

Framework Capacity Statement

Network Rail

December 2016

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1. Purpose

1.1 Purpose

This statement is published alongside Network Rail's Network Statement in order to meet the requirements of [European Commission Implementing Regulation \(EU\) 2016/545](#) of 7 April 2016 on procedures and criteria concerning framework agreements for the allocation of rail infrastructure capacity. The third 'recital' prefacing the regulation includes the following:

“Potential applicants need transparency concerning the allocated framework capacity and the remaining indicative capacity on a line. With a view to avoiding administrative burden related to framework agreements, potential applicants should get a first impression of how likely it is that their applications will be approved.”

Framework capacity is any capacity contracted for sale for more than one (annual) timetable period. Therefore any firm rights under a Track Access Contract fall within this definition, until towards the end of the term of the contract. This Framework Capacity Statement has been produced to improve the clarity and transparency of those rights, and their implications for parties seeking new or additional capacity on Network Rail infrastructure. It fits well with Network Rail's current transformation programme, to make the company more focussed on and accessible to its customers.

Due to the nature of framework capacity, which legally must not specify a train path, it is not possible to be precise about the quantity of capacity that is used by these rights, and consequently the capacity that remains available for use. That can only be identified once the rights are used to create train paths in a timetable. Potential applicants are urged to use this document as an initial guide, to read it in conjunction with the advice in the Network Statement, and to contact us directly at the earliest opportunity to discuss capacity requirements more specifically.

The limitations of a Framework Capacity Statement are discussed more fully in the Annex. In particular we are interested to hear readers' views on

the form in which data may be presented. The contracts containing the access rights are publicly available elsewhere, and links are provided in section 2.2. However, the way in which the rights are described when combined on the geography of the railway network, and over time, to meet the requirements of the regulation, is open to some interpretation. It would be possible to expend a large amount of resource on producing tabulated information that might be of little or no practical use to potential applicants.

In the main document we present several of the possible ways of (dis)aggregating and presenting the data. The Annex provides a commentary on these and others, with questions to encourage stakeholder input. We hope you will respond to help us develop this statement into a format that will be of increasing usefulness to existing and potential train operators. We would be delighted to hear from you.

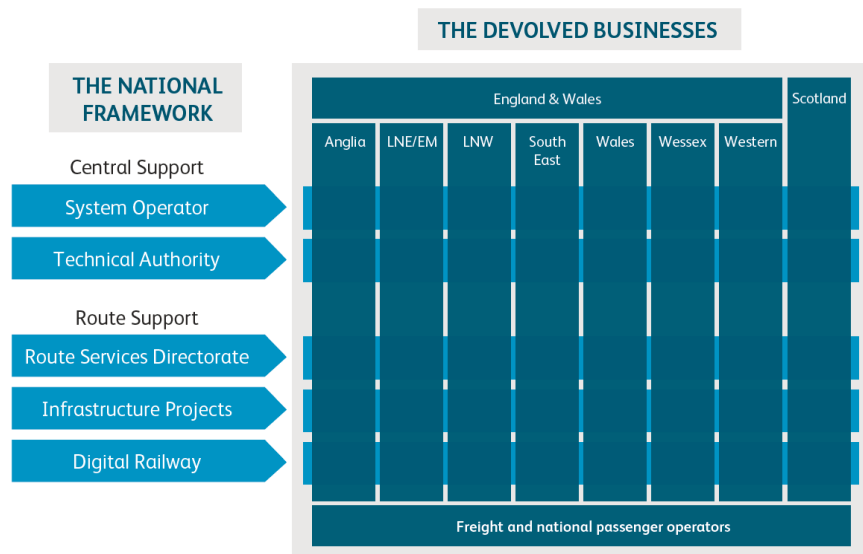


2. National overview

2.1 Infrastructure covered by this statement

The national rail network in Great Britain operated by Network Rail is defined in Network Rail's Network Statement which can be found at <http://www.networkrail.co.uk/asp/3645.aspx>.

This network is managed through eight devolved management units known as Routes, as shown in the adjacent map. There is a ninth 'virtual' Route for Freight and National Operators. Each Route is considered in turn in section 3 of this document.



For planning purposes the whole network is divided into 17 Strategic Routes. These are further divided into a total of 305 Strategic Route Sections. These and other divisions are considered in section 4 of this document.



Infrastructure belonging to other Infrastructure Managers is excluded from this statement: adjacent networks include High Speed One, Eurotunnel and Heathrow Airport's rail system. Some railway infrastructure is outside the scope of the Regulation, for example light rail systems and the London Underground. A full list of adjacent infrastructure is given in section 3.2.2 of the Network Statement.

Network Rail has declared some of its network as **specialised infrastructure** under Regulation 25 of the 2016 Access & Management Regulations. Currently the two railway test tracks at High Marnham (Nottinghamshire) and Old Dalby (Leicestershire/Nottinghamshire) fall into this category. These are subject to bespoke access arrangements as set out in section 3.4.1 of the Network Statement, which do not constitute framework capacity and the test tracks are therefore excluded from this statement. Further information is available at <http://www.networkrail.co.uk/ridc/>.

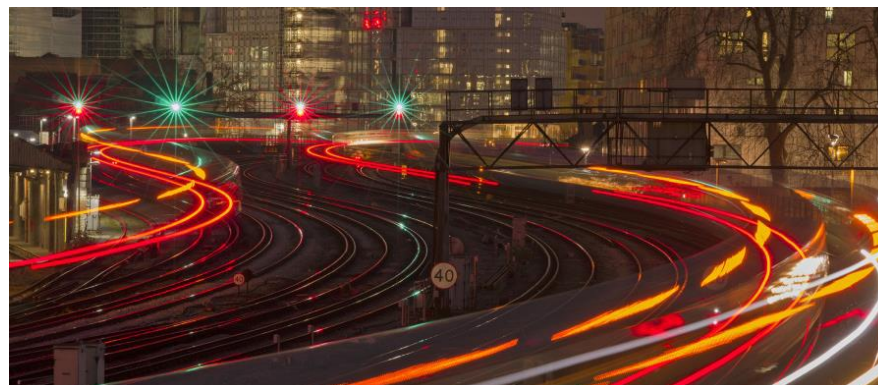
Parts of the network included in this statement are currently declared as **congested infrastructure** under Regulation 26 of the 2016 Access & Management Regulations. These are detailed in section 4.4.3 of the Network Statement and also noted in the appropriate sections of this document.

2.2 Framework Agreements in Great Britain

Regulation 3 of the [2016 Access & Management Regulations](#) defines a framework agreement as “*either (a) an access contract described in section 18(2)(a) of the [1993 Railways] Act [as amended] which satisfies one of the conditions in sub-section (1) of that section; or (b) a legally binding agreement made other than in pursuance of section 17 or 18 of the [1993 Railways] Act [as amended] setting out the rights and obligations of an applicant and the infrastructure manager or, as the case may be, allocation body in relation to the infrastructure capacity to be allocated and the charges to be levied over a period in excess of one working timetable period*”.

In respect of Network Rail's network, this means all track access contracts. However, some contracts include only contingent rights, i.e. for certain freight operators and for all passenger charter train operators. These do not constitute framework capacity, because the capacity is not allocated prior to the timetable planning processes; effectively these contracts provide only a right to request capacity rather than a right to receive capacity. These contracts are identified separately in the list below.

Consolidated, redacted copies of the contracts in the list may be found on the Office of Rail & Road website at <http://orr.gov.uk/what-and-how-we-regulate/track-access/applications-decisions-appeals-and-agreements/consolidated-agreements>, except where noted otherwise by footnote.



Passenger services (firm rights)

Abellio Scotrail, t/a ScotRail
Abellio Greater Anglia
Arriva Rail London, t/a Overground
Arriva Rail North, t/a Northern
Arriva Trains Wales
Chiltern Railway Company, t/a Chiltern Railways
Chinnor & Princes Risborough Railway (no quantified firm rights) ¹
DB Regio Tyne & Wear, t/a Metro
East Coast Main Line Company, t/a Virgin Trains East Coast
East Midlands Trains
Eurostar International, t/a Eurostar ¹
Festiniog Railway (no quantified firm rights) ¹
First Greater Western, t/a Great Western Railway or Heathrow Connect
First Transpennine Express, t/a TransPennine Express ¹
Govia Thameslink Railway, t/a Gatwick Express, Great Northern, Southern or Thameslink
Grand Central Railway Company, t/a Grand Central
Heathrow Express Operating Company, t/a Heathrow Connect
Heathrow Express Operating Company, t/a Heathrow Express ²
Hull Trains Company, t/a Hull Trains
London & Birmingham Railway, t/a London Midland
London & South Eastern Railway, t/a Southeastern
Merseyrail Electrics 2002, t/a Merseyrail
MTR Crossrail, t/a TfL Rail
North Yorkshire Moors Railway Enterprises, t/a North Yorkshire Moors Railway
NXET Trains, t/a c2c
Peak Rail (no quantified firm rights)
Serco Caledonian Sleepers, t/a Caledonian Sleeper
Stagecoach South Western Trains, t/a South West Trains
West Coast Railway Company, t/a West Coast Railways
West Coast Trains, t/a Virgin Trains
XC Trains, t/a CrossCountry

¹ Can be found on the Office of Rail & Road's public register at <https://sites.google.com/a/orr.gov.uk/orr-public-register/>

² Can be found at [tba]

Freight services (firm rights)

Colas Rail
DB Cargo
Direct Rail Services
Freightliner
Freightliner Heavy Haul
GB Railfreight

Passenger charter services (contingent rights only)

Direct Rail Services
First Greater Western
GB Railfreight
Grand Central Railway Company
Rail Express Systems, t/a DB Cargo
West Coast Railway Company, t/a West Coast Railways

Freight or freight customer services (contingent rights only)

Associated British Ports
Devon and Cornwall Railways
Harsco Rail
London Gateway Port
Rail Operations Group
Tarmac Trading and Tarmac Cement & Lime
Victa Railfreight
West Coast Railway Company

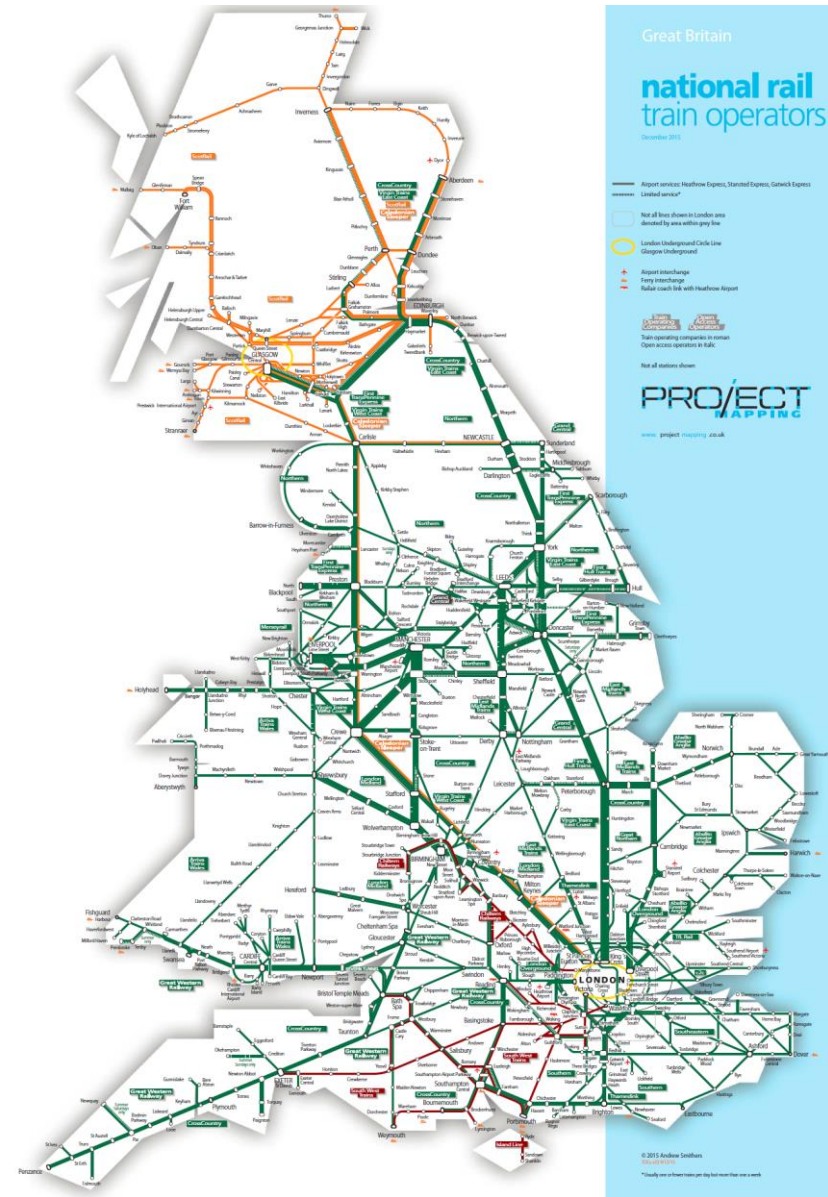
Applicants or potential applicants for new or amended framework agreements are encouraged to contact Network Rail as early as possible, to enable us to help identify where capacity exists that could meet the applicant's requirements and to consider all potential users where capacity is scarce. We will undertake consideration of access requests in accordance with our Access Rights Policy which can be found at <http://www.networkrail.co.uk/using-our-network/Sale-of-Access-Rights.aspx>.

Access rights are increasingly expressed with more flexibility than has historically been the case in Great Britain. It is common for passenger rights to be expressed as a quantum for each 24-hour period, and for freight rights to be expressed in a two-hour 'window' for departure and arrival times. This approach is consistent with Network Rail's Access Rights Policy and ORR's Criteria & Procedures for the approval of track access contracts, which can be found at <http://orr.gov.uk/what-and-how-we-regulate/track-access/guidance>.

The adjacent map gives an indication (orange or red routes) of where passenger train operators still have a greater degree of specific protections in their contracts.

2.3 Capacity allocation in Great Britain

Each Track Access Contract incorporates the Network Code, which is a common set of provisions relating to the functioning of the railway system. Part D of the Network Code relates to timetable change. It sets out the processes for the bi-annual timetable revision and for variations subsequent to that revision. These are the means by which access rights are given effect as train paths in the timetable. The Network Code can be found at <http://www.networkrail.co.uk/browseDirectory.aspx?root=&dir=%5cNetwork%20Code%5cNetwork%20Code%20and%20incorporated%20documents%5cCurrent%20Network%20Code%20document%20by%20Part>.



2.4 National capacity overview – who operates where

The following table indicates which passenger train operator has firm rights to operate on any part of each Strategic Route Section (SRS). Freight firm rights are more complex to analyse, but attempts have been made to include them in the disaggregated examples shown in section 4 of this document. Note that some SRSs span more than one Route; this is indicated in the third column. Where the SRS is highlighted in red then part or all of that SRS is currently declared to be congested infrastructure.

SRS	Description	Route	AGA	ATW	Caledonian Sleeper	Chikem	C&PR	CrossCountry	C2c	EMT	Eurostar	GTR	GC	GWR	Heathrow Connect	Heathrow Express	Hull Trains	LM	London Overground	LUL	Merseyrail	Northern	NYMR	Peak Rail	ScotRail	SWT	Southeastern	TfL Rail	TPE	T&W Metro	VTEC	VTWC
A.01	Victoria Lines	SE																														
A.02	Otford - Sevenoaks	SE																														
A.03	London (Charing Cross and Cannon Street) - Chislehurst	SE																														
A.04	Chislehurst - Tonbridge	SE																														
A.05	Chislehurst - Ashford (via Maidstone East)	SE																														
A.06	Tonbridge - Hastings	SE																														
A.07	Dartford Lines to Gravesend and Hayes Branch	SE																														
A.08	Bromley North Branch	SE																														
A.09	Gravesend/Swanley - Margate	SE																														
A.10	Sheerness Branch	SE																														
A.11	Strood - Paddock Wood	SE																														
A.12	East Kent Routes	SE																														
A.13	Hastings - Ashford	SE																														
A.14	Tonbridge - Continental Junction	SE																														
A.99	Freight Routes	SE																														
B.01	London Victoria - Windmill Bridge Junction	SE																														
B.02	Windmill Bridge Junction - Brighton	SE																														
B.03	London Bridge - Windmill Bridge Junction	SE																														
B.04	Three Bridges - Arundel Junction	SE																														
B.05	Brighton - Havant	SE																														
B.06	Brighton /Wivelsfield - Seaford/Hastings	SE																														
B.07	South Central Inner Suburban	SE																														
B.08	South Central Sutton Lines	SE																														
B.09	Dorking - Horsham	SE																														
B.10	Hurst Green - Uckfield	SE																														
B.11	Tattenham Corner and Caterham Lines	SE																														
B.12	East Grinstead Line	SE																														
B.13	West London Line	SE																														
B.14	Thameslink Core	SE																														
B.15	Redhill - Tonbridge	SE																														
B.99	Freight Routes	SE																														
C.01	London Waterloo - Woking	Wessex																														
C.02	Woking - Basingstoke	Wessex																														
C.03	Basingstoke - Southampton	Wessex																														
C.04	Southampton - Weymouth	Wessex																														
C.05	Lymington Branch	Wessex																														
C.06	Woking - Portsmouth	Wessex																														
C.07	Main Line Suburban Lines	Wessex																														

SRS	Description	Route	AGA	ATW	Caledonian Sleeper	Chiltern	C&PR	CrossCountry	C2c	EMT	Eurostar	GTR	GC	GWR	Heathrow Connect	Heathrow Express	Hull Trains	LM	London Overground	LUL	Merseyrail	Northern	NYMR	Peak Rail	ScotRail	SWT	Southeastern	TfL Rail	TPE	T&W Metro	VTEC	VTWC
C.08	Redhill - Guildford	Wessex + SE																														
C.09	Guildford - Wokingham	Wessex																														
C.10	Isle of Wight	Wessex																														
C.11	Cosham - St Denys/Eastleigh	Wessex																														
C.12	Inner Windsor Lines	Wessex																														
C.13	Outer Windsor Lines	Wessex																														
C.14	Basingstoke - Salisbury	Wessex																														
C.15	Salisbury - Exmouth Junction	Wessex																														
C.16	Redbridge/Eastleigh - Salisbury	Wessex																														
C.17	Brookwood - Alton	Wessex																														
C.99	Other Freight Lines	Wessex																														
D.01	Bethnal Green - Stansted Airport	Anglia																														
D.02	Hackney Downs - Cheshunt/Enfield Town	Anglia																														
D.03	Hertford East Branch	Anglia																														
D.04	Chingford Branch	Anglia																														
D.05	Stansted Junctions - Ely	Anglia																														
D.06	Ely - Kings Lynn	Anglia																														
D.07	Peterborough - Stowmarket	Anglia																														
D.08	Cambridge - Chippenham Junction	Anglia																														
D.09	Ely - Norwich	Anglia																														
D.10	London Liverpool Street - Shenfield	Anglia																														
D.11	Shenfield - Ipswich	Anglia																														
D.12	Ipswich - Norwich	Anglia																														
D.13	Shenfield - Southend/Southminster	Anglia																														
D.14	Braintree Branch	Anglia																														
D.15	Harwich Branch	Anglia																														
D.16	Walton and Clacton Branches	Anglia																														
D.17	Upminster Branch	Anglia																														
D.18	Sudbury Branch	Anglia																														
D.19	East Suffolk Line and Norfolk Branches	Anglia																														
D.20	Felixstowe - Ipswich	Anglia																														
D.99	Other Freight Lines	Anglia																														
E.01	Richmond - Willesden Junction	Anglia																														
E.02	Willesden Junction - Gospel Oak	Anglia																														
E.03	Gospel Oak - Stratford	Anglia																														
E.04	Gospel Oak - Woodgrange Park	Anglia																														
E.05	Forest Gate Junction - Barking	Anglia																														
E.91	Dudding Hill Line	Anglia																														
E.99	Other Freight Lines	Anglia																														
F.01	London Fenchurch Street - Shoeburyness	Anglia																														
F.02	Tilbury Loop	Anglia																														
F.99	Other Freight Lines	Anglia																														
G.01	London King's Cross - Peterborough	LNE																														
G.02	Moorgate Branch	LNE																														
G.03	Hertford Loop	LNE																														
G.04	Hitchin - Cambridge	LNE																														
G.05	Peterborough - Doncaster	LNE																														
G.06	Doncaster - Leeds (via Wakefield Westgate)	LNE																														

SRS	Description	Route	AGA	ATW	Caledonian Sleeper Chiltern C&PR	CrossCountry C2C	EMT	Eurostar GTR	GC	GWR	Heathrow Connect Heathrow Express Hull Trains LM	London Overground LUL	Merseyrail Northern NVMR	Peak Rail ScotRail SWT	Southeastern TfL Rail TPE	T&W Metro VTEC	VTWC
G.07	Doncaster - Colton Junction	LNE				■	■	■									
G.08	Colton Junction - Northallerton	LNE															
G.09	Northallerton - Newcastle	LNE															
G.10	Newcastle - Border (near Berwick-upon-Tweed)	LNE				■											
G.11	Border (near Berwick-upon-Tweed) - Edinburgh	Scotland															
G.12	North Berwick Branch	Scotland															
G.13	Newcastle - Carlisle	LNE															
G.14	Darlington - Bishop Auckland	LNE															
G.15	Middlesbrough - Whitby	LNE															
G.16	Northallerton - Eaglescliffe	LNE															
G.17	Eglescliffe - Newcastle via Durham Coast	LNE															
G.18	Darlington - Eaglescliffe	LNE															
G.19	Eglescliffe - Saltburn	LNE															
G.20	Doncaster - Lincoln	LNE															
G.21	Newark - Barnetby	LNE															
G.22	Gainsborough - Barnetby	LNE															
G.23	Lincoln - Peterborough (via Spalding)	LNE															
G.90	Stillington Branch	LNE															
G.91	Blyth and Tyne Network	LNE															
G.98	Freigh Trunk Routes	LNE															
G.99	Other Freight Lines	LNE															
H.01	Leeds - Holbeck Junction	LNE				■	■										
H.02	Leeds - York via Harrogate	LNE															
H.03	Leeds - Skipton/Ilkley	LNE															
H.04	Leeds - Halifax via Bradford	LNE															
H.05	North Transpennine: Leeds - Guide Bridge	LNE + LNW															
H.06	Leeds - Colton Junction	LNE				■											
H.07	Hull - Micklefield	LNE															
H.08	Gilberdyke - Hatfield & Stainforth/Knottingley a	LNE															
H.09	Knottingley - Mirfield via Crofton Junction and v	LNE															
H.10	Manchester Victoria - Mirfield (via Rochdale)/St	LNW + LNE															
H.11	Hull - Seamer	LNE															
H.12	York - Scarborough	LNE															
H.13	Chesterfield - Swinton via Sheffield	LNE				■	■										
H.14	Swinton - Brocklesby Junction	LNE															
H.15	South Kirkby Junction - Swinton	LNE				■	■										
H.16	Sheffield - Gainsborough	LNE															
H.17	South Transpennine: Dore - Hazel Grove	LNW															
H.18	Sheffield Meadowhall - Horbury Junction	LNE															
H.19	Brocklesby Junction - Cleethorpes	LNE															
H.20	Penistone Line	LNE															
H.21	Barton-on-Humber Branch	LNE															
H.22	Manchester Piccadilly - Crewe	LNW		■													
H.23	Manchester Piccadilly - Deansgate	LNW		■													
H.24	Deansgate - Liverpool South Parkway	LNW															
H.25	Liverpool Lime Street - Liverpool South Parkway	LNW															
H.26	North Transpennine: Manchester Piccadilly - Gu	LNW															
H.27	Deansgate - Euxton Junction (via Bolton)	LNW															

SRS	Description	Route	AGA	ATW	Caledonian Sleeper Chiltern	C&PR	CrossCountry C2C	EMT	Eurostar	GTR	GC	GWR	Heathrow Connect	Heathrow Express	Hull Trains	LM	London Overground	LUL	Merseyrail	Northern	NYMR	Peak Rail	ScotRail	SWT	Southeastern	TfL Rail	TPE	T&W Metro	VTEC	VTWC
H.28	Ashburys/Hyde North - New Mills Central/Rose	LNW																												
H.29	Guide Bridge - Glossop/Hadfield	LNW																												
H.30	Guide Bridge - Chester (via Stockport)	LNW																												
H.31	Manchester Airport - Wilmslow/Slade Lane Junc	LNW		■																										
H.32	Blackpool North Branch	LNW																												
H.33	Edge Hill - Manchester Victoria (via Earlestown)	LNW					■																							
H.34	Southport/Kirkby - Wigan Wallgate	LNW																												
H.35	Wigan Wallgate - Manchester Victoria	LNW																												
H.36	Buxton Branch	LNW																												
H.37	Bolton - Blackburn	LNW																												
H.38	Hazel Grove - Edgeley Junction	LNW						■																						
H.39	Cumbrian Coast	LNW																												
H.40	Settle and Carlisle Line	LNW																												
H.41	Windermere Branch	LNW																												
H.42	Carnforth - Long Preston	LNW																												
H.43	Morecambe/Heysham Port Branch	LNW																												
H.44	Roses Line and Branches (including Preston - Ori	LNW																												
H.45	Chester/Ellesmere Port - Warrington Bank Quay	LNW		■																										
H.46	Blackpool South Branch	LNW																												
H.90	Immingham and Killingholme Docks	LNE																												
H.91	Yorkshire Freight Routes	LNE																												
H.98	Freight Trunk Routes	LNE + LNW																												
H.99	Other Freight Routes	LNW																												
I.01	London St Pancras - Bedford	LNE						■		■																				
I.02	Bedford - Nottingham	LNE					■	■		■																				
I.03	Wichnor Junction/Long Eaton - Chesterfield (via	LNE					■	■																						
I.04	Worksop/Chesterfield - Nottingham	LNE						■																						
I.05	Nottingham - Newark Crossing	LNE						■																						
I.06	Matlock Branch	LNE						■																						
I.07	Netherfield - Grantham	LNE						■																						
I.08	Skegness - Grantham	LNE						■																						
I.09	Nuneaton - South Wigston	LNE					■	■																						
I.10	Syston Junctions - Peterborough/Corby	LNE					■	■																						
I.11	North Stafford Junction - Stoke-on-Trent	LNE						■																						
I.98	Freight Trunk Routes	LNE																												
I.99	Other Freight Routes	LNE																												
J.01	London Paddington - Heathrow Airport Junction	Western										■	■	■																
J.02	Heathrow Airport Junction - Reading	Western										■	■	■																
J.03	Reading - Didcot	Western										■	■	■																
J.04	Didcot - Border (near Pilning)	Western										■	■	■																
J.05	Reading - Newbury	Western										■	■	■																
J.06	Newbury - Cogload Junction	Western										■	■	■										■						
J.07	Didcot - Oxford	Western										■	■	■																
J.08	Greenford Lines	Western										■	■	■																
J.09	Reading - Basingstoke	Wessex										■	■	■																
J.10	Swindon - Standish Junction	Western										■	■	■																
J.11	Cotswolds Line (Wolvercot Junction - Norton Jur	Western										■	■	■																
J.12	Henley-on-Thames Branch	Western										■	■	■																

SRS	Description	Route	AGA	ATW	Caledonian Sleeper Chiltern	C&PR	CrossCountry C2c	EMT	Eurostar	GTR	GC	GWR	Heathrow Connect	Heathrow Express	Hull Trains	LM	London Overground	LUL	Merseyrail	Northern	NYMR	Peak Rail	ScotRail	SWT	Southeastern	TfL Rail	TPE	T&W Metro	VTEC	VTWC
J.13	Marlow Branch	Western										█																		
J.14	Windsor & Eton Branch	Western										█																		
J.15	Bicester Town Branch	LNW			█																									
J.16	Heathrow Airport	Western										█	█	█																
J.98	Freight Trunk Routes	Western										█																		
J.99	Other Freight Lines	Western										█																		
K.01	Bristol Temple Meads - Exeter St Davids	Western					█					█																		
K.02	Exeter St Davids - Plymouth	Western					█					█																		
K.03	Plymouth - Penzance	Western					█					█																		
K.04	Salisbury (Wilton Junction) - Bathampton Junction	Western										█												█						
K.05	Castle Cary - Dorchester	Western										█												█						
K.06	Exeter - Exmouth Junction	Western										█												█						
K.07	Paignton Line	Western					█					█																		
K.08	Barnstaple Branch	Western										█																		
K.09	St Ives Branch	Western										█																		
K.10	Looe Branch	Western										█																		
K.11	Exmouth Branch	Western										█																		
K.12	Falmouth Docks Branch	Western										█																		
K.13	Newquay Line	Western					█					█																		
K.14	Gunnislake Branch	Western										█																		
K.15	Swindon (via Bath Spa)/Filton and Patchway Junction	Western					█					█												█						
K.16	Bristol - Birmingham Line	Western					█					█			█															
K.17	Weston-super-Mare Loop	Western					█					█																		
K.18	Severn Beach Branch	Western										█																		
K.98	Freight Trunk Routes	Western										█																		
K.99	Other Freight Lines	Western										█																		
L.01	Border (near Pilning) - Swansea	Wales	█	█			█					█																		
L.02	Gloucester - Chepstow	Wales	█	█			█					█																		
L.03	Chepstow - Severn Tunnel Junction	Wales	█	█			█					█																		
L.04	Newport - Border (near Pontrilas)	Wales	█	█								█																		
L.05	Border (near Pontrilas) - Crewe	Wales	█	█								█			█														█	
L.06	Heart of Wales Line: Craven Arms - Knighton	Wales	█	█								█																		
L.07	Heart of Wales Line: Knighton - Llanelli	Wales	█	█								█																		
L.08	Cambrian Lines: Shrewsbury - Border (near Midwales)	Wales	█	█								█																		
L.09	Cambrian Lines: Border (near Middletown) - Aberystwyth	Wales	█	█								█																		
L.10	Shrewsbury - Border (near Chirk)	Wales	█	█								█																		
L.11	Border (near Chirk) - Border (near Pulford)	Wales	█	█								█																	█	
L.12	Border (near Pulford) - Saltney Junction	Wales	█	█								█																	█	
L.13	Chester - Saltney Junction	Wales	█	█								█																	█	
L.14	Saltney Junction - Holyhead	Wales	█	█								█																	█	
L.15	Bidston - Border (near Hawarden Bridge)	Wales	█	█								█																	█	
L.16	Border (near Hawarden Bridge) - Wrexham Central	Wales	█	█								█																	█	
L.17	Newport - Ebbw Vale	Wales	█	█								█																		
L.18	South Wales Valleys	Wales	█	█								█																		
L.19	Bridgend - Maesteg	Wales	█	█								█																		
L.20	Swansea - Milford Haven	Wales	█	█								█																		
L.21	Whitland - Pembroke Dock	Wales	█	█								█																		
L.22	Clarbeston Road - Fishguard Harbour	Wales	█	█								█																		

SRS	Description	Route	AGA	ATW	Caledonian Sleeper	Chiltern	C&PR	CrossCountry	C2c	EMT	Eurostar	GTR	GC	GWR	Heathrow Connect	Heathrow Express	Hull Trains	LM	London Overground	LUL	Merseyrail	Northern	NYMR	Peak Rail	ScotRail	SWT	Southeastern	TfL Rail	TPE	T&W Metro	VTEC	VTWC
L.23	Llandudno - Blaenau Ffestiniog	Wales		■																												
L.99	Other Freight Lines	Wales																														
M.01	London Marylebone - Aynho Junction	LNW				■	■																									
M.02	Neasden South Junction - Harrow	LNW				■	■																									
M.03	Amersham - Aylesbury Vale	LNW				■	■																									
M.04	Princes Risborough - Aylesbury	LNW				■	■																									
M.05	Rugby - Birmingham New Street	LNW		■				■											■												■	
M.06	Birmingham New Street - Wolverhampton	LNW		■				■											■												■	
M.07	Wolverhampton - Stafford	LNW		■				■											■												■	
M.08	Birmingham New Street - Barnt Green	LNW		■				■											■												■	
M.09	Barnt Green - Stoke Works Junction	Western						■											■													
M.10	Birmingham - Wichnor Junction	LNW						■											■													
M.11	Oxford - Coventry	LNW + Western				■	■												■													
M.12	Leamington Spa - Birmingham Snow Hill	LNW				■	■												■													
M.13	Stechford - Wolverhampton via Aston	LNW				■	■												■													
M.14	Birmingham Snow Hill - Stourbridge Junction	LNW				■	■												■													
M.15	Stourbridge - Worcester/Hereford	LNW + Western				■	■							■					■													
M.16	Stratford-upon-Avon Lines	LNW				■	■												■													
M.17	Cross City North	LNW						■											■													
M.18	Rugeley - Bescot	LNW						■											■													
M.19	Redditch - Barnt Green	LNW						■											■													
M.20	Wolverhampton - Shrewsbury	LNW		■				■											■												■	
M.21	Camp Hill Line	LNW						■											■													
M.22	Water Orton - Nuneaton	LNW						■											■													
M.23	Nuneaton - Coventry	LNW						■											■													
M.24	Soho Junctions - Perry Barr Junctions	LNW						■											■													
M.25	Stourbridge Branch	LNW						■											■													
M.98	Freight Trunk Routes	LNW						■											■													
M.99	Other Freight Routes	LNW						■											■													
N.01	London Euston - Rugby	LNW				■	■					■							■												■	
N.02	Rugby - Stafford	LNW				■	■												■												■	
N.03	Stafford - Crewe	LNW				■	■												■												■	
N.04	Crewe - Preston	LNW		■				■											■												■	
N.05	Preston - Border (near Gretna Junction)	LNW		■				■											■												■	
N.06	Border (near Gretna Junction) - Carstairs South J	Scotland				■	■												■												■	
N.07	Weaver Junction - Liverpool South Parkway	LNW						■											■												■	
N.08	Norton Bridge/Colwich Junction - Cheadle Hulm	LNW						■											■												■	
N.09	Crewe - Kidsgrove	LNW						■											■												■	
N.10	Watford Junction - St Albans Abbey	LNW						■											■												■	
N.11	London Euston - Watford Junction (DC Lines)	LNW						■											■												■	
N.12	Bletchley - Bedford	LNW						■											■												■	
N.13	Crewe - Chester	LNW		■				■											■												■	
N.99	Freight Lines	LNW		■				■											■												■	
O.01	Merseyrail	LNW						■											■												■	
P.01	Glasgow Queen Street - Edinburgh Waverley	Scotland				■	■												■												■	
P.02	Carstairs - Edinburgh	Scotland				■	■												■												■	
P.03	Newbridge - Drummelloch	Scotland				■	■												■												■	
P.04	Dunblane/Alloa - Polmont Junction/Greenhill U	Scotland				■	■												■												■	

SRS	Description	Route	AGA	ATW	Caledonian Sleeper	Chiltern	C&PR	CrossCountry	C2c	EMT	Eurostar	GTR	GC	GWR	Heathrow Connect	Heathrow Express	Hull Trains	LM	London Overground	LUL	Merseyrail	Northern	NYMR	Peak Rail	ScotRail	SWT	Southeastern	TfL Rail	TPE	T&W Metro	VTEC	VTMC
P.05	Newcraighall - Portobello Junction	Scotland																														
P.06	Fife Circle	Scotland																														
P.07	Dundee - Dunblane	Scotland																														
P.08	Dundee/Perth - Thornton Junctions	Scotland																														
P.09	Dundee - Aberdeen	Scotland																														
P.10	Aberdeen - Inverness	Scotland																														
P.11	Perth - Inverness	Scotland																														
P.12	Far North and Kyle Lines	Scotland																														
P.13	Borders Line	Scotland																														
P.98	Edinburgh Suburban Line	Scotland																														
P.99	Other Freight Lines	Scotland																														
Q.01	West Coast Main Line: Glasgow Central - Carstairs	Scotland																														
Q.02	Midcalder Junction - Holytown Junction	Scotland																														
Q.03	Glasgow Central - Ayr, Largs and Inverclyde	Scotland																														
Q.04	Glasgow North Electric Routes	Scotland																														
Q.05	Stranraer - Ayr	Scotland																														
Q.06	Paisley Canal Branch	Scotland																														
Q.07	Muirhouse Junction - East Kilbride/Kilmarnock	Scotland																														
Q.08	Gretna Green - Barassie Junction	Scotland																														
Q.09	Eglington Street Junction - Neilston, Newton and	Scotland																														
Q.10	Newton - Gartsherrie South/Rutherglen East Jur	Scotland																														
Q.11	Lanark Branch	Scotland																														
Q.12	Anniesland - Greenhill Lower Junction	Scotland																														
Q.13	Gretna Green - Gretna Junction	Scotland																														
Q.14	West Highland Line	Scotland																														
Q.98	City Union and Clydesdale Lines	Scotland																														
Q.99	Other Freight Lines	Scotland																														

2.5 National capacity overview – who operates when

The following table indicates the hours during which each operator has firm rights on a part of the network. It is necessarily approximate, and is divided into 2-hour 'control periods' as required by Regulation 2016/545. As explained earlier in the document, many access rights are not tightly specified to a time-band in this way, and even those that are can be applicable in several of the two-hour periods at different places on the

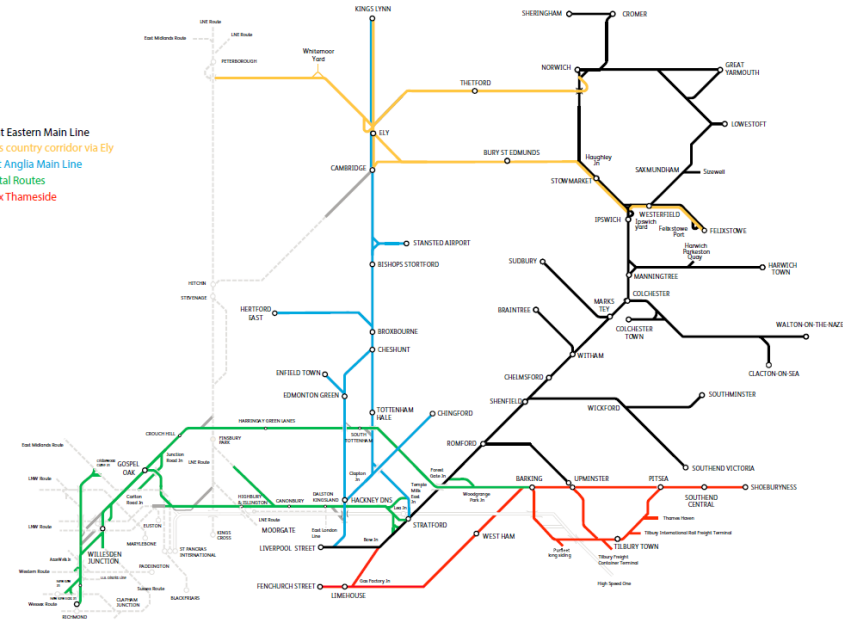
network geography. The table is black when an operator has no firm rights in this time period, and grey when it has, or potentially has, firm rights. Where rights have no time restrictions in the contract, they are shown across the 24 hours in the table, but in practice these rights are still subject to route opening hours published in the planning rules for each route. The analysis excludes weekends.

Operator	0000-0200	0200-0400	0400-0600	0600-0800	0800-1000	1000-1200	1200-1400	1400-1600	1600-1800	1800-2000	2000-2200	2200-0000
Abellio Greater Anglia												
Arriva Trains Wales												
Caledonian Sleeper												
Chiltern Railways												
CrossCountry												
c2c												
East Midlands Trains												
Eurostar												
Govia Thameslink Rly												
Grand Central												
Great Western Railway												
Heathrow Connect												
Heathrow Express												
Hull Trains												
London Midland												
London Overground												
Merseyrail												
Northern												
North Yorkshire Moors												
ScotRail												
Southeastern												
South West Trains												
TfL Rail												
TransPennine Express												
Tyne & Wear Metro												
Virgin Trains												
Virgin Trains East Coast												
West Coast Railways												
Colas Rail												
DB Cargo												
Direct Rail Services												
Freightliner												
Freightliner Heavy Haul												
GB Railfreight												

3. Network Rail's Routes

3.1 Anglia Route

The rail network across the Anglia route is quite diverse. The route covers two direct commuting routes into the City of London, the densely populated areas to the north, east and west of London, the largest container port in the country at Felixstowe, the major cities of Cambridge and Norwich, but also the rural countryside and market towns of Cambridgeshire, Norfolk and Suffolk. The Great Eastern route, West Anglia route, North London Line and the Thameside routes from Shoeburyness to London are intense commuter routes into and around London, but also support a significant leisure market outside the peak and at weekends. The cross country routes between Ipswich, Norwich and Peterborough provide key links to the North and Midlands. The rural routes in Norfolk and Suffolk provide key links between the major towns and cities, and the coast at Felixstowe, Lowestoft, Great Yarmouth and Cromer. The Anglia Route Plan can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The Anglia Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the Anglia Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/anglia-route-study/>.

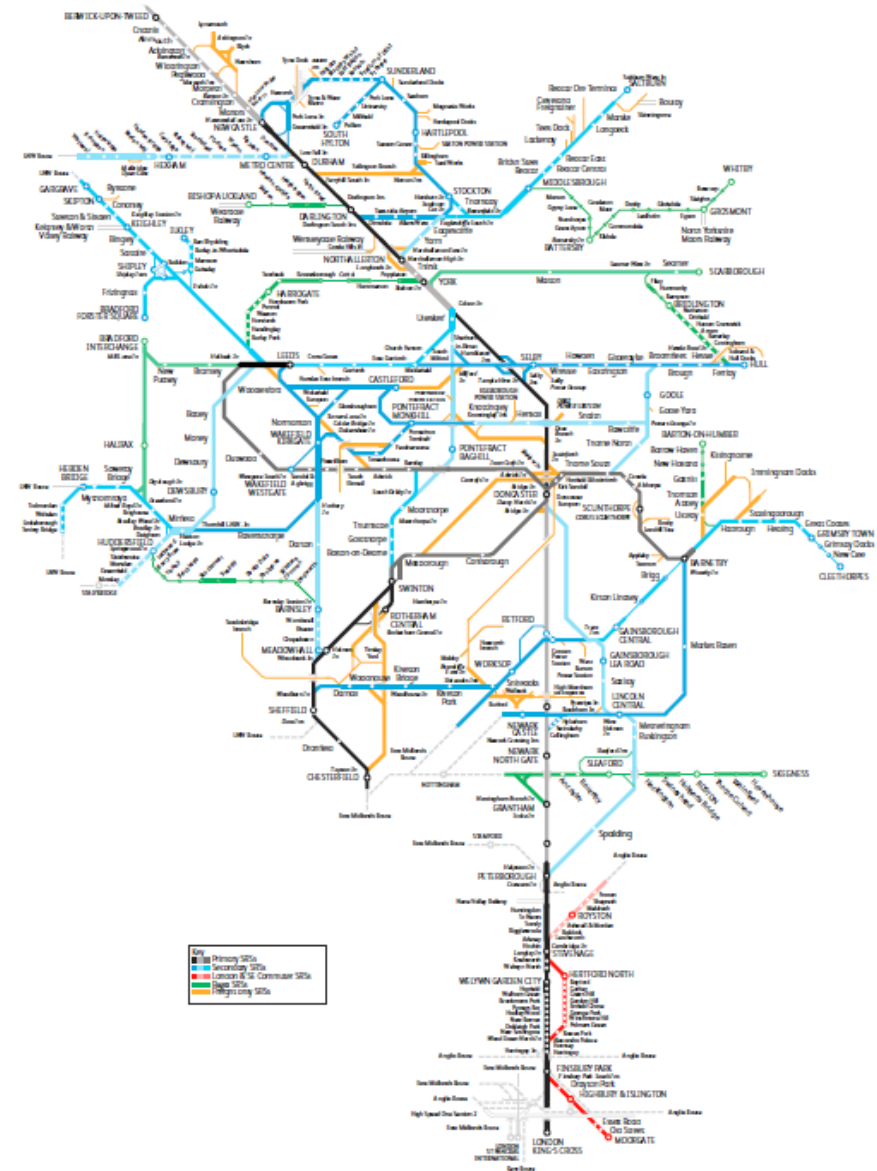


The following train operators hold contracts that include firm rights over at least a part of the Anglia Route:

- Passenger:**
 - Abellio Greater Anglia
 - Arriva Rail London, t/a Overground
 - East Midlands Trains
 - GoVia Thameslink Railway, t/a Great Northern
 - MTR Crossrail, t/a TfL Rail
 - NXET Trains, t/a c2c
 - XC Trains, t/a CrossCountry
- Freight:**
 - Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight

3.2 London North East & East Midlands Route

The East Coast Main Line is the high speed route linking London and South East England with Yorkshire & Humberside, the North East, and Eastern Scotland. It carries key commuter flows to the north of London, as well as some of the UK's fastest growing long distance passenger flows. It forms a vital part of the cross-country and cross-Pennine networks. It also handles regional commuter, and local, passenger services and carries heavy tonnages of freight traffic, particularly over the northern sections. The Yorkshire & Humber rail network varies greatly. The largest conurbations are Leeds and Sheffield, each with a high concentration of urban and interurban services. The less populated areas to the east have more lightly used rural services. Some areas, such as around the ports, are very heavily used by freight traffic. The rail network in the East Midlands serves diverse markets ranging from long distance and commuter travel into London, commuting and leisure travel into Derby, Leicester and Nottingham, plus a mixture of long distance and commuter travel on interurban services that pass through, and some lesser used services to the east. Route Plans for both London North Eastern and East Midlands can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The London North Eastern & East Midlands Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the East Midlands Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/east-midlands-route-study/>. Route Studies are also underway for East Coast and North of England, which will be published in due course.





The following train operators hold contracts that include firm rights over at least a part of the London North Eastern & East Midlands Route:

Passenger:

- Abellio Greater Anglia
- Arriva Rail North, t/a Northern
- DB Regio Tyne & Wear, t/a Metro
- East Coast Main Line Company, t/a Virgin Trains East Coast
- East Midlands Trains
- First Transpennine Express, t/a TransPennine Express
- GoVia Thameslink Railway, t/a Great Northern or Thameslink
- Grand Central Railway Company, t/a Grand Central
- Hull Trains Company, t/a Hull Trains
- North Yorkshire Moors Railway Enterprises, t/a NYMR
- Peak Rail (no quantified firm rights)
- XC Trains, t/a CrossCountry

Freight:

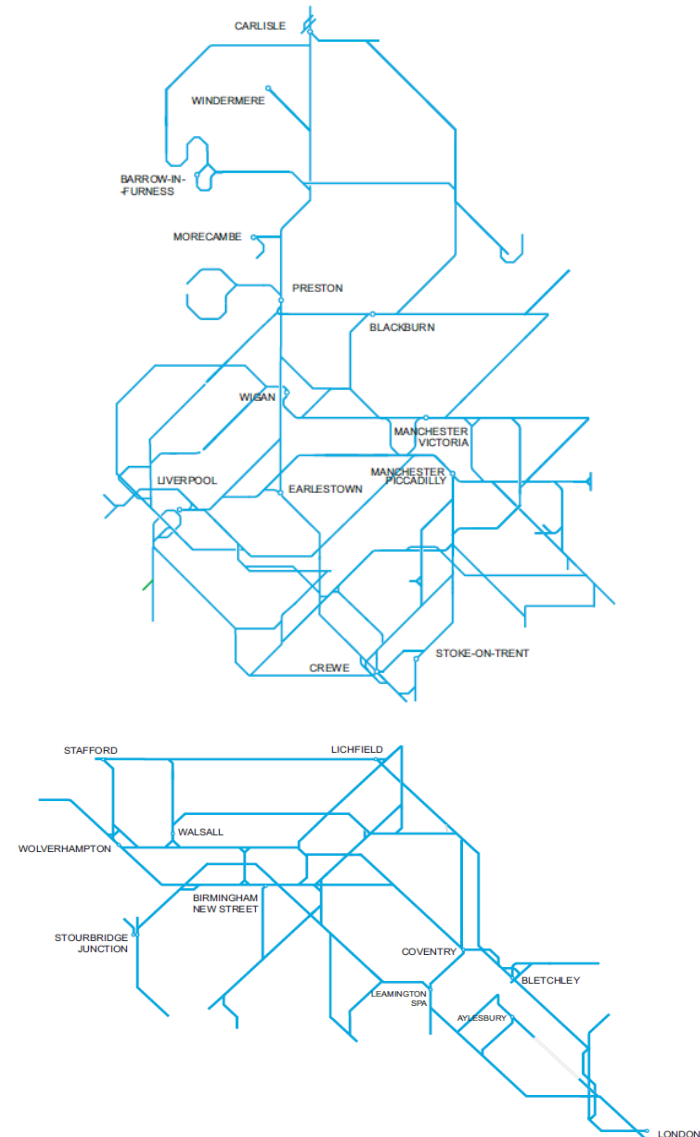
- Colas Rail
- DB Cargo
- Direct Rail Services
- Freightliner
- Freightliner Heavy Haul
- GB Railfreight



3.3 London North Western Route

The London North Western route is the biggest single route within Network Rail and covers over 24 per cent of the national rail network. It is the busiest mixed-use railway in Europe and forms the backbone of the GB rail network. The Route follows the West Coast Main Line from London Euston to the Scottish borders, and incorporates a number of long distance, regional urban, commuter, branch and freight lines. These link London with; Watford, Milton Keynes, Northampton, Birmingham, Manchester, Liverpool, Preston, Carlisle and Scotland. The North West urban network covers a large geographical area and has a number of city conurbations. The principal regional centres are Manchester, Liverpool and Preston. The Route also covers the Chilterns area from London Marylebone to Birmingham Snow Hill and the whole of the West Midlands area. The London North Western Route Plan can be found at

<http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The London North Western Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the West Midlands & Chilterns Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/West-Midlands-and-Chilterns-Route-Study/>. Route Studies are also underway for West Coast and North of England, which will be published in due course.



The following train operators hold contracts that include firm rights over at least a part of the London North Western Route:

- Passenger:**
- Abellio Scotrail, t/a ScotRail
 - Arriva Rail London, t/a Overground
 - Arriva Rail North, t/a Northern
 - Arriva Trains Wales
 - Chiltern Railway Company, t/a Chiltern Railways
 - Chinnor & Princes Risborough Railway (no quantified firm rights)
 - East Midlands Trains
 - First Greater Western, t/a Great Western Railway
 - First Transpennine Express, t/a TransPennine Express
 - Govia Thameslink Railway, t/a Southern
 - London & Birmingham Railway, t/a London Midland
 - Merseyrail Electrics 2002, t/a Merseyrail
 - Serco Caledonian Sleepers, t/a Caledonian Sleeper
 - West Coast Trains, t/a Virgin Trains
 - XC Trains, t/a CrossCountry
- Freight:**
- Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight



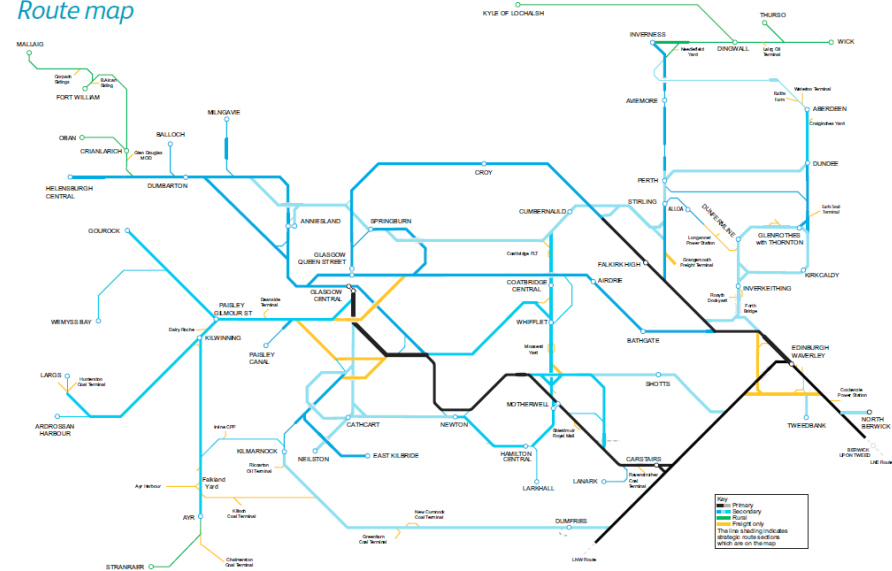
3.4 Scotland Route

The railway network in Scotland is concentrated in the central belt, with key long distance links spanning the country – some busy interurban lines and some rural lifelines – and connecting with the East Coast and West Coast Main Lines into England. The main markets served are:

- Glasgow conurbation
- Edinburgh conurbation
- Interurban, including links between Glasgow, Edinburgh, Ayr, Stirling, Perth, Dundee, Aberdeen and Inverness
- Rural
- Anglo-Scottish, including overnight services
- Freight

The Scotland Route Plan can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The Scotland Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the Scotland Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/scotland-route-study/>.

Route map



The following train operators hold contracts that include firm rights over at least a part of the Scotland Route:

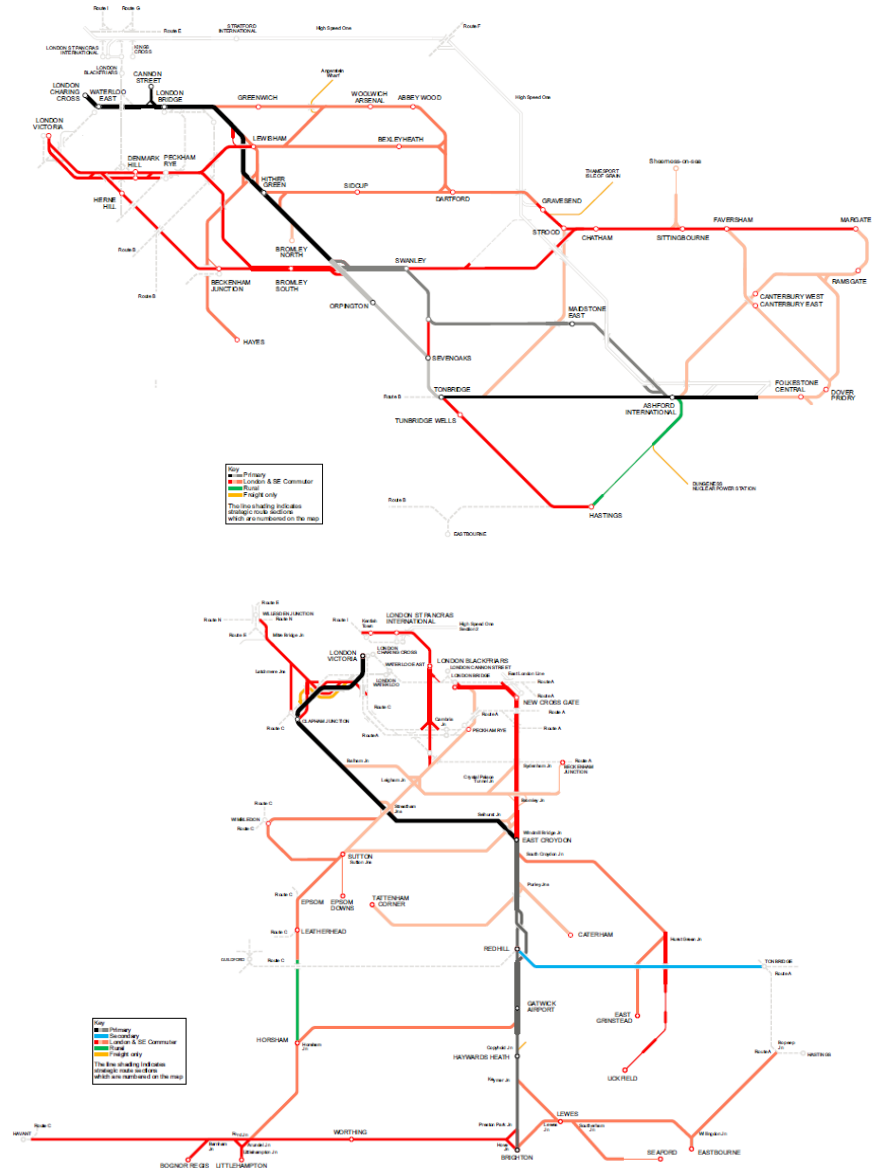
- Passenger:**
- Abellio Scotrail, t/a ScotRail
 - East Coast Main Line Company, t/a Virgin Trains East Coast
 - First Transpennine Express, t/a TransPennine Express
 - West Coast Railway Company, t/a West Coast Railways
 - West Coast Trains, t/a Virgin Trains
 - XC Trains, t/a CrossCountry
- Freight:**
- Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight

3.5 South East Route

Kent Area is a complex network of interconnected lines linking central London and its south-eastern suburbs with the Kent coast, parts of East Sussex and the Channel Tunnel. The area has benefited from a major enhancement to services associated with the introduction of domestic trains on High Speed One. The Kent lines are an important part of the national rail freight network, with the Channel Tunnel routes connecting the UK to railways in mainland Europe. There are also links to Thamesport on the Isle of Grain and many smaller terminals.

Sussex Area does not just cover the counties of East and West Sussex but also parts of London, Surrey and Kent. The route is based around the north-south Brighton Main Line and east-west routes of the East and West Coastways. The Arun Valley Line provides a diagonal link from the West Coastway to the Brighton Main Line. The complex South London suburban services and the West London Line fall within the route.

Route Plans for Sussex and Kent can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The South East Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the Sussex Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/south-east-route-sussex-area-route-study/>. A Route Study is also underway for Kent, which will be published in due course.



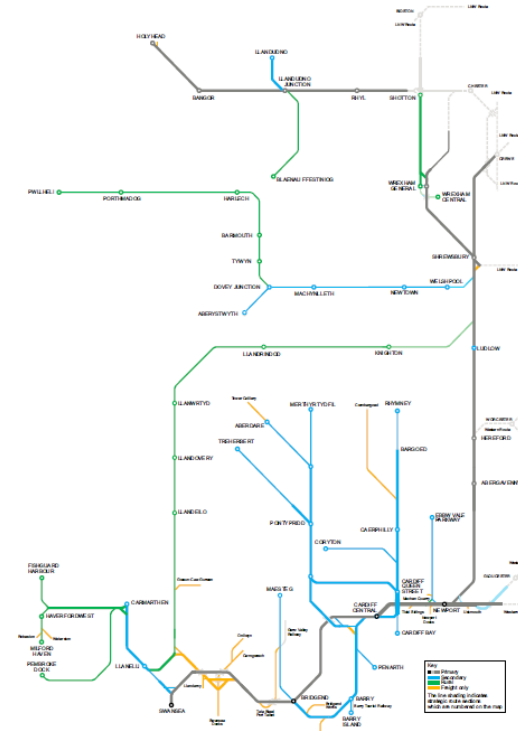
The following train operators hold contracts that include firm rights over at least a part of the South East Route:

- Passenger:**
- Arriva Rail London, t/a Overground
 - Eurostar International, t/a Eurostar
 - First Greater Western, t/a Great Western Railway
 - GoVia Thameslink Railway, t/a Gatwick Express, Southern or Thameslink
- Freight:**
- London & South Eastern Railway, t/a Southeastern
 - Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight



3.6 Wales Route

There are three major west-east routes in Wales, one in south Wales which continues to Bristol Parkway and to London Paddington, one in mid Wales which continues to the West Midlands, and one in north Wales which continues to Chester, Crewe, Warrington Bank Quay and Manchester Piccadilly with connections to the West Coast Main Line. These are all linked by a north-south route along the border counties which lies mainly in England but also weaves in and out of Wales – this is the spine of the network which connects the south, mid and north to each other. When considered together, these routes form the basis of the national network in Wales which provides good connectivity within Wales and with the economic hubs at Birmingham, Bristol, London, Manchester and the Thames Valley. The network also serves the main UK – Ireland ports at Holyhead, Pembroke Dock and Fishguard. South East Wales is the most densely populated area and it is well served by a mix of long distance services as well as urban commuter services which are referred to as the Valley Lines network. The Wales Route Plan can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The Wales Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the Welsh Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/welsh-route-study/>.

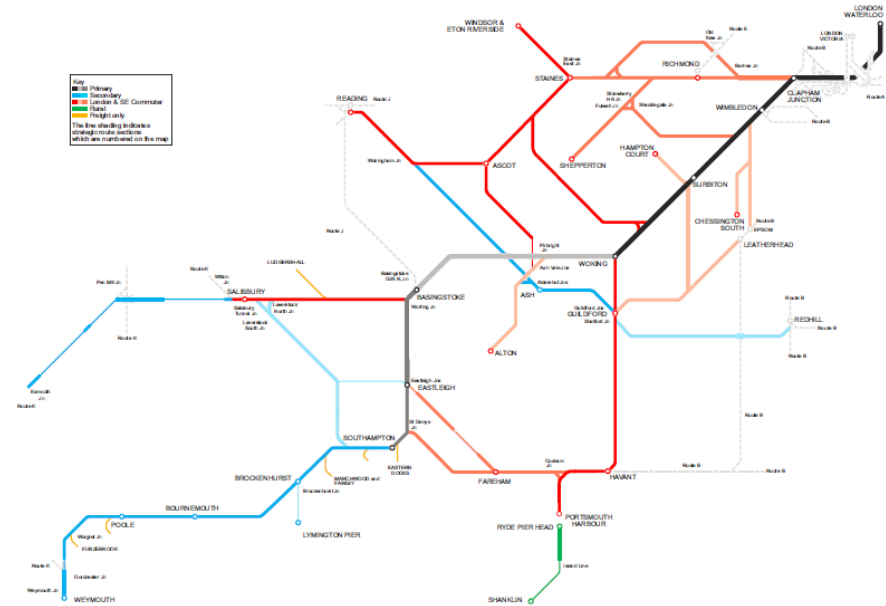


The following train operators hold contracts that include firm rights over at least a part of the Wales Route:

- Passenger:**
 - Arriva Trains Wales
 - Festiniog Railway (no quantified firm rights)
 - First Greater Western, t/a Great Western Railway
 - London & Birmingham Railway, t/a London Midland
 - West Coast Trains, t/a Virgin Trains
 - XC Trains, t/a CrossCountry
- Freight:**
 - Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight

3.7 Wessex Route

The Wessex Route is one of the busiest and most congested routes on the network. It serves a major commuter area as well as providing long distance services from the south and south west of England to London Waterloo. There is a large amount of leisure traffic to the coastal towns and ferry terminals along the south coast such as at Weymouth, Southampton, Portsmouth, Poole and Lymington. In addition, the route supports important cross-country links between the south coast and major conurbations in the north, west and midlands. The line from Exeter to Basingstoke plays an important diversionary role for passenger traffic when the Great Western Main Line is closed, and for freight traffic diverted via Romsey and Andover when the main line through Winchester is unavailable. The Wessex Route Plan can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The Wessex Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the Wessex Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/wessex-route-study/>.

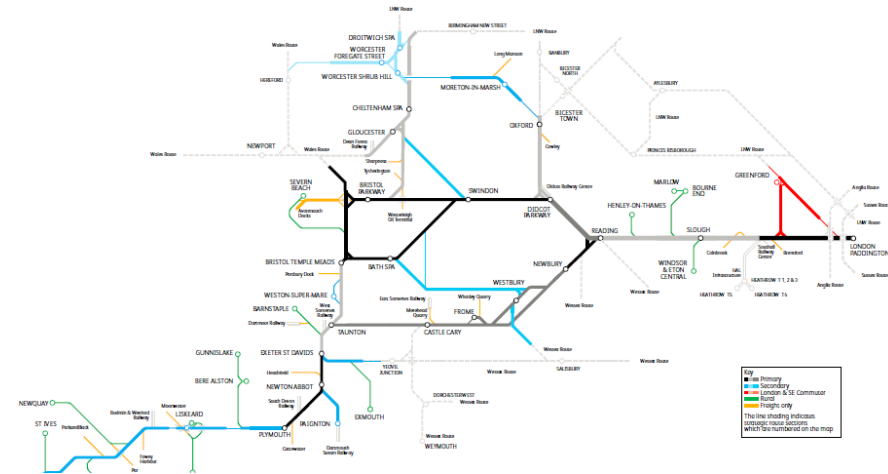


The following train operators hold contracts that include firm rights over at least a part of the Wessex Route:

- Passenger:**
- First Greater Western, t/a Great Western Railway
 - Govia Thameslink Railway, t/a Southern
 - Stagecoach South Western Trains, t/a South West Trains
 - XC Trains, t/a CrossCountry
- Freight:**
- Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight

3.8 Western Route

The Route's key axis is the Great Western Main Line which runs from London Paddington to Bristol and into South Wales. Extending from this are routes from Reading to Penzance, to Oxford, the Cotswolds, towards Birmingham and the South Coast. Branch lines into the inner and outer London suburbs, around Bristol, to the Devon and Cornish coast and dedicated freight only lines complete the mix of routes. The Western Route Plan can be found at <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>. The Western Network Specification, and Route Specifications for its Strategic Routes, can be found at http://www.networkrail.co.uk/Network_Specifications.aspx. Future plans are informed by the Long Term Planning Process, which includes the Western Route Study, available at <http://www.networkrail.co.uk/long-term-planning-process/western-route-study/>.



The following train operators hold contracts that include firm rights over at least a part of the Western Route:

- Passenger:**
- Chiltern Railway Company, t/a Chiltern Railways
 - First Greater Western, t/a Great Western Railway or Heathrow Connect
 - Heathrow Express Operating Company, t/a Heathrow Connect
 - Heathrow Express Operating Company, t/a Heathrow Express
 - Stagecoach South Western Trains, t/a South West Trains
 - XC Trains, t/a CrossCountry
- Freight:**
- Colas Rail
 - DB Cargo
 - Direct Rail Services
 - Freightliner
 - Freightliner Heavy Haul
 - GB Railfreight



4. Sub-route and cross-route data

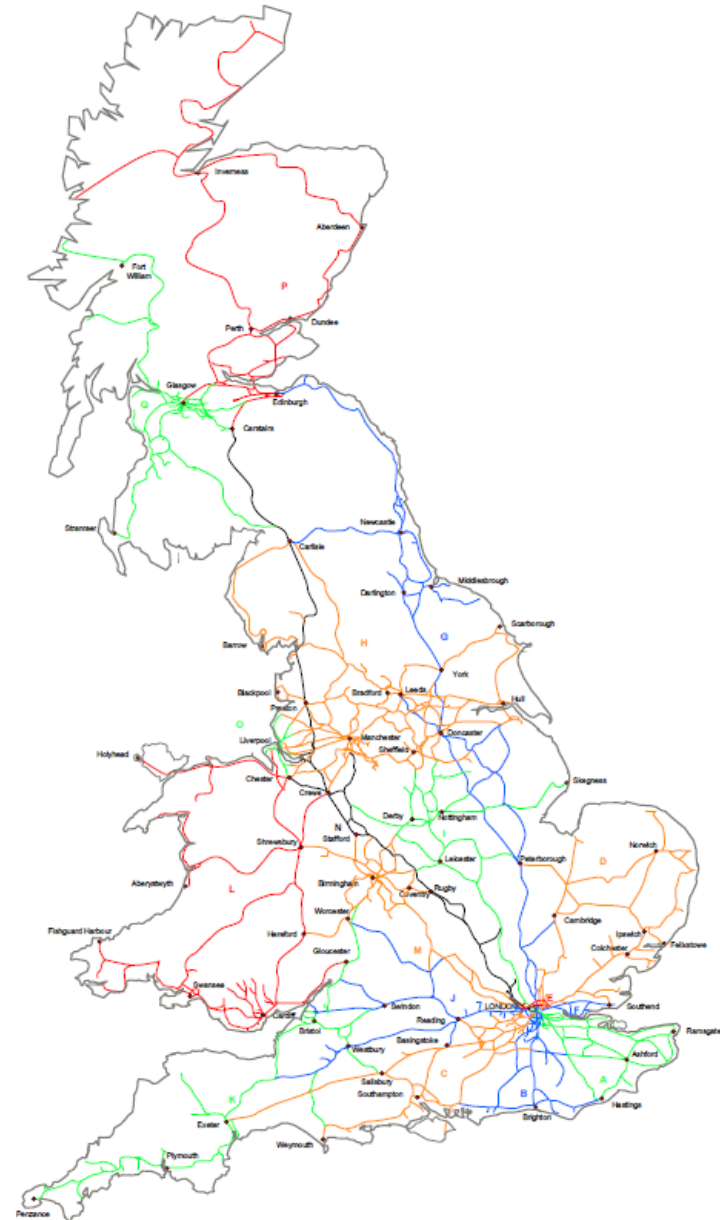
4.1 Strategic Routes / Strategic Route Sections

Sections 2 and 3 of this document describe the geography of the rail network at national and devolved route level, and indicate which operators have firm rights under framework agreements over that geography. However, in order to gain some understanding of how these rights use capacity, and therefore what capacity remains available for potential use, it is necessary to disaggregate further. This section 4.1 considers progressively smaller sections of infrastructure, and section 4.2 describes the smallest granularity.

For planning purposes Network Rail uses 17 Strategic Routes, identified by letters A to Q, as shown on the adjacent map. Each Strategic Route is further divided into Strategic Route Sections (SRSs), generating a total of 305 SRSs across the Network Rail network. Strategic Routes and SRSs are not always contingent with the geographical boundaries of the devolved routes described in section 3.

4.1.1 Analysis at Strategic Route level

An example follows of how the requirements of the regulation might be applied on one strategic route. The example used is Strategic Route J: London and West. A similar format is used to the national table in section 2.5, so where firm rights are not time-specific they are shown spread across their potential validity. This may be the peak period, the off-peak period (definitions of 'peak' vary in each contract and are usually direction specific, so footnotes are necessary), or the whole 24 hours. Unlike the table in section 2.5, an attempt has been made to show the quantum of trains slots to which firm rights are held on this infrastructure. Of course, not all slots extend over the whole geography of the strategic route, so the table remains a very vague indication of the volume of capacity which the framework agreements represent. Weekends are excluded from the analysis.



SR J: London and West - DOWN direction SX

Operator	0000-0200	0200-0400	0400-0600	0600-0800	0800-1000	1000-1200	1200-1400	1400-1600	1600-1800	1800-2000	2000-2200	2200-0000
Chiltern Railways				6 ¹		24 ²						
CrossCountry						63						
Great Western Railway						524 ³						
Heathrow Connect				32 ⁴					6 ⁵			
Heathrow Express						74						
South West Trains						1						
DB Cargo						71 ⁶						
Freightliner						22 ⁶						
Freightliner Heavy Haul		1 ⁶				1 ⁶						
GB Railfreight						11 ⁶						
Direct Rail Services			1 ⁶									
Colas Rail							1 ⁶		2 ⁶			

¹ Quantum across 3-hour peak (0700-1000 arrivals at Marylebone). Subject to interval protection.

² Quantum across offpeak (approximately the shaded periods). Subject to interval protection. Also 1 slot per day offpeak (before 1600 or after 1900) departing Paddington.

³ Includes 53 slots in the 3-hour peak (1600-1900 departures from Paddington) and 212 slots offpeak. Excludes services branded Heathrow Connect. Subject to route opening hours.

⁴ Quantum across offpeak (approximately the shaded periods). Subject to interval protection west of Hayes & Harlington.

⁵ Quantum across 3-hour peak (1600-1900 departures from Paddington). Subject to interval protection west of Hayes & Harlington.

⁶ Counts slots valid on at least 3 days SX. Some slots are subject to windows as short as 1 hour, others are 24 hours, and windows vary over geography. Subject to route opening hours.

SR J: London and West - UP direction SX

Operator	0000-0200	0200-0400	0400-0600	0600-0800	0800-1000	1000-1200	1200-1400	1400-1600	1600-1800	1800-2000	2000-2200	2200-0000
Chiltern Railways				24 ¹					6 ²			
CrossCountry						62						
Great Western Railway						522 ³						
Heathrow Connect				6 ⁴					32 ⁵			
Heathrow Express						74						
South West Trains						3						
DB Cargo						73 ⁶						
Freightliner						22 ⁶						
Freightliner Heavy Haul						1 ⁶					1 ⁶	
GB Railfreight						13 ⁶						
Direct Rail Services							1 ⁶					
Colas Rail							1 ⁶				2 ⁶	

¹ Quantum across offpeak (approximately the shaded periods). Subject to interval protection. Also 1 slot per day offpeak (before 0700 or after 1000) arriving Paddington.

² Quantum across 3-hour peak (1600-1900 departures from Marylebone). Subject to interval protection.

³ Includes 58 slots in the 3-hour peak (0700-1000 arrivals at Paddington) and 209 slots offpeak. Excludes services branded Heathrow Connect. Subject to route opening hours.

⁴ Quantum across 3-hour peak (0700-1000 arrivals at Paddington). Subject to interval protection west of Hayes & Harlington.

⁵ Quantum across offpeak (approximately the shaded periods). Subject to interval protection west of Hayes & Harlington.

⁶ Counts slots valid on at least 3 days SX. Some slots are subject to windows as short as 1 hour, others are 24 hours, and windows vary over geography. Subject to route opening hours.

A further table is given below, aggregating these slots to combine the directions. On the face of it, this is less useful than the directional tables above, but it avoids one complexity which is potentially misleading in the directional analysis. Because of the complex nature of railway geography, there are places on the network where peak train slots run in the contra-peak direction.

One such example is captured on Strategic Route J: Chiltern Railways has firm rights for one train per day each way to/from Paddington (entering SR J at South Ruislip) in the off-peak. Chiltern also has a larger number of train slots between Marylebone and Oxford, entering SR J at Oxford North Junction. These slots are specified by the Marylebone peak, so Up direction peak slots from Oxford to Marylebone are actually applicable in the Down direction, contra-peak, on SR J.

SR J: London and West - BOTH directions SX

Operator	0000-0200	0200-0400	0400-0600	0600-0800	0800-1000	1000-1200	1200-1400	1400-1600	1600-1800	1800-2000	2000-2200	2200-0000
Chiltern Railways							62 ¹					
CrossCountry							125					
Great Western Railway							1046 ²					
Heathrow Connect							76 ³					
Heathrow Express								148				
South West Trains							4					
DB Cargo							144 ⁴					
Freightliner							44 ⁶					
Freightliner Heavy Haul			1 ⁶				2 ⁶					1 ⁶
GB Railfreight							24 ⁶					
Direct Rail Services			1 ⁶					1 ⁶				
Colas Rail							2 ⁶			4 ⁶		

¹ Includes 6 slots in each 3-hour peak period between Oxford and Marylebone (peak defined at Marylebone so contra-peak at Oxford). Includes 24 offpeak slots each way. Also includes 1 offpeak slot each way between Paddington and Ruislip (peak defined at Paddington).

² Includes 58 slots in the 3-hour morning peak to Paddington and 209 offpeak; 53 slots in the 3-hour evening peak from Paddington and 212 offpeak. Excludes services branded Heathrow Connect. Subject to route opening hours.

³ Includes 6 slots in each 3-hour peak period to/from Paddington and 32 each way offpeak. Subject to interval protection west of Hayes & Harlington.

⁴ Counts slots valid on at least 3 days SX. Some slots are subject to windows as short as 1 hour, others are 24 hours, and windows vary over geography. Subject to route opening hours.

4.1.2 Analysis at SRS level

In most cases it would be possible to avoid the type of misleading issue identified in the section 4.1.1 if the network geography is disaggregated to a smaller unit. An example follows of how the requirements of the regulation might be applied on one Strategic Route Section. The example used is SRS N.01: London Euston – Rugby (excluding the Watford DC lines). It should be noted that there are 305 SRSs: the full list is in the table in section 2.4.

At this level of disaggregation, it becomes possible to discuss the rights held in framework agreements against the infrastructure capacity within the SRS. However, although qualitative commentary is possible, the numbers alone are still of little use in ascertaining the likelihood of spare capacity being available should an operator wish to use it.

SRS N.01 London Euston – Rugby (excludes Watford DC lines)

The ruling planning headway on the fast lines is 3 minutes, and on the slow lines 4 minutes. This gives a potential maximum quantum of 20 tph each way on the fast lines and 15 tph each way on the slow lines, before any of the following are taken into account: rolling stock characteristics, especially differences in capability regarding acceleration, deceleration and maximum speed; calling patterns; platforming and conflicting movements including junction reoccupation constraints; differential applicability of engineering or performance allowances.

The routes in this SRS are open continuously except as specified in the relevant Engineering Access Statement. It is normal practice to assume that only two lines are available between Camden and Rugby on weeknights between approximately 2330 and 0630: these could be fast lines, slow lines or a mix of both. This could generate a daily theoretical maximum quantum of 700 in each direction, before any other constraints are considered.

The highest weekday quantum of slots with firm contractual rights in one direction is 296 for passenger services and 52 for freight. A number of assumptions have been made to generate these figures, particularly for the freight slots where rights applicable on fewer than 3 days during the week have not been counted.

Thus around half of the theoretical maximum is contracted in framework agreements. The widely varying nature of the services contracted, and the many requirements for crossing movements, mean that in practice there is very little spare capacity on this SRS.

Passenger services

West Coast Trains (t/a Virgin Trains) has “quantum only” firm rights to 147 slots per weekday in each direction throughout this SRS. One up slot is specified to be routed via Northampton; the remainder would normally be on the fast lines. Calling patterns, intervals and journey times are not specified, but at present some trains call at one of Watford Junction, Milton Keynes Central and Rugby.

London & Birmingham Railway (t/a London Midland) has firm rights to total quanta as follows:

Geography	Down peak	Down offpeak	Up peak	Up offpeak
Euston – Watford Junction	29	96	26	96
Watford Junction - Tring	28	96	24	96
Tring - Bletchley	21	73	18	71
Bletchley – Milton Keynes Central	20	72	15	70
Milton Keynes Central – Hanslope Junction	15	56	10	55
Hanslope Junction – Rugby fast lines	2	9	1	11
Hanslope Junction - Northampton	13	47	9	44
Northampton - Rugby	54		52	

Peak is defined as (Down) departing Euston between 1600 and 1859 inclusive; (Up) arriving Euston between 0700 and 0959 inclusive

Intervals and journey times are not specified, but calling patterns are; and the mixture of stopping, semi-fast and fast services requires regular weaving movements between fast and slow lines. These movements use a large amount of capacity because the lines are paired by speed rather than direction and there is no grade-separation for these movements anywhere between Camden and Rugby.

GoVia Thameslink Railway (t/a Southern) has firm rights between Willesden (to/from the West London Line) and Milton Keynes as follows:

Geography	Down peak	Down offpeak	Up peak	Up offpeak
Willesden – Watford Junction	3	19	4	18
Watford Junction – Milton Keynes Central	3	13	2	14

Peak is defined as (Down) departing Kensington Olympia between 1600 and 1859 inclusive; (Up) arriving Kensington Olympia between 0700 and 0959 inclusive

Intervals, calling patterns and journey times are not specified.

Serco Caledonian Sleepers (t/a Caledonian Sleeper) has firm rights to 2 slots per weekday in each direction throughout this SRS, each calling at Watford Junction. There are time constraints as follows:

Service to/from	Down constraints	Up constraints
Glasgow & Edinburgh	Not to depart Euston before 2330	Not to arrive Euston after 0730
Inverness, Aberdeen & Fort William	Not to depart Euston before 2100	Not to arrive Euston after 0800

Freight services

The freight slots for which rights are counted below mostly have specified “windows” for their departure time from origin and arrival time at destination. The origin and/or destination may of course be far away from this SRS. The windows vary in length between 30 minutes and 24 hours, according to commercial requirements.

DB Cargo has firm rights north of Wembley for 13 Down slots and 8 Up, and 1 further slot in each direction north of Northampton. This counts rights that exist for at least 3 weekdays per week; there are assorted other firm rights for slots on 1 or 2 days a week. There are also many firm rights for slots south of Wembley as far as Willesden, to/from either the West or North London Lines, but these are usually segregated from the main WCML fast and slow lines.

Freightliner has firm rights north of Willesden for 27 Down slots and 20 Up. This counts rights that exist for at least 3 weekdays per week; there are assorted other firm rights for slots on 1 or 2 days a week.

Freightliner Heavy Haul has no firm rights on this SRS, counting rights that exist for at least 3 weekdays per week; there are however firm rights for 1 slot each way on 1 day a week.

GB Railfreight has firm rights north of Willesden for 4 Down slots and 5 Up, and 1 further slot in each direction north of Daventry. This counts rights that exist for at least 3 weekdays per week; there are assorted other firm rights for slots on 1 or 2 days a week. There are also a number of firm rights for slots between Wembley or Willesden and the West or North London Lines, but these are usually segregated from the main WCML fast and slow lines.

Direct Rail Services has firm rights north of Willesden for 2 Down slots and 4 Up, and a further 4 slots in each direction north of Daventry. This counts rights that exist for at least 3 weekdays per week; there are assorted other firm rights for slots on 1 or 2 days a week.

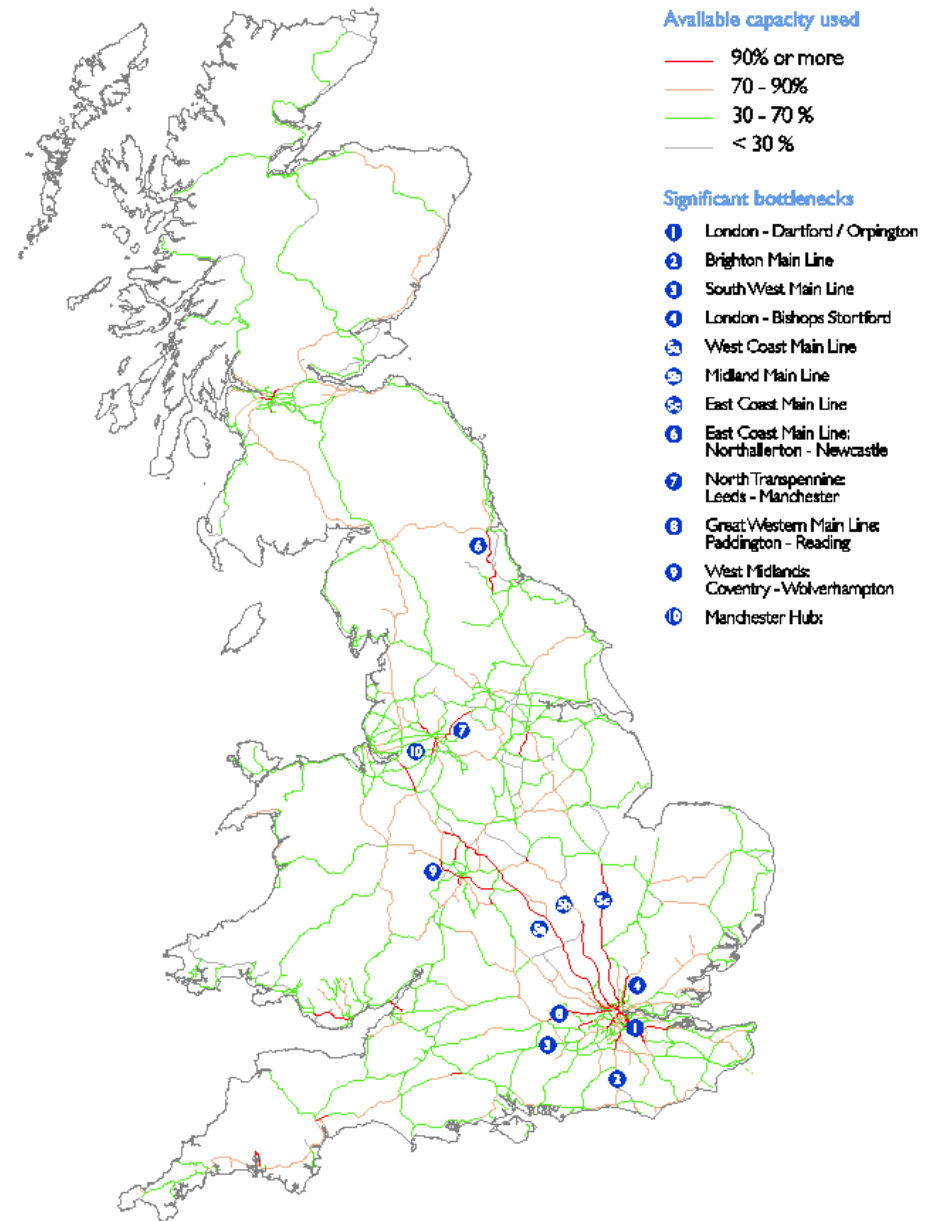


4.2 Constant Traffic Sections

To be accurate about the quantum of slots sold on a part of the network, the maximum granulation should be 'constant traffic section' (CTS), of which there are more than 6,800 (direction-specific) on the Network Rail network. Obviously, it would not be practical – even with a significant workforce – to produce a framework capacity statement at this level without automation. But automation would require contractual access rights to be expressed in a way that could be automated (i.e., with the quantum of slots for which there are firm rights mapped to the infrastructure geography). This is not the case. A proxy is available, in the form of the timetable, but this generates two problems:

- Train paths, in the timetable, and train slots, for which rights are specified in framework agreements, must not be the same by law: “a framework agreement must not specify any train path in detail”³.
- The timetable is different every day. A representative day would have to be chosen, and then ‘cleansed’ so that decisions are made on which versions of multiple paths to retain for the analysis. This is especially an issue for freight services which often have multiple paths to a variety of destinations.

Even if these issues are overcome, there is the cost of overcoming them and generating and running the software. This exercise has been done in the past, to calculate the Capacity Utilisation Index (CUI). The adjacent map shows CUI on every CTS in the busiest hour in the busier direction, reduced to four percentage bands, across the whole network on a sample timetable day in 2006. Producing the map is a further expense, and a network-wide map has not been produced since 2006. However, the calculation has been done twice for the whole network, to help calibrate the capacity charge during ORR’s periodic review of Network Rail access charges, in 2008 and 2012. A sample extract of the 2012 data is shown below, to demonstrate the format and extent of the data.



³ Regulation 21(3), The Railways (Access, Management and Licensing of Railway Undertakings) Regulations 2016

The adjacent table presents an extract of CTS-level data used for a CUI calculation in 2012⁴, based on a sample timetable day. The CTS shown here is between Digswell and Welwyn North, part of a two-track constraining section of the East Coast Main Line in Hertfordshire. CTS 947 is the Down (northbound) direction and CTS 948 is the Up (southbound). SRS 75 is a numeric code to map this section to SRS G.01 London Kings Cross - Peterborough.

The unique identifier splits each directional CTS into 24 3-hour time periods as shown in the accompanying index. The CUI is then calculated by compressing the train paths planned over this section on the minimum headway, but without changing their order, and expressing the time taken for the compressed timetable as a percentage of the time period. Of course this was done automatically by software algorithm, but first significant manual data cleansing and preparation were required so that the trains in the timetable used were representative and not double-counted for (e.g.) multiple daysets, alternative destinations or alternative timing loads.

Unique ID suffix	Time period	Unique ID suffix	Time period
1	0100-0400 weekday	13	1300-1600 Saturday
2	0400-0700 weekday	14	1600-1900 Saturday
3	0700-1000 weekday	15	1900-2200 Saturday
4	1000-1300 weekday	16	2200-0100 Saturday
5	1300-1600 weekday	17	0100-0400 Sunday
6	1600-1900 weekday	18	0400-0700 Sunday
7	1900-2200 weekday	19	0700-1000 Sunday
8	2200-0100 weekday	20	1000-1300 Sunday
9	0100-0400 Saturday	21	1300-1600 Sunday
10	0400-0700 Saturday	22	1600-1900 Sunday
11	0700-1000 Saturday	23	1900-2200 Sunday
12	1000-1300 Saturday	24	2200-0100 Sunday

It can be seen that the maximum CUI here is 82.1% southbound between 0700 and 1000 on a weekday. The CUI over the whole two-track section between Digswell and Woolmer Green would be higher because a longer section increases the effect of speed differentials.

⁴ Calculated by Ove Arup & Partners for Network Rail.

Unique ID	CTS	From	To	SRS	CUI
DIGSWELWLWYNN1	947	DIGSWEL	WLWYNN	75	2.1
DIGSWELWLWYNN2	947	DIGSWEL	WLWYNN	75	14.3
DIGSWELWLWYNN3	947	DIGSWEL	WLWYNN	75	60.3
DIGSWELWLWYNN4	947	DIGSWEL	WLWYNN	75	65
DIGSWELWLWYNN5	947	DIGSWEL	WLWYNN	75	61.7
DIGSWELWLWYNN6	947	DIGSWEL	WLWYNN	75	78.4
DIGSWELWLWYNN7	947	DIGSWEL	WLWYNN	75	58.7
DIGSWELWLWYNN8	947	DIGSWEL	WLWYNN	75	18.3
DIGSWELWLWYNN9	947	DIGSWEL	WLWYNN	75	3.9
DIGSWELWLWYNN10	947	DIGSWEL	WLWYNN	75	11
DIGSWELWLWYNN11	947	DIGSWEL	WLWYNN	75	48.2
DIGSWELWLWYNN12	947	DIGSWEL	WLWYNN	75	55
DIGSWELWLWYNN13	947	DIGSWEL	WLWYNN	75	49.7
DIGSWELWLWYNN14	947	DIGSWEL	WLWYNN	75	59.7
DIGSWELWLWYNN15	947	DIGSWEL	WLWYNN	75	48.4
DIGSWELWLWYNN16	947	DIGSWEL	WLWYNN	75	26
DIGSWELWLWYNN17	947	DIGSWEL	WLWYNN	75	2.2
DIGSWELWLWYNN18	947	DIGSWEL	WLWYNN	75	0
DIGSWELWLWYNN19	947	DIGSWEL	WLWYNN	75	21.2
DIGSWELWLWYNN20	947	DIGSWEL	WLWYNN	75	43.1
DIGSWELWLWYNN21	947	DIGSWEL	WLWYNN	75	39.7
DIGSWELWLWYNN22	947	DIGSWEL	WLWYNN	75	49.8
DIGSWELWLWYNN23	947	DIGSWEL	WLWYNN	75	36.5
DIGSWELWLWYNN24	947	DIGSWEL	WLWYNN	75	22.7
WLWYNNDIGSWEL1	948	WLWYNN	DIGSWEL	75	0
WLWYNNDIGSWEL2	948	WLWYNN	DIGSWEL	75	18
WLWYNNDIGSWEL3	948	WLWYNN	DIGSWEL	75	82.1
WLWYNNDIGSWEL4	948	WLWYNN	DIGSWEL	75	59.8
WLWYNNDIGSWEL5	948	WLWYNN	DIGSWEL	75	61.7
WLWYNNDIGSWEL6	948	WLWYNN	DIGSWEL	75	63.2
WLWYNNDIGSWEL7	948	WLWYNN	DIGSWEL	75	56.7
WLWYNNDIGSWEL8	948	WLWYNN	DIGSWEL	75	23.9
WLWYNNDIGSWEL9	948	WLWYNN	DIGSWEL	75	2
WLWYNNDIGSWEL10	948	WLWYNN	DIGSWEL	75	11
WLWYNNDIGSWEL11	948	WLWYNN	DIGSWEL	75	51.5
WLWYNNDIGSWEL12	948	WLWYNN	DIGSWEL	75	61.7
WLWYNNDIGSWEL13	948	WLWYNN	DIGSWEL	75	52.8
WLWYNNDIGSWEL14	948	WLWYNN	DIGSWEL	75	51.3
WLWYNNDIGSWEL15	948	WLWYNN	DIGSWEL	75	48.2
WLWYNNDIGSWEL16	948	WLWYNN	DIGSWEL	75	19.8
WLWYNNDIGSWEL17	948	WLWYNN	DIGSWEL	75	0
WLWYNNDIGSWEL18	948	WLWYNN	DIGSWEL	75	0
WLWYNNDIGSWEL19	948	WLWYNN	DIGSWEL	75	11.3
WLWYNNDIGSWEL20	948	WLWYNN	DIGSWEL	75	37.9
WLWYNNDIGSWEL21	948	WLWYNN	DIGSWEL	75	39.8
WLWYNNDIGSWEL22	948	WLWYNN	DIGSWEL	75	45
WLWYNNDIGSWEL23	948	WLWYNN	DIGSWEL	75	47.3
WLWYNNDIGSWEL24	948	WLWYNN	DIGSWEL	75	17.8

Annex: Consultation on alternative approaches

A.1 Questions of interpretation of the requirement

The drafting of the regulation leaves a number of questions to be resolved by infrastructure managers.

A. **Firmness of rights.** The FCS should indicate “the framework capacity already allocated and the number of train paths” and the “indicative capacity still available for concluding framework agreements”. Firm rights are clearly “allocated”, but the treatment of contingent rights and ancillary moves, etc, has still to be decided.

B. **Time.** The FCS must indicate capacity in “control periods” of no more than 2 hours each.

- i. These could be the same 2 hours across the whole network, or a rolling two hours on each line of route. Rolling periods will generate anomalies as routes intersect, but general periods will require trains to be captured in different periods in different locations. This is challenging with timetabled train paths, but worse with non-specific slot rights.
- ii. The regulation recognises that contracts do not always allocate quanta within 2-hour periods. In this case the infrastructure manager is required to “assign the framework capacity as close as possible to a two-hours control period.” However, this clause is in the section about contract structure, not about production of the FCS.
- iii. Each day is different and each week is different. We could publish up to 4,380 FCSs each year if every 2-hour period was treated separately. The obvious solution of a representative day (or week) would make the output more indicative and less useful.

C. **Geographical disaggregation.** The FCS must “indicate” capacity “for every section of line per control period”.

- i. The most accurate way of presenting the data would be by constant traffic section, of which there are more than 6,800. Unless the process can be automated, this is not practical.
- ii. Larger route sections require interpretation and judgment: again this makes the output more indicative and less useful.
- iii. Diverging and converging routes cause a number of problems leading to under- or over-counting of allocated capacity. If the sections become too large, it is possible to ‘miss’ the opportunity to run a potentially useful train between two points inside the section. Equally, with smaller infrastructure sections capacity appears to be available when it is of no practical use to any operator. Generally, the larger the section of infrastructure described, the higher the proportion of capacity that appears to be allocated.
- iv. Conflicting moves at flat junctions are generally not included so allocated capacity is under-counted.

D. **Types of service.** The indication of capacity allocated and available should be “if applicable by type of service”. It could be argued that this wording makes the service type optional, but a counter-argument is that some contracts are only for one type of service (freight, long distance high speed, or suburban) and that therefore the service type is “applicable”.

E. **Uses of capacity.** The regulation recognises that total capacity comprises capacity allocated in contracts, capacity available to be allocated in contracts, and capacity used for other purposes. However, given the approximations that are necessary in describing capacity, each of these elements is likely to be merely a factor for consideration rather than an input to a mechanistic calculation.

- i. Capacity used for other purposes should include planned restrictions of use, network services, and any other capacity that Network Rail does not wish to sell for a valid reason, e.g. to preserve the performance integrity of the timetable.

- ii. Capacity available should include Strategic Capacity because this may be sold.

A.2 Potential solutions

The scale of a comprehensive interpretation of the requirements (a maximum more than 6,800 constant traffic sections multiplied by 4,380 2-hour control periods each year) would require automation. Automation would require significant changes to model access contracts and to the planning rules (Timetable Planning Rules and Engineering Access Statement) so that all Schedule 5 access rights and the rules could be expressed in a compatible format. Even if all this were possible, the difficulties identified in section A.1 (C.iii and iv) would constrain the accuracy and value of the resulting data.

This approach would incur significant cost across the industry, and arguably would not be desirable anyway: the regulation accepts that access rights need not be expressed in control periods and that the Framework Capacity Statement will be only an indication of the capacity allocated and available.

Alternative concepts give varying degrees of accuracy and hence usefulness, at varying levels of cost. These include:

- Present information at National, Route or Strategic Route level, as demonstrated in sections 2, 3 and 4.1.1 of this document. This is necessarily a manual exercise and so involves some cost – compiling information of each operator’s firm access rights from Schedule 5 of their Track Access Agreements takes an individual with good geographical and contractual knowledge about a week for each table. This approach is probably of limited use to potential users because of the relatively high level of geographical aggregation.
- Present information by Strategic Route Section. The greater geographical granularity permits a more meaningful comparison of firm access rights with infrastructure capability. However, the

limited quantification must still leave a large degree of uncertainty for the potential user. The resource cost is similar to the larger elements of geography, per element. However, while there are 17 Strategic Routes, there are 305 SRSs, each of which could take an experienced individual about a week to compile.

- Electronically publish the [Working Timetable](#) (WTT), in timetable or graph form, alongside the [planning rules](#) (TPRs and EAS) on the basis that WTT passenger and freight services are generally those with contractual rights. The cost of this would be limited to the initial information systems set-up cost as the information already exists. Any prospective user of capacity would then have all the information necessary to identify whether their desired slot could fit in the timetable; however this does not address the issue of whether Network Rail wishes to sell that capacity (section A.1 point E.i).
- Develop a network map which can be colour-coded according to Network Rail’s judgment of the available remaining capacity on each section in each time period, with an agreed approach to evidencing the judgment. This has the advantage of being explicitly indicative, and could be accompanied by commentary pointing the potential user to the processes for, and factors considered in, decisions on the sale of capacity.

A.3 Questions for stakeholders

- Q1 What is your interest in the Framework Capacity Statement?
- Q2 What would you like to see in the Framework Capacity Statement?
- Q3 How would you use this information?
- Q4 What is your view on the costs and benefits of the various ways of analysing and presenting data?

Please respond to networkstatement@networkrail.co.uk by 31 March 2017, indicating any information you would not wish us to share publicly.