

Detailed Appraisal		D15: Rail Enhancements on the Highland Mainline between Perth and Inverness						
Estimated total Public Sector Funding Requirement:		<i>Capital Costs/grant</i>				Phase 1 £50m - £100m Phase 2 £100m - £250m Freight Enhancements £50m - £100m		
		<i>Annual Revenue Support Present</i>				-		
		<i>Value of Cost to Gvt</i>				Phase 1 £10m - £50m		
		<i>BCR/PVB</i>				Phase 1 0.75 - 1.25 / £10m - £50m		
Summary Impact on STAG Criteria	Environment Safety Economy Integration Accessibility and Social Inclusion	---	--	-	0	+	++	+++
(Judgement based on available information against a 7pt. scale.)								
Intervention Description:								
This intervention supports the objectives to reduce journey time, increase travel opportunities between Inverness and Perth and more effectively link Inverness to the Central Belt.								
Improvements to the Highland Mainline are proposed;								
<ul style="list-style-type: none">• An increase in service frequency (minimum of hourly between Inverness and Perth with additional peak express services): and• A reduction in journey times of approximately 35 minutes, resulting in Edinburgh to Inverness journeys of under three hours, with similar reductions for services to Glasgow.								
Journey time reductions to benefit passenger services would be delivered through line speed improvements, additional loops, dynamic loops or lengthening of double track sections, signalling improvements and more powerful traction. It is envisaged that this could be delivered in two phases.								
Phase 1 would comprise the recognised Highland Mainline improvements as proposed in the Highland Room for Growth Study.								
Phase 2 would comprise a more significant enhancement to allow faster services to operate.								
Additional freight improvements: The passenger enhancements could be optimised to also benefit freight operations. It is envisaged that this would include:								
<ul style="list-style-type: none">• Provision of bi-directional signalling to reduce the impact of engineering works on the route (permitting the route to remain open for freight throughout the day and week);• Increased length of freight loops (allowing longer freight trains); and• Removal of speed limits below 75mph Permanent Speed Reductions (PSRs) for freight trains.								
Included within this intervention is the capability to operate low floor wagons that are currently becoming available for use on the network. These would allow standard containers to be carried on existing infrastructure with minimal physical works, such as targeted gauge enhancements at appropriate structures.								

Summary: Rationale for Selection

This intervention would provide journey time improvements between Inverness and Perth and onwards to the Central Belt, contributing to objectives relating to these issues. Increasing the frequency would provide further benefits by providing additional opportunities to travel.

The reduction in journey time of around 20 per cent is significant and would make the rail service more competitive with the current car journey.

The environmental impacts this intervention has on designated biodiversity and landscape sites have been identified at the strategic level as part of the Strategic Environmental Assessment and Appropriate Assessment. Appropriate mitigation and avoidance measures have been identified and will be further refined should this intervention be taken forward.

The freight improvements would make it considerably more attractive for freight hauliers to move containers and other goods by rail, by reducing journey times.

Table D15.1.1 STPR Objectives

STPR Objectives	
<p><u>STPR Objective 6.1:</u> To reduce journey time and increase opportunities to travel between Inverness and Perth (and hence onto the Central Belt).</p> <p><u>STPR Objective 6.2:</u> To improve the operational effectiveness of the A9 as it approaches Perth and Inverness.</p> <p><u>STPR Objective 6.3:</u> To address issues of driver frustration relating to inconsistent road standard with attention to reducing accident severity.</p> <p><u>STPR Objective 6.4:</u> To promote journey time reductions, particularly by public transport, between the Central Belt and Inverness primarily to allow business to achieve an effective working day when travelling between these centres.</p>	<p>6.1: Strongly Positive – Network Rail's Route Utilisation Strategy (RUS) incorporates the option to enhance the infrastructure between Perth and Inverness to permit an increased frequency and improved journey time. This option primarily focussed on journey time and frequency improvements through level crossing upgrades, line speed enhancements and re-doubling of sections of track. This would result in a 20 per cent reduction in journey times.</p> <p>6.2: Slightly Positive – Improved rail connections along the corridor may result in a degree of modal shift to rail from cars and good vehicles, resulting in a slight reduction in congestion on approaches to Perth and Inverness.</p> <p>6.3. Slightly Positive – The removal of a significant number of HGVs travelling between Perth and Inverness would help address this objective.</p> <p>6.4: Strongly Positive – This intervention would result in journey time reductions between Inverness and Perth of around 35 minutes to less than three hours. Additional peak services that arrive in Glasgow, Edinburgh or Inverness before 10am and leave after 5pm would make it possible for business travellers to spend an effective working day when travelling between the Central Belt and Inverness. Although end-to-end daily commuting is not probable, it is possible that the labour catchments for each city would increase, due to reduced journey times from the intermediate stations along the corridor.</p>

Table D15.1.2 STAG Criteria

STAG Criteria		
Criteria:	Assessment Summary:	Supporting Information:
Environment:	Minor Benefit/Moderate Negative Impact	<p>This intervention has the potential for adverse effects on the natural environment, including biodiversity, cultural heritage, landscape, soils and geology and the water environment. However, these effects are highly dependent on the location of the final works, and mitigation measures may be needed, therefore the overall effect remains uncertain at this stage.</p> <p>These adverse effects are slightly offset by the minor benefit to air quality gained through a modal transfer from road to rail. The local air quality should improve in settlements along the route, such as Blair Atholl, Daviot and Carbridge as well as in the Air Quality Management Area in Perth.</p>
Safety:	Neutral	<p>The overall impact of the intervention on road safety is expected to be negligible.</p> <p>The security on the rail network should remain at current levels or improve with the implementation of any new facilities or rolling stock. New facilities would be designed in line with best practice and new rolling stock could incorporate Closed Circuit Television (CCTV).</p>
Economy:	Moderate Benefit	<p>Transport Economic Efficiency (TEE): This intervention is expected to have a positive economic impact by reducing travel times between the Central Belt and Inverness, and improving the frequency of service between Perth and Inverness on the public transport network. For example, travel times are anticipated to fall from approximately 3hours 30minutes between Edinburgh and Inverness to under 3 hours, saving 35 minutes for rail travellers between economic development sites within the two cities, supporting the concept of achieving an effective working day when travelling between the two cities. The proposed capacity enhancements would amount to up to 200 additional seats arriving at Glasgow and up to 500 additional seats arriving at Inverness over a three-hour peak period (based on four additional six carriage trains per day between Edinburgh and Inverness and between Edinburgh and Perth, six additional six carriage trains per day between Perth and Inverness and two additional six carriage trains per day between Glasgow and Perth and between Glasgow and Inverness). Additional peak services that arrive in Glasgow, Edinburgh or Inverness before 10am and leave after 5pm would make it possible for business travellers to spend an effective working day in the Central Belt or Inverness. Modal shift would result in reduced operating costs for drivers either through transfer of mode or as a secondary benefit following the removal of car trips from the road network, reducing congestion impacts.</p> <p>Wider Economic Benefits (WEBs): It is anticipated that benefits would accrue from the improved access to business and recreational trips between Perth and Inverness. This would improve the attractiveness of public transport travel between the two locations and effectively reduce the time distance between Inverness and the Central Belt. Travel time reductions and improved frequency would result in increased productivity for business travellers by allowing for a more efficient working day, improving the accessibility of customers and suppliers and improving the ability of businesses to work together. In generating these benefits, the intervention is expected to help develop sites within the Highland and Perth and Kinross Regions.</p> <p>Economic benefits are therefore expected along the corridor and in particular in Inverness, which is scheduled for 4,400 new houses between 2007 and 2017, and an identified requirement for 6,060 houses in Perth between 2000 and 2020. Economic development areas along the corridor should benefit from the intervention particularly the Area of Economic Activity in Inverness City Centre.</p> <p>The additional infrastructure to facilitate the transfer of goods from road to rail would also provide benefits to the regional economies of Perth and Inverness. A new rail freight service between Grangemouth and Inverness has the potential to remove</p>

		<p>over 13,000 HGV trips each year from the A9, equivalent to around 3 million HGV kilometres or approximately 5 to 6 million tonnes of freight transferred to rail.</p> <p><u>Economic Activity and Location Impacts (EALIs):</u> This intervention would go some way in assisting with the progression of development areas in Inverness and Perth, and at locations on route, designated for industrial or residential investment such as Aviemore, Pitlochry, and Kingussie respectively. In particular, improved accessibility would assist in the development of tourism industries in the region and increase the attractiveness of the region to inward investors. Improvements to journey times and service frequencies would improve commuting opportunities from settlements along the route and help widen labour catchment areas for businesses in Perth and Kinross.</p>
Integration:	Minor Benefit	<p><u>Transport Integration:</u> This intervention would result in an upgrading of the existing rail infrastructure thereby improving the integration of the transport system.</p> <p><u>Transport Land-use integration:</u> Transport improvements are expected to have a positive impact on land use integration as the proposed development is largely constrained to the rail line corridor between Perth and Inverness providing an enhanced service on the corridor, which by its nature is well integrated with existing communities along the length of the route. This would improve connectivity between important growth areas around Inverness and Perth, and on to the Central Belt, which is of key importance.</p> <p><u>Policy Integration:</u> The measures within this intervention are consistent with the policies set out in Scotland's Railways. While it would improve travel for those for whom the car is not an option, it would not have a significant impact on policies related to disability, health, rural affairs or social inclusion.</p>
Accessibility and Social Inclusion:	Moderate Benefit	<p><u>Community Accessibility:</u> Improvements to community accessibility in terms of promoting non-motorised trips to local services would be as a result of reduced journey times and improved service frequency on the Inverness – Perth corridor improving access to jobs, training, health services, shopping and other locally significant trips. This intervention would not improve public transport network coverage as the proposed development is constrained to the existing rail corridor.</p> <p><u>Comparative Accessibility:</u> It is expected that improvements to frequency and travel times between Inverness and Perth would be inclusive to all groups.</p>

Table D15.1.3 Key Strategic Outcomes

Key Strategic Outcomes (KSO's)		
Objective:	Assessment Summary:	Supporting Information:
Improve Journey Times and Connections:	Major Benefit	Faster and more frequent services between Inverness and Perth, Edinburgh and Glasgow, would improve journey times between North and Central Scotland. This would also result in improved links between Inverness and other parts of Scotland and beyond.
Reduce Emissions:	Minor Benefit	Modal shift from road to rail as a result of the improvements to the Highland Mainline could result in some reductions in CO ₂ e emissions. Environmental modelling indicates a decline in CO ₂ e against the 2005 baseline data and a slight reduction against 2022 baseline forecasts for this corridor, if this intervention was to be implemented.
Improve Quality, Accessibility and Affordability :	Moderate Benefit	Increases in services between Inverness and Perth, and onto Edinburgh, would improve accessibility between the North and Central Scotland. New rolling stock should improve quality of service. Additional seating capacity arriving during a three-hour peak at Glasgow would increase by up to 200 and up to 500 at Inverness (based on the additional: four six-carriage trains on routes Edinburgh to Inverness and Edinburgh to Perth, six six-carriage trains between Perth and Inverness and two additional six-carriage trains on routes Glasgow to Perth and Glasgow to Inverness. .

Table D15.1.4 Scottish Government's Strategic Objectives

Scottish Government's Strategic Objectives		
Objective:	Assessment Summary:	Supporting Information:
Safer and Stronger:	Neutral	This intervention would improve the quality and accessibility of public transport on the Inverness to Perth corridor by increasing the number of services and reducing journey times. However, this intervention would not have a significant impact on road safety or affordability of public transport.
Smarter:	Minor Benefit	This intervention would improve access to educational facilities such as the University of the Highlands and Islands in Inverness and to the education establishments in the Central Belt from the Highlands.
Wealthier and Fairer:	Major Benefit	This intervention would reduce the travel times by public transport between Perth and Inverness, thereby contributing to building and sustaining economic growths, providing travel opportunities for employment, business, leisure and tourism and linking towns, cities and rural communities throughout Scotland. This intervention would also support growth at Areas of Economic Activity in Inverness, Perth and the Central Belt.
Greener:	Minor Benefit	This intervention promotes the use of the rail network in the Highlands and would encourage a modal shift, contributing to an improvement in air quality and climatic factors.
Healthier:	Minor Benefit	This intervention would improve access to health services in Inverness from communities to the south and improve access to more specialist facilities in the Central Belt from the Highlands.

Table D15.1.5 Implementability Appraisal

Implementability Appraisal	
Technical:	<p>It is expected that no untried techniques would be required when implementing any aspects of this intervention. However, as the design stages progress, localised issues may arise, such as the risk of subsidence due to mining, which may require increased technical capacities to overcome.</p> <p>Construction of some aspects of this intervention may have an impact on operating existing services, however much of this work could be carried out at times when the disruption would be minimised.</p>
Operational:	<p>Running additional rail services places extra pressure on the rail network and can increase the risk of delays. However, it is expected that these issues would be mitigated by ensuring that the works included within the intervention have sufficient capacity for the proposed service levels. No significant operational impacts are anticipated from this intervention.</p>
Public:	<p>There has been no specific detailed consultation on this intervention. However, a commitment to Phase 1 was made in a Scottish Government statement on the 5th August 2008.</p>