

*Delivering a better railway
for a better Britain
Network Specification 2020
Scotland*



Incorporating Strategic Routes: Route P –Scotland East; Route Q –Scotland West; part of the Strategic Route G –East Coast Main Line, and Strategic Route N –West Coast Main Line.

This Network Specification describes the Scotland region in its geographical context, outlining train service provision to meet current/future key markets and traffic flows for passenger/freight business. It also includes the infrastructure changes which have been identified through the long-term planning process to meet future growth.

The document refers to Route Specifications, of which there is one for each Strategic Route Section (SRS). Route Specifications cover specific sections of the route and are published as appendices to this document. They describe in greater detail the current and future requirements of each SRS to inform both internal and external stakeholders of future strategic plans.

Network Rail has a licence obligation to plan the future capability of the network through a Long Term Planning Process (LTPP) as agreed with the Office of Rail and Road (ORR). As part of the LTPP, Network Rail developed Market Studies, which forecast future rail demand, and developed Conditional Outputs for future rail services. These outputs were based on stakeholders' views of how rail services can support the delivery of the industry's strategic goals. The Market Studies which are relevant for the Scotland Region are:

- Long Distance Market Study (2013)
- Freight Market Study (2013)
- Scotland Market Study (2016)

These studies informed the development of the Scotland Route Study which was published in 2016. The Scotland Route Study was designed to consider the role of the railway in supporting the UK economy over the next 30 years. It comprised a set of activities and documents that:

- Address the demands that are likely to be placed on Great Britain's rail network over the next 30 years
- Capture stakeholder aspirations to develop new train services in the light of continuing rail investments
- Present investment choices for funders to accommodate demand and future aspirations .

Following the publication of the Scotland Route Study, Network Rail has also published a Freight Industry Growth Plan (2019) in collaboration with the wider industry, which sets out what is required to support rail freight growth.

In CP6 the way in which we undertake long term planning has changed in direct response from stakeholders' feedback in being more responsive to changing priorities or new policy.

Strategic Planning will –

- Put passengers and freight users at the heart of the process
- Better address the route's business needs
- Consider how to improve journey times for the passenger and freight user as well as how to grow the freight market in Scotland
- Develop a Depot & Stabling Strategy for Scotland, working closely with customers and stakeholders
- Consider how Glasgow Central will meet the forecasted demand in an already busy station
- Develop a masterplan for Edinburgh Waverley station and consider other strategic stations and how they integrate with the wider community.

The Programme for Government commitment in September 2019 to decarbonise the domestic passenger railway will bring challenges on how best to meet this agenda by 2035 and a net zero carbon date of 2045 for Scotland. Key considerations will be a:

- Rolling programme for decarbonisation
- Rolling stock strategy recognising the age of the fleet in Scotland

Network Rail is continuing to identify opportunities to reduce operating costs in Scotland and is developing a Signalling Strategy which seeks to improve the efficiency of frontline operations.

The integration of all of these strategies is key to the development of each SRS, as between them they cover the needs and requirements of both passengers and freight going forward.

Route context

Glasgow Queen Street High Level (HL) to Edinburgh Waverley

The route provides a fast, frequent, electrified interurban service between Scotland's two largest cities, Glasgow and Edinburgh (known as the E&G service), and plays an important role in connecting these centres. Starting at either Glasgow Queen Street HL station or Edinburgh Waverley station it runs for 47 miles via Falkirk High.

There are eight intermediate stations along the route and ScotRail operates four trains per hour over the majority of the day. It is predominantly a two track passenger route with only three freight trains per day operating on various sections.

Glasgow/Edinburgh to Aberdeen (including Fife Circle)

The route provides a fast, frequent interurban service between Glasgow/Edinburgh and Aberdeen via Perth and Dundee. It plays an important role in connecting the north east of Scotland to the central belt and beyond. There is also a stopping service around the Fife Circle providing a link to Edinburgh and beyond. Part of the route conveys freight traffic to Aberdeen.

Perth to Inverness

The route provides a crucial role in linking the central belt with Inverness and beyond. It is predominantly single track with passing loops and also conveys freight traffic to Inverness and the Far North lines.

Aberdeen to Inverness

The route provides a cross-country link between Aberdeen and Inverness. It is made up of double and sections of single track with passing loops and is mainly a passenger route. There is however, intermittent freight traffic from Elgin and regular traffic from Aberdeen Waterloo to Irvine and Workington.

Inverness to Wick/Thurso/Kyle of Lochalsh

The route links Inverness with the north and west Highlands. It is single track throughout with passing loops and although mainly a scheduled passenger route it also conveys some charter and freight traffic.

West Coast Main Line to Glasgow Central

The route from Glasgow to Carstairs and onto Carlisle makes up the northern portion of the West Coast Main Line (WCML). The route provides Anglo Scottish services to London, Birmingham and Manchester. There is also a two hourly Anglo Scottish service from Glasgow Central to the North East, Midlands and South West England via Carstairs and Edinburgh. The WCML is a crucial artery for Anglo Scottish freight traffic and part of the route conveys traffic to Central Scotland freight terminals and from Oxwellmains to Uddingston and beyond. ScotRail also operates frequent local services to Lanarkshire over part of the route although some connectivity between Motherwell and Glasgow Central is provided by other operators.

Glasgow Conurbation market

The route covers rail journeys to stations in the greater Glasgow area including Ayr, Ardrossan, Largs, Wemyss Bay, Gourock, Helensburgh, Balloch, Milngavie, Cumbernauld, Croy, Whifflet, Drumgelloch, Carstairs, Lanark, Larkhall, Motherwell, Newton, Neilston, East Kilbride, Barrhead, Kilmarnock, Paisley Canal and Shotts. These services are provided by ScotRail. The route is predominantly electrified with some infill diesel traffic on the non-electric lines. Part of the route conveys freight traffic to Hunterston Central Scotland freight terminals and beyond.

Kilmarnock to Gretna Junction

The route plays a role linking Ayrshire with Gretna Junction, Carlisle and beyond. It is also the main Anglo Scottish arterial freight route for bulk freight traffic between Ayrshire and England.

Ayr to Stranraer

The route links Ayrshire with the former ferry port of Stranraer, providing connectivity to the south west corner of Scotland.

Edinburgh to Carstairs & Holytown

The route plays a role in the core cross-country network, with fast and semi-fast services linking Edinburgh to Carstairs as well as the route via Shotts to Holytown. The Carstairs and Holytown lines also convey internal Scottish and Anglo Scottish freight traffic.

Glasgow to Stirling and Perth

The route plays a role in the core cross-country network, with fast and semi-fast services linking Stirling and Perth on to Dundee, Aberdeen and Inverness serving intermediate towns along the route. Part of the route conveys freight traffic to Aberdeen and Inverness and the Far North.

East Coast Main Line to Edinburgh Waverley

The route from Edinburgh to Berwick-upon-Tweed and on to Newcastle makes up the northern portion of the East Coast Main Line (ECML). This route is a vital north to south artery for long distance traffic from London to Scotland via Yorkshire and the North East and serves the commuter and regional passenger markets as well as carrying significant amounts of rail freight.

Edinburgh Conurbation market

The Edinburgh local network connects East Lothian to Edinburgh via intermediate stations on the ECML, North Berwick branch and Dunbar, as well as routes from Caldercruix via Bathgate, Falkirk Grahamston and Shotts. The main ECML arterial freight route runs via Millerhill to Craiglockhart/Slateford Junction and beyond. The route links Edinburgh with the borders via Newcraighall and south to Tweedbank.

West Highland

The route links Central Scotland with Oban, Fort William, Mallaig, and the intermediate towns along the route and generates significant tourist traffic as it passes through areas of natural beauty including the Loch Lomond & Trossachs National Park. It is single track throughout with passing loops and is also used to convey freight to Glen Douglas and Fort William.

Key markets and traffic flows

The passenger services which cover the route can be broken down into five distinct groups:

The **Glasgow Conurbation** market covers rail journeys to stations in the greater Glasgow area for semi-fast and stopping services to: Ayr, Ardrossan, Largs, Wemyss Bay, Gourock, Helensburgh, Balloch, Milngavie, Cumbernauld, Croy, Whifflet, Drumgelloch, Carstairs, Lanark, Larkhall, Motherwell, Newton, Neilston, East Kilbride,

Barrhead, Kilmarnock, Paisley Canal and Shotts. These services are provided by ScotRail with some connectivity between Motherwell and Glasgow Central provided by other operators. The routes are predominantly electrified with some infill diesel traffic on the non-electric lines.

The **Edinburgh Conurbation** market includes the journeys that start and end within the Edinburgh area. This is taken as all stations to/from Falkirk Grahamston, North Berwick, Drem, Dunbar, Tweedbank, Caldercruix and Shotts. These services are all predominately provided by ScotRail, although cross-border services also call at Dunbar. The routes are predominantly electrified with the only diesel traffic on the non-electric lines to Tweedbank.

The **Interurban** market includes journeys between the conurbations and major cities and towns in Scotland. This reflects the areas that are served by the interurban express services and commuter services to the regional centres. The majority of services are operated by ScotRail, with CrossCountry, Caledonian Sleeper and London North East Railway (LNER) providing some services north of Edinburgh to Dundee, Aberdeen and Inverness and between Edinburgh Waverley and Glasgow Central via Carstairs. First TransPennine Express provides services between Newcastle and Edinburgh Waverley and Glasgow Central and Lockerbie.

The **Rural** market includes rail journeys that start or end at stations on the rural lines. This includes the Far North, Kyle of Lochalsh, West Highland to Oban, Fort William and Mallaig, Stranraer and Glasgow & South Western (G&SW). Services on the routes are provided entirely by ScotRail with the exception of the Caledonian Sleeper and the seasonal Jacobite service between Fort William and Mallaig.

The **Anglo Scottish** market comprises journeys between England and Scotland on the ECML and WCML. LNER and CrossCountry provide the majority of the ECML services and Avanti and First TransPennine Express provide the majority of West Coast services. ScotRail provides connectivity between Dumfries and Carlisle (and onwards to Newcastle) and Serco operates the Caledonian Sleeper services from Inverness, Aberdeen, Fort William, Glasgow Central and Edinburgh Waverley to London.

In terms of net tonne miles, the majority of Scottish rail freight traffic is intermodal (both domestic and deep sea) to/from Central Scotland terminals and Aberdeen and Inverness.

Cement is distributed by rail from Scotland's only cement production plant at Oxwellmains near Dunbar to Uddingston and Inverness and Aberdeen to various locations in England. Cement is also delivered to Mossend from Clitheroe.

Other traffic includes fuel traffic from Grangemouth, Alumina (North Blyth), Metals (pipes to Georgemas, slab product to Dalziel) Automotive traffic, industrial minerals and Royal Mail to and from Shieldmuir.

Almost 80% of Scotland's rail traffic is cross-border with the majority of traffic running via the WCML & ECML.

Performance

Please refer to the [Delivery Plan](#) which presents the “contract” against which ORR will measure Network Rail's Performance in Control Period 6.

Infrastructure investment completing in Control Period 5 & 6 (2019– 2024)

Edinburgh to Glasgow Improvement Programme (EGIP) Initial Phase - Completed

The key outputs of EGIP included a reduction in journey times and increased passenger capacity on the main Edinburgh to Glasgow route, contributing to the Scottish Government’s goals of improving economic growth, connectivity and reducing road congestion.

Electrification will also contribute towards the Scottish Government’s commitment to reduce carbon emissions.

Key Output 1:

- Glasgow Queen St High Level to Newbridge Junction (via Falkirk High) Electrification
- Cumbernauld to Greenhill Lower Junction Electrification
- Glasgow Queen Street High Level station capacity
- Platform extensions at Croy, Falkirk High, Polmont and Linlithgow
- Haymarket to Inverkeithing signalling headways - delivered in 2015
- Edinburgh Waverley station capacity
- Edinburgh EMU depot at Millerhill
- Edinburgh Gateway station - delivered in December 2016 Key Outputs 2, 3 and 4 includes:
- Glasgow Queen Street High Level station : concourse works to accommodate 8-carriage length trains
- Edinburgh to Glasgow (E&G) linespeed improvements.

Aberdeen to Inverness Rail Line Improvements Phase 1 - Completed

Delivering capacity improvements including redoubling and signalling enhancements to enable the operation of enhanced commuting services. The project also included working with station promoters to deliver the infrastructure for new stations at Kintore and Dalcross. Kintore new station will be open by May 2020; with a date for Dalcross currently awaited.

Rolling Programme of Electrification - Completed

- Rutherglen East Jn – Langloan Jn – Coatbridge Jn – Whifflet North Jn
- Greenhill Lower – Carmuir West Junction – Falkirk Grahamston and Polmont
- Carmuir West – Stirling – Dunblane – Alloa (including Larbert Jn to Carmuir East Jn and the Grangemouth branch)
- Holytown Jn – Shotts – Midcalder Jn.

Expansion of the electrified network will bring many benefits, including faster journey times for passenger and freight trains. Where journey time savings are sufficiently significant (and sufficient capacity is available) there is the potential to run additional services on electrified routes.

Highland Main Line Rail improvement Phase 2 - Completed

Providing infrastructure to deliver an hourly train service in each direction between Perth and Inverness extending to either Glasgow or Edinburgh with an average end to end journey time reduction of around 10 minutes in both directions.

Motherwell re-signalling enhancements - Completed

Increasing capacity and capability of the network by the provision of 3-aspect signalling between Holytown Junction and Midcalder Junction in conjunction with the electrification project.

Dunbar new down platform - Completed

The purpose of this project is to improve operational flexibility and capacity on the East Coast Main Line (ECML) between Berwick upon Tweed and Edinburgh. The extent of scope to be delivered in CP6 was agreed as follows:

- New single side platform on the Down side of the fast line
- Platform to platform access via a footbridge with lifts.

East Kilbride Corridor enhancements

Running more and longer services, improving integration of access to stations and electrification.

Edinburgh Waverley Western Approaches

Improve performance and increase capacity over the Haymarket corridor.

For more information on the outputs of each project refer to the [Enhancement Delivery Plan](#) Appendix for the detailed Project Definition sheets.

Beyond Control Period 6

The Team Scotland Execution Plan was developed and introduced in 2019. Its' overall aim is to create a dynamic way of working based on collaborative behaviours across the Scottish Rail Industry that enables rail investments to be delivered, providing tangible benefits to passengers and freight operators. This new way of working is aligned with the Rail Enhancement & Capital Investment Strategy (RECIS) process and the pipeline approach to funding new investment opportunities that benefit the rail industry.

Through the Long Term Planning Process (LTPP) and ongoing dialogue with funders and stakeholders the rail industry has formulated and agreed investment options and choices for the network in Scotland. A number of options have also been proposed in England which will have benefits for cross-border services.

Transport Scotland's decision to commit to a specific enhancement project will be taken when the business case is clear and both cost and affordability are more certain. There will also be a requirement to confirm the availability of suitable capabilities and resources in rail industry supply chains. Greater flexibility in the choice of development, design and contracting models to be applied to projects will also help to improve value for money and make best use of available industry resources.

This flexible, 'pipeline' approach applies to all potential rail projects, including those being promoted by third parties, and the industry will continue to support promoters as they look to develop their proposals and produce associated business cases for consideration. Any proposed potential rail projects should be viewed within the context of a corridor enhancement and would also help inform choices and pipeline development. Given the funding challenges which exist for future projects and the likely constraints on future borrowing, together with pressure on existing Scottish Government budgets, there is a need for a clear prioritisation of investment options.

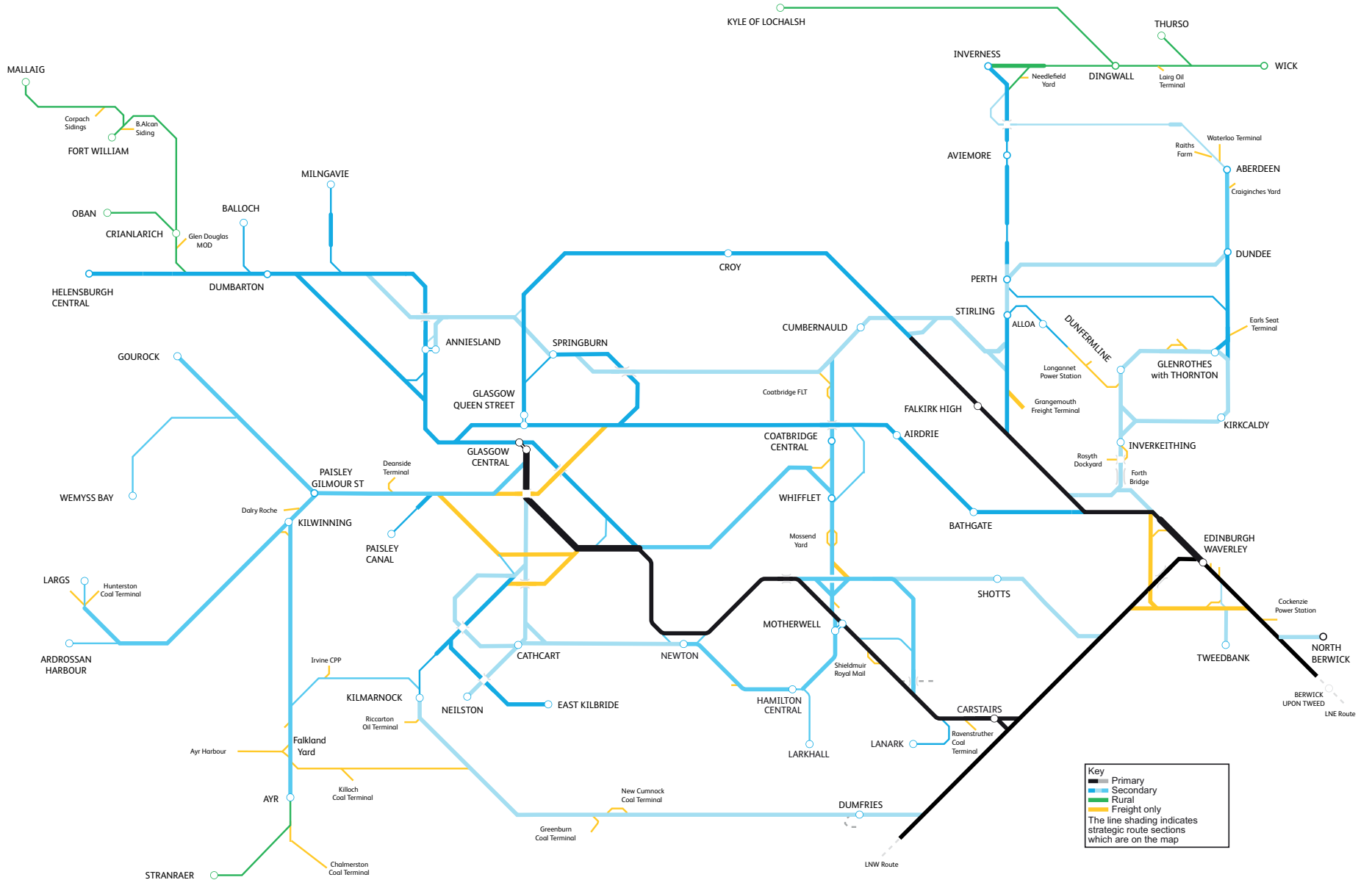
The choices are proposed to accommodate forecast rail demand and also take into account a number of key issues that are likely to shape the way the railway in Scotland will develop in the coming years. These relate to: safety, performance, resilience, construction of High Speed 2 and the move towards a Digital Railway

Further information can be found using the attached links:

- [Scottish Ministers' High Level Output Specification](#)
- [Rail Enhancements & Capital Investment Strategy](#)

SRS	Name
G.11	Border to Edinburgh
G.12	North Berwick Branch
N.06	Border (near Gretna Junction) and Carstairs South Junction
P.01	Glasgow Queen Street - Edinburgh Waverley via Falkirk High
P.02	Haymarket East Junction – Carstairs
P.03	Edinburgh - Drumgelloch
P.04	Dunblane/Alloa - Polmont Junction/Greenhill Upper Junction
P.05	Portobello Junction to Newcraighall
P.06	Fife Circle
P.07	Dundee - Dunblane
P.08	Dundee/Perth – Thornton Jcns
P.09	Dundee – Aberdeen
P.10	Aberdeen – Inverness
P.11	Perth – Inverness
P.12	Far North & Kyle Branch
P.13	Borders Line
P.98	Other Freight Lines
P.99	Other Freight Lines
Q.01	West Coast Main Line between Glasgow Central High Level and Carstairs
Q.02	Midcalder Junction – Holytown Junction
Q.03	Glasgow Central – Ayr/Largs/Wemyss Bay/Gourock lines
Q.04	Glasgow North Electric Routes
Q.05	Stranraer – Ayr
Q.06	Paisley Canal Branch
Q.07	Muirhouse Junction – East Kilbride/Kilmarnock
Q.08	Scottish Border – Barassie Junction (G&SW)
Q.09	Eglinton Street Junction – Neilston/Newton including Cathcart Circle
Q.10	Newton – Gartsherrie South Junction/Rutherglen Junction
Q.11	Lanark Branch
Q.12	Anniesland – Greenhill Lower Junction
Q.13	Gretna – Border (G&SW)
Q.14	West Highland Line
Q.99	Other Freight Lines

Scotland Route map

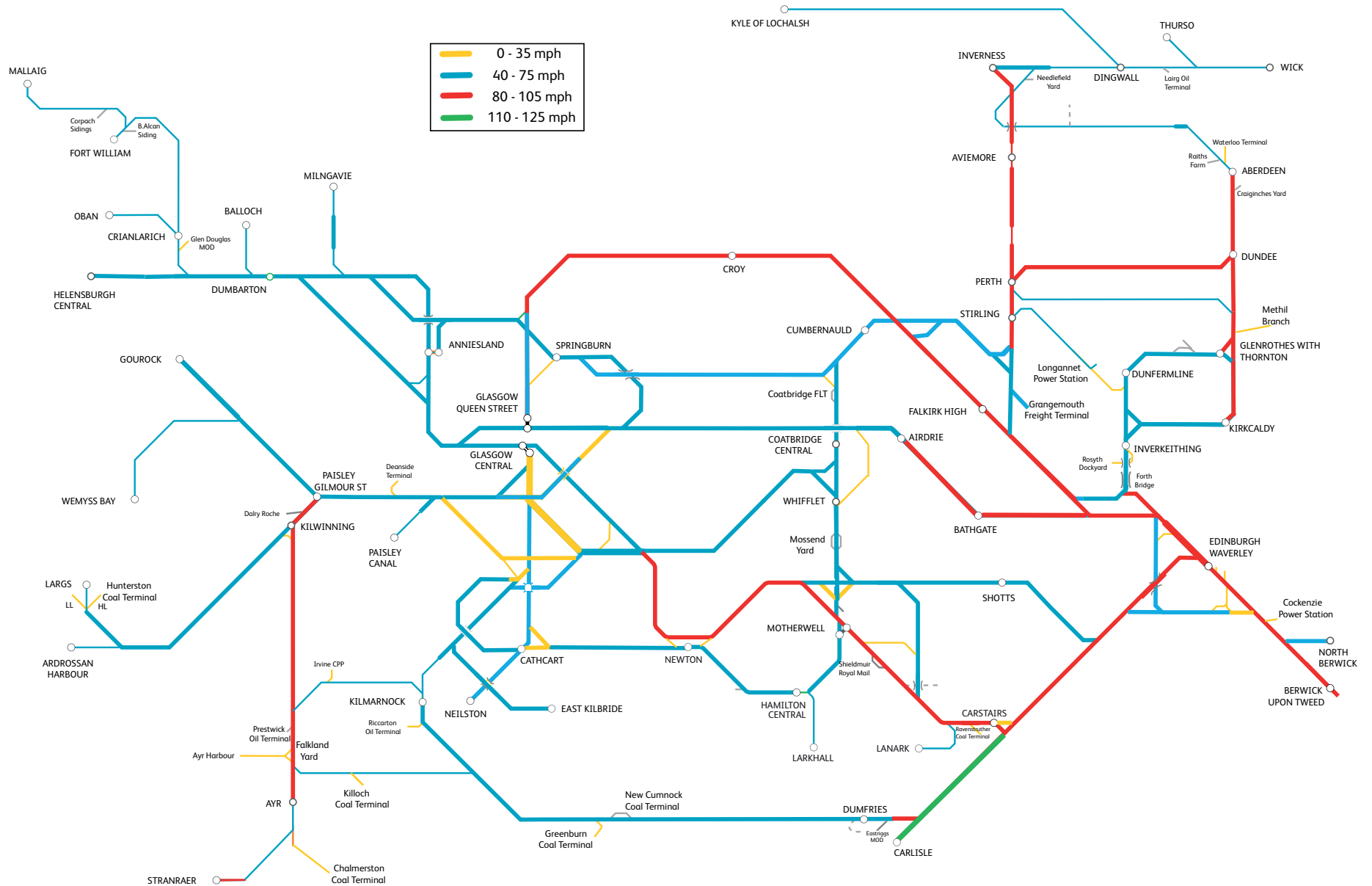


Scotland Capability maps

March 2020

Network Rail – Network Specifications: Scotland 10

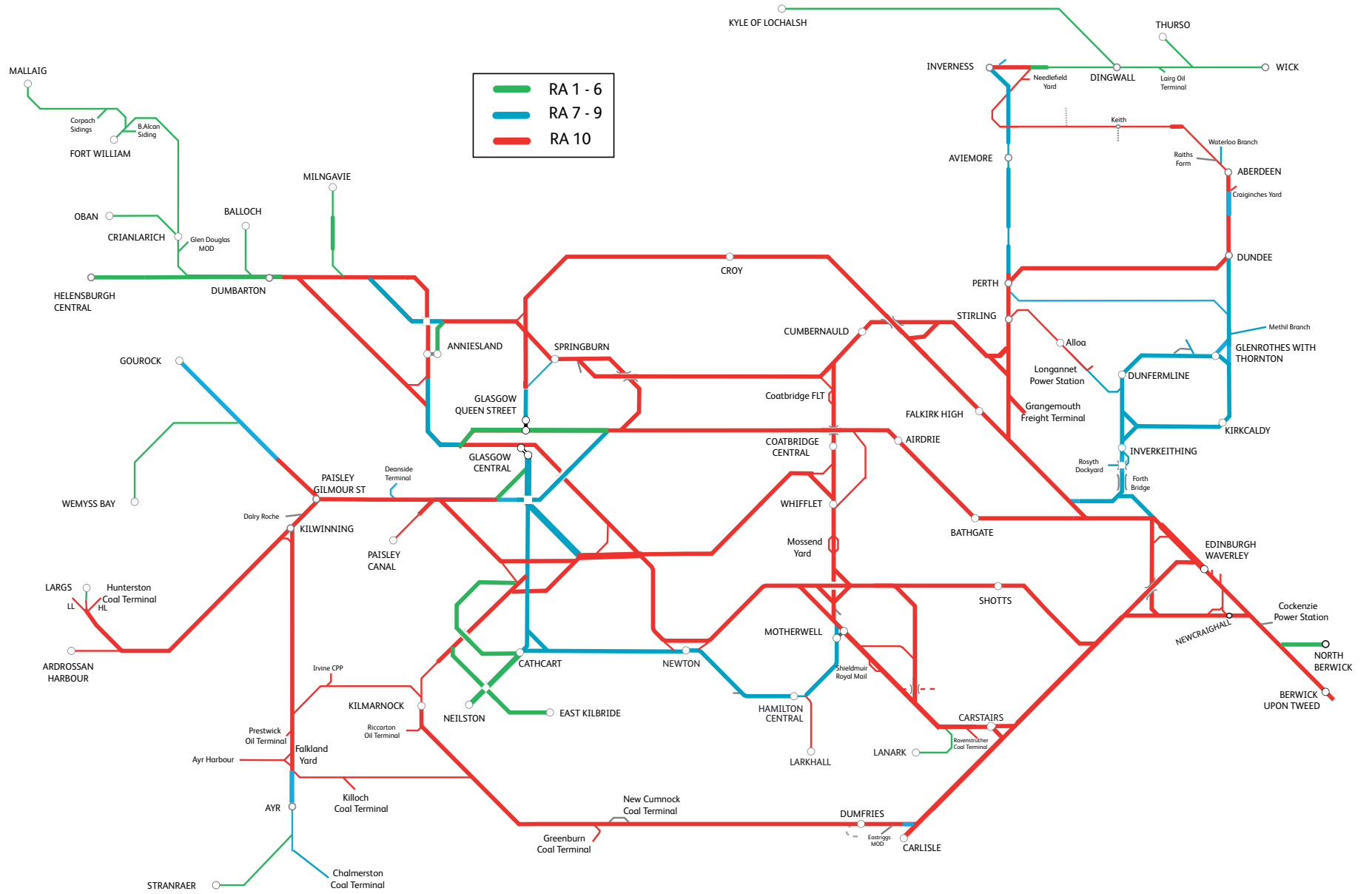
Linespeed



Scotland Capability maps

March 2020

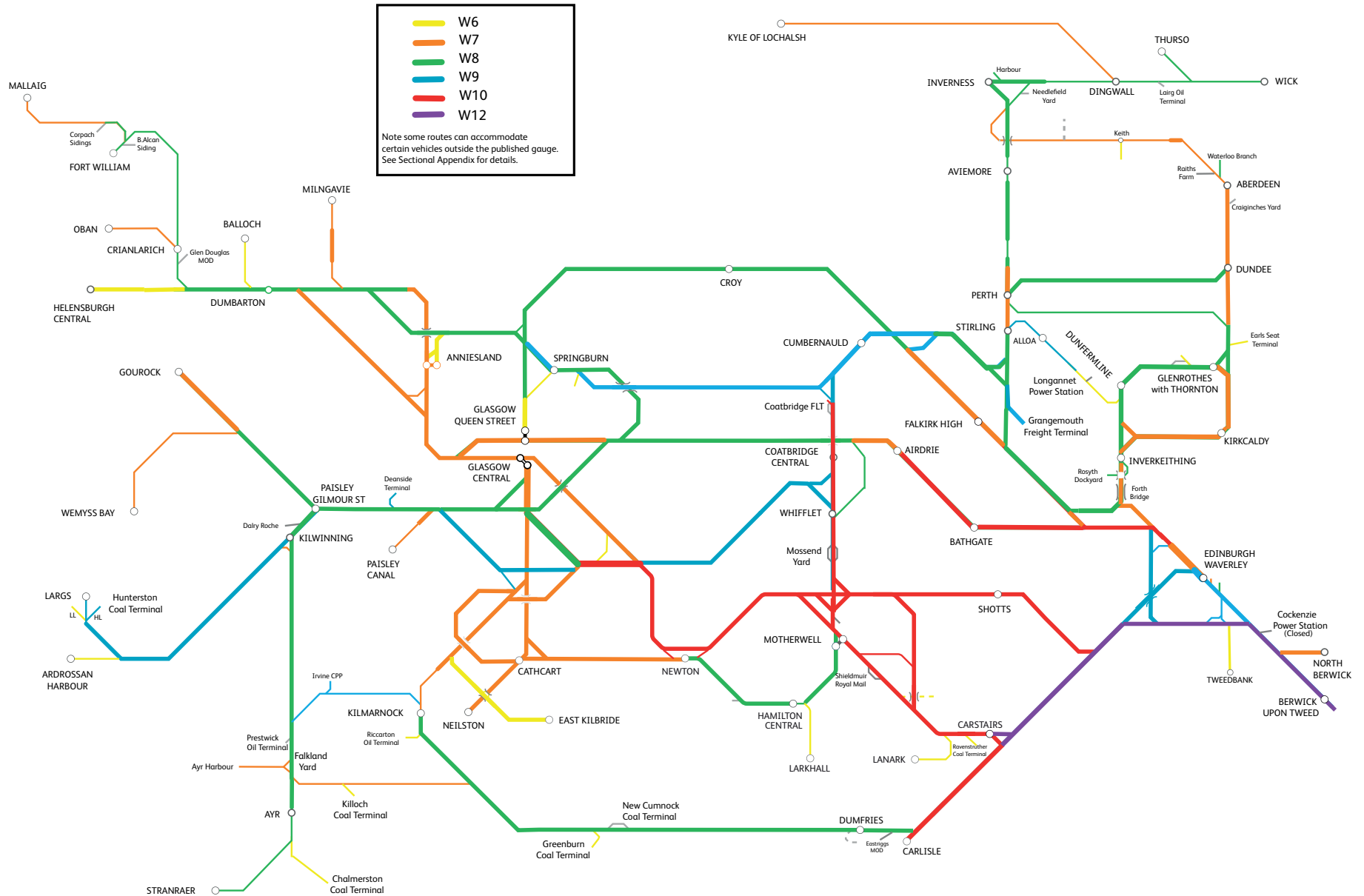
Route availability



Scotland

Capability maps

Gauge



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