STRATEGIC TRANSPORT PROJECTS REVIEW

STPR

PROTECTING OUR CLIMATE
AND IMPROVING LIVES

Appendix I: Recommendation Appraisal Summary Tables

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1. Detailed Appraisal Summary

An 'Appendix I: Recommendation Appraisal Summary Tables (ASTs) Explanatory Note' accompanies this AST.

1.1. Recommendation 27 – Behavioural change and modal shift for freight

Recommendation Description

This recommendation comprises incentives and best practice to establish more efficient, environmentally friendly practices within the freight industry, including promoting sustainable transport options to encourage modal shift particularly but not exclusively for longer distance movements and enable the potential to reduce the number of Heavy Goods Vehicle (HGV)/Light Goods Vehicle (LGV) movements on the road network.

The interventions in this recommendation include:

- A review of the current Modal Shift Revenue Support (MSRS) grants scheme[i], to encourage the establishment of new rail, inland waterway and shipping services, creating modal shift opportunities away from road. The aim of this review to ensure that the current scheme is fit for purpose in supporting the just transition of goods movement to net zero in line with Scottish Government targets.

- A review of the current Freight Facilities Grant (FFG)[ii] programme, to encourage the establishment and/or redevelopment of freight sites for rail, inland waterway and coastal shipping services to develop new flows of traffic; to ensure that the current scheme is fit for purpose in supporting the transition of goods movement to net zero in line with Scottish Government targets and

- Engagement with the public and private sectors to educate operators on the benefits of multimodal best practice, promote the availability of modal shift grants, and ease the application and compliance process – through a Freight Best Practice Programme for Scotland[iii]and augmentation of the existing fora such as the Scottish Freight and Logistics Advisory Group (ScotFLAG) The previous programme was established in 2008 by Scottish Government to promote freight transport sustainability in Scotland with a focus across the entire freight sector and all modes, not only roads[iv].

1.2. Relevance

Relevant across Scotland

Behavioural change and modal shift for freight is relevant to the strategic transport network and the transition to sustainable modes. This is likely to include:

- Businesses and consumers, who would have additional transport choices to make with regards to the movement of freight by rail, road or shipping; and

- Transport operators, who would benefit from financial assistance with up-front costs of terminals and equipment and mode shift for movements by rail and water

1.3. Estimated Cost

<£25 million Capital
Some limited capital costs would be incurred in delivering the study review of grants, incentives and in the running of existing / augmented industry and stakeholder groups.

1.4. Position in Sustainable Investment Hierarchy

Reduces the need to travel unsustainably
This recommendation would contribute to seven of the 12,NTS2 outcomes, as follows: ▪ Provide fair access to services we need; ▪ Help deliver our net zero target; ▪ Promote greener, cleaner choices; ▪ Get people and goods to where they need to get to; ▪ Be reliable, efficient and high quality; ▪ Use beneficial innovation; and ▪ Be safe and secure for all.

1.5. Summary Rationale

Summary of Appraisal

	TPO					STAG					SIA				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Low Scenario	++	0	+	+	+	+	++	+	+	0	+	0	0	0	0
High Scenario	++	0	+	+	+	+	++	+	+	0	+	0	0	0	0

This recommendation makes a positive contribution to a number of the STPR2 Transport Planning Objectives (TPOs), STAG criteria, and Statutory Impact Assessment criteria. This assessment conclusion is based on a wide body of evidence from other locations in the UK and beyond where similar schemes have been implemented successfully, with considerable benefits realised.

Behavioural change and modal shift for freight particularly contributes to objectives for climate change and can also assist in meeting goals for environmental improvement and inclusive economic gain.

This recommendation is implementable from a feasibility perspective, with several interventions being a continuation of existing policy within Scotland. More detailed local engagement and scoping is required to identify the most appropriate routes and types of interventions required.

Details behind this summary are discussed in Section 3, below.

2. Context

2.1. Problems and Opportunities

This recommendation could help to tackle the following problems and opportunities:

Relevant Problem & Opportunity Themes Identified in National Case for Change
Freight: whilst recognising the importance of freight within Scotland's economy, a key challenge will be to ensure that the negative impacts generated by the movement of goods vehicles, such as increased emissions from road freight, are tackled.   **Global Climate Emergency:** the Scottish Parliament committed to an ambitious target of net zero emissions by 2045 and transport needs to play its part. Transport is currently Scotland's largest sectoral emitter, responsible for 37% of Scotland's total greenhouse gas emissions (greenhouse gas emissions encompass CO_2 emissions)[v] in 2018 (National Atmospheric Emissions Inventory 1990-2017)[vi]. Our transport system needs to minimise the future impacts of transport on our climate.   **Air Quality:** transport, and road transport in particular, remains a significant contributor to poor air quality. Air pollution increases the risks of diseases such as asthma, respiratory and heart disease, particularly for those who are more vulnerable. Air quality is often worse in areas of deprivation and is a health inequality issue.   **Trade and Connectivity:** transport is crucial for trade and competitiveness, within Scotland, across the UK and internationally.

2.2. Interdependencies

This recommendation has potential overlap with other STPR2 recommendations and would also complement other areas of Scottish Government activity.

Other STPR2 Recommendations
- Zero emission vehicles and infrastructure transition (28)   - Strategy for improving rest and welfare facilities for hauliers (36)   - Sustainable access to Grangemouth Investment Zone (39)   - Investment in port infrastructure to support vessel renewal and replacement, and progressive decarbonisation (42)   - Rail freight terminals and facilities (44)   - High speed and cross-border rail enhancements (45)

Other areas of Scottish Government activity
- Revised Draft Fourth National Planning Framework (Revised Draft NPF4)[vii];   - Climate Change Plan 2018-2032 Update – measures that reduce average emissions per tonne kilometre of road freight by 28% by 2032[viii]; and   - Scottish Government target of net-zero emissions by 2045.   - Transport Scotland's Missions Zero for Transport programme is investing in a net zero transport system, including by providing £2 billion, over a five-year period from 2021-22, for a Low Carbon Fund to support low emission technologies such as hydrogen powered transport.

In some instances, infrastructure improvements and modal shifts may lead to an allocation of service provision away from passenger services to freight. Where this is the case, design stages would require balancing the sometimes-conflicting aspirations for improved and sustainable freight provision with the need for improved passenger services.

3. Appraisal

This section provides an assessment of the recommendation against:

- STPR2 Transport Planning Objectives (TPOs);

- STAG criteria;

- Deliverability criteria; and

- Statutory Impact Assessment criteria.

The seven-point assessment scale has been used to indicate the impact of the recommendation when considered under the 'Low' and 'High' Transport Behaviour Scenarios (which are described in Appendix F of the Technical Report).

3.1. Transport Planning Objectives

1. A sustainable strategic transport system that contributes significantly to the Scottish Government's net-zero emissions target	
Low Scenario	**High Scenario**
++	++

The implementation of freight grants and best practice encouraging the use of sustainable modes of transport can lead to a decrease in carbon emissions produced by the freight industry. In 2018, Road Freight accounted for 25% of the Scottish Transport Emissions of 14.8 million tonnes of carbon dioxide equivalents (MtCO2e)[ix]. Every tonne carried by rail instead of HGVs reduces carbon dioxide emissions by an average of 76 per cent[x]. Currently, there is insufficient evidence to suggest that Short Sea Shipping (SSS) would outperform the emissions output of road transport, depending on size of consignment[xi]. The availability of Liquified Biogas (LGB) or other emerging fuels for shipping such as hydrogen, can reduce this, however, there are challenges around availability and storage.

This recommendation is expected to have a moderate positive impact on this objective in both Low and High scenarios.

2. An inclusive strategic transport system that improves the affordability and accessibility of public transport.

Low Scenario	High Scenario
0	0

This recommendation is not considered to be of direct relevance to this TPO. This recommendation is therefore expected to have a neutral impact on this objective in both Low and High scenarios.

3. A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.

Low Scenario	High Scenario
+	+

This recommendation would invest in initiatives that would encourage modal shift resulting in the removal of freight vehicles from Scotland's road network, reducing congestion and potentially enhancing communities, with associated benefits to health and wellbeing. There may be some localised disbenefits which can be mitigated wherever there is a concentration of freight where modal shift occurs. The move towards electric / hydrogen vehicles would assist in this regard.

This recommendation is therefore expected to have a minor positive impact on this objective in both Low and High scenarios.

4. An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.

Low Scenario	High Scenario
+	+

Freight incentives would make it more likely for organisations to invest in new sustainable modes of transport, boosting sustainable trade within Scotland, the UK and internationally. Rail freight grants have been largely successful since their first introduction in the mid-1970s. Since 1997/98, for every £1 of grant funding an additional 50 pence of private sector money has been invested in rail freight facilities, boosting rail freight flows[xii].

This recommendation is therefore expected to have a minor positive impact on this objective in both Low and High scenarios.

5. A reliable and resilient strategic transport system that is safe and secure for users.

Low Scenario	High Scenario
+	+

Investment in improved rail and maritime infrastructure and best practice / case studies route maps can help to simplify the interchange between modes, allowing for easier transfers that would improve the reliability and sustainability within the supply chain.

Increased awareness and acting in response to the provision of best practice / case studies, practical route maps and modal shift grants would assist in improving the reliability of the Scottish Supply Chain. Using rail for longer-distance movement is generally more resilient and reliable than road. The Freight Delivery Metric from the Office of Rail and Road (ORR) indicated that the proportion of freight trains arriving within 15 minutes, as measured by the Freight Delivery Metric, reached 95.2% in 2020-21; the highest level of punctuality achieved since the time series began in 2012-13[xiii]. There is expected to be some minor positive impacts on resilience, safety and security – arising from the indirect benefits accruing modal shift from road to rail and water.

This recommendation is therefore expected to have a minor positive impact on this objective in both Low and High scenarios.

3.2. STAG Criteria

1. Environment	
Low Scenario	**High Scenario**
+	+

See Strategic Environmental Assessment (SEA) below.

This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.

2. Climate Change	
Low Scenario	**High Scenario**
++	++

Encouraging behavioural change and modal shift for freight would attract new markets and generate traffic for rail freight operators. This is vitally important to meeting Scotland's ambitious net zero carbon target of 2045, as well as a 75% reduction against 1990 emissions levels by 2030. To achieve these goals, "Decarbonising the Scottish Transport Sector[xiv]", a recent report for Transport Scotland, outlined that 23% of freight goods moved by road must be shifted to rail and ships by 2030 to reach the ambitious net zero targets set by Scottish Government. Each freight train is estimated to remove 76 HGVs off the road, a significant reduction in greenhouse gas emissions when freight is transferred to rail. Therefore, providing platforms for additional services and traffic is vital to achieving this target.

This recommendation has a neutral impact against the vulnerability to effects of climate change, as well as the potential to adapt to effects of climate change.

As this recommendation would contribute to increasing rail and water freight services, thus reducing greenhouse gas emissions produced by the transport system, this recommendation is expected to have a moderate positive impact on this criterion in both Low and High scenarios.

3. Health, Safety and Wellbeing	
Low Scenario	**High Scenario**
+	+

HGVs and LGVs share the road with pedestrians, pedal cyclists and motorcyclists. Although there are relatively few collisions between large vehicles and these vulnerable road users, when they do occur, they often result in serious or fatal injury[xv]. The transition

to rail and water would mean less freight traffic on the Scottish road network, potentially leading to a reduction in accidents as conflicts with vulnerable road users are reduced. HGVs, for example, are disproportionately involved in collisions with Vulnerable Road Users. In 2015, HGVs comprised only 4% of urban traffic miles in London but were involved with 20% of pedestrian fatalities and 78% of cyclist fatalities; HGVs were involved in 53% of Vulnerable Road User fatalities across Great Britain in 2016[xvi]. There could also be minor positive impacts on security for those involved in freight trips from the adoption of freight best practice in this area.

This recommendation has a neutral impact against health, access to health and wellbeing infrastructure and visual amenity.

This recommendation is expected to have a minor positive impact on this criterion in both Low and High scenarios.

4. Economy

Low Scenario	High Scenario
+	+

By investing in initiatives that would encourage modal shift and encourage more efficient freight operations – through lower operating costs, there would be minor positive benefits against Transport Economic Efficiency.

This recommendation would have a neutral impact on Wider Economic Impacts.

This recommendation is expected to have a minor positive impact on this criterion in both Low and High scenarios.

5. Equality and Accessibility

Low Scenario	High Scenario
0	0

This recommendation has no direct impact on community accessibility, as it does not provide improved network coverage or access to public transport or active travel for the Scottish population. This recommendation would not impact on affordability.

Also refer to EqIA/ICIA/FSDA/CRWIA Assessment in the next section.

This recommendation is expected to have a neutral impact on this criterion in both Low and High scenarios.

3.3. Deliverability

1. Feasibility

The introduction of freight grants and incentives from a technical and implementation perspective is feasible and relatively low risk, with Scotland already having similar schemes in place, including the MSRS. However, the biggest feasibility risk would be around the availability of extra capital and revenue funding within the public sector.

A further potential risk of this recommendation is that whilst new services may be established through the use of grants and investment, it is possible that these may not be commercially viable to continue in the long-term, as revenue streams may be difficult to establish.

2. Affordability

Freight incentives can be relatively inexpensive to implement, although this is dependent on the scale of the grants. For example, Transport Scotland's co-funding of MSRS with the Department for Transport amounted to £640,000 in 2016/2017 for intermodal and bulk/waterway freight and £25 million for the period 2019-2024 for the Rail Freight Fund[xvii].

Recent examples of this include the awarding of £1.49 million in 2020 to extend the Tarmac Rail Freight Facilities at its Dunbar Plant[xviii] and the award of £4.47 million to Highland Spring in respect of the Blackford Freight Terminal which opened in September 2022. This was supported by an investment of £8.62 million to provide a southern connection into the site.

The main affordability challenge would be to find extra revenue funding within a constrained public sector revenue spending plan.

3. Public Acceptability

The implementation of grants to support sustainable freight modes is welcomed by operators, as they are currently often unable to compete with single operator road hauliers on price. Mode shift from road to rail and sustainable transport is seen as positive by the Scottish public. In a 2017 You Gov Survey 60% of Scottish responses said that freight should be transported more by rail[xix]. The main issue that might impact on public acceptability would be the use of scarce revenue funding relative to other public sector revenue funded workstreams within transport and wider afield, but this is considered a low risk.

3.4. Statuary Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

Low Scenario	High Scenario
+	+

This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3). This is because the recommendation seeks to improve the use of sustainable modes of transport through modal shift of freight from road; reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries, particularly where alternative fuels are used. There would also be a positive effect on noise and vibration and safety (Objectives 5 and 7), due the expected reduction in freight vehicles on the road network.

The recommendation would also have a positive effect on sustainable use of the transport network (Objectives 8 and 9) as it promotes a more sustainable use and management of the existing transport network and should require fewer natural resources as more sustainable freight transport is introduced.

There is potential for positive and negative effects on the water environment, biodiversity and soil (Objectives 10, 11 and 12 respectively) as a result of changes in diffuse pollution on key receptors; however, this would be dependent on the location and therefore these effects are uncertain at this stage.

Given the nature of this recommendation to use softer measures to incentivise operators, there are limited physical interventions anticipated and therefore no (or negligible) clear link to the achievement of Objective 2 (climate change adaption). The recommendation is related to, but unlikely to have a notable effect on the achievement of the remaining SEA Objectives and is therefore considered neutral.

Overall, this recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios.

2. Equalities Impact Assessment (EqIA)

Low Scenario	High Scenario
0	0

This recommendation would have neutral direct impacts on equalities. However, incentivising the modal shift of freight from road to rail or water could contribute to improved health outcomes as a result of better air quality. This is of particular benefit to those who are more vulnerable to air pollution, including children, older people and disabled people. The benefit to these groups would be dependent on the success of the recommendation in encouraging modal shift.

Overall, this recommendation is expected to have a neutral impact on this criterion in both Low and High scenarios.

3. Island Communities Impact Assessment (ICIA)

Low Scenario	High Scenario
0	0

Incentivising rail or water freight as an alternative to road freight would have a negligible impact on island communities. However, although this recommendation would not directly increase access to goods for communities, there may be the opportunity to increase the sustainability of existing freight routes to the islands.

Overall, this recommendation is expected to have a neutral impact on this criterion in both Low and High scenarios.

4. Children's Rights and Wellbeing Impact Assessment (CRWIA)

Low Scenario	High Scenario
0	0

This recommendation could contribute to reduced freight emissions by shifting to more sustainable modes, which would benefit children and young people who are more vulnerable to the adverse health impacts of poor air quality.

Overall, this recommendation is expected to have a neutral impact on this criterion in both Low and High scenarios

5. Fairer Scotland Duty Assessment (FSDA)

Low Scenario	High Scenario
0	0

Promoting and investing in sustainable freight could positively contribute to improvements in place, health and wellbeing, particularly for deprived urban communities which are more likely to be located in areas of poor air quality. This would help to reduce inequalities of outcome such as lower healthy life expectancy.

Overall, this recommendation is expected to have a neutral impact on this criterion in both Low and High scenarios

References

i https://www.transport.gov.scot/media/43470/msrs-scheme-guide-updated-november-2018.pdf

ii https://www.transport.gov.scot/our-approach/industry-guidance/freight-transport/#42454

iii https://www.transport.gov.scot/our-approach/industry-guidance/freight-transport/#42445

iv http://www.starconference.org.uk/star/2009/KatherineSoane.pdf

v Greenhouse gas emissions encompass CO_2 emissions

vi National Atmospheric Emissions Inventory 1990-2017

vii National Planning Framework 4 (Revised draft at time of writing) https://www.transformingplanning.scot/national-planning-framework/

viii https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/

ix https://www.transport.gov.scot/media/49874/scottish-transport-statistics-2020-may-2021.pdf

x https://bettertransport.org.uk/blog/rail/shift-freight-road-rail-fight-climate-change

xi https://www.mdpi.com/2071-1050/12/13/5383

xii https://www.researchgate.net/publication/242146675_Evaluation_of_Rail_Freight_Facilities_Grant_Funding_in_Britain

xiii https://dataportal.orr.gov.uk/media/1945/freight-rail-usage-and-performance-2020-21-q4.pdf

xiv https://www.transport.gov.scot/media/50354/decarbonising-the-scottish-transport-sector-summary-report-september-2021.pdf

xv https://www.rospa.com/rospaweb/docs/advice-services/road-safety/cyclists/hgvs-and-vulnerable-road-users.pdf

xvi https://www.clocs.org.uk/resources/clocs_crown_estates_report_2018_web_ready.pdf

xvii https://www.transport.gov.scot/media/4314/mode-shift-grant-awards-table-aug-16.pdf

xviii https://tarmac.com/news/scottish-government-awards-grant-for-improved-rail-infrastructure-at-tarmacs-dunbar-cement-plant/

xix https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/wgt39dy57r/CampaignforBetterTransportResults_170622_Freight_W.pdf