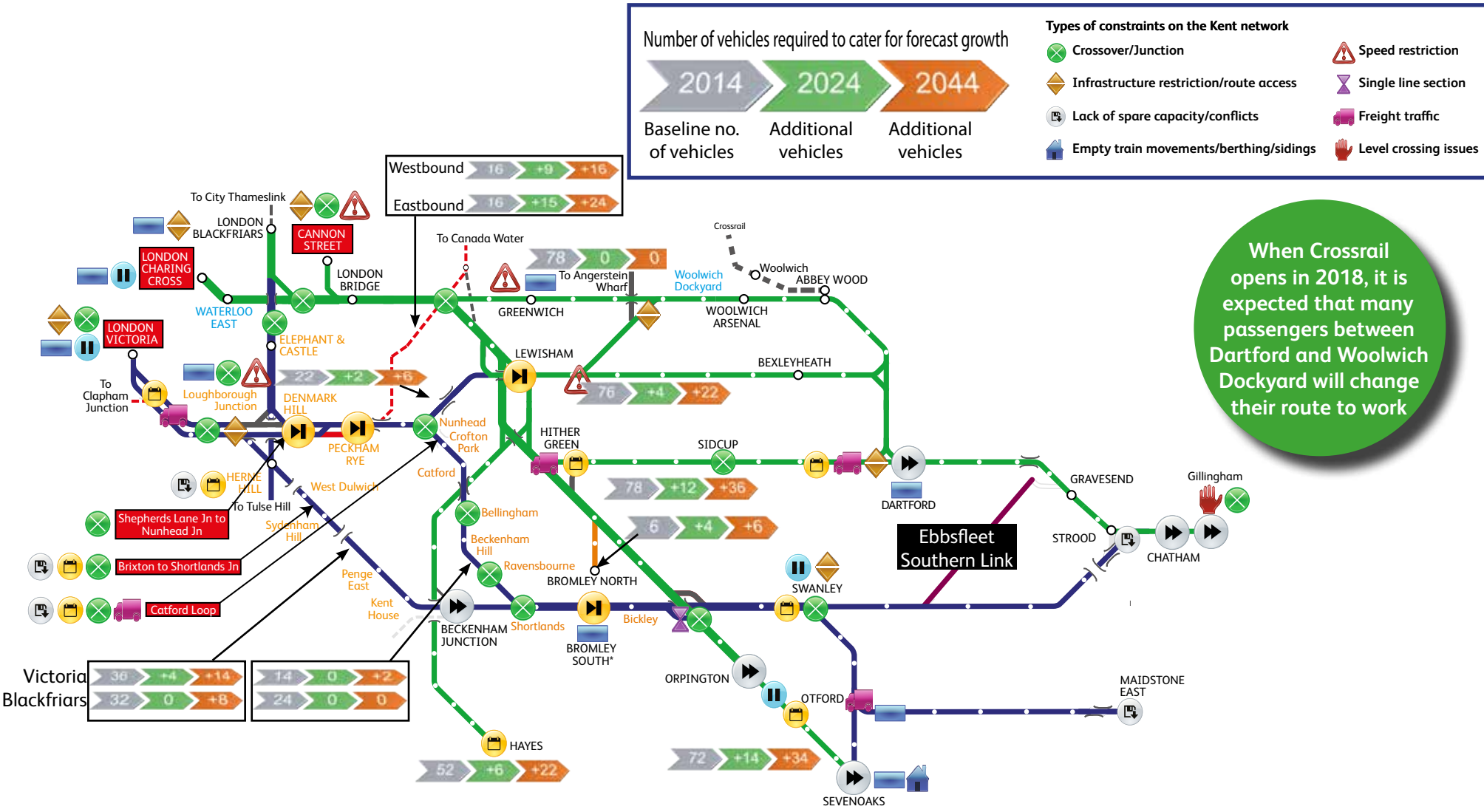
Choices for Funders

These have been prioritised using the following criteria:

- accomodating passenger and freight demand to 2024
- taking advantage of any potential synergies with planned renewals
- aligning capacity with major programmes
- affordability
- value for money

METRO

The 'Metro' area covers the suburban services into London Bridge, Charing Cross, Cannon Street, Victoria and Blackfriars.
The East London Line London Overground services between Surrey Quays and Clapham Junction are also included in this category.



By 2024: lengthen peak hour (08:00-08:59) arrivals at:

London Bridge to 12-car

- Platform extensions or Selective Door Opening (SDO) may be required at Woolwich Dockyard (pale blue on the map)
- Signal moves may be required at Erith Triangle, Crayford Triangle, Grove Park Sidings, Gillingham and Waterloo East

London Victoria to 8-car

- Reconfigure existing or procure new high-density trains

London Blackfriars (via Elephant & Castle) to 8-car

- Most trains will be new high-density trains by 2018

Freight connection to Angerstein Wharf & freight gauge clearance

By 2044: further work will be required to develop the following schemes:

London Bridge Corridor

- Capacity improvements required at Cannon Street and Charing Cross
- Possible junction reconfiguration at pinch-points

London Victoria Corridor

- Capacity improvements required at and on approach to Victoria
- Possible junction reconfiguration and platform lenghtening for 12-car trains

London Blackfriars to 12-car (should it be required north of London)

- Platform extensions at all the stations shown in orange on the above map
- Possible Metroisation of the Metro area and extension of Crossrail to Gravesend

Possible passing track between Peckham Rye and Nunhead

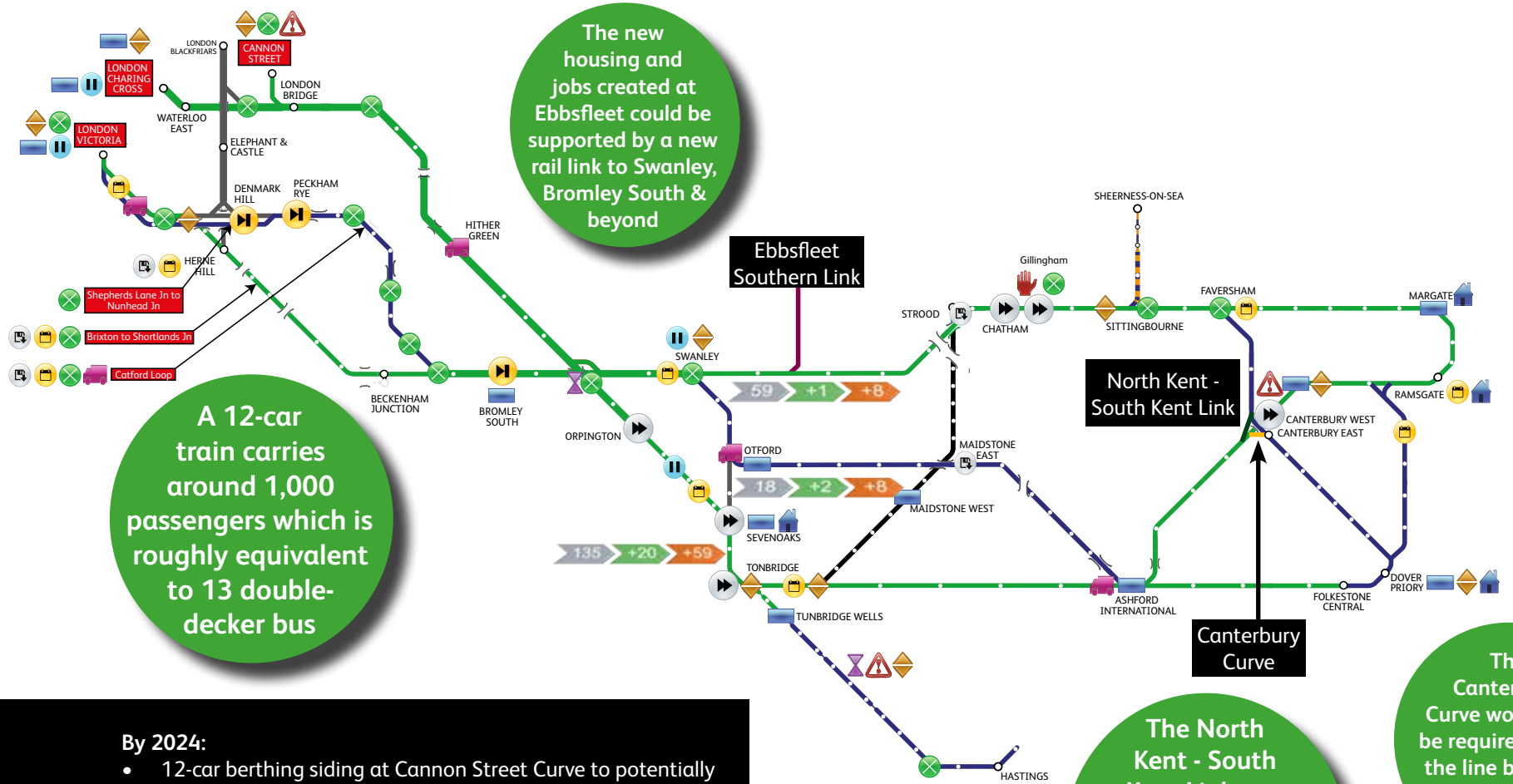
Choices for funders

MAIN LINE & BRANCHES

The 'Kent Main Line & Branches' area covers the Main Line services into London Bridge, Charing Cross, Cannon Street, Victoria & Blackfriars as well as the Sheerness Branch (Sittingbourne - Sheerness-on-Sea) and Medway Valley Line (Strood - Maidstone West - Paddock Wood - Tonbridge) services.

- Platform length/availability
- Service pattern/journey time
- Two-track section
- Location Name — Key constraint location
- Station capacity enhancement by 2023
- Station capacity enhancement post-2023
- Blue stations
- Orange stations
- } Possible platform extensions or Selective Door Opening

Green lines - predominantly 12-car services
Blue lines - predominantly 8-car services
Red line - frequent 5-car services
Black line - 3-car services
Orange line - 2-car services
Purple line - proposed Ebbsfleet Southern Link
Yellow line - proposed Canterbury Curve
Dark green line - proposed North Kent - South Kent Link



The new housing and jobs created at Ebbsfleet could be supported by a new rail link to Swanley, Bromley South & beyond

A 12-car train carries around 1,000 passengers which is roughly equivalent to 13 double-decker bus

The North Kent - South Kent Link was looked at as a long term connection between Faversham and Ashford International

The Canterbury Curve would only be required should the line be closed between Dover and Folkestone

Choices for funders

By 2024:

- 12-car berthing siding at Cannon Street Curve to potentially enable an additional train per hour
- Freight gauge clearance from Channel Tunnel to West London Line via Maidstone East/Farningham Road and Catford Loop

By 2044:

- Further work required to develop solutions on the London Bridge and Victoria corridors (see Metro area)
- Potential additional link lines (shown on the map)

HIGH SPEED & MARSHLINK

The High Speed services operate between London St Pancras International and Faversham/Ramsgate (via Medway, Canterbury West and Folkestone Central).
The Department for Transport also requested that High Speed services to Hastings and Bexhill be explored.

By 2024:
High Speed - all peak services to be formed of 12-car trains plus an additional 12-car train to Ashford International - requires more rolling stock, platform extension at Maidstone West, possible power supply enhancements and timetable alterations on HS1.

By 2044:
High Speed - connection to Hastings (may require additional pathways on HS1)

Potential additional link lines (shown on the map)

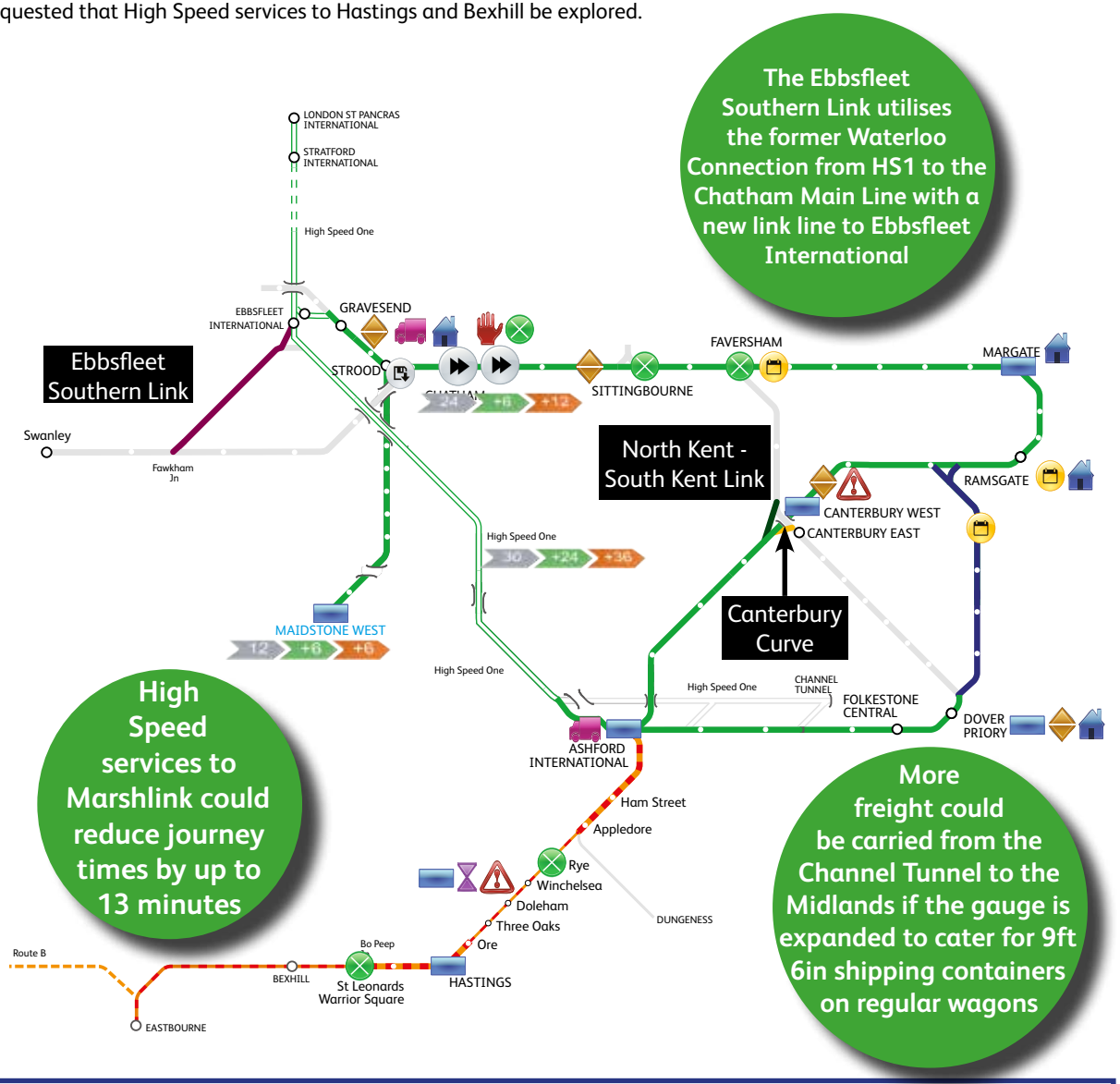
Marshlink High Speed:
The connection of Marshlink to High Speed 1 requires new sets of points at Ashford International to enable trains to cross from Platform 2 to HS1 but that is just the beginning...

...there are some questions that need answering:
- should the line be electrified and if so, to 25kV AC overhead or 750V DC third rail?
- which trains are going to use it?
- where are the trains going? Hastings, Bexhill and Eastbourne were looked at

...but there are some Choices for Funders that could be carried out with or without High Speed services:
- linespeed improvements between Eastbourne and Hastings 70 to 90 mph
- linespeed improvements between Ore and Doleham 40 to 60 mph
- linespeed improvements between Doleham and Ashford International 60 to 90 mph
- junction improvements Appledore
- junction improvements and platform extensions at Rye.

Some of the schemes, such as the linespeed improvements, may be funded by local authorities, LEPs or other funders. It will need the assistance of local land owners, level crossing users etc. to develop a strategy of closures, mergers or other solutions for the many level crossings between Ore and Ashford International.

The South Eastern Franchise competition is being consulted on at the same time as the Route Study so now is a good time to share your views on this scheme - further information on the scheme can be found in the Route Study and Technical Appendix. Details of the franchise process can be found on the back cover of this document.



CHOICES FOR FUNDERS

Conditional Output	Choice for Funders	By 2024								2024 - 2044							
		More trains	Longer trains	Platform extensions	Station improvements	Linespeed Improvements	Power Supply Enhancement	Significant Infrastructure Enhancement	Berthing Siding Improvements	More trains	Longer trains	Platform extensions	Station improvements	Linespeed Improvements	Power Supply Enhancement	Significant Infrastructure Enhancement	Berthing Siding Improvements
London Bridge Metro	12-car services: Dartford Lines		✓	✓					✓	Further development work required							✓
	12-car services: Hayes Line		✓						✓								✓
	12-car services: Orpington & Sevenoaks		✓						✓								✓
Victoria Metro	8-car trains		✓							Further development work required							
High Speed	12-car services: Medway		✓						✓								✓
	12-car services: Maidstone		✓	✓			✓		✓								✓
	12-car services: Ashford International	✓	✓				✓		✓								✓
Blackfriars	12-car services		✓	✓					✓		✓	✓					
London Bridge & Victoria Main Line	12-car services		✓						✓	Further development work required		✓	✓			✓	✓
	Ashford - Ramsgate additional services							✓	✓								✓
Third Party Proposals	TfL's Bakerloo Line Extension															✓	
	TfL's Metroisation									✓			✓			✓	
	Crossrail towards Gravesend									✓			✓			✓	
Various Conditional Outputs	Marshlink High Speed					✓	Option			✓	✓	✓			Option	✓	✓
North to South Kent Connectivity	Ebbsfleet Southern Link									✓						✓	
	North Kent to South Kent									✓						✓	
Freight	Angerstein Wharf Connection									✓						✓	
	Nunhead Passing Loop									✓						✓	
	Howbury Park Freight Terminal									✓							
	Gauge Clearance									✓						✓	
Improved passenger circulation at stations	Lewisham				✓												
	Denmark Hill				✓												
	Peckham Rye				✓												
	Bromley South				✓												
	Brixton				✓												
	Beckenham Junction												✓				
	Dartford												✓				
	Chatham												✓				
	Tonbridge												✓				
Resilience	Canterbury Chord														✓	✓	

CONSULTATION & NEXT STEPS

The full version of the Kent Route Study document and the associated Technical Appendix can be found on the Network Rail website.

It is also suggested that the Department for Transport's South Eastern Franchise consultation document is also reviewed - it can be found at www.dft.gov.uk.

To provide clarity to respondents and avoid duplication it is requested that any comments regarding passenger capacity on trains and lengthening of trains are addressed through the DfT franchise consultation and not the Route Study consultation.

To respond to the Route Study consultation please email:

KentRouteStudy@networkrail.co.uk

Or by post to:

South East Route: Kent Area Route Study Consultation
Senior Strategic Planner (South East)
Network Rail
Cottons Centre
Cottons Lane
London
SE1 2QG

Closing date: 30 June 2017