RAIL FREIGHT IN SCOTLAND

@railfreightscot

NetworkRail

Scotland Freight Joint Board

# Industry Growth Plan for Rail Freight


## Foreword

The Scottish Ministers' High Level Output Specification (HLOS) for CP6 set out a number of requirements to support rail freight in Scotland including targets for rail freight growth, proposals to improve freight average speed, deliver performance and to ensure that the Network in Scotland is appropriately gauge cleared. The HLOS requires delivery of this Growth Plan to demonstrate how the Scottish Ministers' requirements will be developed, planned and delivered.

The Growth Plan for CP6 sets out our 5-year plan for CP6, from 1 April 2019 to 31 March 2024. The plan, which is centred on a range of objectives that support rail freight businesses in Scotland, has been developed with active collaboration of, and input from, our customers and stakeholders. The plan seeks to deliver what they have told us they want.

Rail freight supports Scottish businesses and the productivity and economic benefits to Scotland from rail freight are currently estimated to be just under £200m annually. Our freight customers are a vital part of Scotland's Railways and the Scottish Economy but as most freight trains run to and from England any implications associated with Scottish growth need be considered on a Great Britain wide basis. This will make sure that the required capacity and capability exists both north and south of the border.

Network Rail supports freight. We, and the rail freight industry, welcome the growth target. However, whilst Network Rail's Freight and National Passenger Operators team (FNPO) will be accountable for the delivery of the targets, Network Rail cannot secure rail freight growth in isolation, we and the Scotland Route Business need to continue to work in partnership with the rail freight operators, with Industry and with the System Operator.

I am really grateful for the support and input provided by our customers and stakeholders in developing the Growth Plan. The plans and objectives in this document will continue to be developed and will be incorporated in FNPO's Delivery Plan as we head into CP6 with continued engagement with our customers and stakeholders.

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**Managing Director, Freight and National Passenger Operators**

COLAS RAIL

Gregory March, Performance & Policy Manager

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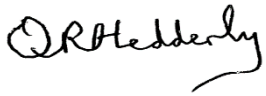

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**Introduction**

The Office of Rail and Road's (ORR) Final Determination[1], published on 31st October 2018, states that FNPO must work with the freight industry to develop and oversee implementation of a plan, including all reasonable steps to facilitate growth of 7.5% in rail freight traffic carried on the Scotland route, of which, at least 7.5% of this growth will represent new business (i.e. new traffic flows, not previously moving by rail), by end of CP6 as measured by net tonne miles.

The plan must be developed in cooperation with the freight industry, consulted with Transport Scotland and stakeholders and updated and amended as appropriate through CP6.

To develop an Industry plan to facilitate the growth of new rail freight business, Network Rail and Scotland's rail freight industry, under the governance of Scotland Freight Joint Board (SFJB)[2] have worked in partnership, using combined knowledge and experience, to establish what measures are required to secure sustainable growth and to understand how the Industry may need to adapt to unlock growth in Scotland. This industry plan recognises that whilst Network Rail can develop a framework that supports freight growth and create new opportunities (whilst not interfering with existing markets) Network Rail cannot deliver rail freight growth in isolation and is reliant on collaboration with the Rail Freight Operators, the freight industry and the wider UK Industry (Industry). However, the actions contained in this plan primarily address the issues that Network Rail can control and that the rail freight industry believes will support growth.

Network Rail will support Industry and the rail freight sector, becoming a focal point in the creation of new opportunities and encouraging existing and potential freight users to choose rail to move their goods. We will look to proactively explore new opportunities and engage with Industry to demonstrate the benefits of rail freight and to understand how modal shift could be achieved.

Going forward, in an environment where rail transport has to be efficient, value for money and economically viable, in line with the investment hierarchy, infrastructure enhancement has to be the option of last resort and the first objective of any solution to support growth should be through changing the way that we do things, however the development of this plan has revealed that there are several infrastructure interventions that would be required to secure growth, including gauge enhancement and the development of new freight terminals.

We have identified four headline objectives for this growth plan - our **4 Actions 4 Growth** (page 6):

1. Encouraging Customer Confidence
2. Developing Growth
3. Doing Things Differently
4. Simpler Solutions

# 4 Actions 4 Growth

## ACTION 1: ENCOURAGING CUSTOMER CONFIDENCE

**BENEFITS** Retention of existing traffic and securing Industry support for growth. Attaining advocacy from existing customers.

**ACTION** A bespoke freight control guidance document for Scotland to support decision making during perturbation, the roll-out of which will be aligned to an engagement plan to improve awareness of freight customer requirements.

Review of productivity and average speed to improve the economics of existing services

## ACTION 2: DEVELOPING GROWTH

**BENEFITS** Increasing the volume of rail freight moved to, from and within Scotland

**ACTION** Network Rail will proactively provide support to existing and potential freight users and become a focal point for the creation of new opportunities through a focus on business development.

"How To" Guides to be developed to simplify, demystify and improve awareness of what could be achieved and to support and develop potential and existing business.

**4 Actions 4 Growth**

## ACTION 4: SIMPLER SOLUTIONS

**BENEFITS** Reviewing existing ways of doing things to develop solutions that simplify and support.

**ACTION** A comprehensive review of existing processes to understand where additional support is required to develop facilities and traffic, including development of "How To" Guides, supported by a Communications Plan which will be implemented throughout CP6.

## ACTION 3: DOING THINGS DIFFERENTLY

**BENEFITS** Development and implementation of lower cost and innovative solutions that facilitate rail freight.

**ACTION** The rail freight industry in Scotland will explore opportunities to collaborate to identify ways to improve rail freight development and create achievable solutions to issues facing existing and potential customers.

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**Background**

Why develop a Growth Plan?

The Scottish Ministers published their High Level Output Specification (HLOS) on 20th July 2017[3]. In developing the HLOS, Transport Scotland consulted widely with the Industry to understand what Network Rail should be expected to deliver in Control Period 6 (CP6), which runs from 1st April 2019 to 31st March 2024. This work highlighted that the freight industry would support freight targets to improve growth, freight average speed and freight performance. The HLOS therefore contained a number of requirements which impact on rail freight operations in Scotland, including freight average speed improvements, a performance target, a growth challenge and the development of an Industry Agreed Growth Plan. The requirements also follow, and flow, from Scottish Government's Rail Freight Strategy published in March 2016[4] and have been endorsed in the ORR's Final Determination[1], published on 31st October 2018.

In advance of CP6, the Final Determination required Network Rail to work with the freight industry to develop and oversee implementation of a plan including all reasonable steps to facilitate growth of 7.5% in rail freight traffic carried on the Scotland route, of which, at least 7.5% of the growth will represent growth in new business (i.e. new traffic flows, not previously moving by rail), by end of CP6 as measured by net tonne miles. This document constitutes that plan.

To develop the plan, Network Rail and Scotland's rail freight industry, under the governance of SFJB, have worked in partnership using combined knowledge and experience to establish what measures are required to secure sustainable growth and to understand how the industry may need to adapt to unlock growth in Scotland.

This industry plan recognises that whilst Network Rail can develop a framework that supports freight growth and create new opportunities (whilst not interfering with existing markets) Network Rail cannot deliver rail freight growth in isolation and is reliant on collaboration with the Rail Freight Operators, the wider freight Industry, government and other stakeholders. The actions contained within this plan primarily address the issues that Network Rail can control and that the industry believes will support growth.

New analysis, published by Rail Development Group (RDG) in "Rail Freight; Working for Britain"[5] has estimated that in 2016, rail freight generated over £1.7 billion in economic benefits for the UK and contributes more that £0.5bn through reducing road congestion, improving air quality, reducing carbon emissions and reducing the number of road accidents. The aggregate productivity and economic benefits for Scotland are estimated at £192m (11% of the total UK benefits)[5]. Each tonne of freight transported by rail reduces carbon emissions by 76 per cent compared to road, and, in Scotland, each freight train removes between 25 and 62 HGVs from Scottish roads depending on the route and commodity being transported.

This Industry Plan will not go into detail about specific customer aspirations or projects as this would breach customer confidentiality and sharing specific details could infringe Competition law therefore the figures and examples utilised within this plan are an aggregation of the Industry interviews held.

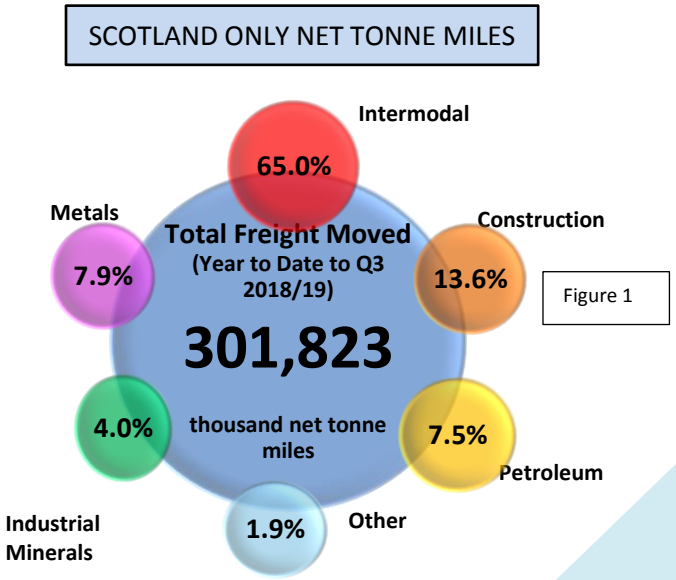



Figure 1

The faster than anticipated decline in what was Scotland's bedrock for rail freight, Electricity Supply Industry (ESI) coal has radically changed the face of rail freight in Scotland from a buoyant industry to one that will require a period of recovery and support to build up new and sustainable markets. The decline of traffic and subsequent reallocation of resources, as well as what could be perceived as Scotland's geographical remoteness from some markets, means that securing modal shift will be challenging for some markets and this will require the rail industry, Industry, Network Rail and Scottish Government to adopt new approaches in order to attract and secure new markets. Rail freight volumes are directly linked to the health of the UK economy; if development activity slows it lessens demand for construction materials; tariff barriers reduce exports of whisky; public confidence drops and if consumers reign back spending, this will necessarily feed through to rail traffic volumes.

The UK freight market is fiercely competitive, both with road (which remains the price and service benchmark for most categories of rail freight), shipping (both container feeders and bulk coastal shipping) and within rail, with the main Freight Operating Companies (FOC's) competing across the UK in all markets. Recent Commodity Studies have highlighted growth potential in intermodal (including food & drink, chilled and frozen), forest products and aggregates, each of these markets has its own challenges to secure modal shift including consolidation requirements, cost competitiveness with other modes of transport and confidence in the service that rail can deliver.

The FNPO Route Strategic Plan highlights that growth will require an appropriate framework to be put in place to develop infrastructure capability and capacity, and to fairly charge for access to it. Such a framework would then serve to create the operating conditions for an economically sustainable rail freight sector and so a rail freight offer that is both attractive to potential end-users and provides the maximum socio-economic gain at lowest cost to funders.

It is acknowledged that, at least for intermodal traffic, rail cannot work without road. Only a small proportion of all rail freight journeys are rail connected door to door, in fact $^{2}/_{3}$rds of all intermodal trains on the Scottish Network each week are running because road logistics companies (3PLs) have actively chosen to use rail as part of their logistics offering. Therefore, reviewing how growth of freight on rail can be supported and simplified from now and throughout CP6 is timely; road congestion is increasing, there is a UK wide HGV driver shortage (the impact of which could be greater in Scotland given the distance to markets) and road regulation is expanding.

Industry Support/Plan Development

The content of the growth plan has been developed and shaped through support from SFJB members, interviews with industry stakeholders, meetings with potential customers and incorporates the output of four industry workshops led by Transport Scotland, the Chartered Institute of Logistics and Transport (CILT) and the Freight Transport Association (FTA) and supported by SFJB. A separate industry workshop was held in October 2018 to develop and agree an Action Plan to support this plan. A land strategy working group was also created to understand potential opportunities from the existing land portfolio, to provide input into Planning Consultations and to review where there could be a requirement for future freight facilities.

Growth Plan progress has been reviewed at quarterly SFJB meetings since the HLOS Publication in July 2017 and draft versions circulated to SFJB members, FNPO, System Operator (SO) and Scotland Route Business for review and comment.

Freight Customer Requirements

Understanding the needs of our freight customers and anticipating emerging trends is vital to the success of the business. We will continue to hold regular tracked meetings with our customers to make sure that we are clear on their priorities and that we are working in partnership to achieve their requirements. The meetings, which will include the quarterly SFJB, will be supported by FOC and Freight End User Customer Surveys.

Rail Network Challenges to Growth

The Scottish rail network is a busy mixed railway and getting busier. In Control Period 5 (1st April 2014 to 31st March 2019) there was considerable infrastructure investment to enhance capacity, capability and resilience such as interventions at Mossend, on the Highland Main line, between Aberdeen and Inverness, Aberdeen and Dundee and the central belt electrification enhancements – all of which will have benefits for existing and future freight customers.

Whilst there has been significant investment to support Government and Franchise commitments (such as Scotrail's "Revolution in Rail", which introduces a substantial benefit to passengers in terms of number of trains/amended service patterns and new rolling stock), the committed passenger service improvements have utilised most of the previously spare capacity on some corridors which will restrict the potential for freight growth on routes such as Central Scotland to Inverness and Aberdeen within existing operating hours. Therefore infrastructure interventions and/or other solutions (ie extending operating hours, FOCs working together to maximise capacity, whole industry timetabling solutions) would be required going forward to deliver growth, improve journey times and sustain high levels of freight performance at the same as achieving Government's current and future aspirations for increased passenger services and reduced passenger journey times on a punctual and reliable Scottish railway.

As well as reducing harmful emissions, electric haulage has an important role to play in securing freight paths on the network. Electric locos improve acceleration, get trains to their destination faster for customers, freeing up paths on busy sections of the network. The continued introduction of electric and dual-powered freight locomotives has allowed freight services to be timetabled more efficiently between existing passenger services and, in general, permitted heavier and longer freight services

Significant rail freight growth is expected between East Coast of England ports and Scotland and passenger service increases between Scotland and England will result in East Coast Main Line pathing becoming more constrained. A solution for this could have been the use of electric traction for freight haulage which would support freight and passenger services co-existing north of Newcastle. By CP6 there will be four electrified routes between the east and west of Scotland however, without electrification of the Edinburgh Suburban route, access for freight operators using electric traction would be wholly dependent on paths being available via Edinburgh Waverley and Haymarket. During daytime and the 15 minute Edinburgh to Glasgow service capacity does not exist for this to happen. The freight industry recognises that alignment with Department for Transport (DfT) proposals would be required to secure all the benefits that electrifying the Edinburgh Suburban Route would provide however it recommends that design for electrification is progressed in CP6, along with dialogue with DfT.

The decline in coal has not released capacity where it will be required for growth. Most coal flows were routed either via the Glasgow & South West Route (G&SW), which has severe journey time implications for the routing of intermodal traffic, or were routed cross-country from Hunterston to Longannet. Many of the cross-country coal paths have already been utilised for the expansion and improvement of passenger services.

**RAIL FREIGHT GROWTH**

**Success Criteria**

Scottish Ministers require **all reasonable steps** to be taken to facilitate growth of 7.5% in rail freight traffic carried on the Scotland route by 31st March 2024. At least 7.5% of the growth achieved must represent a growth in new business (ie new traffic flows, not previously moving by rail). The growth target will be measured in thousand net tonne miles, with the mileage element being miles run only in Scotland Route, given that the constitutional boundary for the Scotland HLOS is the border with London North Western (LNW) and London North Eastern (LNE) Routes. A shadow metric will also be provided detailing total journey mileage in order that there is a full understanding of product moved at the end of CP6. The plan does not include measures that may be required in England to support Scottish growth however it is recognised that alignment is required and this will be achieved through Network Rail's System Operator (SO).

The rail freight industry was asked to consider how to **make rail freight use more attractive to Scottish businesses including simplifying processes, improving business development, assisting in the development of new business/terminal facilities and maximising existing traffic flows and how the rail freight industry in Scotland can promote itself better**.

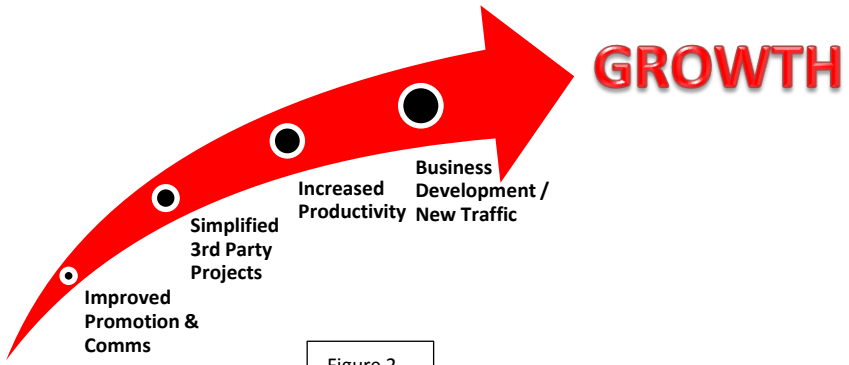



Figure 2

The Growth Plan sets out to demonstrate how, throughout CP6, the rail freight industry and Network Rail will facilitate and support Scottish rail freight growth. This is not simply a GROWTH Plan, it is a plan to highlight how the Industry will collaborate, take on board current perceptions of existing and potential customers and explain what could be done differently both to address concerns and to drive advocacy.

This Growth Plan touches on the three HLOS targets that are specific to rail freight; growth, average speed improvement and performance. It is recognised that whilst it is desirable to achieve a balance of all three targets there could be unintended consequences of introducing a solution for one of the targets and there may be scenarios where a trade-off between growth, speed, performance or another conflicting HLOS target may be necessary and this will require further dialogue between Network Rail, Transport Scotland and the rail freight industry.

**Recognising that growth of rail's market share is not always in the gift of the rail freight industry to achieve, the industry commits to work in partnership to transfer at least 1,700 lorry movements a year to rail from Scotland's road network**

**What does growth look like?**

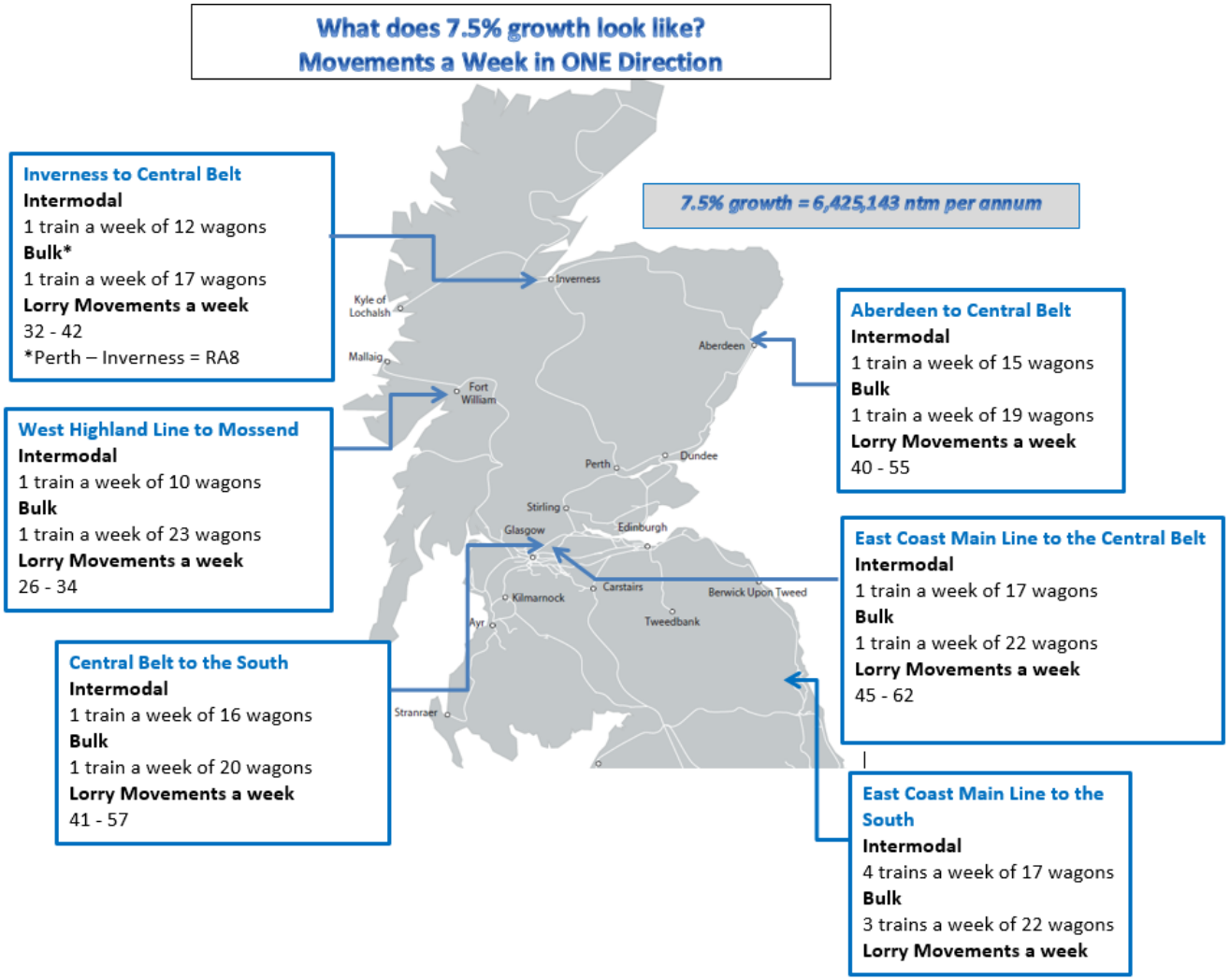



Figure 3

7.5% growth from the 2018/2019 year-end figure (forecast at 428,000,000 net tonne Scottish miles, 7.5% growth = c. 6,425,000 net tonne mile growth p.a.) is achievable. As the metric for growth is based on a combination of product carried and mileage within Scotland, what 7.5% growth looks like depends on the origin/destination of the traffic and train weight.

There are currently around 45 freight trains a day in Scotland, if the growth target was purely measured on number of trains this would equate to an additional 3 trains a day during CP6.

***With the loss of coal traffic Scotland is starting from a low base therefore we aspire to achieve a minimum of 7.5% growth***

**THE OPTIONS SHOWN ABOVE ACHIEVE THE NET TONNE MILE TARGET ON THEIR OWN MERIT – THEY ARE EITHER/OR AND DO NOT NEED TO BE COMBINED TO DELIVER 7.5% GROWTH, THEY DO HOWEVER ASSUME A FULLY LADEN TRAIN OPERATING TO THE MAXIMUM ROUTE**

Challenges to Growth

Another factor that requires to be considered is the potential for traffic losses during CP6. It is understood that some traffic that is currently on rail may switch to sea and/or road during CP6 therefore the 7.5% HLOS growth target also needs to assume that some traffic will be lost. An assumption on potential losses has been made to calculate what impact it would have on the growth target.

The ongoing macro-economic challenges that may affect anticipated growth rates are recognised by the industry but at time of writing this growth plan the impact cannot be predicted. It is also recognised that the anticipated growth may not be realised without interventions to increase capability and capacity.

The impact of Brexit is, as yet, unknown however companies are being cautious on investment decisions and innovation, at least until the outcome becomes clear.

One significant concern for exports and imports is the potential impact of customs requirements post Brexit. Currently internal rail freight movements within Europe, except for alcohol and tobacco, do not require customs declarations, only a safety/security inspection at both ends. Free movement of alcohol and tobacco ceases post Brexit and import/export declarations for any such movements will be required on both sides of the UK/EU borders.

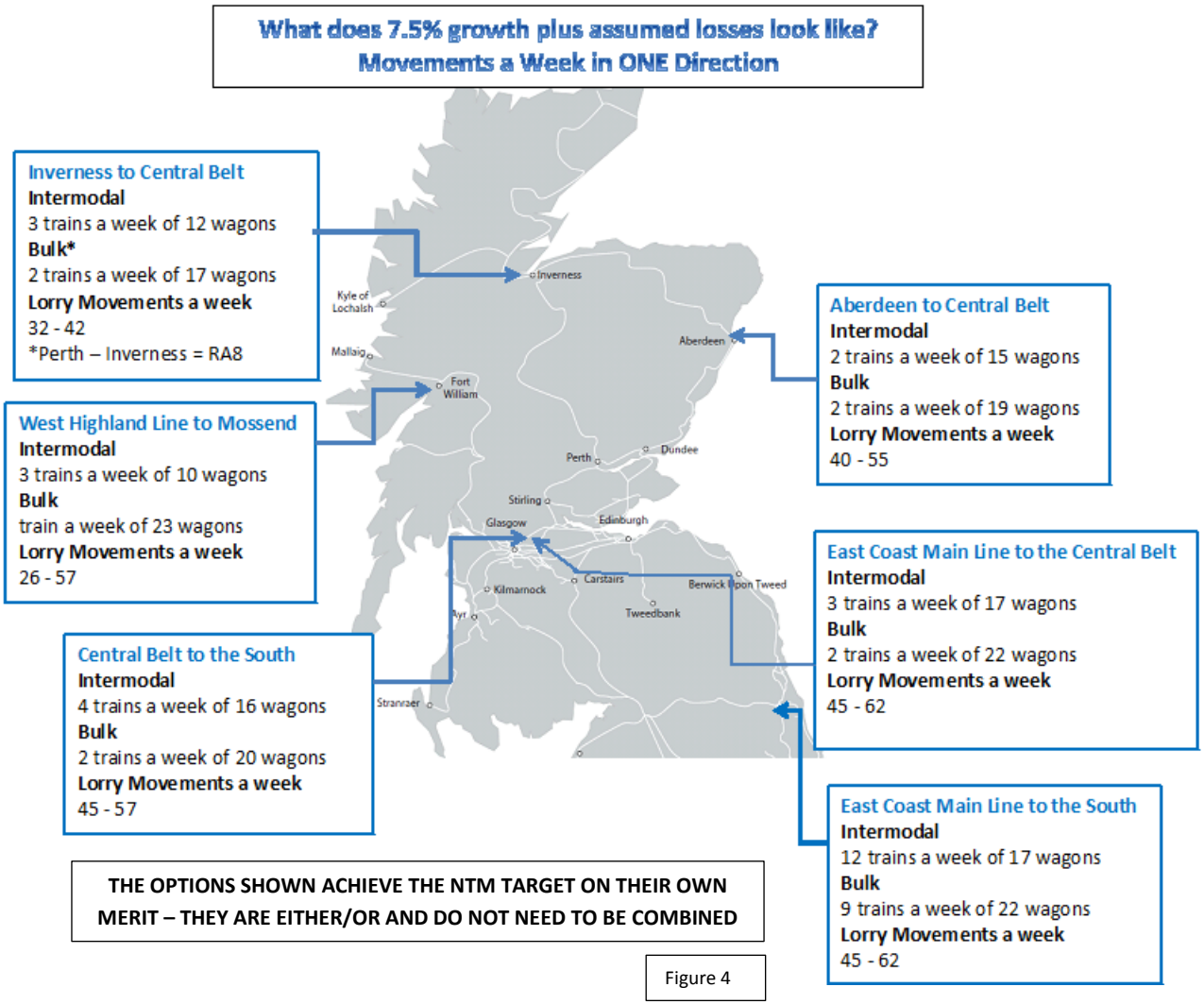



Figure 4

Whilst it is not yet clear and legislation is still being developed, there is concern that once Britain exits Europe, the customs requirements on both sides of the channel will lead to the requirement for a single cross channel border checkpoint in England and France causing significant congestion and delays. In a recent report commissioned by RDG "International rail freight post-Brexit" [6] it was proposed that the creation of Railway Customs Areas (RCAs) at suitable terminal/departure terminals would reduce this risk. Should the concept of RCAs be agreed, then moving goods by rail could become a more attractive prospect post Brexit given the potential for delay for road hauliers with the forecast increase in customs declarations requiring to be processed, however it should be noted that creation of RCAs will require investment which will need to be recovered by the terminal operator.

Whilst the maps highlight what growth would look like in terms of number of new trains and lorry movements saved it is recognised that the existing Scottish cross border intermodal flows are currently running at around 60% of available capacity out-with peak periods (such as Easter, Black Friday, Christmas) therefore the first option for growth in the intermodal sector should always be to improve productivity where there is an existing service. We will therefore work with customers to review productivity, where possible maximising train lengths and weights and reducing operational challenges in order to improve the economics of existing services.

Where growth does result in a new service however, as a significant proportion of product moved by rail freight to or from Scotland will be either domestic intermodal traffic from England to Scottish distribution centres, supermarkets and high streets, imported goods or exports from Scottish businesses, the implications of this plan do not stop at the border with England. Scottish growth will inevitably have an impact on train pathing, capacity, and potentially capability requirements on the rail network in England and this challenge will become more acute during the construction of HS2 therefore any cross-border growth aspirations need to be developed through collaboration with SO, FNPO and Route colleagues in all affected Routes.

Scotland Freight Joint Board members undertook a SWOT analysis during 2018; a review of the strengths and opportunities for rail freight in Scotland as well as the weaknesses and threats that Scottish rail freight traffic could face in the next five years, to assess the viability to achieve the growth target. The resultant SWOT matrix and a Risk Register will be owned by Scotland Freight Joint Board and will be developed and updated throughout CP6.

Going forward, the number of new homes planned in the UK will have an impact on road congestion, for example in Scotland there are around 12,000 new homes planned on the East Coast along the A1 corridor and the implications of low emissions zones in the major Scottish cities and where road deliveries are collected could also shift some current congestion points to new locations. Road congestion (and the resultant impact on road maintenance spend) could be alleviated by rail freight.

The freight industry would like to work with Transport Scotland and the Scottish Government on a strategy to actively seek to decongest roads through encouraging appropriate modal shift to rail. Reducing congestion on the road network would improve road haulage productivity from reduced road congestion and, in turn this would improve the attractiveness of the road haulage industry for drivers. It may also potentially reduce the requirement for road repairs and subsequent road budget savings.

MDS Transmodal updated the 2013 Freight Market Study with a new forecast in 2017[7] to support the FNPO Route Strategic Plan. This update has indicated a **15.6% increase** in traffic lifted from the base in 2016/17 until the end of CP6 in 2023/24 for the UK. FNPO has consulted widely with the industry on these findings and the feedback from consultees broadly aligns with this predicted growth however the outcome of Brexit might impact on a higher growth forecast.

Whilst Transport Scotland has set a growth target, this growth plan is not solely about achieving the 7.5% target. Transport Scotland set the target due to a perception that Network Rail requires to be more receptive to facilitating freight developments, be that new trains or new freight facilities and the rail freight industry in Scotland requires to be more proactive and collaborative - therefore this growth plan is about how the rail freight Industry will continue to work together to demonstrate a collective willingness to do things differently to achieve modal shift.

**Encouraging Customer Confidence**

Network Rail and the rail freight industry recognises that developing and retaining customer confidence and attaining advocacy is a key component to protect existing rail freight traffic and to create a sustainable framework for growth.

It is acknowledged that transporting goods by rail is highly efficient and has a very positive performance record with over 90% of all rail freight services arriving within 15 minutes. Occasionally however, like other modes of transport, extreme weather and isolated incidents can impact on rail's normally excellent reliability. The impact of a route closure or cancelled train is more significant on rail than it would be on road given the volumes being moved on each train.

Network Rail's customers are at the heart of what we do and we look to continuously improve our service delivery, so freight customer support and service recovery when there is Network disruption will be an area for focus in our Action Plan.

As highlighted previously, we will work with customers to review productivity, where possible maximising train lengths and weights and reducing operational challenges to improve the economics of existing services. Another key issue to achieve growth and retain existing traffic will be ensuring that we are working towards customers traffic being able to run from origin to destination 365 days a year. The criticality of service continuity was exposed during the closure of the West Coast Main Line (WCML) for several weeks at Lamington in 2016. The closure highlighted that the ability to seamlessly switch between the core and comparative diversionary routes, both in Scotland and routes south of the border, is essential to prevent traffic being lost to road. It has been established that investment is required for network enhancement to achieve equivalent gauge and Route Availability (RA) on diversionary routes for both unplanned and planned route closures. Whilst Network Rail will look to improve the ability to keep freight services running there is also an onus on Freight Operating Companies to make sure that they attain and retain driver route knowledge for the agreed diversionary routes so that, when required, there can be a seamless transfer of traffic.

Proactive mitigation measures will be developed and put in place to improve resilience and to reduce or, where feasible, prevent future delays. These measures will include an internal Engagement Plan and improved information on freight customer requirements for Controls to support decision making.

**Promotion & Business Development for new traffic**

Network Rail's role is to support the rail freight industry, creating new opportunities, encouraging existing and potential freight users to choose rail to move their goods but not to interfere with existing markets. We will look to proactively explore new opportunities and engage with Industry to demonstrate the benefits of rail freight and to understand how modal shift could be achieved.

Network Rail will support existing and potential freight users, facilitating their requirement to be an informed Client, from initial consideration of rail freight through to tender bid. Together with the rail freight industry, Network Rail will introduce an external Communications and Stakeholder Management strategy during 2019 to proactively increase visibility, promotion and awareness of potential rail freight opportunities and will work closely with the Rail Freight Operators and existing freight users to identify and reduce possible barriers for a new customer.

**Growth Potential**

This growth plan has been populated using information gleaned from Industry and rail freight industry interviews, and research into Scottish markets. Industry Workshops with potential freight users were also held at Coatbridge, Aberdeen, Inverness and Kirkcaldy and the feedback received from these forums incorporated into the plan.

Alongside growth potential for intermodal traffic (including chilled and frozen produce), Scotland has several industries including timber products, whisky/gin/craft beers and aggregates that, with the right conditions, are ideal partners for rail freight. Without collaboration and finding innovative solutions, modal shift will be difficult to achieve in some markets. Cost, security/reliability of delivery and the ease of changing from existing modes of transport will all influence whether or not the rail freight industry will be successful in supporting modal shift for potential freight users.

A 2015 report on forestry's economic contribution to Scotland highlighted that forestry and timber processing was valued at over £770 million GVA[8]. 19% of Scotland is covered in woodland and nearly 7 million green tonnes (weight when freshly felled) of Softwood (ie conifers such as pine, spruce and fir) was harvested in Scotland, around $^{2}/_{3}$rds of the entire UK softwood harvest in 2017. The UK has 222 establishments (in 2017) that used UK grown timber (logs), including sawmills, pulp & paper mills, wood-based panel mills, wood fuel producers and round fencing manufacturers. Sawmills consumed 6.6 million green tonnes of Softwood in 2017, just over 1 million green tonnes was delivered to UK panel mills, 1.6 million green tonnes delivered for the production of wood fuel and 1.3 million green tonnes delivered to produce fencing and panels[9].

With high demand and diverse industries which rely on a stable and secure supply of timber, it might be thought that transporting timber and timber products by rail would be easy to achieve but there are significant challenges for rail to compete in this sector; including, that the current logistics routes for timber by boat and road work well for the timber industry, cost of double handling the timber, location of timber supply and processers in relation to railway lines, short duration contracts and previous experience (or perception) of rail. Whilst rail is normally seen as a green alternative the mainly private ownership of Scottish forests may result in cost being the main driver for transport decisions (dependent on contract type).

A HITRANS report "Timber Wood you use rail V2" [10] advised that the timber industry sees rail as high cost, requiring specialist infrastructure and rolling stock, with transit time from the West Highlands and Highlands by rail also being a deterrent to modal shift. The timber industry has also highlighted that rail operators do not adequately market their services or what is possible on the Network and Network Rail is not seen as facilitating access to the network, introducing barriers and costs. Rail's requirement for long-term commitment and collaboration runs counter to the timber industry's requirement to compete for supply and to shift harvesting activity within short timescales. Most plants are not rail connected but there are a number that are adjacent or near the railway.

The HITRANS report[10] highlighted that there was a need for information on rail routes, capability and terminals and that the timber industry, with encouragement from government agencies, needs individual companies to work co-operatively to draw together:

- Sufficiently long-term arrangements from a railhead/terminal or network of railheads/terminals that guarantee the rail operator traffic over a period, justifying investment in the rail network and offering a reasonable and transparent rate of return;
- Timber hubs, operated by third parties which provide rail freight services for a number of processors;
- Open data on timber logistics that enables the planning of a timber network, fulfilled for example by dedicated freight trains that provide a merry-go-round service, calling at a different processor or hub on a certain day of the week;
- Aggressive marketing by Network Rail and terminal owners to attract new timber flows;
- Joint working with other sectors such as whisky (grain in, chips/pellets out) where the same equipment can be used for each product;

Transporting logs by rail will therefore need further work by Network Rail and the rail freight industry to demonstrate how rail can meet the requirements of the timber industry, this work will also include exploring how to secure the significant opportunities for finished products and by-products, such as panel mills and wood fuel producers where the finished product is being moved from production facility to distribution hub.

Another of Scotland's key industries is Scotch Whisky (plus the growing market of craft gins). In 2017 The Scotch Whisky Association (SWA) published a report[11] which showed that Scotch Whisky adds around £5 billion to the UK economy and exports accounted for 20% of all UK food and drink exports. In 2018, exports of Scotch Whisky were £4.69 billion which is the equivalent of 1.27 billion 70cl bottles equivalent being exported to 175 markets world-wide.

There are potentially 5 key sub-sectors for the whisky industry (i) export of finished product from Central Scotland where rail is already an established market leader for exports (almost 24 million bottles of whisky are shipped from Scotland every week), (ii) bulk spirit movement within Scotland, (iii) glass bottles to Central Scotland bottling plants (iv) barrels and (v) cereals to distilleries.

Nearly 1.5m tonnes of bulk spirit is moved annually from distilleries in the north of Scotland to maturation sites and blending plants in Central Scotland however bulk spirit movements within Scotland are entirely on road. In 2013 the 'Lifting the Spirit' trial explored the feasibility of transporting bulk spirit from Speyside distilleries to central Scotland by rail, the trail highlighted that there were economic and safety concerns that would need to be addressed before rail could be a viable alternative to road. The shorter journey times and improved reliability afforded from a doubled A9 may further dampen rail's potential, especially given the locations of a lot of the distilleries in relation to railheads and the A9[12]. The rail freight industry has not yet been successful in securing the movement of bulk spirit on rail, however given the volume of bulk spirit being transported, the Scottish rail freight industry will undertake further development work into finding solutions for the challenges.

Rail is likely to be more accessible for the movement of spirits from maturation locations to bottling plants and movement of product to distribution facilities and/or storage from bottling plants (given a significant proportion of finished product is stored in warehouses to smooth out peaks and troughs of production requirements). Many of the major bottling plants are close to existing/potential railheads and some key maturation sites are adjacent or close to the rail network.

With gauge improvements (to secure 2,896 mm high on some routes) rail may also be ideal for transportation of barrels. Rail would also be ideal for the bulk movement of grains and cereals including barley and wheat. A report by SWA[13] highlights that the Whisky Industry seeks to source cereals from Scotland and the UK wherever possible. The Scotch Whisky industry is the largest end-user of malting barley in the UK[14] and the UK distilling industry uses between 700,000 and 800,000 tonnes of wheat each year amounting to approximately 5% of the total UK wheat production[13]. In 2017, barley was the UK's second largest crop, yielding 7.4 million tonnes.[15]

Apart from ballast movements for Network Rail there are currently no aggregates moved by rail in Scotland as, historically, the main Scottish centres of construction have been cities close to quarries. However, the construction of HS2 has the potential to change the supply patterns for UK aggregates traffics. A massive amount of aggregates will be required for HS2 which could tie up production in English quarries and increase the attractiveness of Scottish aggregates for use in the north of England as large Scottish quarries would be able to efficiently export by rail to northern England cities (ie Manchester/Leeds).

**Growth Potential: Commodity Highlights**

| Commodity | Sub Commodity | Issue | Action | By Whom | By When |
|---|---|---|---|---|---|
| Timber | **Logs** | Cost differential. Multiple forest owners and multiple purchasers. Existing logistics works for the timber industry. Would work well for large volumes. | Further business development work required to establish viable projects in conjunction with 'how to' guide for lineside loading | FNPO SRFM & BDM | Throughout CP6 |
| | **Finished Product** | Lack of direct rail connection into plants | Clarify what would be required to secure gauge clearance of 2,896 mm high boxes on the HML.<br>Work with the Industry to develop potential | FNPO SRFM<br>FNPO SRFM & BDM | 30/05/19<br>Throughout CP6 |
| | **Pellets** | Lack of direct rail connection | Further business development work required | FNPO SRFM & BDM | Throughout CP6 |
| Intermodal | **Whisky (Bottled)** | Lack of direct rail connection to bottling plants | Further business development work required in conjunction with External Comms Plan | FNPO SRFM & SCM | Throughout CP6 |
| | **Whisky (Bulk)** | Industry content with existing logistics<br>Security, loading, size of tanker<br>Lack of direct rail connection to maturation plants<br>Location of distilleries<br>A9 doubling – road even more attractive | Further business development work required in conjunction with External Comms Plan<br>Requires 2,896 mm high | FNPO SRFM & SCM | Throughout CP6 |
| | **Whisky (Grain)** | Most grain is currently sourced locally | Further business development work required | FNPO SRFM & BDM | Throughout CP6 |
| | **Craft Beer/Gin etc** | Growing market | Freight Operating Companies to explore potential with support from NR where required | FOC Business Development | Throughout CP6 |
| | **Chilled & Frozen** | Requires clearance for Reefers | Clarify what would be required in terms of work and funding to secure gauge clearance of 2,896 mm high x 2,600 mm wide to Inverness, Aberdeen and between Aberdeen and Inverness | FNPO SRFM | 04/11/19 |

**Growth Potential: Commodity Highlights**

| Commodity | Sub Commodity | Issue | Action | By Whom | By When |
|---|---|---|---|---|---|
| | **European** | Could be significant opportunities post/during Brexit transition | Review once Brexit uncertainty settles down | Scotland rail freight industry | Post Brexit |
| | **Other Intermodal** | Potential future opportunities including impact of lorry driver age profile, Brexit | Work with 3PLs and Freight Operating Companies to understand requirements and review existing services to understand potential for increases to existing length/weight. | FNPO SRFM | Throughout CP6 |
| **Construction** | **Cement** | Good growth potential but growth dependent on a healthy economy and improving economics of rail transport | Identify whether forecast growth will require additional train paths and work with Customers to secure additional capacity | FNPO SRFM & HoSC / SO | Throughout CP6 |
| | **Aggregates** | Aggregates requirements for HS2 could drive growth from Scottish quarries | Further dialogue required with Aggregates Industry | FNPO SRFM / BDM | During 2019 |
| **Metals** | **Slab/Sheet** | | No immediate action | | |
| | **Alumina/Aluminium** | Aluminium – heavy product, WHL capability (RA5) | No immediate action | | |
| | **Pipes** | Dependent on Customer demand | No immediate action | | |
| | **Alloys** | Very light product to dispersed locations but some long hauls to market | No immediate action | | |
| | **Scrap / Rebar etc** | | No immediate action | | |
| **Fuel** | **Petroleum & Gas Products** | Growth not anticipated to be significant | Petroleum - no action required, Gas products - further business development required in CP6 | FNPO BDM | Throughout CP6 |
| **Other** | **Express Freight** | Potential growth market | Potential currently being explored | FNPO BDM | Throughout CP6 |
| | **MOD** | | No action required | | |
| | **Waste** | Further clarity required on future waste proposals incl. plastics | Further business development work required | FNPO SRFM & BDM | During 2019 |

**ADDITIONAL POTENTIAL GROWTH IN CP6**

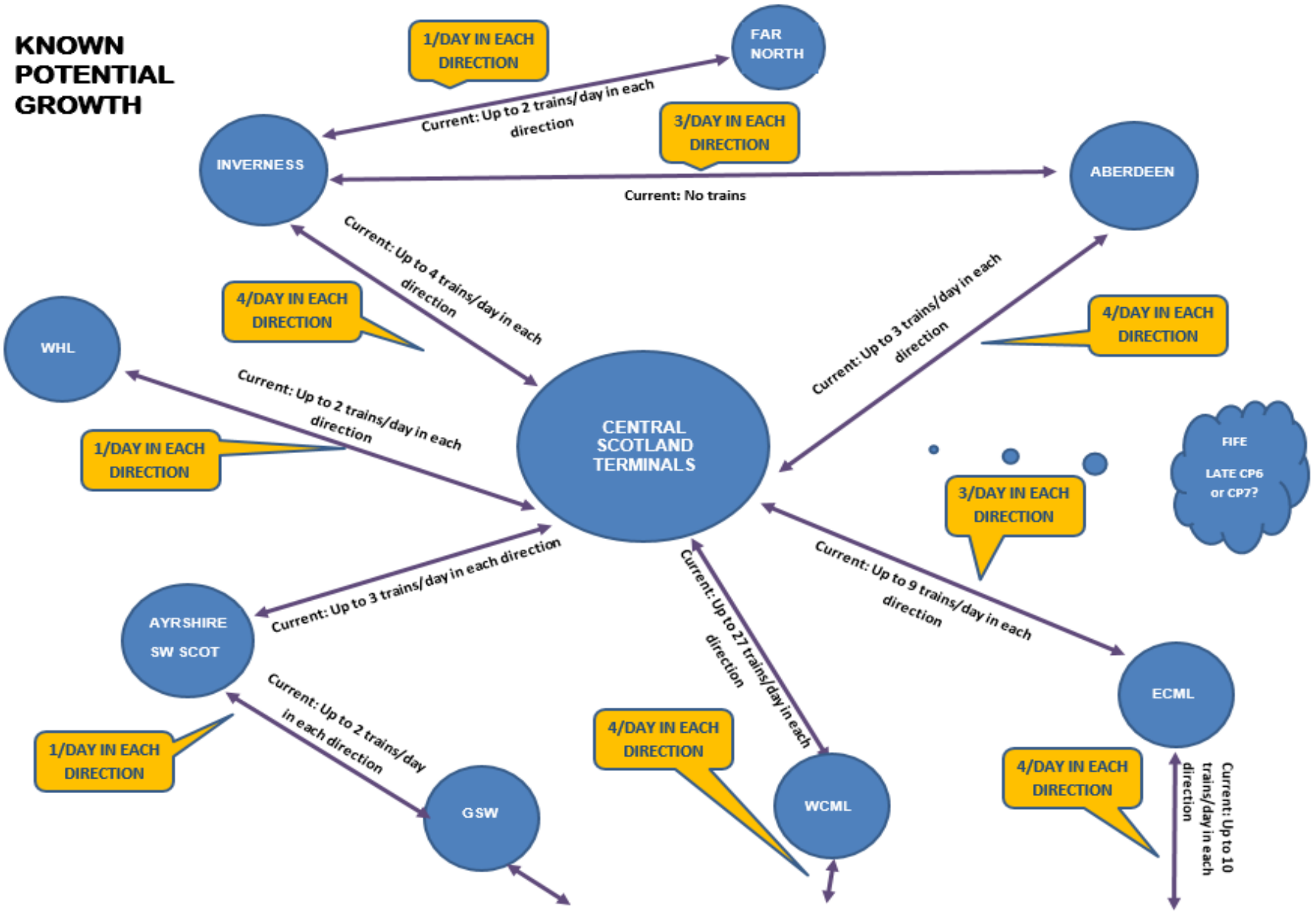



Figure 5

**Growth Potential: Overview**

| Route | Current Paths / Day (each direction) | Known Additional Potential (each direction) | Total Known CP6 Potential (each direction) | Potential to Increase Existing Train Capacity | Additional Paths Required | Current Gauge | SSFN Medium Term Gauge | SSFN Longer Term Gauge | Current RA | Future SSFN RA | Electrified | Industry Required Infrastructure Enhancement (excluding requirements to increase capacity) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Scots Anglo** Central Belt to South via WCML and Holytown or Motherwell | 27 | 4 | 31 | Yes | Yes | W10 | W12 | W12 | RA10 | RA10 | Yes | W12 gauge to Grangemouth / Longer loops / Coatbridge terminal capacity and capability enhancement |
| **Scots Anglo** Central Belt to South via ECML and Edinburgh Suburban line | 10 | 4 | 14 | Yes | Yes | W12 | W12 | W12 | RA10 | RA10 | No | Main class route via Sub / Longer loops ECML / Electrification of Sub |
| **Scots Anglo** Central Belt to South via Glasgow & South West Route (GSW) | 2 | 1 | 3 | Yes | Yes | W8 W7 via Annbank or GBK | W9 | W12 | RA10 | RA10 | No | W9 gauge (minimum) for diversionary/resilience purposes |
| **Connecting Route** Central Belt to ECML via Shotts | 3 | 8 | 11 | Yes | Yes | W8S until April 19 | W12 | W12 | RA10 | RA10 | Yes | W12 gauge |
| **Connecting Route** Central Belt to ECML via Carstairs | 7 | -4* | 3 | Yes | Yes | W12 | W12 | W12 | RA10 | RA10 | Yes | * Transfer of traffic onto Shotts route following completion of gauge improvement works |

## Growth Potential: Overview

| Route | Current Paths / Day (each direction) | Known Additional Potential (each direction) | Total Known CP6 Potential (each direction) | Potential to Increase Existing Train Capacity | Additional Paths Required | Current Gauge | SSFN Medium Term Gauge | SSFN Longer Term Gauge | Current RA | Future SSFN RA | Electrified | Industry Required Infrastructure Enhancement (excluding requirements to increase capacity) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Scotland Internal** Central Belt to Grangemouth | 5 | 2 | 7 | Yes | Yes | W9 | W12 | W12 | RA10 | RA10 | Yes* *end Jan 19 commissioning | W12 to Grangemouth Access to Grangemouth branch from east |
| **Scotland Internal** Central Belt to Ayrshire/SW Scotland via R&C | 3 | 1 | 4 | Yes | Yes | W9R W8 to Stranraer | W9 W8 to Stranraer | W12 | RA10 RA5 to Stranraer | RA10 above RA5 permissions to Stranraer | Yes* * No, south of Ayr | W9 gauge (minimum) for diversionary/resilience purposes |
| **Scotland Internal** Central Belt to Inverness | 4 | 4 | 8 | Review Rqd | Yes | W8S | W9S minimum of 2,896mm x 2600 mm wide on FKA / IKA / IDA | W12 | RA8 | RA10 | No | 2,896 mm x 2600mm wide on FKA/IKA and IDA (minimum). Longer Loops Removal of RT3973 speed |
| **Scotland Internal** Inverness to Georgemas | 2 | 1 | 3 | No | Yes | W8 | W8 | W12 | RA5 | RA8 | No | Removal of HAW speed restrictions to secure HAW RA permissions. |
| **Scotland Internal** Central Belt to Aberdeen via Perth/Dundee inc Aberdeen Waterloo branch | 3 | 4 | 7 | Review Rqd | Yes | W7/W8S | W9S minimum of 2,896mm x 2600 mm wide on FKA / IKA / IDA | W12 | RA10 | RA10 | No | 2,896 mm x 2600mm wide on FKA/IKA and IDA (minimum). Longer Loops Removal of RT3973 speed |
| **Scotland Internal** Aberdeen to Inverness | 0 | 3 | 3 | No current trains | Yes | W8S | W9S | W12 | RA10 | RA10 | No | 2,896 mm x 2600mm wide on FKA/IKA and IDA (minimum). Removal of one train working on Waterloo branch |
| **Scotland Internal** Central Belt to Fort William/Corpach (WHL) | 2 | 1 | 3 | No | Yes | W8 | W8 | W12 | RA5 | RA8 | No | Review operations |
| **Scotland Internal** Central Belt to Fife via Stirling, Alloa to Charlestown Jn | 0 | 0 | 0 | No current trains | Yes | W7 SAK W6 | W9 | W12 | RA8 Forth/Tay Br = RA8LS | RA10 Forth/Tay Br = RA8LS | No | Full W9 via SAK into Fife (minimum) |

**Growth Potential: Detail – High Level Enablers and Constraints (incl potential lower cost options)**

| POTENTIAL | CAPACITY REQUIREMENT (EACH DIRECTION) | LINES | CONSTRAINT | CONSTRAINT TIMEFRAME | NEW TERMINAL FACILITIES REQUIRED | LIKLIEHOOD IF CONSTRAINT REMOVED |
|---|---|---|---|---|---|---|
| Far North | 1<br>Timber Product<br>Mixed | Far North 1<br>HML 1 | Capacity<br>Route Capability<br>Length of Haul | Immediate | Possible | Medium |
| Inverness | 4<br>Intermodal<br>Timber<br>Waste<br>Construction | Ab - Inverness 2<br>HML 4<br>Central Scotland 4<br>WCML 3 | Capacity<br>Route Capability | Immediate (Capacity & Gauge) | Yes | High |
| Aberdeen | 4<br>Intermodal<br>Construction | Ab - Inverness 1<br>Ab - Perth 4<br>Central Scotland 4 | Capacity<br>Route Capability | Immediate (Capacity & Gauge) | Possible | High |
| West Highland Line (WHL) | 1<br>Timber Product<br>Mixed | WHL 1<br>Central Scotland 1 | Length of Haul<br>Route Capability<br>External to Rail | 18 to 24 months | Yes | High |

| Location | New Terminal Potential | Known Potential Commodities | Constraint | Impact of Constraint | Potential Lower Cost Solution | Potential Enhancement Solution |
|---|---|---|---|---|---|---|
| **Far North** | Yes | Timber (inc biomass)<br>Intermodal<br>Metals<br>Fuel (LPG) | Weight related restrictions | Restricted to RA5<br>Loco and HAW restrictions which impact on Journey Time | Protect existing with no new restrictions. Run new traffic (RA5 to RA7) with RA6/RA7 permissions | Enhancement linked to renewals |
| | | | Limited infrastructure at Georgemas for more than one train at a time should the DRS terminal be occupied | Limits potential to run services on the same day<br>Prevents available capacity from being used | Operational/Train Length solution<br>Train sharing? | Additional infrastructure |
| | | | Capacity (Single Line and frequency of passenger service at the southern end) | Lack of paths for Class 4 or Class 6 trains<br>Limits growth | Timetable recast | Enhancement to increase capacity<br>Removal of speed restrictions |
| **Inverness** | Yes | Intermodal<br>Whisky/Grain<br>Timber<br>Waste<br>Construction<br>Express Freight | Network Capacity Pinch points incl single line sections, length of loops and lack of passing locations | Lack of paths for Class 4 or Class 6 trains<br>Limits growth<br>Restricts potential train lengths | Review of access opportunities<br>Heavier Rail Containers/Swapbodies<br>Timetable recast to reduce use of loops and permit longer trains<br>Amended Timetable/Service Reductions | Investment in Capacity Enhancements |
| | | | Absolute block signalling resulting in large headways | Restricts capacity | Partial Resignalling | Resignalling |
| | | | Gauge Restrictions | Restricts growth for traffic, especially export traffic | Wagon Solutions or gradual gauge enhancement linked to platform/structure renewals or refurbishment and/or electrification | Investment in Gauge Enhancement |
| | | | RA Restrictions | Increases Industry costs through not fully loading a train<br>Encourages use of more capacity to deliver required volume | RA10 permissions for specific traffic<br>Longer trains to make up the 'lost' volume | Investment in Enhancement to RA10 |

| Location | New Terminal Potential | Known Potential Commodities | Constraint | Impact of Constraint | Potential Lower Cost Solution | Potential Enhancement Solution |
|---|---|---|---|---|---|---|
| **Aberdeen** | No | Intermodal<br>Construction<br>Express Freight<br>North Sea Consumables | Network Capacity Pinch points incl a single line section, lack of/ length of loops | Lack of paths for Class 4 or Class 6 trains<br>Limits growth<br>Restricts potential train lengths | Review of access opportunities<br>Heavier Rail Containers/Swapbodies<br>Longer trains<br>Amended Timetable/Service Reductions | Investment in Capacity Enhancement |
| | | | Absolute block signalling resulting in large headways | Restricts capacity | Partial Resignalling<br>Reduce headways to 5” | Resignalling |
| | | | Gauge Restrictions | Restricts growth for traffic, especially export traffic | Wagon Solutions or gradual gauge enhancement linked to platform/structure renewals or refurbishment and/or electrification | Investment in Gauge Enhancement |
| | | | Freight Terminal Constraints | Restricts train lengths | Review operational solutions | Investment to attain operational flexibility / capacity improvement |
| **WHL** | Yes | Timber<br>Intermodal | Length & Weight Restrictions | Limits potential volume of traffic that can be carried<br>Increases Journey Times | Traction or Wagon solutions | Enhancement linked to renewals<br>Targeted speed improvements |

**Growth Potential: Detail – High Level Enablers and Constraints (incl potential lower cost options)**

| POTENTIAL | CAPACITY REQUIREMENT (EACH DIRECTION) | LINES | CONSTRAINT | CONSTRAINT TIMEFRAME | NEW TERMINAL FACILITIES REQUIRED | LIKLIEHOOD IF CONSTRAINT REMOVED |
|---|---|---|---|---|---|---|
| Central Belt | 16<br>Intermodal<br>Construction<br>Express Freight<br>Automotive | Central Scotland 16<br>WCML 4<br>ECML 3 | Capacity | Immediate | Possible | High |
| Ayrshire/SW Scot | 1<br>Timber<br>Intermodal<br>Aggregates | Ayrshire 1<br>GSW 1 | Traffic Volume | 2 to 5 years | Yes | Low |
| Scottish Borders | 1<br>Timber<br>Intermodal | Ayrshire 1<br>GSW 1 | Traffic Volume<br>Route Availability | 2 to 5 years | Possible | Low |
| ECML / Edinburgh | 4<br>Construction<br>Intermodal<br>Metals | ECML 4<br>Central Scotland 4<br>Inverness 1<br>Aberdeen 1 | Capacity<br>Lack of electrification | 12 to 18 months | No | High |

| Location | New Terminal Potential | Potential Commodities | Constraint | Impact of Constraint | Potential Lower Cost Solution | Potential Enhancement Solution |
|---|---|---|---|---|---|---|
| **Central Belt** | Yes | Intermodal incl Chilled/Frozen<br>Construction<br>Metals<br>Express Freight<br>Automotive<br>Bottled Spirits/Whisky<br>Timber incl Finished Product | Network Capacity Pinch Points including Mossend area (Mossend E Jn) | Restricts available paths | Wholesale timetable recast | Enhancement linked to renewals |
| | | | Significant speed differentials between passenger and freight traffic | Challenging to timetable new freight services into an existing mixed use timetable | Retiming / Rolling Stock | Freight Loops |
| | | | Insufficient Capacity (WCML freight loops are also too short) | Restricts available paths | Timetable recast / traction solution / higher speed wagons? | Investment in infrastructure solutions |
| | | | No access to Grangemouth from the east | Prevention of access to 4 terminals when WCML and Scottish Central routes are blocked | Operational solution linked to Resignalling | Enhancement linked to Edinburgh / Waverley area enhancements |
| **Ayrshire / SW** | Yes | Timber Products<br>Intermodal<br>Aggregates<br>Bottled Spirit / Grain | Lack of suitable terminals | Restricts traffic growth | Operational Solution | Site Investment |
| | | | RA Restrictions (Stranraer) | Restriction for some potential traffic. Increased Journey Time | Wagon / train length Solutions | RA Enhancement |
| **Scottish Borders / Lothian** | Yes | Timber Products<br>Intermodal | Lack of suitable terminals | Restricts traffic growth | Investment in existing facility | Development of new facility |
| **ECML / Edinburgh** | Yes | Construction<br>Intermodal<br>Metals | Network Capacity Pinch Points | Restricts available paths | Review of access opportunities | Capacity Enhancements |
| | | | Section 5 possessions | Prevents trains from running overnight on a Mon/Tue and Tue/Wed one week out of every three | Review Section 5 Access | Gauge clear diversionary routes in England (requires alignment with DfT) |
| | | | Possible scarcity of suitable terminals | Restricts traffic growth | Investment in existing facility | Development of new facility |

It should be noted that any solutions suggested in the tables on pages 20 to 26 will need to follow the Rail Enhancement and Capital Investment Strategy Process

**Growth Potential: The Role of the Scotland Rail Enhancements and Capital Investment Strategy[16] for rail freight**

In an environment where rail transport must be efficient, value for money and economically viable, infrastructure enhancement must be the option of last resort.

The way infrastructure enhancements will be funded in the next Control Period will be significantly different and there will be a reduction in the capital funding available. In CP6, enhancement funding will be by means of Grant and more than ever, this will necessitate demonstrating value for money, that the right investment decisions are being made and that the timing of investment has been aligned to support passenger and freight growth and to encourage economies of scale, for example taking advantage of infrastructure renewal requirements. Transport Scotland published the "Scotland Rail Enhancements and Capital Investment Strategy" [16] (CIS) in March 2018 which explains the changes and highlights the revised process, robust governance and structure.

What does this mean for rail freight?

- given the future competition for available funds, spending on infrastructure interventions will require the rail freight Industry to demonstrate that the enhancement intervention is the **only option** to deliver the required output – other possible solutions (infrastructure and Whole System) will require to be thoroughly reviewed and discounted;
- a very strong industry strategic business case will be essential. For any Government funded projects, the Scottish Transport Appraisal Guidance (STAG)[17] will require to be used;
- timing – any future freight project that requires Government funding support may require a third party to wait until there is a pipeline project to align their requirement to. Scottish Government has advised of the intention to review rail corridors holistically which means the rail freight industry needs to get ahead of the curve and understand future opportunities by area and carry out proactive business development so that potential or known requirements can be aligned at as early a stage as possible to the Pipeline projects, with passive provision being created if the 3rd Party timescales are behind that of the Pipeline;
- opportunities for 3rd Party investment and projects – there will be economies of scale to be achieved if a 3rd Party project can be developed and delivered in tandem with a Pipeline project.
- Further opportunities to define incremental enhancements (such as cross-over speeds, structure gauging/RA speed removals, loop entry speeds, platform works to improve gauge) at an early stage on the back of the renewals strategy and seek the required funding;
- opportunities for the rail freight industry – the CIS process is not just for Network Rail to propose infrastructure projects, the freight industry can also propose Whole System projects which, for example, could include wagon solutions.
- the rail freight industry needs to improve promoting their requirements to Government/Transport Scotland and Network Rail and demonstrating the benefits to be gained by a proposed intervention.
- Contributory funding opportunities will also be sought from a range of parties and sources, such as:
    - Regional development bodies – where proposed enhancements align with regional economic development agendas;
    - Principal beneficiaries – where proposed enhancements deliver demonstrable business benefits to rail using businesses;
    - Ring-fencing (or otherwise recognising) the value generated by the Network Rail freight estate, if appropriate. The freight estate has potential to become a 'prime mover' supporting future freight network enhancements – offering a direct, incentivised linkage between further development in the scale of freight estate activity and the resultant incomes then supporting freight network enhancements.

In accordance with Transport Scotland's Rail Enhancement and Capital Investment Strategy, the process for securing enhancement funding for enhancements linked to renewals or stand-alone small/medium sized enhancements is as follows:

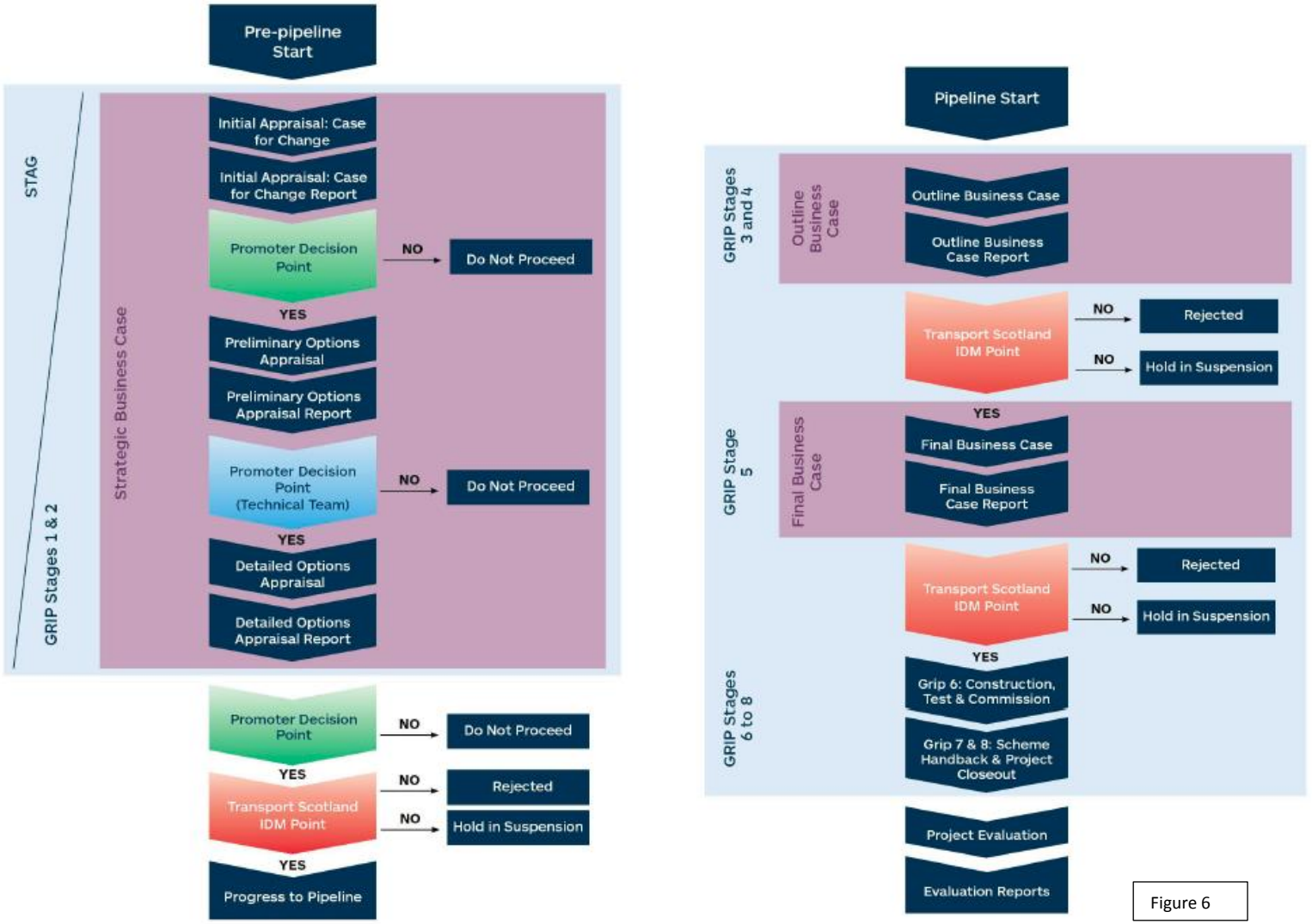



Figure 6: Extract from Scotland Rail Enhancements and Capital Investment Strategy[16]

**Known Infrastructure Intervention Requirements**

Many routes in Scotland were constructed for short length passenger services which means that there is a legacy of single line sections, short loops and small arched bridges, there are also numerous steep gradients due to Scotland's geography. Current 'pinch points' include a challenge to secure freight paths between Aberdeen and Inverness to the Central belt, capacity constraints also already exist on the West Coast Main Line (WCML), East Coast Main Line (ECML), Haymarket West Jn, through Waverley/Haymarket stations, Carstairs, Larbert to Perth and the Far North.

Prior to understanding whether a 'pinch point' will require an infrastructure intervention, the freight industry will review whether other low/no cost solutions could be introduced and the approach to capacity and capability planning is, where-ever possible, for FNPO and System Operator to work with the freight industry and Routes to provide additional incremental capacity as efficiently as possible, obviating the need for significant capital expenditure, by:

- developing and using Strategic Capacity and Strategic Freight Capacity
- flexing existing train paths and reviewing train paths (for example where there are any synergies with timetable recasts or a review of the working timetable);
- supporting service Plan Reviews to enable normalisation of longer and heavier services.

The rail freight industry also recognises that there is some latent capacity from daily paths that are used less than daily however further work is required to understand whether these paths could be better utilised and if a potentially ad-hoc arrangement would provide sufficient security for a freight user

Future capacity requirements for freight paths were agreed with the freight industry as part of the Scotland Route Study (published in 2016). This was expressed in the long term aspirational train service specification, subject to value for money and affordability. All enhancement projects currently being developed for CP6 onwards are consistent with these requirements.

Making more efficient use of existing paths is not always feasible to secure the growth. Future freight capacity requirements have been discussed at various Industry meetings including SFJB and Freight Working Group and whilst it is recognised that there will be future funding constraints, the rail freight industry has identified some key infrastructure interventions that would be essential and a priority to secure or to unlock growth, even if other low/no cost solutions were to be introduced. FNPO will review possibilities with SO and Route Business Scotland for potential inclusion in the Pipeline or delivery out-with the Pipeline should the enhancement be required for immediate growth. The proposals include: -

**Gauge Enhancement Programme**

A development project is ongoing (development to GRIP 3) to understand what would be required to enhance the current published gauge on:-

- key **diversionary routes** such as G&SW, Annbank* and Ayrshire plus City Union line to E&G to permit seamless transfer of diverted traffic;
- **WCML and Central Scotland** (to Mossend, Coatbridge & Grangemouth) to W12 to support growth;
- routes between **Mossend/Coatbridge and Grangemouth to Inverness and Aberdeen** to allow 2,896 mm high by 2,550 mm/2,600 mm wide reefers to open up the route to Inverness for growth by improving the viability for modal shift for chilled and frozen produce;

Whilst there is current funding for feasibility further funding will be required to design and implement a programme of gauge enhancement work.

* the route via Glasgow, Barrhead and Kilmarnock is not being developed at this time as it has been identified that alongside other fouls and infringements for box/wagon combinations or W9 (and larger) on this route there are 2 significant structures (Pollokshaws Road and Victoria Road) which would require substantial intervention therefore it is proposed that gauge enhancement be deferred until the route is electrified or until other renewal work is being carried out on restrictive structures.

**Additional Gauging Work**

Further gauge enhancement on the **Shotts Route** for W10A/W12 to permit 3,098 mm high containers on megafret wagons over the **ECML to the Central belt** terminals.

**Other Infrastructure Intervention Requirements**

**Enhancements to permit operational flexibility and longer trains to run to/from Coatbridge FLT:** Solution to permit longer trains to arrive and depart Coatbridge FLT (project being developed in CP5) plus a further proposal to allow trains arriving from the north to arrive directly into Coatbridge terminal removing the requirement to run to Mossend to run round (not currently included in the CP5 development work).

**Inverness:** securing growth will require a comparative offering to road in terms of cost and journey time therefore it will be imperative for customers to maximise the use of assets (cycle assets) and secure attractive paths. For rail freight to compete with road, and to compete with the benefits that a doubled A9 will provide to road hauliers (highlighted in an AECOM[12] report which reviewed the impact of road doubling on rail freight), a sustainable rail freight service to Inverness or beyond will require to maximise productivity and reduce journey times. Recent capacity studies, which include the benefits realised from CP5 enhancements at Aviemore and Pitlochry, have highlighted the significant capacity challenge between the Central Belt and Inverness. A timetable review has highlighted that no additional freight paths remain within the current operating hours and existing timetable constraints. Given that growth that could result in 4 trains a day (in each direction) has been identified either infrastructure enhancement is required or a combination of timetabling, train operational or operational hours solutions would be required to be implemented early in CP5.

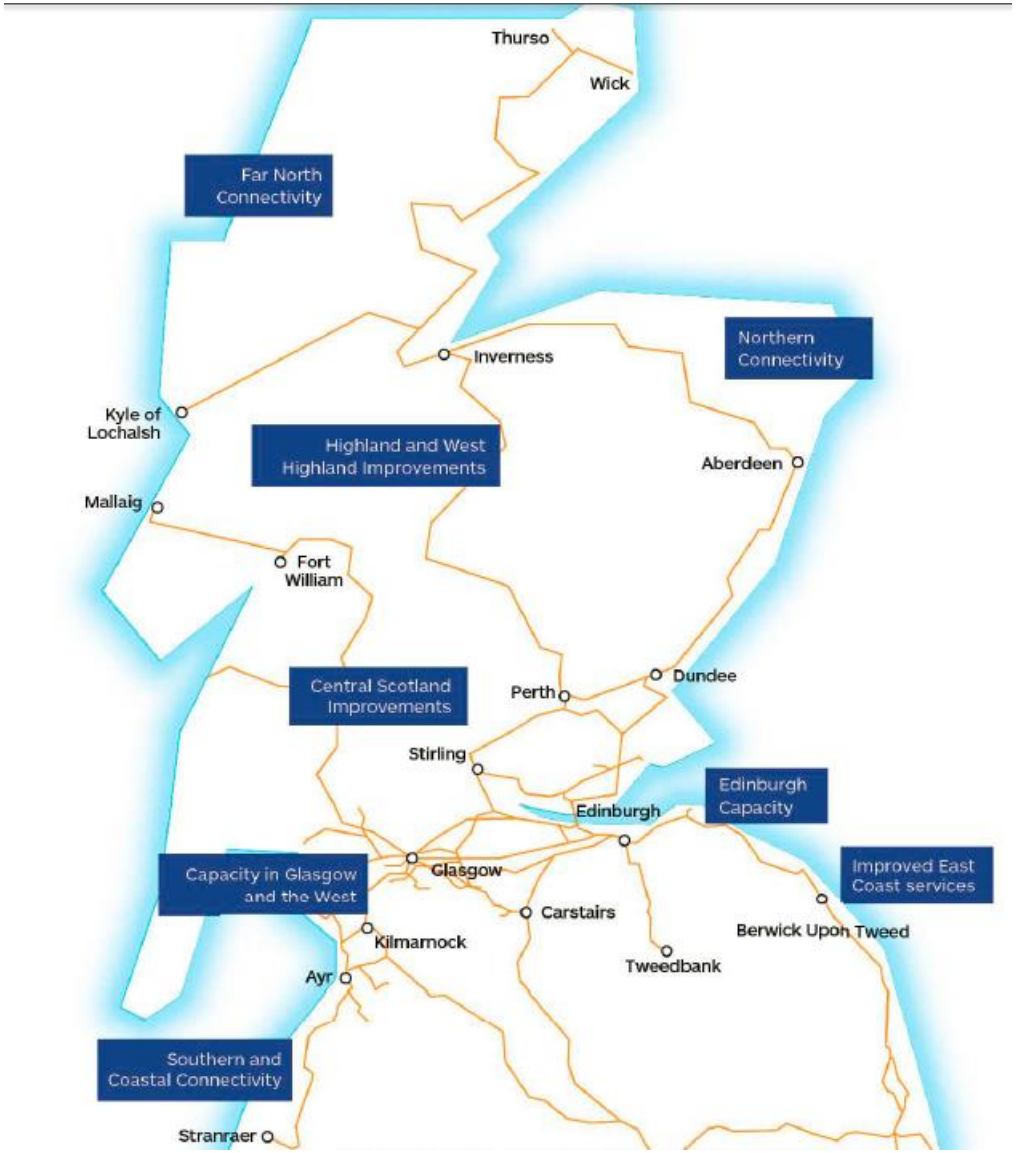
**Aberdeen:** Removal of one train working operation on the Aberdeen Waterloo branch to maximise operational opportunities is essential to develop a sustainable rail freight offering for various potential customers in the Aberdeen area, also, like Inverness, recent capacity reviews have highlighted a tangible capacity challenge between the Central Belt and Aberdeen. Given that growth that could result in 4 trains a day (in each direction) has been identified either infrastructure enhancement is required or a combination of, for example, timetabling, train operational or operational hours solutions would be required.

**Grangemouth:** Intermodal traffic growth is currently being restricted due to trains not being able to access the terminals at Grangemouth early enough to transfer the goods to road and on to stores. Growth would be achieved by permitting a 03.00/03.30 arrival at Grangemouth with a 1:6 access strategy via Gartsherrie/E&G (aligned to the above access strategy). Grangemouth terminals would also benefit from being able to access the Grangemouth Freight Only Line from the East. This would require further review to determine the optimal solution.

Removal of existing RT3973/HAW/Loco restrictions to **improve journey time, increase capacity and resilience and save fuel** and therefore enhance the attractiveness of the rail service: FNPO, SO and Route Business Scotland will review where there is potential to remove speed restrictions associated with gauge, route availability or locomotive restrictions and where incremental improvements can be made alongside renewals or enhancements restrictions through the vehicle of Route Strategy Planning Group (RSPG) Sub Group throughout CP6. Unless a structure is being strengthened, demolished and/or rebuilt, removal of historical restrictions is likely to require top up enhancement funding over and above funding allocated to a renewal.

With significant growth potential from East Coast ports to and from Scotland solutions are required between the **ECML and Central Scotland** to improve capacity and capability allowing for longer operating hours and longer trains and reducing journey times to support a proportion of the freight trains being 'ship catchers'. Current proposed interventions include **development of a Main Class Route through Millerhill** which would remove current time penalties, reduce operational costs (as there would be no requirement for ground staff to operate manual points and to accept/despatch services) and it would also have safety benefits.

We will work with SO, Scottish Government and with prospective third-party investors to develop and establish funding mechanisms for investment.




Network Rail held meetings with potential freight users in order to develop this plan.

It became clear that there is a significant opportunity to secure new traffic, if the conditions are right. With the support of the freight industry, NR will lead further feasibility work with potential customers to understand how we can secure modal shift including reviewing the potential to connect sites, which are either geographically remote from existing freight facilities or would require a direct rail connection to the plant to be economically viable, to the rail network.

Going forward, in line with the Continuous Modular Strategic Planning (CMSP) process, Strategic Questions and Client Remits will include the requirements of the strategic freight network and the freight growth plan.

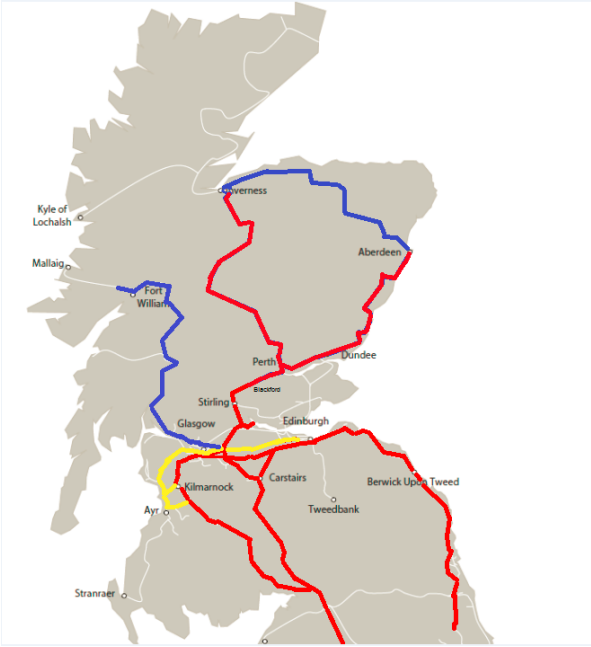
FNPO, SO and Route Business Scotland will work together to make sure that all possible freight opportunities are reviewed and considered as part of the pipeline process. This will allow future business development work to be aligned to potential pipeline project timescales where possible. It is recognised though that some of the potential freight facilities will be in areas which do not currently have pipeline projects scheduled for CP6.

Recognising the commercial benefits that economies of scale would afford for potential customers, FNPO will work proactively with the Industry and the rail freight industry in order that the full advantage of the robust planning and economies of scale associated with the Pipeline process can be realised.

Map from Transport Scotland Rail Enhancements and Capital Investment Strategy[16]

**The Scottish Strategic Freight Network**

Scotland Freight Joint Board agreed the specification for the **Scottish Strategic Freight Network** (SSFN) in 2017. The SSFN, shown as red on the map, incorporates the three key cross-border arteries linking Scotland to England (via WCML, ECML and GSW) and extends through Central Scotland to Inverness and Aberdeen. The other key routes for freight services in Scotland which incorporate lower volume traffic flows, are classified as 'core freight routes' (shown as blue on the map) and key diversionary routes (shown as yellow on the map).




The aim of the SSFN is a progressive realisation of a freight capable network of core routes linking centres of production, distribution and consumption and allowing for seamless diversion of services in times of perturbation or planned work on the Network. Ultimately the SSFN will permit W12 gauge traffic at up to 775m long (640m to Inverness and Aberdeen) with permission for RA10 traffic. It is recognised that north of the Central belt achieving W12 is likely to only be achievable in conjunction with electrification therefore, until electrification, the gauge specification for Aberdeen and Inverness is 2,896mm high x 2,600mm wide on FKA, IKA and lower wagons.

Going forward, all enhancement remits and land strategy decisions require an appropriate freight output that reflects this Growth Plan and Transport Scotland's requirements to encourage rail freight growth and reduce rail freight journey times. The freight specification should also reflect the agreed specification of the SSFN.

To sustain existing traffic and support growth, it is imperative that the existing Gauge and Route Availability (RA) permissions through the Sectional Appendix and condition of carriage (HAW/RT3973) forms are retained and where possible improved; especially on routes where higher RA traffic (ie Far North and WHL) or larger gauge combination permissions (ie G&SW) have resulted in traffic opportunities. An example of where growth potential is being dampened by RA is the cement traffic to Inverness where the train is required to be downloaded from RA10 to RA8 which, in real terms, is an opportunity lost of around $^{1}/_{3}^{rd}$ of a train. Given the lack of pathing opportunities on cross-border routes, Anglo Scottish traffic requires to be able to maximise train length, weight and speed and the key driver to achieve this will be the use of electric traction, often double headed to maximise haulage capability.

The ORR's Final Determination requires Network Rail to develop and implement a gauging strategy which seeks to implement the Scottish Gauge Requirement as defined by the HLOS. The HLOS required that freight gauge capability should be maintained to at least the capability in the most recently published issue of the Freight Gauge Database Map (published and maintained categories), or the Sectional Appendix, or the full suite of RT3793 forms for Scottish routes, whichever is most capable at the time of publication of the HLOS. A database has been created using the Sectional Appendix and RT3973 forms to benchmark the largest capability (by wagon/container combination) which, from a customer perspective, provides clarity as to what combinations are permitted to run on the Scottish Network as at July 2018. An 'out of gauge load' database has also been created in order that any RT3973 permissions that are larger than the Sectional Appendix published gauge can be advised to the maintainer and site-specific plans are being developed to manage each constraining site, protecting the clearance.

Network Rail, along with key stakeholders such as Freight Operating Companies, Office for Rail & Road and Railway Safety & Standards Board, are embarking on a review into Compatibility as well as Gauging, starting in March 2019. This review will focus upon roles & responsibilities, processes and service level agreements with a strong emphasis on embedding LEAN techniques.

# ACTION 1: ENCOURAGING CUSTOMER CONFIDENCE

**WHAT ARE WE DOING?**

There is a perception from the freight industry that freight customers traffic does not receive the same priority as passenger services, leading to slower recovery, particularly when there is unplanned (or planned) disruption on the network or when freight customers need assistance in recovering from an off-network issue.

We are therefore collaborating with the industry, and working internally, to proactively highlight rail freight requirements and to develop an understanding as to the freight traffic being transported on the Scottish rail network and what is important to our freight customers, and their customers.

**BENEFITS**

Retention of existing traffic and securing industry support for growth.

Attaining advocacy from existing customers.

Proactively providing support during perturbation with “Can Do” approach

**WHAT WILL BE DELIVERED**

A bespoke freight “Control Guidance During Perturbation” document for Scotland to support decision making during perturbation aligned to an internal engagement plan to improve awareness of freight customer requirements.

Review of current operations to increase productivity to improve the economics of existing services

**NEXT STEPS / FUTURE LINK**

Roll out of Internal Engagement Plan from April 2019.

During 2019 and throughout CP6, carry out a route by route review of current operations and services to understand where productivity can be improved and to implement measures to achieve this.

# ACTION 2: GROWTH

**WHAT ARE WE DOING?**

Network Rail will proactively provide support to existing customers, working closely to find and implement solutions that will support traffic growth or improve productivity. FNPO will become a focal point for the creation of new opportunities through an increased focus on business development.

FNPO will also provide support and independent guidance to potential freight users, especially in the enquiry and development stages and work closely with the successful freight operating company in delivering the freight users requirements.

**BENEFITS**

Increasing the volume of rail freight moved to, from and within Scotland.

Achieving the 7.5% HLOS growth target.

Development of new markets.

**WHAT WILL BE DELIVERED**

"How To" Guides and an External Communications Plan to be developed to simplify, demystify and improve awareness of what could be achieved on rail and to support and develop potential and existing business.

Proactive Business Development throughout CP6.

**NEXT STEPS / FUTURE LINK**

- Agreement of what "How To" Guides would be desirable and external communications plan for delivery throughout CP6.
- Development and implementation of "How To" Guides and external communications plan.
- Proactive business development from Network Rail FNPO throughout CP6.

**Innovation / Different Ways of Doing Things**

The rail freight industry & Network Rail recognises that, in a challenging funding environment, the first option for growing the rail freight business has to be to explore how the existing ways of doing things could be improved and how novel ideas can be rapidly developed.

Unless there is significant volume, or the growth emerges from a location that doesn't have an existing freight service then the first option should always be to review **Productivity**. The rail freight industry acknowledges that, out-with peak periods (ie lead up to Christmas, Black Friday), the current intermodal services rarely run fully laden or to the length/weight that their traction haulage could support, for bulk services the trailing weight could potentially be improved by a wagon solution if the wagon used on the service only has a 34.5t coupling strength as 56t couplings can offer significant trailing weight advantages.

As well as clarifying opportunities to increase train lengths, weights and speeds, a **review of operations** should also be undertaken on a route by route basis to understand whether there are opportunities to become more efficient. The rail freight industry will also review whether there are seasonal spare resources (ie SCO resources) that can be utilised and partly underwritten.

A strong theme from the four Industry Workshops held in Coatbridge, Aberdeen, Inverness and Kirkcaldy was that there were not many businesses in Scotland that could fill a train on their own and that for businesses geographically remote from the Central Belt, a solution to support **consolidation** of low volume/pallet-load would be required. The freight industry will therefore explore the feasibility of increasing collaboration and flexibility through more multi-user services and to understand the benefits of an aggregator role for consolidation of small loads/consignments.

Working closely with the Transport Scotland Grants team an improved understanding of the **Freight Facilities Grant (FFG)**[18] eligibility criteria will be developed to clarify what options could exist going forward without contravening State Aid policy ie could an existing terminal owner receive support to update their **terminal equipment** which could improve throughput or could it be available to spread the risk of a new service (seed funding), could **dedicated wagon pools** be secured which could be shared by all FOCs and also minimise the impact of gauge restrictions?

Reviewing how things can be done differently will not be solely focussed on issues that Network Rail can lead. **Whole System initiatives** must also be considered, for example, intermodal rail does not have equality with road as rail borne boxes are heavier than the road only option which results in a 15% payload disadvantage (24.7t on rail v 28.5t on road). This inequality could be reduced by increasing lorry axle weights from 44t to 48t (limited to a 48 mile radius around the terminal that the goods are transported to/from) and the feasibility of this will be explored with Scottish Government, Transport Scotland and Department for Transport.

Longer term (post CP6) the rail freight industry in Scotland will explore the benefits that would come from being able to transport conventional road trailers on trains.

Network Rail will establish an Industry **Development Working Group** from the start of CP6 to challenge existing ways of doing things, to develop opportunities for trials and create the right environment to innovate.

# ACTION 3: DOING THINGS DIFFERENTLY (INNOVATION)

**WHAT ARE WE DOING?**

The Scottish rail freight industry & Network Rail are going to be proactive in finding different and novel solutions for growth.

Modal shift cannot wait until infrastructure enhancements are developed to increase capacity. The rail freight industry/Network Rail needs to work collaboratively and evolve in order that rail freight can be competitive with road, rail's market share can increase and Industry costs can be reduced.

**BENEFITS**

- Growth at minimal cost;
- Scotland developing a reputation for Industry leadership and innovation;
- Collaboration;
- Reducing Industry Costs.

**WHAT WILL BE DELIVERED & BY WHEN**

A Development Working Group, formed from members of Scotland Freight Joint Board, will be established and continued throughout CP6. The members of the Development Working Group will be experienced Industry individuals who will work together to challenge existing ways of doing things, to develop opportunities for trials and create the right environment to innovate

**NEXT STEPS**

- Set up the Development Working Group
- Industry to develop the case for 48t for 48m
- Develop potential programme and determine priorities

**CASE STUDY**: **48t for 48m**

Intermodal rail **does not have equality** with road. Rail borne boxes are heavier than the road only option resulting in a **15% payload disadvantage** (24.7t on rail v 28.5t on road).

This inequality could be reduced by increasing lorry axle weights from 44t to 48t. The increase would be limited to a 48 mile radius around the terminal that the goods are transported to/from.

A recent report identified c. 100 loads/wk (in each direction) that could transfer to rail – that's **100 fewer lorry moves per week** should the swapbody be permitted to be fully loaded. The benefits are significant; an even playing field for rail freight, reduced GHG emissions, improved road safety and reduced spend on road budgets through less vehicle movements. There would also be less pressure on the congested road network and it would mitigate against the impact of HGV driver shortages.

Measures would be put in place to prevent scope creep such as use of dedicated road routes, enforcement action and operating under STGO Cat 1 Regulations (STGO =Road Vehicles (Authorisation of Special Types) (General) Order 2003) https://www.gov.uk/government/publications/special-types-enforcement-guide/special-types-enforcement-guide

**Doing Things Differently: Simpler Solutions**

**Simplifying 3rd Party Enhancement Projects**

When asked what "simplicity of process" meant to them, the rail freight industry was unanimous in advising that the top priority was to simplify, speed up and reduce the cost of getting a new 3rd party terminal up and running. A joined up, clear and easy to understand process (for someone not in the rail industry) is required that supports the customer from initial aspiration through to first train. Network Rail and the rail freight industry also requires an openness to novel solutions and support in trialling new technology or different ways of operating.

For a company that does not have experience with the rail industry getting off the blocks and starting a rail project can be really daunting, but it shouldn't be. The earlier that Network Rail can be involved in the development of a project, the more we can help define the scope and deliver the proposal. We will work closely with clients throughout the development of projects and appoint a dedicated point of contact who will provide support throughout.


We will continue to work with the Industry to understand how smaller projects can be made less complex. 'How To' Guides will be developed in early CP6, including (but not limited to) project steps, likely timescales, costs to be aware of, property guidance such as clearance, planning and information on Licence Condition 7[19], connection agreements and grants available. Development of the Guides will be an iterative process involving Industry participation.

Network Rail will also review how the initial enquiry process can be improved including an indication of potential solutions and high-level estimate, timescale (including fit with Pipeline if the project is Government funded) and how the required future capacity could be secured for the development.

# ACTION 4: DOING THINGS DIFFERENTLY (SIMPLER SOLUTIONS)

**WHAT ARE WE DOING?**

Feedback from the industry has highlighted that current processes involved with developing third party freight facilities can be confusing and challenging for a client that has not been previously involved in railway projects therefore we will work with the industry and recent clients to understand their experiences and to develop solutions that will simplify and support.

**BENEFITS**

- Improvement in advocacy.
- Return Clients
- Enhanced understanding of freight Clients requirements
- Continued improvements for future freight projects

**WHAT WILL BE DELIVERED**

We will review existing processes to understand where additional support and guidance is required.

We will develop “How To” Guides supported by a Communications Plan.

**NEXT STEPS / FUTURE LINK**

- Review of existing processes;
- Development of ‘How To’ Guides
- Roll out of External Communications Plan

**Land Strategy**

The Scottish freight network includes 115 km of freight only lines and 81 freight terminals and yards (excluding yards currently designated as 'engineering'), 35 of which are currently operational and 8 identified as Strategic.

**1. Background**

The Land Strategy Working Group was created in December 2017, principally in response to the 5th December 2017 SFJB decisions on an HLOS Growth Plan incorporating a Land Strategy work stream. The Working Group, focusing on four main work streams (see Sections 2-5 below), met / teleconferenced on eight occasions, produced a Final Report in September and produced a Concluding Report in November. The Group's objectives have been, in summary:

(i) to create the basis for better protection of rail freight interests in Scottish Planning Policy
(ii) to identify the land portfolio of sites available for rail freight in Scotland so that it can be made known to potential customers and FOCs
(iii) to categorise sites into those currently believed to have potential future use for rail freight, and those which may have no future use as rail freight facilities
(iv) to initiate a process to develop efficient use of rail facilities and land in areas of multiple land holding and/or multiple customers/users
(v) to create the basis for informed decision-making on alternative rail use / release of land.

**2. Rail freight guidance in the Scottish Planning Policy**

The Working Group reviewed the current (2014) Scottish Government 'Scottish Planning Policy'[20] insofar as rail freight is concerned, and produced a paper – with input from Network Rail town planners – outlining suggested amendments to future guidance to help protect the interests of rail freight during the preparation of local, regional and national development plans and in respect of specific planning applications for non-rail land uses on sites adjacent to existing or potential rail freight facilities. These recommendations were endorsed by SFJB on 17 July 2018. The Working Group recommends that the final paper should be taken forward to Scottish Government planners by the NR Town Planning team.

**3. Terminals / sites**

The Working Group reviewed in detail NR databases of over 150 freight only, freight-related and engineering sites in Scotland, supplemented by selected non-railway sites adjacent or close to the railway related to known major quarrying, manufacturing, processing and distribution activities which might have rail freight potential. Key Network Rail Maintenance Delivery Unit (MDU) sites were also assessed, to understand whether there could be scope for more land-efficient provision of Network Rail engineering land and FOC engineering/support facilities, securing the right balance between efficient engineering and the movement of freight and/or passengers. The Working Group recommends that the Terminals & Sites spreadsheets be submitted to SFJB and Network Rail Strategic Planning Meetings in early 2019 for endorsement and/or adoption prior to being released into the public domain.

The documents will be live and will require to be maintained and updated by Network Rail (FNPO and Property). The Working Group identified sites in close geographical groupings and recommended future local strategic analyses of these. It is proposed that these future land requirements are encompassed within further business development and commodity workstreams. It is recognised that this future work may benefit from, or require the involvement of, external parties such as local authorities. The Working Group also recommended that consideration of purchase of non-NR land to support (either directly or indirectly) rail freight development should be part of such a wider, holistic approach to land strategy however it did not review the funding implications of this approach.

**4. Operational yards / groups of sidings**

As part of the wider assessment of railway land, the Working Group compiled a list of yards and groups of sidings that are not 'terminals' (ie locations at which freight is loaded to /unloaded from rail wagons), so that decisions may be made on their future role. These sites are actually, or potentially, important in the operation of freight trains on the network (or as rolling stock storage locations), therefore – where appropriate – they need to be managed as an integral part of the network to facilitate efficient train operation and planning.

The Working Group compiled a list of locations to be utilised as a starting point for strategic industry discussions and notes that decisions will involve a logical process incorporating: analysis of potential traffic demand > consequent decisions on terminals and/or sites > consequent analysis of train service patterns > conclusions on optimum yard locations (and potential alternative uses / disposals of other locations).

**5. Closed / mothballed freight branches**

The Working Group's overview identified and categorised all closed / mothballed freight branches still in industry ownership, the objective of the categorisation being to try to identify, with today's understanding of growth potential and possible traffic losses, the optimum parts of the network for investment for future benefit as markets change, but also to identify assets which may no longer serve a useful freight purpose but potentially may have future value in disposal or alternative rail use. The four broad categories within which the Working Group defined the branches are:

(i) Currently operational – strategic long-term / strategic medium-term / potentially short-life.
(ii) Potentially strategic but with no current traffic.
(iii) Possible closure candidates.
(iv) No known rail freight potential / completely disconnected.

The subsequent document compiled by the Working Group will be used as a starting point for industry discussions. The Working Group noted that decisions on freight-only branches will be downstream of the current stage of information gathering, with a logical process involving: analysis of potential traffic demand > consequent decisions on terminals / sites > consequent analysis of train service patterns > conclusions on retention / alternative uses of branches.

**6. Other key conclusions**

In completing its work and handing on the four work streams to Network Rail (Senior Route Freight Manager and Property Surveyor) the Working Group suggests that, following final endorsement of the recommendations and completed spreadsheets by SFJB, the Group's analysis and key conclusions and recommendations be shared Britain-wide. Other key conclusions in respect to freight land are:

- The industry needs to disseminate better the lessons learnt about what worked / what did not work in terms of new terminal development in the past.
- A strategic approach to new terminal development needs to be taken by the industry, Scottish Government (both the policy and grants functions) and Scottish Enterprise, to balance the need to avoid dilution of existing terminal volumes against new traffic opportunities far from existing terminals.

**Growth Plan Delivery**

There is a requirement to address how the Plan will be delivered throughout CP6. The current objectives for the FNPO team embedded in Scotland Route are to support the Freight Operators and Freight End Users day to day operational, performance and safety requirements within Scotland, to advocate on behalf of the industry and, if necessary, to challenge actions that may not be in the best interests of our freight customers.

In CP6 however, in order to support Transport Scotland and ORR's requirements, it will be essential to bolster the FNPO activities in Scotland which will necessitate the current Scotland Route Freight team of two individuals being increased by one so that the day to day Network Management role is not diminished due to the additional requirements below. The funding implications of this have not been incorporated in either the FNPO or Route Business Scotland Route Strategic Plans.

Throughout CP6 (and for the remainder of CP5) the FNPO Scotland Route activities will need to also incorporate the following: -

- Development of the Growth Plan throughout CP6 and delivery of the Growth Action Plan;
- Alignment of new business opportunities to the Scotland Pipeline;
- Targeted Action Plan to allow tracking and future ORR reporting ie Scorecard metric evidence;
- Encouragement of new business opportunities, supporting the FNPO Business Manager and collation of evidence of proactive business development;
- CP6 Strategic Focus with the Industry, TS, ORR and SO including making sure that freight strategic requirements are known and understood and championing achievement of freight deliverables alongside, or separate to, the Investment Pipeline process;
- Establishment and Chair of Development Working Group;
- Provision of data and analysis to support achievement of the Industry Growth Plan;
- Provision of data and analysis to support achieving the Average Speed metric;
- Working with SO making sure that the Average Speed Metric is delivered and any improvements identified through actual Journey Time data reviewed to understand where journey times could be reduced or SRTs improved;
- Guidance and support of 3rd party and internal freight projects from conception to completion;
- Challenge and review of processes that potentially hamper freight growth;
- Maintenance and development of the freight property database;
- Working with the FNPO Senior Communications Manager, delivery of the internal Engagement and external Communications & Stakeholder Plans;
- Proactive promotion of rail freight including involvement in Industry workshops and targeted conferences;
- Supporting the Head of Network Management and FNPO Route Safety Improvement Project Programme Manager/Project Manager in delivery of the Network Management FNPO RSIP CP6 plans;
- Providing Scottish target input to the FNPO Delivery Plan.

**External Communications Plan and Stakeholder Engagement**

The Growth Plan has been developed in Partnership with SFJB and the rail freight industry in Scotland.

The plan has been developed and discussed at SFJB meetings with drafts of the plan being circulated for review and comment. The content of the plan was developed through various interviews with Industry Bodies; including Freight Operating Companies, 3rd Party Logistics Providers, Rail Freight Group (RFG), Scotch Whisky Association (SWA), Forestry Commission (FC) and the Confederation of Forest Industries (CONFOR) and has been supported by, and agreed with, SFJB. An Industry Workshop to define the Action Plan which supports the Growth Plan was held in October 2018.

In CP6, FNPO will work closely with Stakeholders to create an integrated external Communications and Stakeholder Engagement Plan building engagement and advocacy for the industry. The plan will address the issues surrounding misconceptions of the complexities of using the railway to move goods. We will also be clear on the benefits of switching to rail freight for new customers and use existing customers as advocates. The Plan will include creation of a promotional campaign which will be able to be utilised across multiple channels and which will be able to be replicated by partner organisations across the industry to amplify the message. The plan will be rolled-out from early 2019 throughout CP6.

An internal Engagement and Stakeholder Plan is also being developed. This plan will highlight rail freight requirements, priorities and importance internally to Network Rail to improve understanding and support effective decision making. This internal plan will also be finalised/rolled-out from early 2019 throughout CP6.

**HLOS TARGETS: Growth, The Freight Average Speed Metric, CP6 Performance Target and Safety**

**Growth**

| Locally Driven Customer Measures | Definitions | | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|
| Scottish Freight Growth on Baseline | Scottish freight growth against a baseline of product moved (measured in kntm) as at the end of 18/19 FYR | Worse Than Target | 1.0% | 2.5% | 3.5% | 5.5% | 7.0% | 7.0% |
| | | Target | 1.5% | 3.0% | 4.5% | 6.0% | 7.5% | 7.5% |
| | | Better Than Target | 3.5% | 5.0% | 6.5% | 8.0% | 9.5% | 9.5% |
| Scottish new traffic share | Percentage of growth which is traffic that is new to rail | Worse Than Target | 1.0% | 2.5% | 3.5% | 5.5% | 7.0% | 7.0% |
| | | Target | 1.5% | 3.0% | 4.5% | 6.0% | 7.5% | 7.5% |
| | | Better Than Target | 3.5% | 5.0% | 6.5% | 8.0% | 9.5% | 9.5% |

**Freight Average Speed Metric**

FNPO, in partnership with the Freight Sector and SO, has developed a metric to measure average speed (mph) during CP6. The metric was developed with co-operation from Freight Operating Companies and SFJB and consulted with Transport Scotland and Stakeholders.

The metric will be the overall average scheduled speed for all Scottish commercial freight trains (excluding Class 5 stock movements due to the variability of their movements) and the baseline will be the average of scheduled speed for Periods 6 to 13 2018/19. Periodic reporting will be on a moving annual average basis. Once the baseline has been finalised (April 2019) the percentages shown in the table below will be changed to reflect the target average speed (mph). Whilst average scheduled speed will be reviewed periodically, it is recognised that the opportunity to influence improvements will occur twice a year in advance of timetable change date, therefore the metric will be reported on a 6 monthly periodicy in June and January. The agreed metric will be used to support the development of a plan to increase the average speed of freight trains by not less than 10% by the end of CP6.

| Locally Driven Customer Measures | Definitions | | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|
| Average speed improvement on baseline (Freight, Scotland) | Average speed improvement on December 18 TT baseline (Freight, Scotland) | Worse Than Target | 0.0% | 2.0% | 3.0% | 4.0% | 5.0% | 5.0% |
| | | Target | 1.8% | 3.0% | 6.0% | 8.0% | 10.0% | 10.0% |
| | | Better Than Target | 3.0% | 6.0% | 9.0% | 12.0% | 15.0% | 15.0% |

SO, with support from other parts of Network Rail, including FNPO route and Scotland Route Business and with Industry and Government stakeholders, has developed an Industry Plan to improve average speed.

**Performance; FDM-R**

The ORR's Final Determination and Transport Scotland's HLOS requires Network Rail to achieve FDM-R (Freight Delivery Measure – Route) for Scotland of 93.5% at the start of CP6 and improve this so that the CP6 exit position is no worse than 94.5% therefore a target of 94.5% has been set throughout CP6. The metric FDM-R measures the expected delivery of commercial freight services on a train by train basis. Where that delivery isn't met it assigns responsibility to a Network Rail Route based on the Delay, Cancellation and Service Variation events affecting each qualifying train - see Appendix D.

| Locally Driven Customer Measures | Definitions | | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|
| Freight Delivery Measure (FDM) Scotland | Regulatory measure of Network Rail's ability to deliver freight trains to destination within 15 minutes of booked time | Worse Than Target | 93.5% | 93.5% | 93.5% | 93.5% | 93.5% | 93.5% |
| | | Target | 94.5% | 94.5% | 94.5% | 94.5% | 94.5% | 94.5% |
| | | Better Than Target | 95.0% | 95.0% | 95.0% | 95.0% | 95.0% | 95.0% |

Collaboration with Freight Operators, Freight End Users and Route Business Scotland will continue throughout CP6 to improve performance delivery to freight services. This work will include delivery of the FDM improvement initiatives defined in FOC Freight Performance Strategies, a more targeted use of Freight Service Delivery Managers to reduce the number of near FDM missing freight services and joint working to improve right time performance of services at key hubs and terminals where required. A key requirement to achieving an FDM-R of 94.5%, given the forecast increase in network utilisation, will be asset performance/resilience on the WCML and other strategic freight routes in Scotland, in particular during extreme weather. As well as robust asset resilience, effective contingency plans will be developed to support 24/7 operation of freight on WCML and other key freight routes.

**Safety**

The rail freight industry, FNPO and Route Business Scotland are strong advocates of proactive Joint Safety Visits. Joint Safety Visits are a collaborative programme of site visits with an aim to proactively identify and rectify potential risks and prevent accidents or safety incidents. As the visits are collaborative they have a consequential benefit of strengthening industry relationships. A rolling programme of visits to infrastructure utilised by freight customers will continue throughout CP6. Initial projects have been identified for the CP6 FNPO Safety Improvement Programme (FSIP) and further project proposals for safety improvements that Scotland Route Business is not already funded to address will be fed into the FSIP pipeline.

The Scottish rail freight industry and Route Business Scotland have got an excellent safety record and it is expected that this will continue into CP6, notwithstanding this, FNPO will continue to work proactively with the Freight Operating Companies and Freight Terminal Owners/Operators through regular Operational/Production meetings and site visits to reduce potential for trespass, derailments, operational incidents and SPADs.

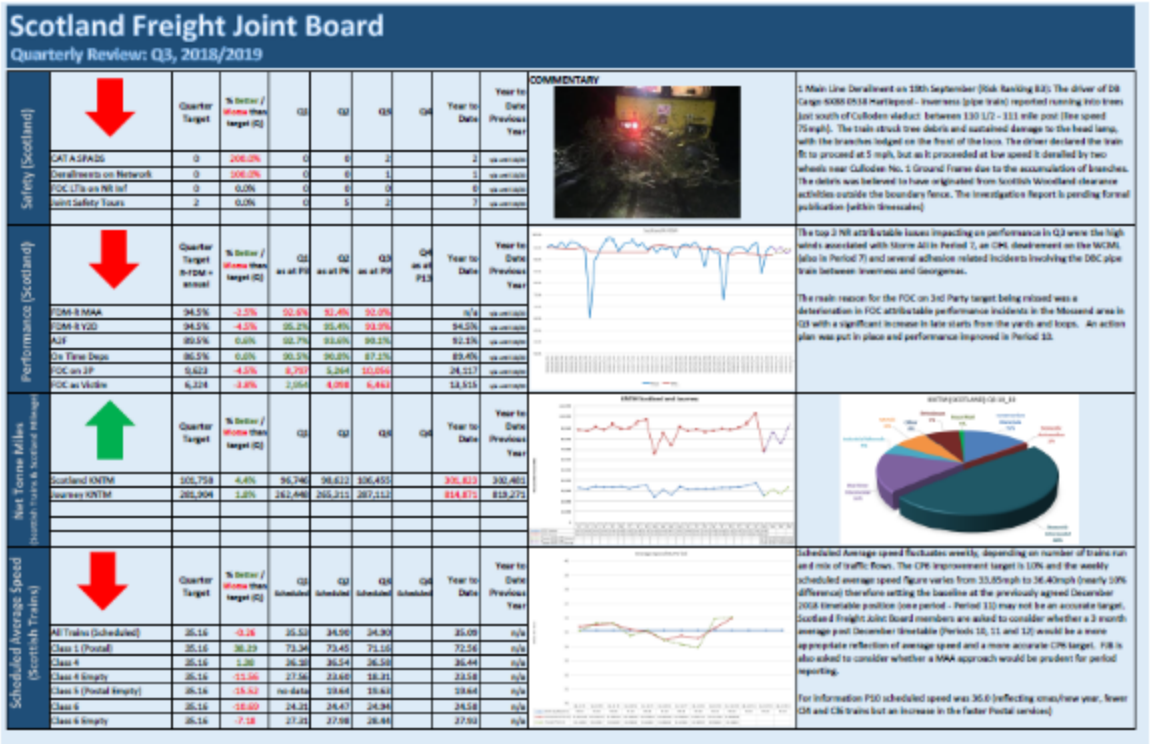
The opportunity to share Industry best practice has also been incorporated into the SFJB meetings with a Safety agenda item to share and review lessons learned, Industry initiatives and best practice.

**High Level Actions for what needs to be done pre, during and beyond CP6: For Detailed Action Plan see Appendix A**

| | | | |
|---|---|---|---|
| Bespoke **Control Guidance** for freight to aid decision making during perturbation and improve awareness of freight customer requirements for delivery during 2019 | To improve understanding of freight issues and develop a more balanced view of priorities an **Internal NR Engagement and Stakeholder plan** will be developed for introduction in early 2019 and delivery throughout CP6 | To improve perception of rail freight through proactive promotion, raising the profile of freight and reducing complexity, an **External Communications and Stakeholder plan** will be developed for introduction in early 2019 and delivery throughout CP6 | Continued roll-out of the **Industry promotional workshops** throughout CP6, supported by a review to make sure that future organisation, content and presentations (and follow up) supports future growth. |
| Further **business development** work required to support the plan (including timber aggregation and whisky) and proactive business development throughout CP6. | Feasibility work required to understand the potential of utilising the **90mph capability** of some wagon types by 1/12/19. | Further development work required to clarify cost and scope of **gauge clearance** work to support growth during 2019 | **Industry Development Working Group (IDWG)** to be set up to identify cost effective solutions to improve capacity/capability and collaboration opportunities on a route by route basis throughout CP6 |
| To encourage growth, **non-traditional methods of loading** need to be explored. NR and industry to develop relevant 'How To' guides by 30/5/20 | Future enhancement projects require **balanced industry outputs** therefore FNPO to be consultee to relevant enhancement requirements documents and remits throughout CP6 | Feedback from RDG Working Group (to SFJB) required to understand the implications of **clear air zones** to allow development of options throughout CP6 | Further work required to explore how to collate and centralise **cross-industry data** to allow it to be used more effectively by 30/8/19 |
| Through the IDWG and SFJB the rail freight industry and NR are going to be more proactive in finding **different and novel solutions for growth** through-out CP6 | Process review required alongside 'How To' Guides to simplify and support potential **3rd Party freight facilities** by 31/01/20 | **Review of maintenance strategies and future disruptive possession plans** (that have not already been agreed with the Industry) to understand feasibility of amending plans to reflect the landscape of today's industry by 30/11/19 | Opportunities that could be secured from the **freight land portfolio** need to be more widely understood therefore the recommendations from the Land Strategy Working Group require further development and roll-out by 30/3/20 |

**Recording Progress against Objectives and Governance**

**Example Quarterly Report to FJB and FNPO QBR on Progress against Plan**



Scotland Freight Joint Board

Quarterly Review: Q3, 2018/2019

Safety (Scotland)

| | Quarter Target | % Better / Worse than target (Q) | Q1 | Q2 | Q3 | Q4 | Year to Date | Year to Date Previous Year |
|---|---|---|---|---|---|---|---|---|
| CAT A SPADS | 0 | 200.0% | 0 | 0 | 2 | | 2 | us-unknown |
| Derailments on Network | 0 | 100.0% | 0 | 0 | 1 | | 1 | us-unknown |
| TOC LTIs on NR Inf | 0 | 0.0% | 0 | 0 | 0 | | 0 | us-unknown |
| Joint Safety Tours | 2 | 0.0% | 0 | 3 | 2 | | 7 | us-unknown |

Performance (Scotland)

| | Quarter Target (=TSM = annual | % Better / Worse than target (Q) | Q1 as at P3 | Q2 as at P6 | Q3 as at P9 | Q4 as at P13 | Year to Date | Year to Date Previous Year |
|---|---|---|---|---|---|---|---|---|
| TOM-8 MAA | 94.5% | -2.5% | 92.6% | 92.4% | 92.0% | | n/a | us-unknown |
| TOM-8 YTD | 94.5% | -4.3% | 95.2% | 93.4% | 94.3% | | 94.5% | us-unknown |
| A2F | 89.5% | 0.6% | 92.7% | 93.6% | 90.1% | | 92.1% | us-unknown |
| On Time Dep | 86.5% | 0.0% | 90.5% | 90.0% | 87.1% | | 89.4% | us-unknown |
| TOC on 1P | 9,623 | -4.5% | 8,797 | 9,264 | 10,054 | | 28,117 | us-unknown |
| TOC on Victim | 6,224 | -3.8% | 2,064 | 4,058 | 6,461 | | 12,515 | us-unknown |

Net Tonne Miles (Scottish Trains & Scotland Mileage)

| | Quarter Target | % Better / Worse than target (Q) | Q1 | Q2 | Q3 | Q4 | Year to Date | Year to Date Previous Year |
|---|---|---|---|---|---|---|---|---|
| Scotland KNTM | 105,758 | 4.4% | 96,746 | 98,612 | 106,455 | | 300,823 | 302,481 |
| Tourism KNTM | 265,904 | 1.8% | 262,448 | 265,213 | 287,112 | | 814,873 | 819,273 |

Scheduled Average Speed (Scottish Trains)

| | Quarter Target | % Better / Worse than target (Q) | Q1 Scheduled | Q2 Scheduled | Q3 Scheduled | Q4 Scheduled | Year to Date | Year to Date Previous Year |
|---|---|---|---|---|---|---|---|---|
| All Trains (Scheduled) | 35.16 | -0.16 | 35.53 | 34.98 | 34.80 | | 35.08 | n/a |
| Class 1 (Postal) | 35.16 | 36.29 | 73.34 | 73.45 | 71.10 | | 72.56 | n/a |
| Class 4 | 35.16 | 1.20 | 36.28 | 36.54 | 36.50 | | 36.44 | n/a |
| Class 4 Empty | 35.16 | -15.66 | 27.56 | 23.60 | 18.21 | | 23.58 | n/a |
| Class 5 (Postal Empty) | 35.16 | -15.52 | no data | 19.64 | 19.63 | | 19.64 | n/a |
| Class 6 | 35.16 | -18.69 | 24.21 | 24.47 | 24.34 | | 24.58 | n/a |
| Class 6 Empty | 35.16 | -7.18 | 27.21 | 27.98 | 28.44 | | 27.93 | n/a |

COMMENTARY

## Governance

### Scorecards

| Locally Driven Customer Measures | Definitions | | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|
| Scottish Freight Growth on Baseline | Scottish freight growth against a baseline of product moved (measured in kntm) as at the end of 18/19 FYR | Worse Than Target | 1.0% | 2.5% | 3.5% | 5.5% | 7.0% | 7.0% |
| | | Target | 1.5% | 3.0% | 4.5% | 6.0% | 7.5% | 7.5% |
| | | Better Than Target | 3.5% | 5.0% | 6.5% | 8.0% | 9.5% | 9.5% |
| Scottish new traffic share | Percentage of growth which is traffic that is new to rail | Worse Than Target | 1.0% | 2.5% | 3.5% | 5.5% | 7.0% | 7.0% |
| | | Target | 1.5% | 3.0% | 4.5% | 6.0% | 7.5% | 7.5% |
| | | Better Than Target | 3.5% | 5.0% | 6.5% | 8.0% | 9.5% | 9.5% |

Freight measures for growth, average speed and performance are contained in both the FNPO and the Scotland Route Business Scorecards.

A Quarterly Report will be reviewed at Scotland Freight Joint Board meetings alongside the Growth Plan Action Tracker.

### Reporting

Progress against targets will be reported at Scotland Freight Joint Board and via the quarterly HLOS Tracker Meeting with ORR and Transport Scotland

**Summary**

The Action Plan included in the Growth Plan and Appendix A is supported by a more detailed action tracker that will be a 'live' document and will be reviewed at SFJB meetings.

Development work to date has established that to support growth potential on some routes, infrastructure interventions will be required to enhance gauge and improve capacity, in particular between the Central Belt and Inverness and Aberdeen however the extent of any work to the infrastructure is not yet defined and will require a Whole Industry review to ascertain whether there are any alternatives to minimise the required infrastructure enhancements and to understand the potential cost.

Going forward, Network Rail and the freight industry will work closely to establish how current practices and processes can be simplified and improved to support rail freight developments and efficient operations and that train paths support trains that are as big (gauge) and heavy (route availability) as the routes and rolling stock permit.

The freight industry has identified opportunities for growth and only by working together will we be successful in securing growth for Scottish rail freight traffic. With the right conditions of cost, simplicity and proactive development (by both the freight operating companies and Network Rail) in place, the growth target is achievable.

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