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NTS2 Policies/Enablers Collation and Assessment

Enablers Assessment Technical Report

On behalf of Transport Scotland





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1 Introduction

1.1 Introduction

1.1.1 This report presents the assessment of the 38 measures that were developed to support Transport Scotland's next National Transport Strategy (NTS2) and presented in the draft for consultation.

1.2 Background

- 1.2.1 In 2006, NTS set out a 20-year vision to 2026, encapsulating priorities for transport in Scotland and providing a strategic framework against which questions of transport investment, priorities and policies could be judged.
- 1.2.2 A refreshed NTS was published in January 2016, keeping the overall NTS framework whilst updating the strategic context and clarifying roles and responsibilities across transport modes, locations and organisational hierarchy. It recommended a 'fuller, collaborative review of the NTS to the next Scottish Government' which was subsequently announced by the Minister for Transport and the Islands, in August 2016.
- 1.2.3 The NTS Review builds upon the 2006 Strategy, and its subsequent refresh in 2016, to produce a successor Strategy (the NTS2) setting out an updated vision for Scotland's transport system over the next twenty years. The Vision, Priorities and Outcomes are presented in in the Strategic Framework in Figure 1.1.
- 1.2.4 The NTS Review followed a collaborative approach which included creating four Thematic Working Groups (TWGs). The four TWGs were designed around the four priorities: Promotes Equality; Takes Climate Action; Helps our Economy Prosper; and Improves our Health and Wellbeing. Each of the four TWGs was tasked with developing a set of policies that would help deliver the 3 NTS2 outcomes under its priority, as set out in the Strategic Framework in Figure 1.1.

1



Our Vision

We will have a sustainable, inclusive and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors.



Figure 1-1: Strategic Framework Diagram

- 1.2.5 In total, there were 94 policy proposals developed by the four TWGs. It was clear from reviewing the policies that there had been different approaches taken to identifying them. Further iterative exercises were undertaken to, in summary, eradicate any overlap and duplication between the policies and get them into a consistent format. These tasks reduced the number of policies firstly to 38 and then to 14. As part of this task and as the policies evolved, a series of meetings was held with each of the TWGs to ensure the members were content with the development of the policies and they remained consistent with the views of the Groups when they were designed. Following the collation exercise, the next stage was to assess the policies.
- 1.2.6 Given the high-level nature of the 14 policies that were developed, it was agreed that it would be difficult to assess these without a good understanding of what interventions will / could be used to deliver the policy. Following meetings with TS, it was agreed that a number of 'enablers' should therefore be assessed for each policy. These 'enablers' would provide a basis to assess how each policy will perform against delivering the NTS2 Outcomes.
- 1.2.7 In terms of the enablers to be assessed, it was agreed that, as a starting point, this would include the previous list of 38 that evolved into the 14 policies these essentially emerged from the initial policy suggestions from TWGs and comments received through various stakeholder engagement events undertaken as part of the NTS2 Review process. The 38 enablers arrived at are set out under each of the 14 policies (A to N) below.



Policy A - Continue to improve the reliability, safety and resilience of our transport system

- Enabler 1. Increase safety of the transport system and meet casualty reduction targets;
- Enabler 2. Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
- Enabler 3. Implement measures that will improve perceived and actual security of Scotland's transport system; and
- Enabler 4. Increase the use of asset management across the transport system.

Policy B - Embed the implications for transport in spatial planning and land use decision making

- Enabler 5. Ensure greater integration between transport, spatial planning, and how land is used;
- Enabler 6. Ensure that transport assets and services adopt the Place Principle; and
- Enabler 7. Ensure the transport system is embedded in regional decision making.

Policy C - Integrate policies and infrastructure investment across the transport, energy and digital system

 Enabler 8. Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure investment including the transport, digital, and energy system.

Policy D - Provide a transport system which enables businesses to be competitive domestically, within the UK and internationally

- Enabler 9. Optimise accessibility and connectivity within business-business and businessconsumer markets by all modes of transport;
- Enabler 10. Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study, visit and invest in Scotland; and
- Enabler 11. Support measures to improve sustainable surface access to Scotland's airports and seaports.

Policy E - Provide a high-quality transport system that integrates Scotland and recognises our different geographic needs

- Enabler 12. Ensure that infrastructure hubs and links form an accessible integrated system that improves the end-to-end journey for people and freight;
- Enabler 13. Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas; and
- Enabler 14. Safeguard the provision of lifeline transport services and connections.

Policy F - Improve the quality and availability of information to enable better transport choices

Enabler 15. Support improvements and innovations that enable all to make informed travel choices:



- Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport; and
- Enabler 17. Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents.

Policy G - Embrace transport innovation that positively impacts on our society, environment and economy

Enabler 18. Support Scotland to become a market leader in the development and early adoption
of beneficial transport innovations.

Policy H - Improve and enable the efficient movement of people and goods on our transport system

- Enabler 19. Ensure the Scottish transport system efficiently manages needs of people and freight; and
- Enabler 20. Promote the use of space-efficient transport.

Policy I - Provide a transport system that is equally accessible for all

- Enabler 21. Ensure transport in Scotland is accessible for all;
- Enabler 22. Identify and remove barriers to public transport connectivity and accessibility within Scotland:
- Enabler 23. Reduce the negative impacts which transport has on the safety, health and wellbeing of people; and
- Enabler 24. Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework.

Policy J - Improve access to healthcare, employment, education and training opportunities to generate inclusive sustainable economic growth

- Enabler 25. Ensure sustainable labour market accessibility to employment locations;
- Enabler 26. Ensure sustainable access to education and training facilities; and
- Enabler 27. Improve sustainable access to healthcare facilities for staff, patients and visitors.

Policy K - Support the transport industry in meeting current and future employment and skills needs

- Enabler 28. To meet the changing employment and skills demands of the transport industry and upskill workers; and
- Enabler 29. Support initiatives that promote the attraction and retention of an appropriately skilled workforce across the transport sector.

Policy L - Provide a transport system which promotes and facilitates travel choices which help to improve people's health and wellbeing

- Enabler 30. Promote and facilitate active travel choices across mainland Scotland and islands;
- Enabler 31. Integrate active travel options with public transport services; and



Enabler 32. Support transport's role in improving people's health and wellbeing.

Policy M - Reduce the transport sector's emissions to support our national objectives on air quality and climate change

- Enabler 33. Facilitate a shift to more sustainable modes of transport for people and commercial transport;
- Enabler 34. Reduce emissions generated by the transport system to improve air quality;
- Enabler 35. Reduce emissions generated by the transport system to mitigate climate change;
 and
- Enabler 36. Support management of demand to encourage more sustainable transport choices.

Policy N - Plan our transport system to cope with the effects of climate change

- Enabler 37. Increase resilience of Scotland's transport system to climate change related disruption; and
- Enabler 38. Ensure the transport system adapts to the projected climate change impacts.
- 1.2.8 The findings of the assessment are set out in the remainder of this report. Before presenting the findings, however, the following chapter presents the approach used in the assessment process.



2 Enabler Assessment Approach

2.1 Overview

2.1.1 This section sets out the approach to the assessment of the measures. The outputs from the assessment are important in presenting the evidence and rationale for the policies and measures to be included in the Strategy. It supports the challenges presented in the Strategy explaining why the policies and measures are necessary i.e. what they are aiming to address/realise and how they will achieve the NTS2 12 outcomes.

2.2 Context

2.2.1 The first section of the assessment sets out the context or current / future situation with respect to the measure. Where available, existing secondary data and research has been used to provide this context. However, for some measures, available evidence is limited, and professional judgement has been used.

2.3 Logic Maps and Assessment against NTS2 Outcomes

- 2.3.1 The anticipated impacts of each enabler are then set out in a logic map. The purpose of the logic map is to provide a diagrammatic storyline of how the enabler will help address the current / future situation and challenges by changing behaviour. In particular, the logic map presents what the outputs of the enabler will be, the short-term outcomes, and longer-term impacts it will generate, and how it performs against the NTS2 12 outcomes.
- 2.3.2 The assessment against the 12 outcomes was conducted in one of two ways. For those measures that impact on travel demand, the Scenario Planning Tool was used to assess the impact. In total, 18 measures impact demand and therefore fall into this category and are represented by ticks below.
- 2.3.3 The main purpose of the Scenario Planning Tool was to understand how the enablers perform under different plausible futures. These futures include a range of different scenarios, such as where the economy is weak or strong, where society is less or more equal, where the environment has or has not addressed the effects of climate change, or where we have a healthy or unhealthy population that takes high or low levels of active travel. The eight future scenarios are presented in the table below and more details of the Scenario Planning Tool are included in the Scenario Planning Process Development Report published as a supporting document to the Strategy.

Table 2-1: Plausible Future Scenarios and Summary Characteristics

Plausible Future Scenario	Summary Characteristics
Healthy and Wealthy	 More walking and cycling, with the infrastructure to accommodate demand There is a move away from vehicular travel Economic innovation results in less commuting and productivity increases There is reduced car ownership Air quality improves
Mindful Travellers	 Economic growth alongside a greater understanding of environmental sustainability Decrease in working hours Reverse in the trend of conducting life online



Plausible Future Scenario	Summary Characteristics				
	 Increase demand for personal travel More walking and cycling with smaller than forecasted car ownership High use of public autonomous vehicles Air quality improves 				
Cyber- Ecos	 Reduced working weeks and more people work from home leads to improved productivity Less time is spent commuting and more time is spent in local communities which regenerates towns Reduction in the number of trips made by al modes of transport Reduced walking and cycling leads to an increase in obesity There is still a large use of non-autonomous vehicles Cars are affordable as energy is cheap and plentiful Transport emissions reduce 				
Top Gear	 Economic growth is prioritised over caring for the environment GDP increases, inequalities increase There is a slow uptake of autonomous vehicles Car ownership increases more than projected, road traffic increases and congestion remain an issue The energy grid struggles to cope with demand and energy costs rise Air quality improves 				
Straightened Stay Homers	 We enter recession Demand for travel decreases so there is less congestion Fewer goods are consumed Investment stalls and the quality of the transport system reduces Electric cars are cheap which results in a decrease in walking and cycling- this impacts health, which continues to worsen as there is less money to spend on health care 				
White- Collar Connectors	 The number of high skilled workers increases, and more people work from home Commuter trips decrease Electric cars become the norm and air quality improves Denser housing in cities Travel demand decreases Car ownership doesn't grow any faster than forecasted Some people are excluded due to technological changes and expensive goods 				
Multi-Modal Movers	 There is an energy revolution and transport are electrified Public transport is expanded, and inequalities reduce Air quality improves Demand for travel increases leading to congestion at peak times The use of technology in daily life decreases 				
Cyber Boomers	 Population increases Energy use increases leading to energy cost increasing Public transport fares increase There are fewer non-essential journeys made There is a reduced need to make physical journeys. 				

2.3.4 The impact of each enabler on each NTS outcome is judged on a seven-point scale from Major Positive to Major Negative.



- 2.3.5 For the enablers assessed using the Scenario Planning Tool, this was done quantitatively. For those not assessed using the Scenario Planning Tool, this was done qualitatively using professional judgement and evidence where available.
- 2.3.6 The findings of the assessment whether undertaken with the Scenario Planning Tool or undertaken on a qualitative basis are presented in the logic map in the same way. Enablers that cannot be tested using the Tool were not given less weight during the assessment process compared to those that can be tested using the Tool. How the enablers impact against the outcomes is summarised in a matrix in Appendix B.

2.4 Conflicts or Complements

- 2.4.1 The assessment of each enabler includes a section on Conflicts or Complements which sets out a list of potential conflicts or complements with other enablers. These terms are defined as follows:
 - A conflict is where the implementation of another enabler would have a negative impact on the assessed enabler; and
 - A complement to an enabler is where the implementation of both enablers could have a greater positive impact than one enabler alone.
- 2.4.2 A summary matrix showing all conflict and complements is included in **Error! Reference source n ot found.** for ease of reference.

2.5 Public Acceptability

- 2.5.1 The assessment of each enabler did not include an assessment against the Scottish Transport Appraisal Guidance (STAG) criteria. This was because the STAG criteria (of accessibility & social inclusion, environment, economy, safety, and integration) were felt to be implicit within the NTS2 outcomes and completing a separate assessment against the criteria would therefore be repetitive.
- 2.5.2 As part of the process, however, an assessment of how acceptable each enabler was to the public and their overall affordability was undertaken. The former used a combination of the findings from the engagement with Citizens' Panels undertaken on behalf of Transport Scotland and an element of professional judgement based on a number of previous public engagement exercises.
- 2.5.3 The engagement with the Citizens' Panels involved testing the enablers with the public to understand how 'important' and 'acceptable' the policies and enablers are. A series of Citizens' Panels events were carried out in Stornoway, Dunfermline, Stranraer and Newtonmore, with two consecutive evenings at each location.
- 2.5.4 The policies and enablers were assigned either:
 - High level of importance when the policy adequately addressed citizens' key priorities and concerns for transport in Scotland;
 - Medium level of importance when the policy partially addressed citizens' key priorities and concerns; or
 - Low level of importance If the policy did not address any of the key priorities and concerns for transport held by citizens in Scotland.
- 2.5.5 In terms of public acceptability, at the events policies or enablers were assigned either:

Enablers Assessment Technical Report



- High level of acceptability when citizens felt the enablers of a policy would mean it would be successfully delivered;
- Medium level of acceptability when citizens felt the enablers would be partially successful in delivering the policy as key priorities or concerns were not fully addressed; and
- Low level of acceptability when citizens felt the policy would be less likely to be achieved, due to insufficiencies within the proposed enablers.
- 2.5.6 Given the definition of acceptability used for the Citizens' Panels appears to be more in line with whether people thought the enabler would or would not successfully deliver the policy, rather than whether it was acceptable to them, the findings of that exercise have not been used. However, the results of whether or not the policy and enabler were deemed to address key priorities and concerns for transport, i.e. the level of importance of the policy or enabler, appear to be more aligned with acceptability and the findings of that exercise have been used in the acceptability assessment. It should be noted that all the policies and enablers were considered to be acceptable by the attendees at the Citizens' Panels. The results of the assessments for each of the 38 enablers, using the criteria discussed above, are presented in the remaining chapters of this report.



3 Policy A: Enabler 1

3.1 Policy

3.1.1 Continue to improve the reliability, safety and resilience of our transport system.

3.2 Enabler

3.2.1 Increase safety of the transport system and meet casualty reduction targets.

3.3 Context

3.3.1 The number of road accidents in 2017 was 43% lower than in 2007, with reductions across all accident severities (see Figure 3.1). However, accident numbers have reduced at varying rates across local authorities (see Table 3.1). For example, in the north east of Scotland, rates have decreased by 62% compared to 32% in Edinburgh. Increasing safety of the transport system would reduce these rates further.



Figure 3-1: Percentage Change in Road Accidents 2007-20171

3.3.2 The Scottish Government published Scotland's Road Safety Framework "Go Safe on Scotland's Road – It's Everyone's Responsibility" in June 2009 which included accident reduction targets to 2020. The Road Safety Framework 10 Years 2018 Annual Report included progress against the targets, and this is summarised below.

Table 3.1 Scottish Reported Road Safety Casualties

	2004-2008 Average	2015 Milestone	2016	2017	2020 Targets
Fatalities	292	204 (30% reduction)	191 (down 35%)	146 (down 50%)	175 (40% reduction)

¹ Table 6.1, Scottish Transport Statistics No 37 2018 Edition, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/



Serious	2,605	1,484	1,697	1,589	1,172
Casualties		(43% reduction)	(down 35%)	(down 39%)	(55% reduction)
Child	15	10	8	6	8
Fatalities		(35% reduction)	(down 47%)	(down 60%)	(50% reduction)
Serious Child Fatalities	325	163 (50% reduction)	167 (down 49%)	152 (down 53%)	114 (65% reduction)

- 3.3.3 Road accidents are costly to society. In total, the cost of all recorded road accidents in 2017 was estimated to be around £1 billion.
- 3.3.4 While the above focuses on road incidents, the enabler is aimed at safety across all of Scotland's transport system and includes ferries, trains, cycling and walking. While there is less data in some of these areas over time, people continue to have concerns for their safety when using them and the enabler will be for all users given the impacts they can have on individuals, families and wider society.

3.4 Logic Map

3.4.1 The anticipated impacts of this enabler are set out in Figure 3.3. Overall, increasing safety of the transport system would help reduce accident rates and contribute to reduced disruption and improved economic growth. A safer transport system would help enable people to get to where they need to get to and make our communities much better places to live. A safer transport system would also support people to make healthy travel choices as many choose not to cycle, for example, because it is perceived to be dangerous.

When assessed against the NTS2 outcomes, this enabler will have a major positive impact on safety and security within the transport system. It is likely that this would be the case under all future scenarios.

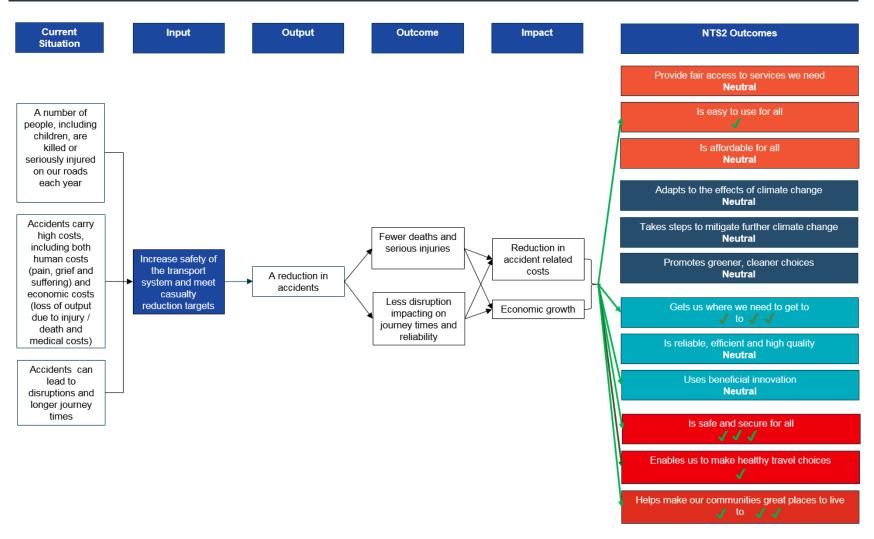


Figure 3-2: Enabler 1 – Logic Map



3.5 Conflicts or Complements

- 3.5.1 There are no conflicts with this enabler.
- 3.5.2 Increasing the safety of the transport system will, as shown above, reduce the number of accidents and disruption impacting on journey times. Therefore, the enabler complements the flowing enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy A: Enabler 4 Increase the use of asset management across the transport system;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovations.
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on the safety, health and wellbeing of people; and
 - Policy L: Enabler 32 Support transport role in improving people's health and wellbeing.

3.6 Public Acceptability

3.6.1 Safety across our transport system is seen as a very important issue by a large proportion of the population and would be a very acceptable enabler to be included in the Strategy. This was reflected at the Citizens' Panels discussions, which saw safety as being of high importance.



4 Policy A: Enabler 2

4.1 Policy

4.1.1 Continue to improve the reliability, safety and resilience of our transport system.

4.2 Enabler

4.2.1 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility.

4.3 Context

- 4.3.1 The aim of this enabler is to reduce the impact of disruption caused by our transport system not being as resilient as it could be. It would also involve people taking responsibility for contributing to the creation of a more resilient transport system e.g. helping to clear roads/pathways during periods of bad weather.
- 4.3.2 When there is extreme weather or incidents, it is vital that information is given to the public as quickly as possible so that they can act accordingly. Without the necessary information, people can't make the right travel choices and can lead to disruption on the network.
- 4.3.3 Extreme weather leads to uncertainty about travel conditions for people and businesses and across all modes. In these situations, commuters do not know whether or not they can get to work due to the impact on the roads and public transport services. In many places, goods, including food, cannot be delivered causing significant further disruption.
- 4.3.4 The transport system should be resilient, thus minimising impacts of delayed journeys on networks and users. Strong resilience planning should include the physical resilience of the transport system and how disruption is managed and the speed of recovery.
 - Dedicated walking and cycling infrastructure must also be maintained to encourage use. Both trunk and local roads face significant maintenance backlogs and need considerable investment to ensure they are appropriately maintained. As for motorised traffic, road condition is vital for cyclists. And the effective maintenance of our networks is important in reducing in disruption and delivering a resilient and reliable transport system.

4.4 Logic Map

4.4.1 The anticipated impacts of this enabler are set out in Figure 4-1. Overall, improving the management of assets and information regarding disruptions will improve transport network resilience. This would likely lead to productivity improvements through reduced journey times, contributing to economic growth. When assessed against the NTS2 12 outcomes, this enabler will have a major positive impact on getting us where we need to get to and having a reliable, efficient and high-quality transport system. While the main benefits are likely to be economic, there will also be positive environmental and social benefits. It is likely that this would be the case under all future scenarios.

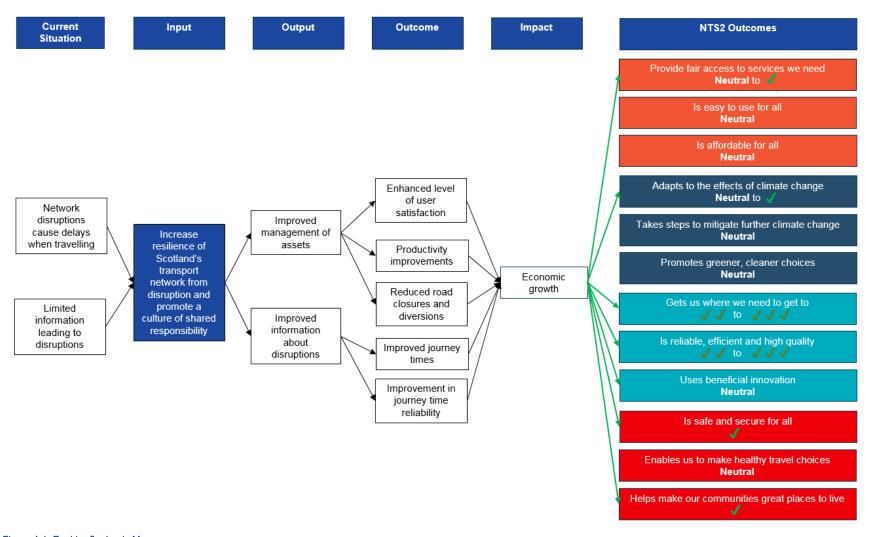


Figure 4-1: Enabler 2 – Logic Map



4.5 Conflicts or Complements

- 4.5.1 There are no conflicts with this enabler.
- 4.5.2 This enabler would complement the following enablers:
 - Policy A: Enabler 1 Increase safety of the transport system and meet casualty reduction targets;
 - Policy A: Enabler 3 Implement enablers that will improve received and actual security of Scotland's transport system;
 - Policy A: Enabler 4 Increase the use of asset management across the transport system;
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland;
 - Policy F: Enabler 15 Support improvements and innovations that enable all to make informed travel choices;
 - Policy F: Enabler 17 Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents; and
 - Policy N: Enabler 37 Increase resilience of Scotland's transport network to climate change disruption.

4.6 Public Acceptability

4.6.1 Resilience of the transport system is a subject that came up frequently during the Citizen's Panels, particularly the impact of potholes and resilience to severe weather events. There is also likely to be high levels of support for reducing the impact of road closures and diversions. This enabler would therefore be very acceptable to the public.



5 Policy A: Enabler 3

5.1 Policy

5.1.1 Continue to improve the reliability, safety and resilience of our transport system.

5.2 Enabler

5.2.1 Implement measures that will improve perceived and actual security of Scotland's transport system.

5.3 Context

5.3.1 Transport systems are becoming more digital, with greater use and storage of data. Ticketing payment and verification systems are becoming much more advanced. There are risks and perceived risks of, for example, loss of personal information or cyber-attacks. These could, for example, have significant impacts on connected and autonomous vehicles and other forms of driverless vehicles. This enabler does not deal with personal security as that is captured under Enabler 23: reduce the negative impacts which transport has on safety, health and wellbeing of people

5.4 Logic Map

- 5.4.1 The anticipated impacts of this enabler are set out in Figure 5-1. When assessed against the NTS2 12 outcomes, this enabler would have a major positive impact on the outcome to create a safe and secure transport system. It is likely that this would be the case under all future scenarios.
- 5.4.2 Overall, implementing enablers to improve the security of the transport system would also help reduce the risk of attacks and disruption, leading to a transport system in which the public will have more trust and generate a range of social benefits by allowing more people to use it as it becomes more reliable and effective. These impacts, particularly a more reliable system, would likely also lead to economic benefits.



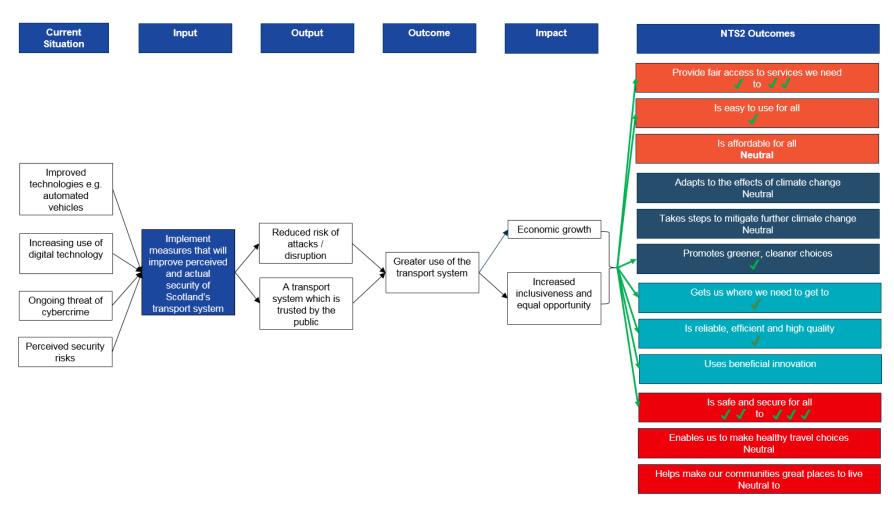


Figure 5-1: Enabler 3 – Logic Map



5.5 Conflicts or Complements

- 5.5.1 There are no conflicts with this enabler.
- 5.5.2 This enabler would complement the following enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility; and
 - Policy A: Enabler 4 Increase the use of asset management across the transport system;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, digital, and energy system; and
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland.

5.6 Public Acceptability

5.6.1 Security and perceived security, particularly in an age of digital communication, large data storage and cyber-attacks, is a growing issue for transport users and this enabler could, therefore, be very acceptable to the public. However, opinion amongst those who attended the panels was divided, with some deeming this enabler to be acceptable, and others less so.



6 Policy A: Enabler 4

6.1 Policy

6.1.1 Continue to improve the reliability, safety and resilience of our transport system.

6.2 Enabler

6.2.1 Increase the use of asset management across the transport system.

6.3 Context

- 6.3.1 Scotland has a road network of 34,745 miles and a rail network of 1,750 miles. Added to this is a considerable number of footways, bridges, cycle routes, lighting etc. All these assets require to be managed with a number of challenges. Network Rail is responsible for managing the rail network in Scotland and sets out its approach to asset management in its Asset Management Policy².
- 6.3.2 Trunk roads in Scotland are the responsibility of Transport Scotland and the Road Asset Management Plan for Scottish Trunk Roads (Transport Scotland 2016)³ sets out a number of key challenges which adopting a structured process like Asset Management helps to overcome. It highlights why road asset management is important and necessary. These include:
 - Increasing customer expectations for an accessible and available trunk road network and for safe and reliable journeys;
 - Managing and maintaining a road network that is resilient to damage from wear and tear and which is ageing and increasingly subjected to more traffic and severe weather;
 - Financial constraints placing more emphasis on the preservation of existing assets for the longterm with clear messages of 'more for less', 'sweating the asset' and 'make the most of what you have' that create a culture for making best use of existing assets;
 - Providing improved financial accountability and transparency and demonstrating that decisions made, and the resulting work, provide taxpayers with good value for money;
 - Maximising the contribution of road maintenance to sustainability and the environment through appropriate material and construction choices; and
 - Training and retaining staff in a competitive market and recruiting from a limited pool of skilled, experienced and qualified engineers and other specialist personnel.
- 6.3.3 There is a correlation between the level of traffic and maintenance required. Figure 6-1 shows the increase in road traffic in Scotland since 2007.

² Asset Management Policy, Network Rail, January 2018

³ Road Asset Management Plan for Scottish Trunk Roads, January 2016 https://www.transport.gov.scot/media/32978/j408891.pdf



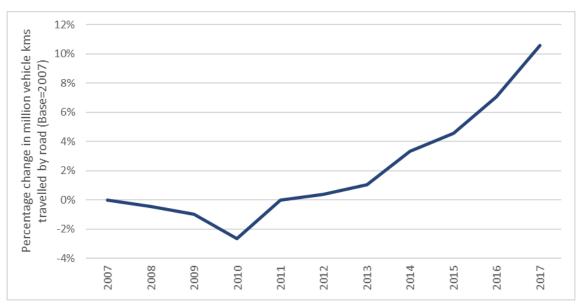


Figure 6-1: Percentage Change in Road Traffic from Base Year 2004

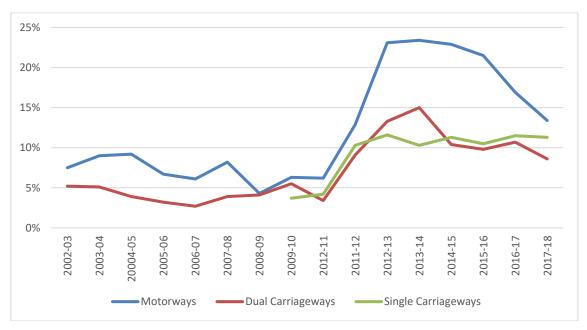


Figure 6-2: Percentage of Road Network which requires Close Monitoring by Road Type5

6.4 Logic Map

6.4.1 The anticipated impacts of this enabler are set out in Figure 6-3. Overall, increasing the use of asset management across the transport system will reduce disruptions. Disruptions to assets are caused by various factors including; increased travel demand and damage due to extreme weather. Minimal disruptions would increase journey reliability times, enhancing journey experience and increasing productivity leading to economic growth.

⁴ Table 5.1, Scottish Transport Statistics No 37 2018 Edition, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/

⁵ Table 4.5, Scottish Transport Statistics No 37 2018 Edition, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/



When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on getting us where we need to get to and having a reliable, efficient and high-quality transport system. It is likely that this would be the case under all future scenarios.



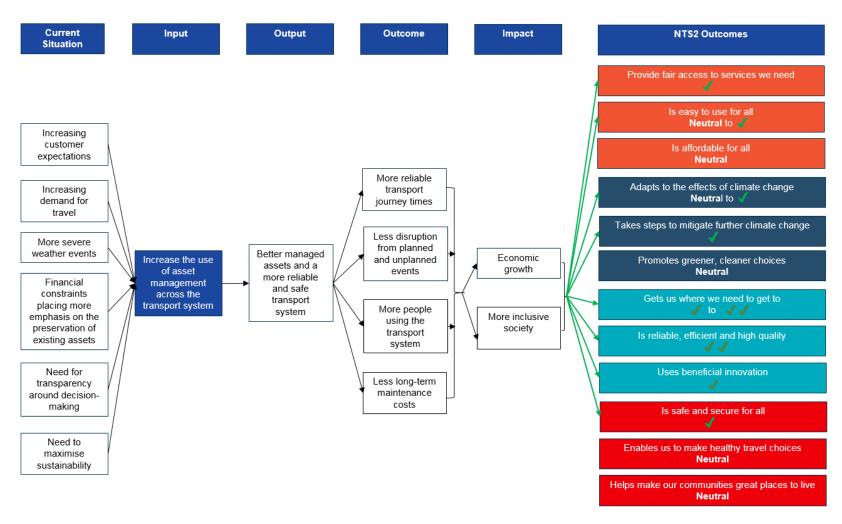


Figure 6-3: Enabler 4 – Logic Map



6.5 Conflicts or Complements

- 6.5.1 There are no conflicts with this enabler.
- 6.5.2 This enabler would complement the following enablers:
 - Policy A: Enabler 1 Increase safety of the transport system and meet casualty reduction targets;
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy A: Enabler 3 Implement enablers that will improve received and actual security of Scotland's transport system;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficially transport innovations;
 - Policy N: Enabler 37 Increase the resilience of Scotland's transport network to climate change disruption; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

6.6 Public Acceptability

6.6.1 Asset management and maintenance are highly important (particularly issues around severe weather conditions and potholes) for the ongoing operations of the transport system and will be more efficient in spreading costs. These views were very much reflected in the engagement with the Citizens' Panels and, therefore, it's likely this enabler will be viewed as acceptable.



7 Policy B: Enabler 5

7.1 Policy

7.1.1 Embed the implications for transport in spatial planning and land use decision making.

7.2 Enabler

7.2.1 Ensure greater integration between transport, spatial planning, and how land is used.

7.3 Context

- 7.3.1 Planning and development have a major influence on our transport system. Where we build houses, the places we locate schools and hospitals, and where we build offices and factories to accommodate employment all impact on the choices about the types of journeys we make, when we make them and how we make them.
- 7.3.2 When planning decisions are made, they need to have the consideration of the impacts on transport as a priority. In identifying sites for development of housing, employment, schools and hospitals transport considerations need to play a crucial role and need to do so as early as possible. This includes designing places to reflect where people will be travelling to and from.
- 7.3.3 Similarly, transport needs to influence the development. Transport can help planning and development and ensure our communities are sustainable. The transport system can put in place options that will discourage people from owning or using cars. It can be designed so that workers in, and visitors to, an area are attracted to public transport or active travel options ahead of private cars. The transport system can also help ensure that places are convenient to get to without having to use a car. Strong links with spatial planning, including the National Planning Framework and local development plans, can help us understand and address these challenges.
- 7.3.4 For example, across the country only 60% of people consider access to hospital outpatients services to be very or fairly convenient. This drops to 46% in remote rural areas. A particular issue for island residents is the need to use intra island services and services to the mainland to access health appointments.⁶

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⁶ From NTS2 engagement with the Convention of Highlands & Islands and others.



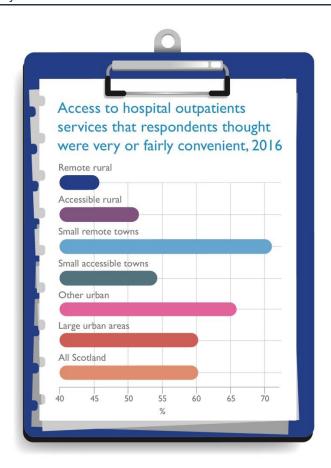


Figure 7-1: Access to Hospital Outpatients Services⁷

7.3.5 Overall, the transport system and the consideration of the current and future transport needs of people should be at the heart of planning decisions to ensure sustainable places.

- 7.4.1 The anticipated impacts of this enabler are set out in Figure 7-2. Overall, greater integration between transport, spatial planning and how land is used will result in more effective use of land as well as the demand for transport and how it is used. Transport would be incorporated more into development plans to ensure more public transport and active travel options are available.
- 7.4.2 The result of the assessment highlighted that this enabler will have a positive impact on all outcomes, with potentially larger impacts on reliable, efficient and high quality and adapts to the effects of climate change.
- 7.4.3 In addition, the results of the assessment showed that, in the plausible future 'Multi-Modal Movers', this enabler will have a major positive impact on the NTS2 outcome 'is reliable, efficient and high-quality', higher than under all other plausible future scenarios. Under 'Multi-Modal Movers' demand for travel increases and therefore improving integration is likely to result in greater benefits.

⁷ Transport and Travel in Scotland 2016, Table 33

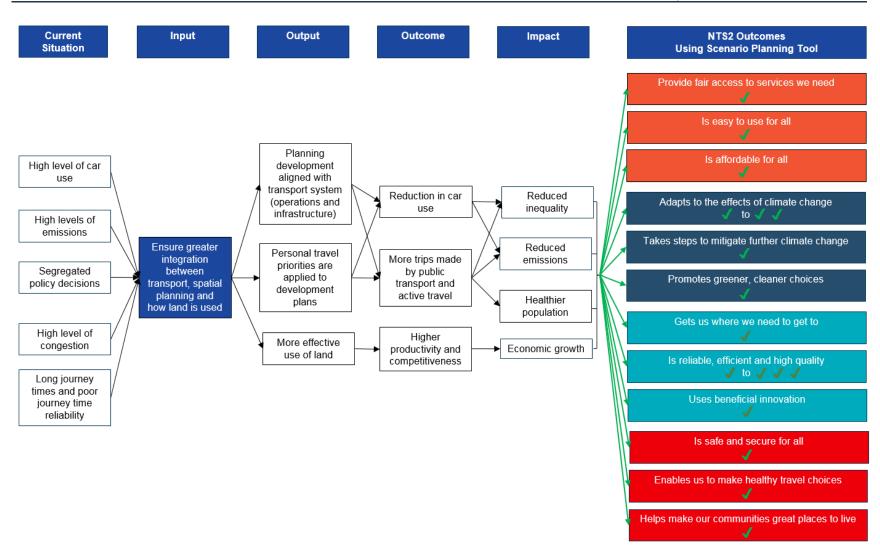


Figure 7-2: Enabler 5 – Logic Map



- 7.5.1 There are no conflicts with this enabler.
- 7.5.2 This enabler would complement the following enablers:
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, digital, and energy system;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves the end-to-end journey for people and freight; and
 - Policy F: Enabler 16 Support the seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport. Public Acceptability
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland; and
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices.
- 7.5.3 Integrated decision making and ensuring new developments are connected to infrastructure will ensure a more efficient transport system and the more efficient movement of people and goods. This was deemed to be important during the Citizens' Panels.



8 Policy B: Enabler 6

8.1 Policy

8.1.1 Embed the implications for transport in spatial planning and land use decision making.

8.2 Enabler

8.2.1 Ensure that transport assets and services adopt the Place Principle.

8.3 Context

8.3.1 Some communities believe their views are not considered as part of the decision-making process, ultimately leading to outcomes that don't deliver the needs of the communities they are aimed at. The Place Principle requests that "all those responsible for providing services and looking after assets in a place need to work and plan together, and with local communities, to improve the lives of people, support inclusive growth and create more successful places". The adoption of the Place Principle would lead to greater community involvement in the process of designing local transport services aligned with the needs of the places they are designed to serve.

- 8.4.1 The anticipated impacts of this enabler are set out in the Logic Map in Figure 8.1. Overall, if transport assets and services adopt the Place Principle, community services will be integrated to create a successful, enjoyable place to live and work the aim in adopting the Place Principle is to create safer, attractive and healthier places by increasing the number of trips made by walking and cycling. More sustainable travel options would reduce car use and in turn, reduce emissions.
- 8.4.2 When assessed against the NTS2 outcomes, this enabler will have a major positive impact on enabling us to make healthy travel choices and making our communities great places to live. There would also be environmental benefits from people switching to more active modes, as well as positive social impacts from removing barriers that some people face. It is likely that this would be the case under all future scenarios, albeit the impacts are likely to be lower in a future where people already make more trips by active travel eg Health and Wealthy.

⁸ The Place Principle, http://www.improvementservice.org.uk/documents/planning/planning-for-place/place-principle.pdf



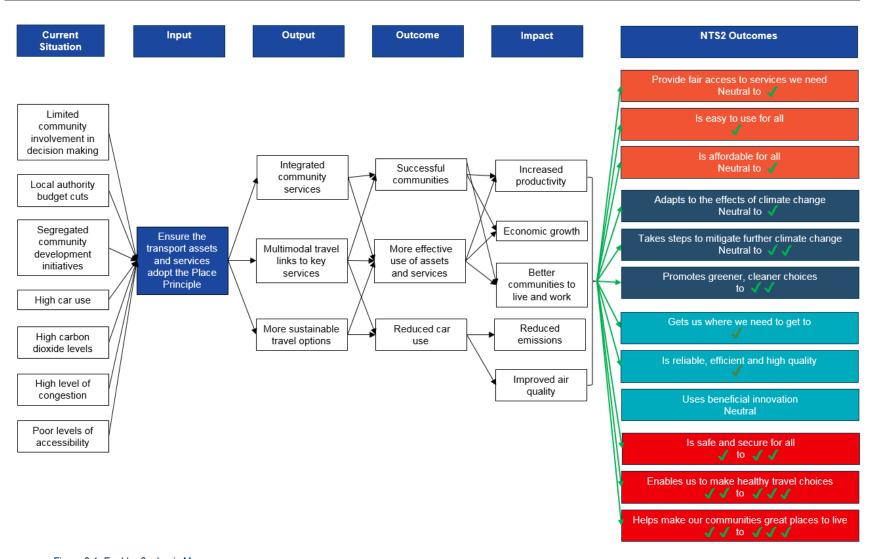


Figure 8-1: Enabler 6 - Logic Map



- 8.5.1 There are no conflicts with this enabler.
- 8.5.2 This enabler would complement the following enablers:
 - Policy A: Enabler 4 Increase the use of asset management across the transport system;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, digital, and energy system;
 - Policy E: Enabler 12 Ensure the infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy M: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

8.6 Public Acceptability

8.6.1 The lack of community engagement and involvement in decisions that affect lives is a common criticism from the public. While this enabler will be important, the concept of the Place Principle is not clear to people and will need explanation.



9 Policy B: Enabler 7

9.1 Policy

9.1.1 Embed the implications for transport in spatial planning and land use decision making.

9.2 Enabler

9.2.1 Ensure the transport system is embedded in regional decision making.

9.3 Context

9.3.1 Embedding the transport system in regional decision making will encourage cross-boundary working and help ensure cross-boundary projects take account of all the impacts they are likely to have, not just those in specific locations where local decisions are made.

- 9.4.1 The anticipated impacts of this enabler are set out Figure 9-1. Overall, if the transport system is embedded into regional decision making, journey times will decrease due to reduced congestion, people will be encouraged to travel by more sustainable modes of transport and emissions will likely reduce. Key benefit of this enabler is that a strategic approach addresses cross boundary issues and impacts, reflecting travel patterns and needs of people and businesses.
- 9.4.2 When assessed against the NTS2 outcomes, it is anticipated that this enabler will have a positive impact against all themes and also almost all outcomes. The highest impacts will be in terms of health and environment due to more local journeys being made using active travel options. There will, however, also be positive economic and social impacts. It is likely that this would be the case under all future scenarios.

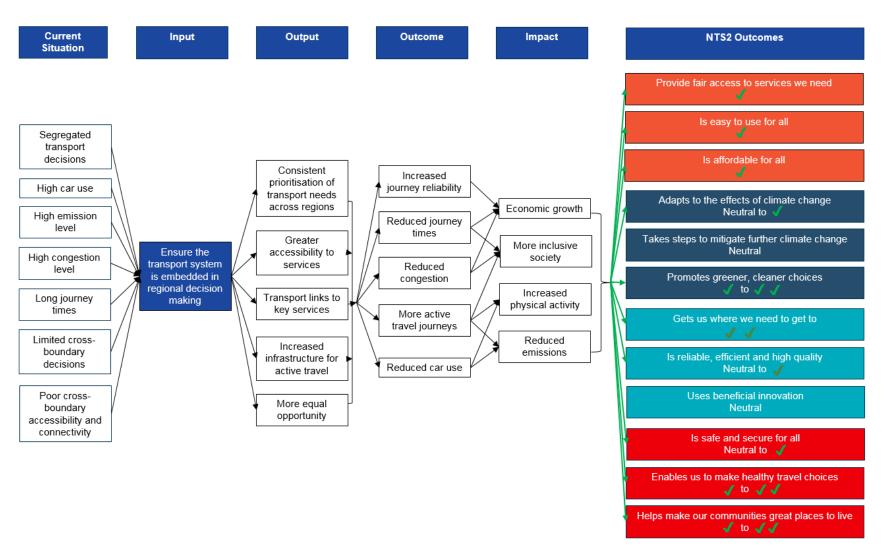


Figure 9-1: Enabler 7- Logic Map



- 9.5.1 There are no conflicts associated with this enabler.
- 9.5.2 This enabler would complement the following enablers:
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, digital, and energy system;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages need of people and freight;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors; and
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands.

9.6 Public Acceptability

9.6.1 Cross boundary services are seen as important and regional decisions should be made locally as well as cross-regionally. The policy will be acceptable.



10 Policy C: Enabler 8

10.1 Policy

10.1.1 Integrate polices and infrastructure investment across the transport, energy and digital system.

10.2 Enabler

10.2.1 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure investment including the transport, digital, and energy system.

10.3 Context

10.3.1 Developing transport systems and networks in Scotland that reflect changing demands cannot be done independently. Therefore, polices need to consider transport alongside other strategies and initiatives, including energy and digital. For example, with increasing demand for renewable fuel travel options, the energy sector must be integrated alongside the development and implementation of transport infrastructure. Also, as society becomes increasingly digital, and this impacts on decisions that affect transport eg working from home, it is important that the digital sector is also included.

- 10.4.1 The anticipated impacts of this enabler are set out in Figure 10-1. Overall, ensuring that there is an integrated approach across all aspects of infrastructure will allow people and businesses to use renewable transport options. This will both reduce emissions and create business competition leading to economic growth.
- 10.4.2 The results from the assessment reveal negative impacts on easy to use for all and enables us to make healthy travel choices outcomes. The impacts on the other outcomes are deemed to be positive, with the potential of major positive impacts on is reliable, efficient and high quality under a multi-modal movers' scenario. Under 'multi-modal movers' demand for travel increases and therefore improving integration between modes is likely to result in greater benefits.

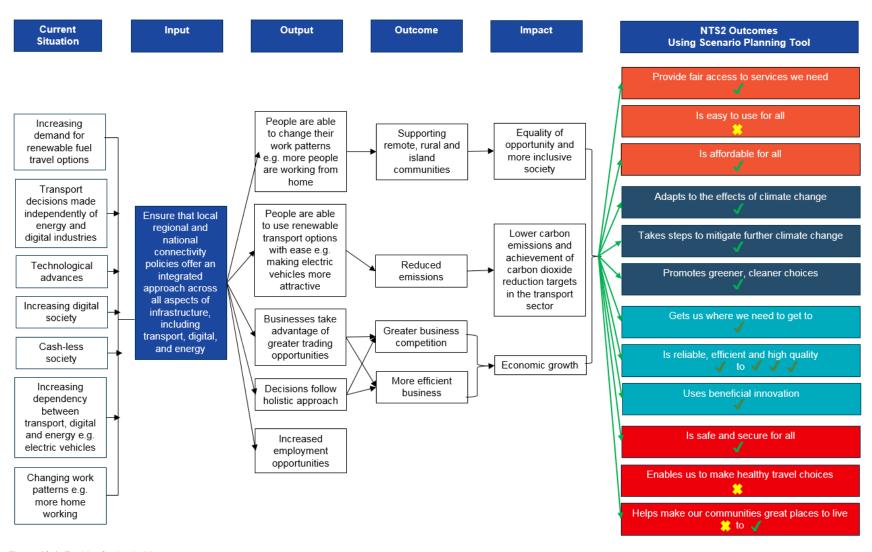


Figure 10-1: Enabler 8 – Logic Map



- 10.5.1 There are no conflicts with this enabler.
- 10.5.2 This enabler complements the following enablers:
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy D: Enabler 9 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport;
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficially transport innovations;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 and
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport.

10.6 Public Acceptability

10.6.1 While recognising that this enabler is not of high importance, integrating decision making on policies that impact on each other was still deemed to be important to those involved in the Citizens' Panels events and would therefore be acceptable.



11 Policy D: Enabler 9

11.1 Policy

11.1.1 Provide a transport system which enables businesses to be competitive domestically, within the UK, and internationally.

11.2 Enabler

11.2.1 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport.

11.3 Context

- 11.3.1 Transport plays a key role in delivering Scotland's Economic Strategy. It enables firms to have efficient access to suppliers and customers. It allows people fair and affordable access to reach the jobs where they can be most effective. These factors can impact on productivity, therefore improving competitiveness, business performance and support increased economic activity and growth.
- 11.3.2 Figure 11.1 below reveals Scotland's productivity levels are in the second quartile among OECD countries and are below the United Kingdom as a whole.
- 11.3.3 Whilst low productivity is not purely a result of poor transport accessibility, there is potential to improve productivity levels through transport improvements. For example, providing better links between businesses and between businesses and consumers.

Nominal GDP per hour worked in 2017, OECD countries (USA=100)

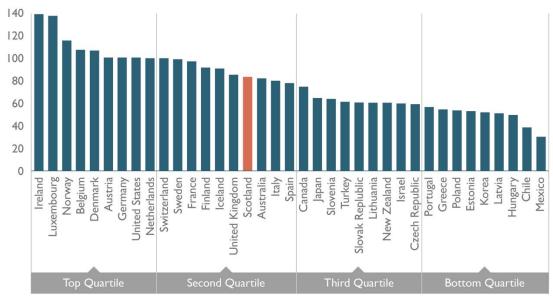


Figure 11-1: GDP per Hour Worked9

⁹ Scottish Government Labour Productivity Statistics, 2018 Quarter 3, https://www2.gov.scot/Resource/0054/00545826.pdf



- 11.4.1 The anticipated impacts of this enabler are set out in Figure 11-2. Overall, connecting businesses' together and with consumers can lead to higher levels of productivity and greater competition. Together this will lead to higher, sustainable growth.
- 11.4.2 When assessed against the NTS2 outcomes, this enabler will have a major positive impact on adapting to the effects of climate change as people switch to public transport as a consequence of lower fares, freeing up capacity on the transport system for business users. Lower costs for car users will, however, mean more car trips and impact on communities as places to live. It is likely that this would be the case under all future scenarios.

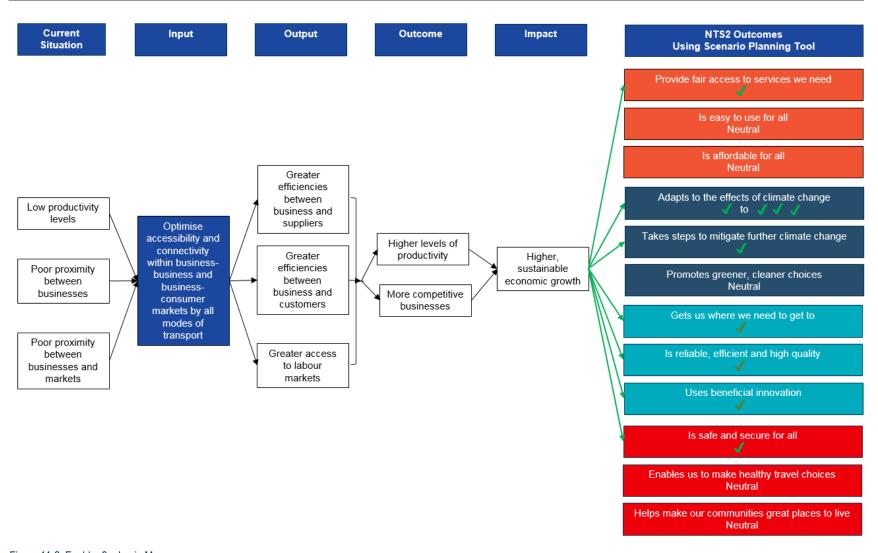


Figure 11-2: Enabler 9 - Logic Map



- 11.5.1 There are no conflicts with this enabler.
- 11.5.2 This enabler complements the following enablers:
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure investment including the transport, digital, and energy system;
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland:
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages need of people and freight;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all; and
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations.

11.6 Public Acceptability

11.6.1 Improvements in the transport system that impact positively on businesses were seen as highly important. International connectivity is also seen as crucial to economic performance, albeit air travel is contested by many on environmental grounds



12 Policy D: Enabler 10

12.1 Policy

12.1.1 Provide a transport system which enables businesses to be competitive domestically, within the UK, and internationally.

12.2 Enabler

12.2.1 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport network to encourage people to live, study, visit and invest in Scotland.

12.3 Context

- 12.3.1 Transport is crucial for Scotland's trade and competitiveness, within Scotland, across the UK and internationally. Improving gateways (such as airports, ports and major transport hubs) and the surface access to these gateways supports exporters to grow in existing markets and explore opportunities in new ones.
- 12.3.2 Trade and connectivity with EU and global markets is impacted by uncertainty around Scotland's future relationship with the EU as a result of the UK's ongoing activity around EU Exit.
- 12.3.3 Scotland has strong trade links with 105 countries across nearly 100 different industries and sectors. Scotland's key export markets include petroleum, petroleum products & related materials, food & drink and power generating machinery and equipment with 38% of all exports in these goods, being sent to EU markets.
- 12.3.4 Scotland traded nearly £53 billion worth of goods in 2017 beyond the UK¹⁰, with more than half (54%) being exports, the remainder being imports. The £28.7 billion worth of exported goods were destined for markets as shown below¹¹.

¹⁰ Scotland: A Trading Nation - A plan for growing Scotland's exports, 2019

¹¹ Note: the importance of the Netherlands is partly because of the central role of Rotterdam in onward shipment.



Destination of Scotland's exports (£ billions)

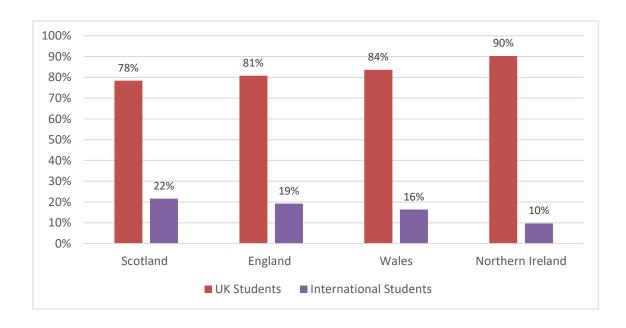


Top five export countries

1 Netherlands £4.3bn 2 USA £3.4bn 3 Germany £2.8bn 4 China £2.2bn 5 France £1.8bn

Figure 12-1 – Destination and Value of Scotland's Exports (£ billions), and Top 5 Export Countries 12

- 12.3.5 The number of international visits to Scotland has also increased. In 2017 there were 3 million international trips made to Scotland representing a 44% increase on 2012 levels.
- 12.3.6 Scotland also has the highest percentage of international students (22%) enrolled in higher education courses of all nations in the UK (see Figure 12-3). The transport network must be able to accommodate both international visitors and students travelling in and out the country, with the latter often making trips multiple times a year.



¹² Transporting Scotland's Trade, Transport Scotland, 2018



Figure 12-2: Breakdown of UK and International Students Enrolled in Higher Education Courses by Region 2016-201713

12.3.7 To maintain Scotland's competitive position, it is important to make it as easy as possible for Scotlish firms to do business abroad and for foreign firms to do business in Scotland. It is also important for international tourists to visit Scotland.

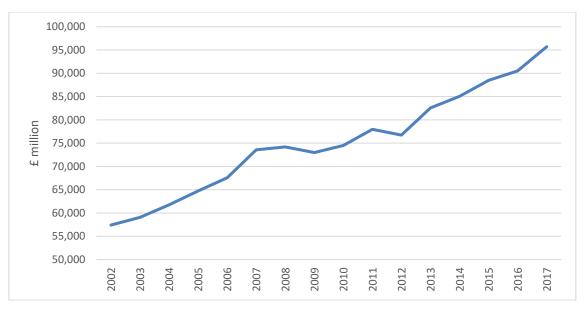


Figure 12-3: Scotland's Imports 2002 - 201714

12.4 Logic Map

12.4.1 The anticipated impacts of this enabler are set out in Figure 12-. Overall, ensuring gateways to and from Scotland are resilient and integrated into the wider transport network will encourage more visitors and business to the country.

12.4.2 The result of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome. The findings suggest that the largest positive impact will be on enabling people to make healthier travel choices, with lower positive impacts against the outcomes under the 'helps our economy prosper' and 'promotes equality' themes. There are negative impacts against the 'takes climate action' outcomes as well as 'helps our communities prosper'.

¹⁴ Total value of imports into Scotland from 2000 to 2017, Statistca, https://www.statista.com/statistics/348541/scotland-imports-total-value/

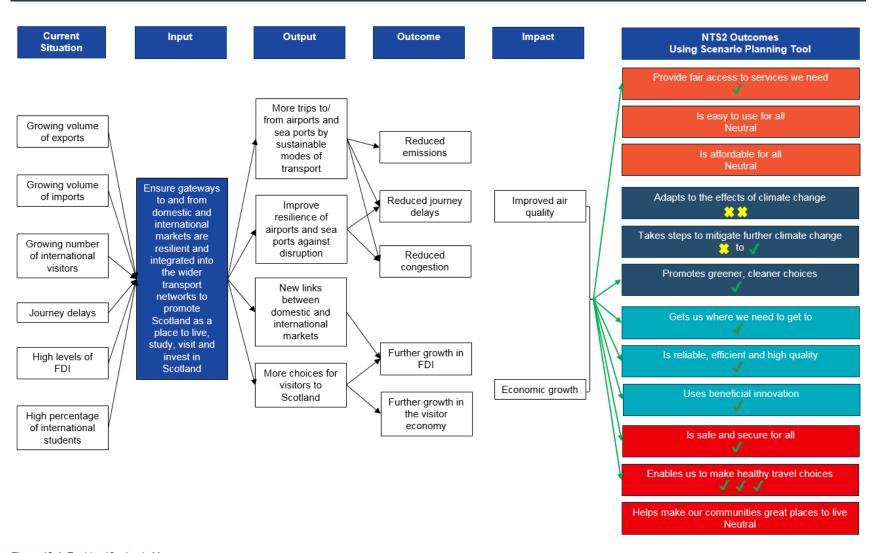


Figure 12-4: Enabler 10 – Logic Map



- 12.5.1 Increasing the resilience of gateways to and from domestic or international markets could encourage more air travel. This enabler conflicts with the following enablers:
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.
- 12.5.2 This enabler complements the following enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure investment including the transport, digital, and energy system;
 - Policy D: Enabler 9 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport;
 - Policy D: Enabler 11 Support enablers to improve sustainable surface access to Scotland's airports and seaports;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport; and
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages need of people and freight.

12.6 Public Acceptability

12.6.1 Transport in Scotland is seen as being very important in attracting visitors, businesses and students and would therefore be acceptable.



13 Policy D: Enabler 11

13.1 Policy

13.1.1 Provide a transport system which enables businesses to be competitive domestically, within the UK, and internationally.

13.2 Enabler

13.2.1 Support measures to improve sustainable surface access to Scotland's airports and seaports.

13.3 Context

- 13.3.1 It is imperative that there is sustainable surface access to our airports and seaports. Air passenger traffic in Scotland has increased in recent years with the number of air terminal passengers growing by 38% since 2010 and the total freight transported increasing by 27% over the same period (see Figure 13-1). The mode of surface transport used by passengers to access Scotland's airport is presented in Figure 13-2. As shown, there is a high level of car and taxi use when accessing airports. This often leads to congestion and ultimately delays which can have large negative impacts for individuals and businesses.
- 13.3.2 For freight, 67 million tonnes of freight were handled by ports in Scotland in 2017. One quarter of Scotland's freight tonnage, including exports, was by water. There were also 60,000 tonnes of freight carried by air in 2017. 178,000 tonnes of goods left Scotland by road destined for non-UK countries in 2017. 26% of this went to France and 25% went to the Netherlands.

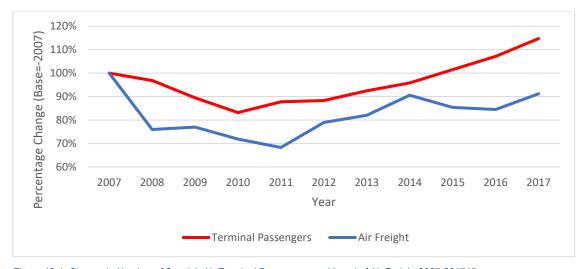


Figure 13-1: Change in Number of Scottish Air Terminal Passengers and Level of Air Freight 2007-201715

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¹⁵Table 8.1, Scottish Transport Statistics No 37 2018



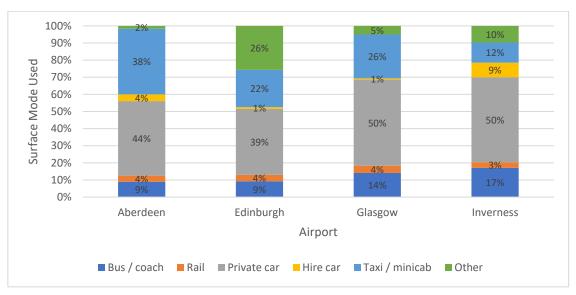


Figure 13-2: Mode of Surface transport used to access Scotland's largest Airports in 201316

- 13.4.1 The anticipated impacts of this enabler are set out in Figure 13-3. Overall, improving sustainable surface access to airports and seaports will reduce congestion and delays on the roads serving the ports. This will lead to greater productivity and business competitiveness, contributing to higher economic growth.
- 13.4.2 When assessed against the NTS2 outcomes, this enabler will have a neutral impact on the majority of the outcomes. It will however have a minor positive impact on getting us where we need to get to and creating a reliable, efficient and high-quality transport system. This is estimated to be minor due to the number of journeys made on surface access routes to sea and airports is low as a total proportion of journeys on the transport system in Scotland. While journeys to the ports would be sustainable, making air travel easier would encourage more air travel and have a negative impact on the environment. The impacts of this enabler would be greatest under future scenarios where international trade is constrained and where air travel is low.

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¹⁶ Table 8.15, Scottish Transport Statistics No 37 2018, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/sct01193326941-11/

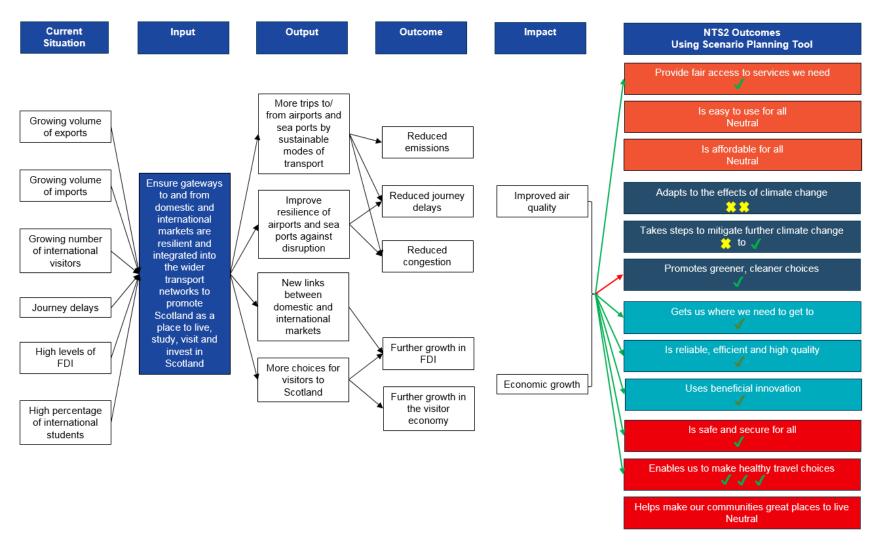


Figure 13-3: Enabler 11 – Logic Map



- 13.5.1 Although this enabler supports sustainable access to airports and seaports, the environmental benefit of this could potentially be outweighed by improved access to ports which would facilitate more air and ferry/ship travel. Therefore, this enabler potentially supports but also conflicts with the following enablers:
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy M: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.
- 13.5.2 This enabler complements the following enablers:
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves the end-to-end journey for people and freight;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport; and
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages need of people and freight.

13.6 Public Acceptability

13.6.1 Ports and airports are regarded as important for business competitiveness (e.g. exports) and good access is seen as positive, particularly if it can be delivered in a sustainable way.



14 Policy E: Enabler 12

14.1 Policy

14.1.1 Provide a high-quality transport system that integrates Scotland and recognises our different geographic needs.

14.2 Enabler

14.2.1 Ensure that infrastructure hubs and links form an accessible integrated system that improves the end-to-end journey for people and freight.

14.3 Context

14.3.1 It is important that our transport system attracts people by providing an integrated system for end-to-end journeys. Currently, there are often disparities between services due to timetables not being aligned which can lead to longer journey times as a result of excessive wait times at interchanges. This can also lead to more expensive journeys. In many cases people choose to use their private car instead of public transport or active travel modes to simplify their journey. There has also been limited roll-out of integrated ticketing systems, which could make journeys, especially those with interchanges, easier and a more attractive option.

- 14.4.1 The anticipated impacts of this enabler are set out in Figure 14-1. Overall, ensuring that infrastructure hubs and links from an accessible transport system will allow people to make journeys that they previously couldn't and remove the high dependency on private cars.
- 14.4.2 The of the assessment reveal a positive impact against all 12 outcomes as a result of making public transport and active travel journeys more attractive. The reduction in emissions also has a moderate to major impact on adapting to the effects of climate change. The result of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome.



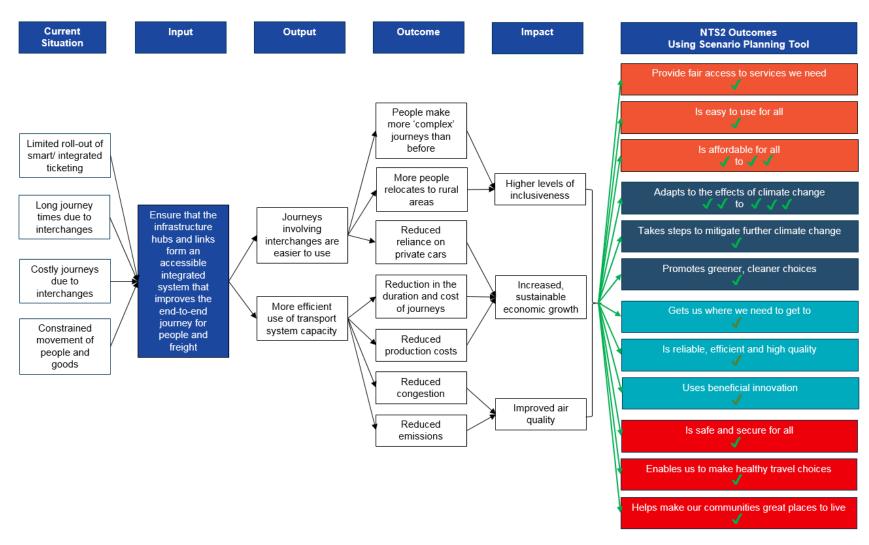


Figure 14-1: Enabler 12 – Logic Map



- 14.5.1 This enabler may not necessarily encourage people to make more sustainable transport choices. Therefore, the enabler conflicts with the following:
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport.
- 14.5.2 This enabler complements the following enablers:
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy C Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, digital, and energy system;
 - Policy D: Enabler 9 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport;
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland;
 - Policy D: Enabler 11 Support enablers to improve sustainable surface access to Scotland's airports and seaports;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages need of people and freight;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all; and
 - Policy L: Enabler 31 Integrate active travel options with public transport services.

14.6 Public Acceptability

14.6.1 It is recognised that it is important to integrate the public transport system and this enabler would be supported by the public.



15 Policy E: Enabler 13

15.1 Policy

15.1.1 Provide a high-quality transport system that integrates Scotland and recognises our different geographic needs.

15.2 Enabler

15.2.1 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas.

15.3 Context

- 15.3.1 There are many transportation disadvantages that those who live on the islands and remote, rural areas face. For many people, they are reliant on transport services to carry out their daily lives. While the impact of Road equivalent Tariff fares have reduced the cost of travelling to and from many islands, currently, the cost of transport on the islands and in remote, rural areas is much higher, proportionate to income, than in the rest of Scotland. Journey times are often long and can require multiple interchanges, sometimes overnight. This can add further costs to journeys. In addition, there are limited or no integrated tickets adding to the price and complexity of journeys.
- 15.3.2 Businesses operating in remote, rural and island areas also face challenges, incurring higher transport costs to customers and markets. This can impact on competitiveness and overall performance.
- 15.3.3 Research has been undertaken into the required minimum income standard for remote and rural Scotland. The aim of the research was to calculate how much it costs for people to live at a minimum standard in remote and rural Scotland. The key finding was that the minimum income that households require for an acceptable standard of living in island communities is well above the rest of the UK, and in many cases higher than other areas of rural Scotland. Factors driving additional costs for households in island communities compared to the rest of the UK include:
 - Longer commuting distances compounded by higher fuel prices;
 - The additional cost of occasional trips to the mainland; and
 - Additional ferry / air costs for inter-island travel.
- 15.3.4 Longer commutes to work combined with more expensive petrol typically adds £30-£40 a week to costs when compared to rural England. ¹⁸ When someone needs to travel between islands to access work, ferry trips can add as much again and for others living on islands there is a significant cost in accessing an annual holiday.

http://www.hie.co.uk/regional-information/economic-reports-and-research/archive/a-minimum-income-standard-for-remote-rural-scotland.html

http://www.hie.co.uk/regional-information/economic-reports-and-research/archive/a-minimum-income-standard-for-remote-rural-scotland.html

¹⁷ A Minimum Income Standard for Remote Rural Scotland, 2013,

¹⁸ A Minimum Income Standard for Remote Rural Scotland, 2013,



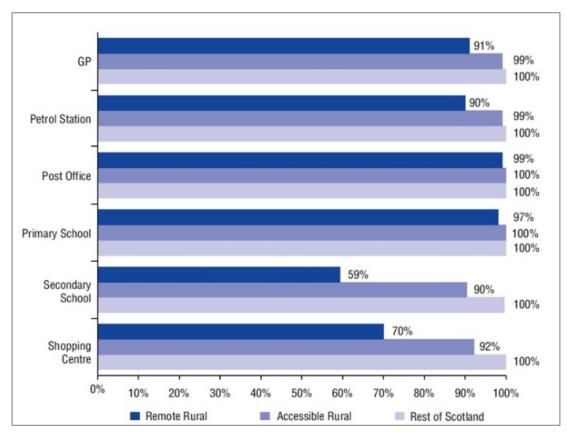


Figure 15-1: Percentage within 15-minute Drive Time of Service by Geographic Area, 201619

15.3.5 Figure 15-1 shows that only rural areas of Scotland are not within a 15-minute drive time to key services. For example, 91% of people in remote rural areas and 99% of people in accessible rural areas live within a 15-minute drive time to a GP compared to 100% of the population in the rest of Scotland.

- 15.4.1 The anticipated impacts of this enabler are set out in Figure 15-2. Overall, minimising connectivity and cost disadvantages faced by island communities and those in remote and rural areas would increase the number of trips people are able to make and improve access to employment, education, health services, and social and leisure opportunities. Reduced travel cost improves employment opportunities and can lead to an increase in productivity and economic growth.
- 15.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on ensuring transport is affordable for all, provide fair access to services people need and get people who may currently facing barriers to where they need to get to. This is likely to be the case under all future scenarios.

¹⁹ Scottish Index of Multiple Deprivation 2016 (Using Scottish Government Urban Rural Classification 2016); https://www.gov.scot/publications/rural-scotland-key-facts-2018/pages/3/

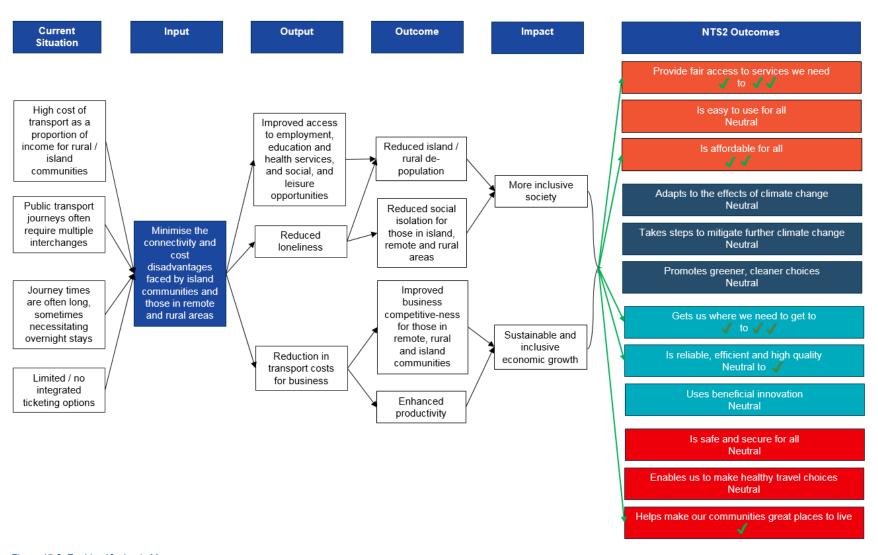


Figure 15-2: Enabler 13 - Logic Map



- 15.5.1 This enabler complements the following enablers:
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, digital, and energy system;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities; and
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors.

15.6 Public Acceptability

15.6.1 It is recognised that those who live in rural and island locations face relatively higher costs and transport fares and services need to reflect this. This is seen as highly important and therefore would be acceptable.



16 Policy E: Enabler 14

16.1 Policy

16.1.1 Provide a high-quality transport system that integrates Scotland and recognises our different geographic needs.

16.2 Enabler

16.2.1 Safeguard the provision of lifeline transport services and connections.

16.3 Context

- 16.3.1 Lifeline transport services (eg air, bus, rail and ferry) are essential for the sustainability of many island, remote and rural communities. They support people and businesses.
- 16.3.2 Those living in these communities have relatively poor access to key services, including employment, education and health facilities and disruption of transport services can have a significant impact. It is important that the transport system in these areas is safeguarded so that the communities are supported and maintained.
- 16.3.3 For example, there are several Highlands and Island air routes which would not be commercially viable without financial support. This is done through public service obligations, which are imposed on a carrier to provide a set level of service on a particular route in order to ensure that the service satisfies fixed standard of continuity, regularity, capacity and pricing. This is an example of a service that needs support to run but, is essential for the continued maintenance of many island and peninsula communities.

- 16.4.1 The anticipated impacts of this enabler are set out in Figure 16-1 Overall, protecting lifeline services and connections ensures that people can continue to make journeys and supply chains continue to function. Therefore, isolated communities are supported and maintained at current levels
- 16.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on ensuring transport is affordable for all. It will also have minor positive impacts on providing access to services rural, remote and island communities need and enabling them to get to where they need to get to. It will also make communities in these areas great places to live. This is likely to be the case under all future scenarios.

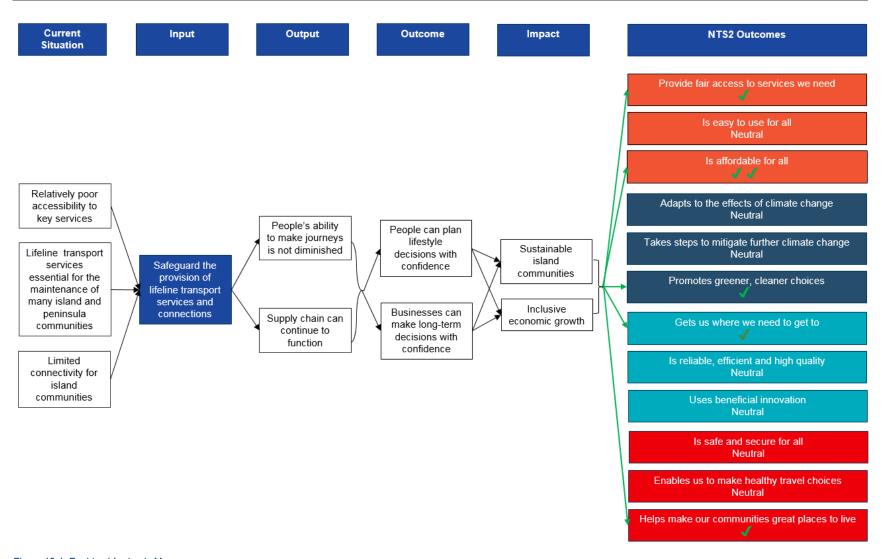


Figure 16-1: Enabler 14 – Logic Map



- 16.5.1 Many lifeline services are provided through ferries and planes. This could have conflicts with the following enablers:
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport.
- 16.5.2 This enabler complements the following enablers:
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities; and
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors.

16.6 Public Acceptability

16.6.1 It is recognised that existing and improved lifeline services are crucial to the sustainability of the islands and the communities they serve. This enabler would be seen as highly acceptable.



17 Policy F: Enabler 15

17.1 Policy

17.1.1 Improve the quality and availability of information to enable better transport choices.

17.2 Enabler

17.2.1 Support improvements and innovations that enable all to make informed travel choices.

17.3 Context

- 17.3.1 High quality journey planning information digital and physical is important to enable a resilient transport network that allows people and goods to get to where they need to get to. Currently, there is limited real-time travel information which significantly helps users on the transport network. There are also few multi-modal journey planners to help those with interchanges in their journeys to make better travel choices and plan their journeys in the most effective way.
- 17.3.2 Given the increasing reliance of transport information and service provision on digital connectivity, unreliable or inconsistent service as a result of digital divides or digital 'dark areas' may have negative consequences for comprehensive transport service provision.²⁰ It is also important to recognise that less able users of Smart technology also continue to be connected eg those without internet connection or smart phone.
- 17.3.3 Traffic Scotland provides planned and real-time information for motorways and trunk roads. Roadworks Scotland provide details of road works and closures across Scotland's local and trunk road networks. The Traveline Scotland website, mobile app and call centre offer journey planning, timetables and disruption information for buses, coaches, rail, ferries Glasgow subway and Edinburgh trams.

- 17.4.1 The anticipated impacts of this enabler are set out in Figure 17-1. Overall, supporting technological innovations and improvements would result in people being more informed about their travel options and the disruptions they may face. With appropriate information people may choose to switch to using more sustainable modes of transport. Reduced congestion and increased use of sustainable transport modes would improve air quality and reduce emissions, therefore increasing productivity and facilitating further economic growth.
- 17.4.2 When assessed against the NTS2 outcomes, this enabler will have a major positive impact on adapting to the effects of climate change as public transport becomes a more attractive option relative to the car. There will also be potential positive impacts against each of the other outcomes as more information becomes available and travelling, particularly by public transport and active travel, is made easier.

²⁰ Government Office for Science, Data and digital systems for UK transport: change and its implications, 2018 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766718/Dataanddigital.pdf

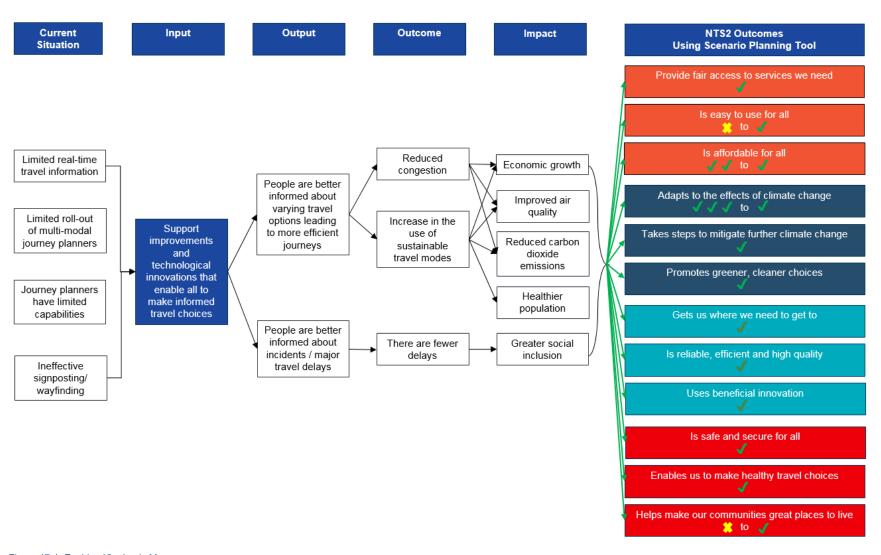


Figure 17-1: Enabler 15 – Logic Map



- 17.5.1 There are no conflicts with this enabler.
- 17.5.2 This enabler is a complement to the following enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy F: Enabler 17 Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovations; and
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight.

17.6 Public Acceptability

17.6.1 Improving facilities to allow people to make more informed travel choices is likely to be very acceptable to the public. However, during the citizens' panels it was highlighted that it was important to ensure technological travel information does not replace physical information and the latter is also improved as many people do not have access to a smartphone / the internet.



18 Policy F: Enabler 16

18.1 Policy

18.1.1 Improve the quality and availability of information to enable better transport choices.

18.2 Enabler

18.2.1 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport.

18.3 Context

18.3.1 Currently, many people are choosing to travel by car instead of public transport and active travel due to the number of necessary interchanges on their journey. In some cases, their journey isn't possible due to a lack of connections. In addition, long wait times, the need for multiple tickets and complex connections deter people from transport services resulting in many services running under capacity.

- 18.4.1 The anticipated impacts of this enabler are set out in Figure 18-1. Overall, implementing infrastructure to support seamless journeys will make public transport options and active travel more attractive. The high-quality transport system will result in more journeys being made by sustainable modes.
- 18.4.2 When assessed against the NTS2 outcomes, this enabler will have a major positive impact on adapting to the effects of climate change, but will have many other positive social, health and economic impacts through enabling people to make journeys that they might not be able to make due to poor information and interchanges.

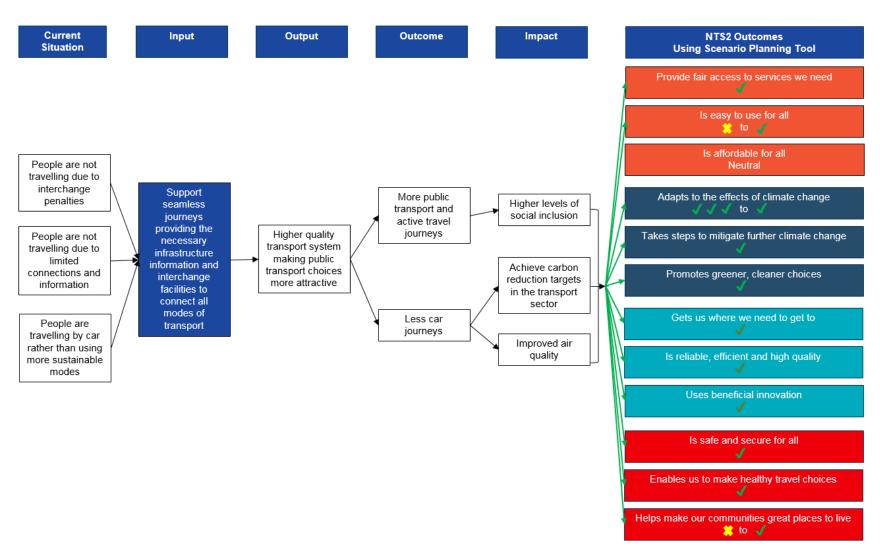


Figure 18-1: Enabler 16 – Logic Map



- 18.5.1 There are no conflicts with this enabler.
- 18.5.2 This enabler is a complement to the following
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, energy and digital system;
 - Policy D: Enabler 9 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport;
 - Policy D: Enabler 10

 Ensure gateways to and from domestic and international markets are
 resilient and integrated into the wider transport networks to encourage people to live, study and
 invest in Scotland;
 - Policy D: Enabler 11 Support enabler to improve sustainable surface access to Scotland's airports and seaports;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy F: Enabler 15 Support improvements and innovations that enable all to make informed travel choices;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovations; and,
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland; and
 - Policy L: Enabler 31 Integrate active travel options with public transport services.

18.6 Public Acceptability

18.6.1 During the citizens' panels, seamless journeys and smart ticketing were seen as crucial to improving our service offering on our transport system. However, it was not seen as a major priority ie medium importance. However, this issue is one that is raised as frequently by the public as a barrier to travel and would be seen as very acceptable.



19 Policy F: Enabler 17

19.1 Policy

19.1.1 Improve the quality and availability of information to enable better transport choices.

19.2 Enabler

19.2.1 Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents.

19.3 Context

- 19.3.1 When there is extreme weather or incidents, it is vital that information is given to the public as quickly as possible so that they can act accordingly. There have been recent experiences of extreme weather where people and businesses were uncertain about travel conditions and whether to make journeys or not. In these situations, people were unable to travel to work and in many places goods, including food, could not be delivered causing significant further disruption.
- 19.3.2 In recent years, there have been several weather events which have led to significant disruption and resulted in high economic costs. Perhaps most notable amongst these is the Beast from the East in February 2018 which was the costliest weather event in seven years. The extreme weather cost the UK economy at least £1 billion per day as gridlocked roads, no trains and no buses meant many workers were unable to access employment.

- 19.4.1 The anticipated impacts of this enabler are set out in Figure 19-1 Overall, real time travel information would result in people being better informed regarding incidents and extreme weather travel advice. This would result in fewer delays and people avoiding unnecessary travel when advised to. More people would also travel when they might not otherwise have done. Road accidents would decrease, productivity would increase and there would be economic growth.
- 19.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on ensuring that the transport system is safe and secure for all. A more resilient, reliable and efficient transport system would also generate economic benefits by allowing people and businesses to get to where they need to get to.

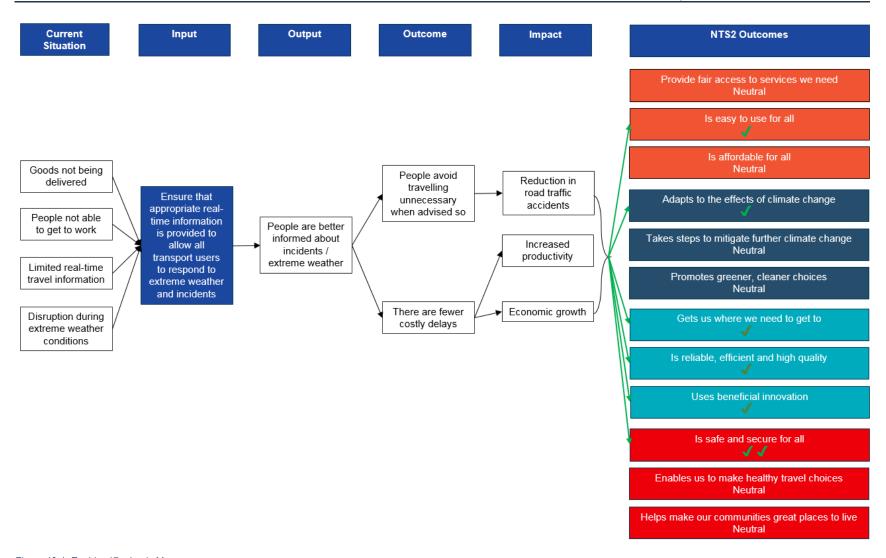


Figure 19-1: Enabler 17 – Logic Map



- 19.5.1 There are no conflicts with this enabler.
- 19.5.2 This enabler is a complement to the following enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy F: Enabler 15 Support improvements and innovations that enable all to make informed travel choices;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovations; and,
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy N: Enabler 37 Increase resilience of Scotland's transport network to climate change disruption; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

19.6 Public Acceptability

19.6.1 Being able to respond to extreme weather conditions, both before the journey starts and during, particularly for those making journeys in in remote, rural or island areas, is seen as highly important and the policy would be very acceptable.



20 Policy G: Enabler 18

20.1 Policy

20.1.1 Embrace transport innovation that positively impacts on our society, environment and economy.

20.2 Enabler

20.2.1 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovations.

20.3 Context

20.3.1 Innovation is crucial for businesses to maintain profitability and competitiveness and provide high value products and services in a competitive, globalised economy. Transport innovation can also lead to the use of more sustainable modes and increase the safety of the network. If transport innovation and initiatives are being constrained it will limit the benefits that we can generate through an improved transport system.

20.4 Logic Map

20.4.1 The anticipated impacts of this enabler are set out in Figure 20-1 Overall, supporting Scotland to develop and adopt beneficial transport innovations is likely to result in a more efficient transport system which should be more environmentally friendly and make Scotland a market leader in the field. It will have wider impacts on our environment and communities by making them more attractive places to live. It will also increase travel opportunities/choices and provide improved access to services.



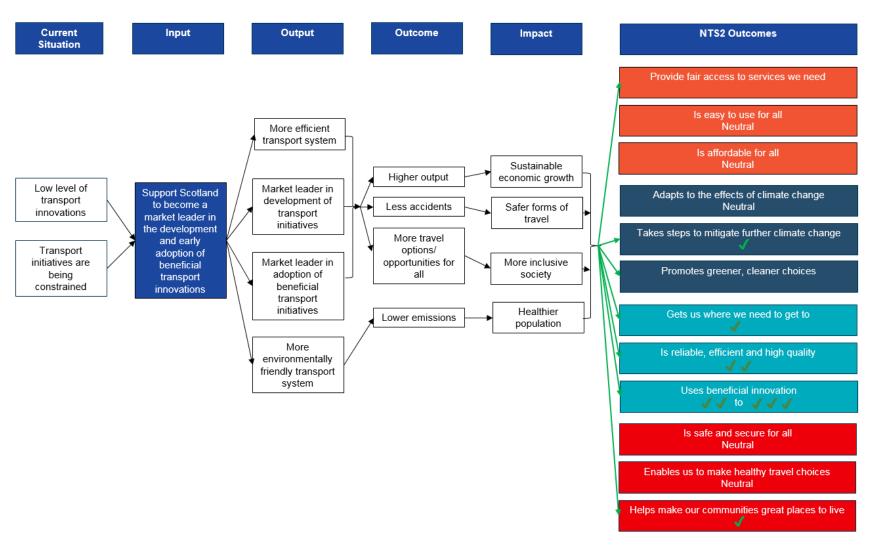


Figure 20-1: Enabler 18 – Logic Map



- 20.5.1 There are no conflicts with this enabler.
- 20.5.2 This enabler is a complement to the following enablers:
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, energy and digital system;
 - Policy F: Enabler 15 Support improvements and innovations that enable all to make informed travel choices;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy: Enabler 17 Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

20.6 Public Acceptability

20.6.1 Innovation is seen as important by many in the transport industry to give Scotland a modern and attractive transport system. However, it was not deemed to be highly important by the participants of the citizens' panels. Would still be deemed an acceptable enabler.



21 Policy H: Enabler 19

21.1 Policy

21.1.1 Improve and enable the efficient movement of people and goods on our transport system.

21.2 Enabler

21.2.1 Ensure the Scottish transport system efficiently manages needs of people and freight.

21.3 Context

- 21.3.1 Figure 21.1 shows the percentage change in million vehicle kilometres travelled by road between 2011 and 2017. As shown, since 2011 there has been more than a 10% increase in vehicle kilometres travelled.
- 21.3.2 While the latest figures show a decline in the volume of freight carried on Scotland's roads, the figure of 122 million tonnes is still significant. There is also considerable volume of freight originating or destined for Scotland transported by water, rail and air. It is important, therefore, that the transport system is efficient in the movement of both people and freight ie people and businesses can get to their destination at the time planned/anticipated.
- 21.3.3 As a result of high volume of traffic and inefficient movement of people and goods, both Edinburgh and Glasgow are in the top ten most congested cities in the UK resulting in productivity losses through time and money.²¹

Annual percentage change in million vehicle kms travelled by road

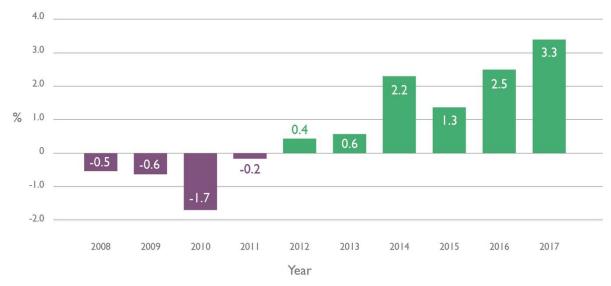


Figure 21-1: Percentage Change in Road Traffic from Base Year 2007²²

²¹ INRIX 2018 Global Traffic Scorecard http://inrix.com/scorecard/

²² Table 5.1, Scottish Transport Statistics No 37 2018 Edition, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/



- 21.4.1 The anticipated impacts of this enabler are set out in Figure 21-2. Overall, ensuring the efficient management of people and freight across the transport system reduces congestion which reduces journey time. This leads to greater business competitiveness and higher productivity which contribute to economic growth.
- 21.4.2 When assessed against the NTS2 outcomes, this enabler will have a major positive impact on making the transport system reliable, efficient and high-quality as well as enabling people to get to where they need to get to, both impacting positively on Scotland's economy. There will also be positive social benefits by making the transport system easier to use and enable people to get to the services they need. Less congestion will reduce emissions and improve air quality, and therefore reduce harmful effects on people's lives, but the enabler will not necessarily encourage greener, cleaner travel choices ie public transport and active travel.

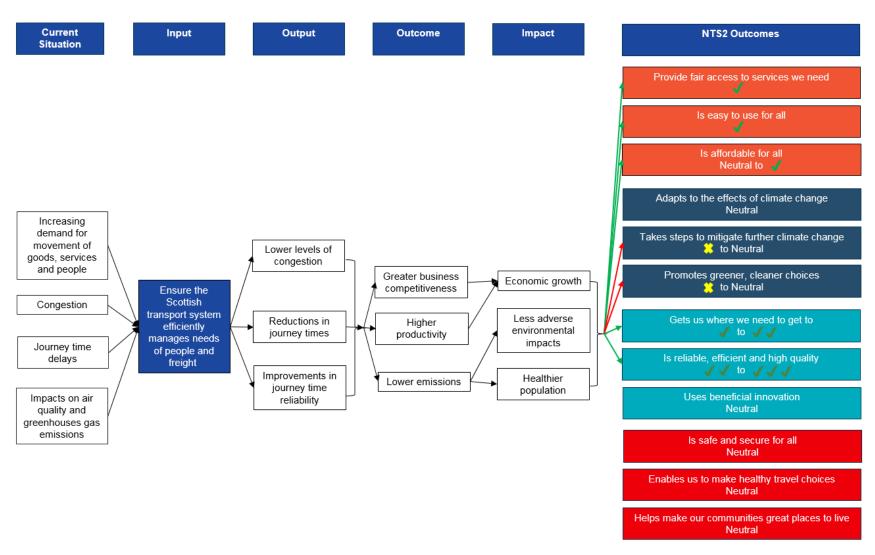


Figure 21-2: Enabler 19 – Logic Map



- 21.5.1 Creating an efficient transport system will reduce congestion and promote sustainable transport mode. Therefore, this enabler does not have any conflicts.
- 21.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy D: Enabler 9 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport;
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland:
 - Policy D: Enabler 11 Support enabler to improve sustainable surface access to Scotland's airports and seaports.
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy F: Enabler 15 Support improvements and innovations that enable all to make informed travel choices;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy F: Enabler 17 Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality; and
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change.

21.6 Public Acceptability

21.6.1 A transport system that efficiently manages the movement of goods and people (through reduced journey times, reliable journeys and limited congestion) would be seen as very acceptable.



22 Policy H: Enabler 20

22.1 Policy

22.1.1 Improve and enable the efficient movement of people and goods on our transport system.

22.2 Enabler

22.2.1 Promote the use of space-efficient transport.

22.3 Context

- 22.3.1 For any given size, the more people a vehicle can carry the more space-efficient it is. A car carrying four people is more space efficient than one with a single occupier.
- 22.3.2 The proportion of single occupancy car trips is increasing, with 66% of all car trips in 2017 being made by a single person (see Figure 22-1).

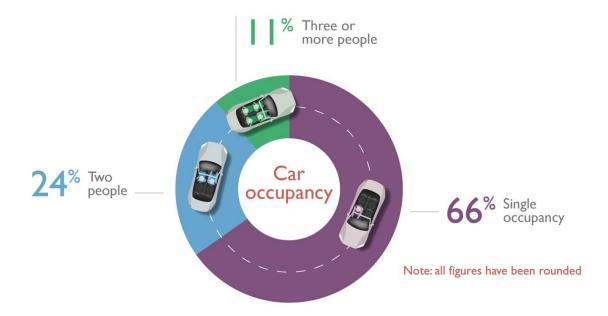


Figure 22-1: Car Occupancy Rates 2007-2018²³

- 22.3.3 Car remains the dominant mode of transport. In 2017, 64.6% of all journeys were either as drivers or passengers in a car or a van (see Figure 22-2). This is very space-inefficient and a major factor in congestion, as well as associated adverse environmental impacts, especially at peak travel times.
- 22.3.4 The number of bus passenger journeys is in decline. In 2017-18, 388 million journeys were made on local bus services in Scotland. This is down from 394 million (-1.5%) the previous year and from 487 million (-20.3%) in 2007-08.

https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/

²³ Scottish Transport Statistics No 37 2018



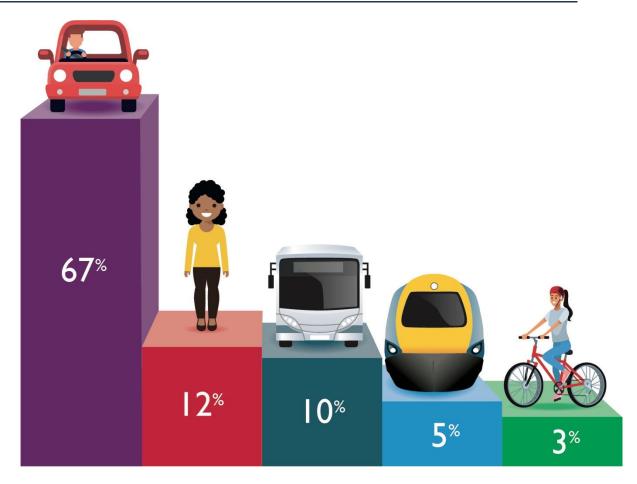


Figure 22-2: Modal Share of all Journeys 2017²⁴

- 22.4.1 The anticipated impacts of this enabler are set out in Figure 22-3. Overall, promoting space-efficient transport would result in more public transport and active travel journeys being made and fewer single-occupancy car trips. This would reduce congestion and improve journey times. There would be resultant improvements in air quality and economic and health benefits.
- 22.4.2 The result of the assessment highlighted that in plausible future 'multi-modal movers', this enabler will impact on the NTS2 outcome for both reliable, efficient and high-quality transport, and adapting the effect of climate change more than under the other plausible future scenarios. Under 'multi-modal movers' demand for travel increases and therefore promoting space-efficient transport is likely to result in greater benefits.

²⁴ Scottish Transport Statistics No 37, 2018, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/scot1193326941-14/

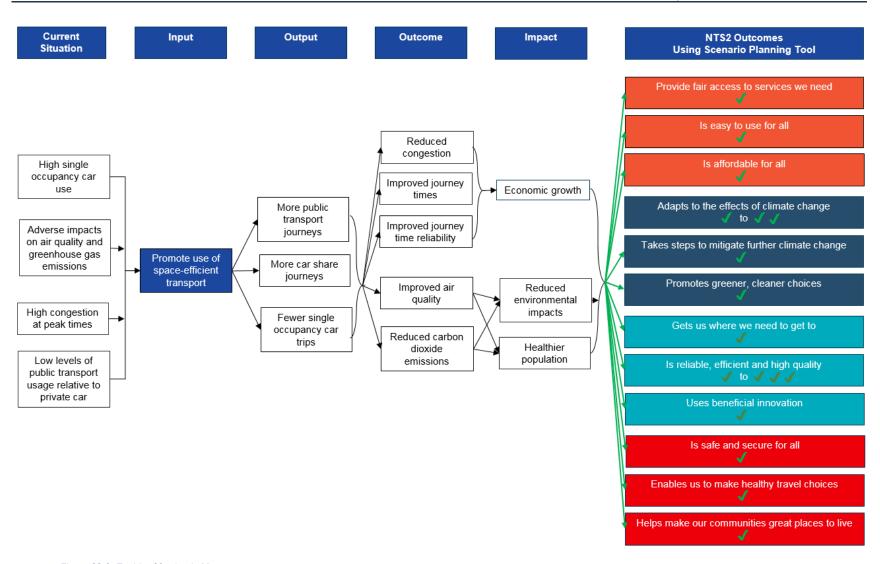


Figure 22-3: Enabler 20 – Logic Map



- 22.5.1 There are no conflicts with this enabler.
- 22.5.2 This enabler is a complement to the following enablers:
 - Policy D: Enabler 11 Support enabler to improve sustainable surface access to Scotland's airports and seaports.
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Enabler 21. Ensure transport in Scotland is accessible for all;
 - Enabler 22. Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality:
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

22.6 Public Acceptability

22.6.1 Space efficient transport is seen as important but not necessarily at the expense of impacting on people's car journeys. –Most people will accept the enabler, but not at any cost to them – some people will be resistant. So low acceptability.



23 Policy I: Enabler 21

23.1 Policy

23.1.1 Provide a transport system that is equally accessible for all.

23.2 Enabler

23.2.1 Ensure transport in Scotland is accessible for all.

23.3 Context

- 23.3.1 Currently, there are transport services that are not accessible to everyone. More than a quarter of Scotland's population do not travel on any given day, rising to more than half of people aged 80 and over. Not travelling can be due to physical and mental impairment, lack of confidence or physical constraints using transport services eg accessing buses. In addition, due to the high cost of travel, some people cannot afford to use transport services.
- 23.3.2 Figure 23-1 shows that bus fares have increased since 2008, after adjusting for general inflation.²⁵

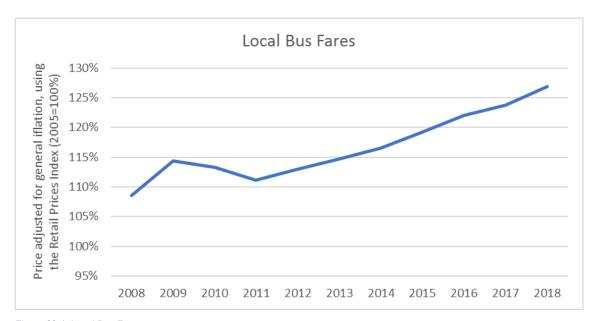


Figure 23-1: Local Bus Fares

23.3.3 Between 2015 and 2018 over one million Scottish citizens were living in relative poverty each year, including almost one in four children²⁶. Average weekly household expenditure in Scotland on transport and vehicles in 2017-18 was £68.20, representing 13.9% of total household expenditure. In average, £23.50 was spent on the purchase of vehicles, £27.00 on the operation of personal transport (including £18.40 on fuel) and £17.70 on transport services (such as bus and train fares).²⁷

https://www.transport.gov.scot/media/44207/sct01193326941.pdf

https://www.transport.gov.scot/media/44207/sct01193326941.pdf

²⁵ Chapter 10, Scottish Transport Statistics, Edition 38, 2018

²⁶ Poverty and Income Inequality in Scotland: 2015-2018, Scottish Government, 2019

²⁷ Table 10.8, Chapter 10, Scottish Transport Statistics, Edition 38, 2018



- 23.3.4 There are also geographical disparities, and in some areas, people are unable to make the journey they wish due to a lack of public transport connectivity, or indeed there is no footway to get to public transport. The latter is common in many rural areas.
- 23.3.5 Some people are unable to travel on the transport system due to it being unsafe or inaccessible. This is especially true regarding vulnerable groups and can result in social isolation which is increasingly prevalent among Scotland's ageing population. The time of day can also be a barrier. Some services are reduced or removed early in the morning or in the evening, making it difficult to access services during these periods.

23.4 Logic Map

23.4.1 The anticipated impacts of this enabler are set out in Figure 23-2. Overall, ensuring that transport in Scotland is accessible for all will give people greater access to key services, make it fairer and more affordable, and therefore help reduce social inequalities in Scotland. It will also have positive impacts on the labour market and contribute to productivity and growth. There will also be health and environmental benefits as active travel and public transport options increase.

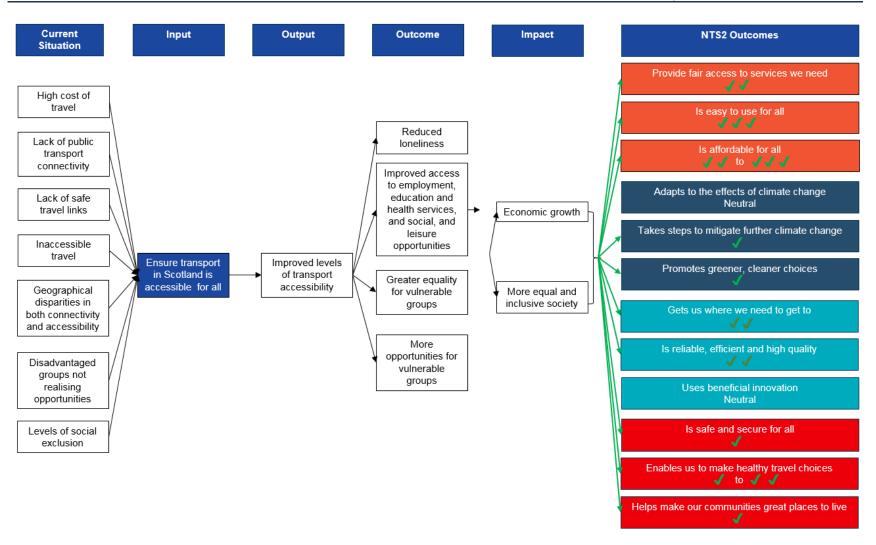


Figure 23-2: Enabler 21 – Logic Map



- 23.5.1 There are no conflicts with this enabler.
- 23.5.2 This enabler is a complement to the following enablers:
 - Policy A: Enabler 3 Implement enablers that will improve received and actual security of Scotland's transport system;
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 15 Support improvements and innovations that enable all to make informed travel choices;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 20 Promote the use of space-efficient transport;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities; and
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;



23.6 Public Acceptability

23.6.1 A transport system that is accessible for all and provides equal opportunity is seen as highly important and would be a very acceptable enabler to the public.



24 Policy I: Enabler 22

24.1 Policy

24.1.1 Provide a transport system that is equally accessible for all.

24.2 Enabler

24.2.1 Identify and remove barriers to public transport connectivity and accessibility within Scotland.

24.3 Context

- 24.3.1 There are locations within Scotland where the current level of public transport provision / connectivity acts as a barrier to accessing employment, education and training, health and leisure opportunities. Many people are reliant on owning a car to access these key services. Another barrier for many people is the cost of travel.
- 24.3.2 For example, Figure 24-1 shows the number of jobs people in the South-West of Scotland can access by both public transport and car. As shown, public transport is currently acting as a barrier, with significantly more jobs being accessible with a car. As a result, many people are dependent on their car for accessing employment,

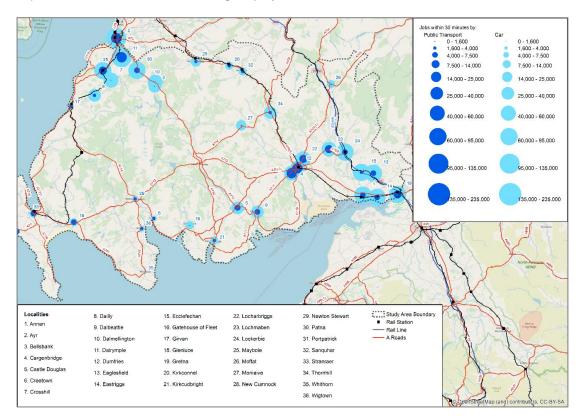


Figure 24-1: Accessing Employment by Public Transport

24.3.3 In 2010 the Scottish Government carried out research on the perceptions of bus travel and the barriers to its use amongst those who do not use the service often. Participants from all geographical areas in the sample believed that fares were too expensive. Fares were seen as particularly disproportionate for short journeys and journeys where you need to get more than one bus. Bus fares were viewed as expensive in comparison with both private car and taxi travel



(particularly where making journey with other people). ²⁸Further to this, an online survey conducted by Scottish Rural Action looked at the impact of public transport costs on education and employment opportunities for young people in rural Scotland ²⁹. Some key findings are shown below:

- 48% of young people have been prevented from going to work because travel is too expensive;
- Over 20% of young people's income is spent on travel to work;
- Almost 30% of young people have been stopped from accessing education or training because travel is too costly; and
- 33% of young people travel over 30 miles per day for work or education.

- 24.4.1 The anticipated impacts of this enabler are set out below in Figure 24-2. Overall, reducing the barriers to public transport connectivity and accessibility will increase opportunities to travel to key facilities at an affordable cost. This is anticipated to lead to higher economic growth, improved health and higher levels of equality.
- 24.4.2 When assessed against the NTS2 outcomes, making public transport more connected and accessible will have a positive impact across all outcomes. It will also have social benefits by improving opportunity and equality, it will have environmental benefits as people switch mode from private car, it will have economic benefits by making it easier for people to access employment, and this enabler will have a major positive impact on adapting to the effects of climate change. This is likely to be the case under all future scenarios.

²⁸ Understanding Why Some People DO Not Use Buses, Scottish Government, 2009 https://www.gov.scot/publications/understanding-people-use-buses/pages/0/

²⁹Fare Enough Report, Scottish Rural Action, 2018 https://www.sra.scot/wp-content/uploads/2018/04/FareEnough-Report-2018.pdf

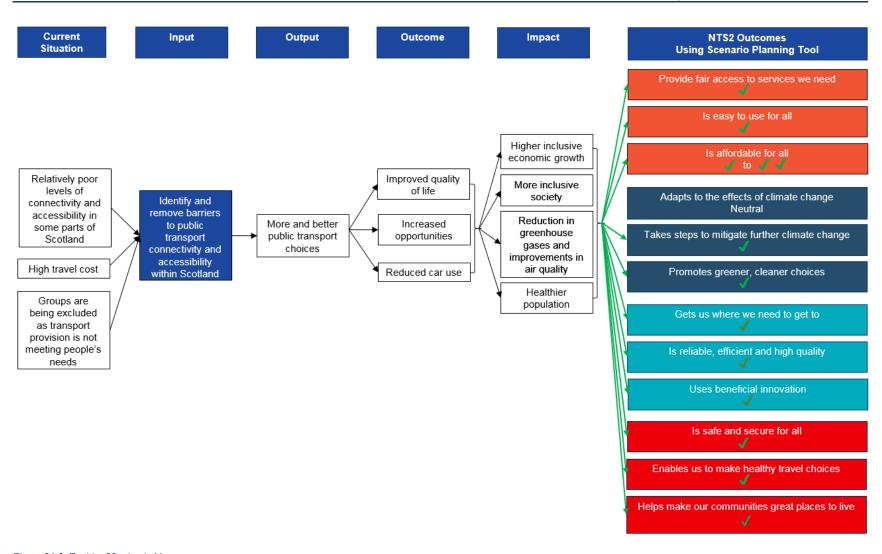


Figure 24-2: Enabler 22 - Logic Map



- 24.5.1 There are no conflicts with this enabler.
- 24.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy D: Enabler 11 Support enabler to improve sustainable surface access to Scotland's airports and seaports;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 15. Support improvements and innovations that enable all to make informed travel choices;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 20 Promote the use of space-efficient transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors;
 - Policy L: Enabler 31 Integrate active travel options with public transport services; and
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices.

24.6 Public Acceptability

24.6.1 Removing barriers to travel is seen as highly important to give people equal access to opportunity and support disadvantaged groups. Vey acceptable.



25 Policy I: Enabler 23

25.1 Policy

25.1.1 Provide a transport system that is equally accessible for all.

25.2 Enabler

25.2.1 Reduce the negative impacts which transport has on safety, health and wellbeing of people.

25.3 Context

- 25.3.1 In 2018, 8,402 road accident casualties were reported in Scotland, a reduction of 11% on 2017. This was also the lowest number of casualties since annual records began in 1950. However, while the overall numbers fell, of these, 160 were fatalities, an increase of 10% over the previous year.
- 25.3.2 Road incidents in Scotland continue to have a significant negative impact on individuals, families and society as a whole. There are also significant inequalities with children in Scotland's most deprived areas nearly three times more likely to be injured by road traffic than those in the least deprived areas.
- 25.3.3 When people are travelling, they should be able to do so without the fear or threat of crime. Women and disabled people, for example, are more likely to experience transport poverty. They are less likely to drive and more likely to use public transport, particularly buses. However, many women and disabled people feel vulnerable when using public transport. This is especially true at bus stops or train stations that have poor lighting, are isolated and not frequently used at certain times of the day or are located in places perceived to be unsafe.
- 25.3.4 Research has highlighted that children on foot or bike are more than three times as likely to be involved in a traffic accident in the 20% most deprived areas in Scotland than the 20% least deprived areas.
- 25.3.5 Our transport system is also becoming increasingly digital. We need to ensure it is secure against cybercrime for users e.g. bank details of rail passengers when booking tickets online, and transport operators who make increasing use of technology and data to operate their services.
- 25.3.6 Transport is a significant contributor to emissions of carbon dioxide (CO₂), nitrogen (NO_x) and particulate matter (PM₁₀ and PM_{2.5}). Table 25.2 provides the estimated emissions of CO₂, NO_x, PM10, and PM2.5 in 2016 and the proportion which is attributable to the transport sector. In each case, within the transport sector, road transport contributes the largest proportion.

Table 25-1: Estimated Emissions in 2016 and Proportion Attributable to Transport³⁰

Pollutant	2016 Emissions	Proportion Transport	Proportion Road Transport
CO ₂	38.6 MtCo ₂ e	39%	25%
NOx	91kt	58%	29%
PM ₁₀	14kt	18%	12%
PM _{2.5}	9kt	23%	13%

³⁰ Scottish Transport Statistics 2018, p218

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- 25.3.7 Air pollution increases the risks of diseases such as asthma, respiratory and heart disease, particularly for those who are more vulnerable such as the very young and the elderly or those with existing health conditions. This leads to outcomes including:
 - Increased episodes of acute and chronic illness;
 - Reduced life expectancy;
 - More pressure on health services;
 - Higher NHS costs; and
 - Loss of work time and school time.
- 25.3.8 Reducing air pollution, especially from transport, will have positive impacts on health and lessen health inequalities as well as reducing the cost burden on both the NHS and other services.

- 25.4.1 The anticipated impacts of this enabler are set out in Figure 25-. Overall, reducing the negative impacts of transport will reduce the number of accidents, thus making the system safer and also reducing disruption. More active and sustainable travel trips will reduce emissions and improve air quality. NHS costs will reduce, health inequalities will reduce, and the carbon reduction target will be achieved in the transport sector.
- 25.4.2 When assessed against the NTS2 outcomes, this enabler will have a neutral impact on the majority of outcomes. This is likely to be the case under all future scenarios

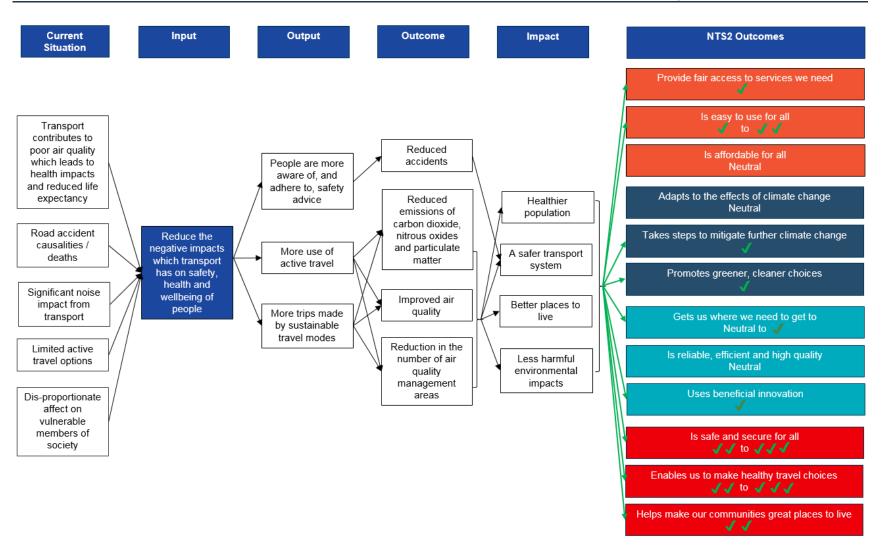


Figure 25-1: Enabler 23 – Logic Map



- 25.5.1 There are no conflicts with this enabler.
- 25.5.2 This enabler is a complement to the following enablers:
 - Policy A: Enabler 1 Increase safety of transport system and meet casualty reduction targets;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas:
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 17 Ensure that appropriate real-time travel information is provided to allow all transport users to respond to extreme weather and incidents;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

25.6 Public Acceptability

25.6.1 Safety and health (both physical and mental) are seen as highly important and this enabler would be very acceptable.



26 Policy I: Enabler 24

26.1 Policy

26.1.1 Provide a transport system that is equally accessible for all.

26.2 Enabler

26.2.1 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework³¹.

26.3 Context

- 26.3.1 The proportion of adults with a long-term limiting mental or physical health condition or disability is increasing as the population ages. Between 2008 and 2017, the proportion of women who were disabled increased from 28% to 34%. Over the same period, the proportion of men who were disabled increased from 23% to 29%³².
- 26.3.2 While there is a National Concessionary Travel Scheme for those eligible, disabled people are more likely to experience transport poverty relative to people without disabilities. Also, a lower proportion of disabled people are in employment compared to those who are not disabled.

The increasing proportion of Scottish adults with a long-term limiting mental or physical health condition or disability



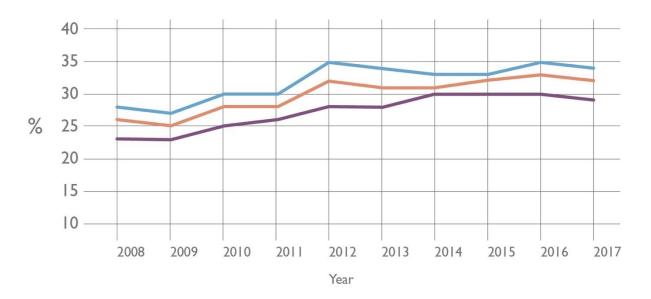


Figure 26-1 Percentage of adult population who have a long term limiting mental or physical health condition³³

³¹ Scotland's Accessible Travel Framework, Transport Scotland 2019

³² Scottish Health Survey 2017 edition, 2018

³³ Scottish Health Survey 2017 edition, 2018



- 26.3.3 Disabled people have the same rights as every other citizen³⁴ to equal access to employment and healthcare and to participate in learning, social, leisure and cultural activities in order to live life to the full.
- 26.3.4 However, barriers to travel can create considerable problems for disabled people. Key challenges that the transport system must address include:
 - Being able to access accurate and relevant travel information both before and during the journey;
 - Being able to access public transport interchanges;
 - Being able to access public transport vehicles;
 - Being able to interchange between modes (e.g. between rail/bus and ferry); and
 - Concerns regarding safety and comfort on the public transport network.
- 26.3.5 These barriers lead to lower levels of travel amongst disabled people and contribute to a range of impacts that are not inevitable.
- 26.3.6 The United Nations Convention on the Rights of Persons with Disabilities makes it clear that disabled people have the same right as every other citizen to equal access to employment and healthcare and participation in learning, social, leisure and cultural activities in order to live life to the full.
- 26.3.7 However, barriers to travel can leave disabled people unable or unwilling to travel. Key problems include:
 - Difficulties accessing accessible and accurate travel information both before and during the journey:
 - Difficulties accessing public transport interchanges;
 - Difficulties accessing public transport vehicles;
 - Difficulties interchanging between vehicles; and
 - Concerns regarding safety on the public transport network.
- 26.3.8 These barriers contribute to lower levels of travel amongst disabled people and contribute to a range of impacts. Using available secondary datasets, Scotland's Accessible Travel Framework identifies the following:
 - There are lower levels of employment amongst disabled people with just 45.4% of disabled people aged 16-64 in employment compared to 74.3% for the total population as a whole³⁵;
 - Those with disabilities or long-term health conditions report lower levels of attendance at cultural events or places (60%) compared to those with no condition (89%)³⁶;
 - Those with disabilities or long-term health conditions make visits to the outdoors for leisure or recreation less than the rest of the population, with 42% of adults with a long-standing illness or

³⁴ United Nations Convention on the Rights of Persons with Disabilities

³⁵ Regional Employment Patterns in Scotland: Statistics from the Annual Population Survey 2017

³⁶ Scottish Household Survey 2017, https://www2.gov.scot/Topics/Statistics/16002



disability visiting the outdoors at least once a week and 25% never visiting the outdoors (compared to 56% and 8% respectively of those with no long-standing illness or disability)³⁷;

- Poverty rates are higher for households with a disabled adult with 24% of families with a disabled person living below the poverty line in 2014-17 compared to just 16% amongst those without a disabled person³⁸; and
- Adults with physical health problems, long-term conditions, or disability are two times more likely to report severe loneliness than the general population³⁹.
- 26.3.9 The lower levels of travel by disabled people also impacts on society more generally. For example, the Department for Work and Pensions (DWP) estimated in 2014, that households with a disabled person have a combined income of £212 billion per year after housing costs⁴⁰. Improving transport for disabled people potentially opens up this spend, with resultant economic benefits.

- 26.4.1 The anticipated impacts of this enabler are set out in Figure 26-2. Overall, supporting Scotland's Accessible Travel Framework makes it easier for people with disabilities to make journeys they need to. This increases access to employment, education, social and leisure opportunities. With a combination of better employment opportunities and easier travel, disabled people may experience an increased income. There is also a reduced chance of disabled people experiencing loneliness. As a result, there may be reduced poverty among disabled people, encouraging inclusive growth and better health outcomes, including lower levels of social isolation.
- 26.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact for providing fair services for all and easy to use for all. It will also make a positive contribution to making transport more affordable for all, as well as having positive health and wellbeing impacts. This is likely to be the case under all future scenarios

³⁷ Scottish Household Survey 2017, https://www2.gov.scot/Topics/Statistics/16002

³⁸ Poverty and Income Inequality in Scotland 2014-17 (Last updated: March 2018)

³⁹ Social isolation and loneliness in Scotland: a review of prevalence and trends, J Teuton, NHS Health Scotland, 2018, http://www.healthscotland.scot/media/1712/social-isolation-and-loneliness-in-scotland-a-review-of-prevalence-and-trends.pdf

⁴⁰ The UK Government provided an estimate in August 2014, further details are available from the Office for Disability

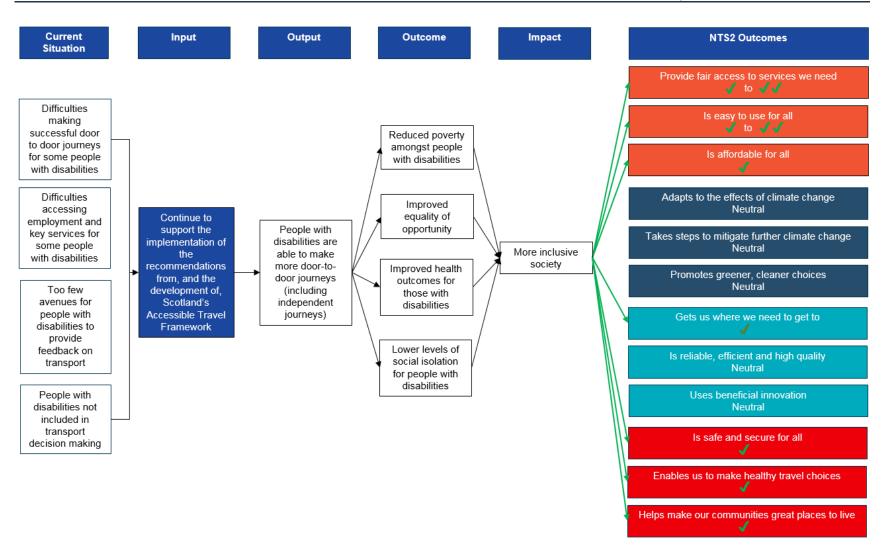


Figure 26-2: Enabler 24 – Logic Map



- 26.5.1 There are no conflicts with this enabler.
- 26.5.2 This enabler is a complement to the following enablers:
 - Policy E: Enabler 12 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy F: Enabler 15. Support improvements and innovations that enable all to make informed travel choices:
 - Policy F; Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities; and,
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors:
 - Policy L: Enabler 31 Integrate active travel choices across mainland Scotland and islands;
 and
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing.

26.6 Public Acceptability

26.6.1 Improvements to help people with disabilities is seen as crucial to allowing all people to access transport according to their need. This enabler would be seen as very acceptable.



27 Policy J: Enabler 25

27.1 Policy

27.1.1 Improve access to healthcare, employment, education and training opportunities to generate inclusive sustainable economic growth.

27.2 Enabler

27.2.1 Ensure sustainable labour market accessibility to employment locations.

27.3 Context

- 27.3.1 People need transport to access employment, education and training and therefore help reduce the numbers out of work and support Scotland's ambitions for growth. Transport can also make sure that the skills and experience of those in the labour force are effectively matched with the needs of businesses, helping to increase incomes and improve productivity.
- 27.3.2 In March 2019, the Scottish employment rate was 75.3%⁴¹, close to its record high. The unemployment rate was also historically low at 3.4%. This level, however, is not uniform across Scotland. Figures of 1.8% and 2.1% were recorded in the Orkney Islands and Shetland Islands respectively, but the local authorities of East Ayrshire, Glasgow City and Dundee City recorded figures of 5.8%, 5.9% and 6.5% respectively.
- 27.3.3 While transport access to labour market opportunities is not the sole cause of unemployment, there is evidence⁴² that some people out of work see high transport costs to employment locations as a barrier, particularly for the young, those on low incomes and families with children, and limits the employment opportunities and options available.
- 27.3.4 Businesses benefit from improved labour market access by matching the skills required to undertake the work with the skills offered by the labour market pool. This improves business productivity and in turn reduces production costs. There will be a positive impact on business competitiveness leading to an increase in output, assuming demand is there.
- 27.3.5 This enabler supports inclusive economic growth by improving connectivity to employment for both those in employment and those currently excluded from the labour market due to existing connectivity challenges. The impact on those currently excluded from the labour market will likely be greatest.
- 27.3.6 Between 2015 and 2018 over one million Scottish citizens were living in relative poverty each year, including almost one in four children⁴³. In addition to this, recent research⁴⁴ has stated that over one million Scots also live in areas that are at risk of transport poverty⁴⁵.

27.4 Logic Map

27.4.1 Anticipated impacts of the enabler are set out diagrammatically in the Logic Map. It is anticipated the enabler will make a positive contribution to outcomes under the theme of Helps our Economy Prosper. However, it could also have a positive impact on outcomes under Promotes Equality through, for example, making transport more affordable for those who may be affected by

⁴¹ Labour Market Statistics March 2019

⁴² The Poverty Alliance Poverty and Transport Event, February 2019

⁴³ Poverty and Income Inequality in Scotland: 2015-2018, Scottish Government, 2019

⁴⁴ Transport Poverty in Scotland, Sustrans 2016

⁴⁵ People here are deemed to be at risk of transport poverty when they don't have access to essential services or work due to limited affordable transport options.



transport poverty. If the focus is on sustainable transport options then the enabler could also impact on promoting greener, cleaner travel choices as those in or re-entering the labour market switch modes. Sustainable travel options will also include active travel, therefore encouraging healthier travel choices and making our communities greater places to live.



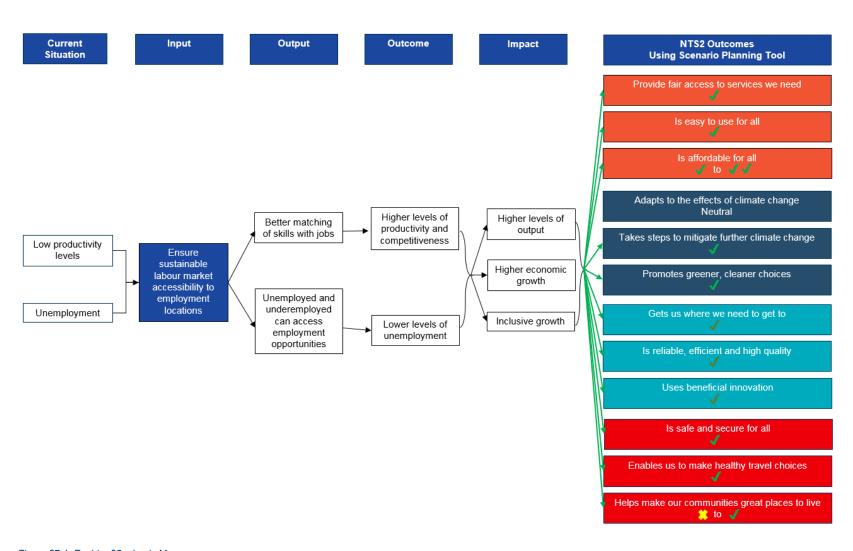


Figure 27-1: Enabler 25 – Logic Map



- 27.5.1 This enabler is a complement to the following enablers:
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, energy and digital system;
 - Policy D: Enabler 9 Optimise accessibility and connectivity within business-business and business-consumer markets by all modes of transport;
 - Policy E: Enabler 12 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 15. Support improvements and innovations that enable all to make informed travel choices;
 - Policy F; Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework; and
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport.

27.6 Public Acceptability

27.6.1 Improving access to employment in particular was seen as highly important in the citizens' panels e.g. lower costs, more frequency or earlier/later running services. It is also seen as important in helping unemployed people back to work. Therefore, it can be seen as a very acceptable enabler.



28 Policy J: Enabler 26

28.1 Policy

28.1.1 Improve access to healthcare, employment, education and training opportunities to generate inclusive sustainable economic growth.

28.2 Enabler

28.2.1 Ensure sustainable access to education and training facilities.

28.3 Context

- 28.3.1 Many people living in remote areas of Scotland can't access further education. For example, a previous study for Transport Scotland⁴⁶ focussing on the south-west of Scotland showed that there are several localities in the area, namely: Creetown, Gatehouse of Fleet, Kirkcudbright and Whithorn, from which it is not possible to make a return journey by public transport to either a higher of further education facility.
- 28.3.2 Often those living in remote areas have to move away to access higher or further educational facilities. This contributes to rural depopulation and places a heavy financial burden on families due to high accommodation and living costs. For example, in Scotland, the University of Stirling, University of Aberdeen, and University of Strathclyde are the only higher education institutions that provide halls of residence with weekly rent less than the Scottish average weekly rent price.⁴⁷
- 28.3.3 Sustainable transport links to educational facilities, especially from rural and remote locations, would give more students the option to stay at home and commute to educational facilities. This would significantly reduce costs and may contribute to higher levels of educational attainment and reduced rural depopulation.
- 28.3.4 Currently, over a quarter (26%) of children in Scotland travel to school by car. Many of these journeys can be made by walking or cycling. It is particularly important that people learn healthy behaviours when they are young. These behaviours will likely continue into later life. Research shows that around one quarter of children in all age groups between 5 and 15 do not meet physical activity guideline over an average week and this declines with age.

- 28.4.1 The anticipated impacts of this enabler are set out in Figure 28.1. Overall, ensuring sustainable access to educational facilities will result in more people being able to access education and training. In turn, a higher number gaining a higher standard of education/training will likely result in improving employment opportunities that would otherwise not have been available previously. Improved educational attainment and reduced inequalities result in inclusive growth. In addition, young people would be able to stay at home and commute to their education/ training facility reducing rural de-population.
- 28.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on providing fair access to the services that we need. It will also have positive impacts under helps our economy prosper, takes climate action and improves our health and wellbeing themes.

⁴⁶ South West Scotland Regional Transport Study, June 2019

⁴⁷ Data taken from higher education institution websites and Scottish average weekly rent price. Based on a 39week lease.

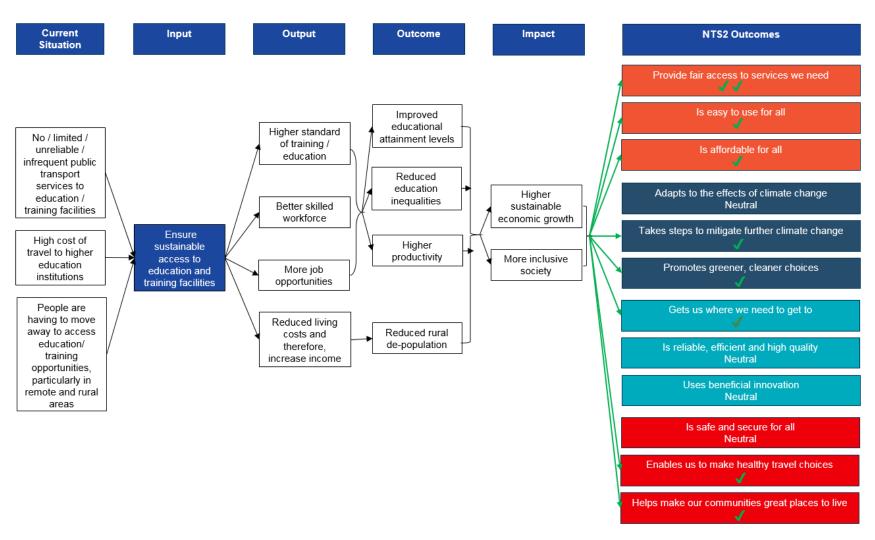


Figure 28-1: Enabler 26 – Logic Map



- 28.5.1 There are no conflicts with this enabler.
- 28.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy E: Enabler 12 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 15. Support improvements and innovations that enable all to make informed travel choices;
 - Policy F; Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework; and
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport.

28.6 Public Acceptability

28.6.1 Access to education and training is seen as crucial to a highly skilled workforce and our future prosperity. It was regarded as highly important during the citizens' panels and would be a very acceptable enabler to the public.



29 Policy J: Enabler 27

29.1 Policy

29.1.1 Improve access to healthcare, employment, education and training opportunities to generate inclusive sustainable economic growth.

29.2 Enabler

29.2.1 Improve sustainable access to healthcare facilities for staff, patients and visitors.

29.3 Context

- 29.3.1 There are significant health inequalities in Scotland, with lower health outcomes in deprived areas. Premature mortality rates were 3 times higher in deprived areas in 1997, and 4 times higher in 2017⁴⁸. Over the same time period, premature mortality rates declined by 43% in the least deprived area, but by only 21% in the most deprived area⁴⁹. Figure 29-1 shows that there is a higher percentage of cardiovascular disease among the most deprived people in Scotland while the lowest percentage among the least deprived.
- 29.3.2 Similarly with wellbeing, adults in the most deprived areas are approximately three times as likely to have below average wellbeing compared to those in the least deprived areas⁵⁰.

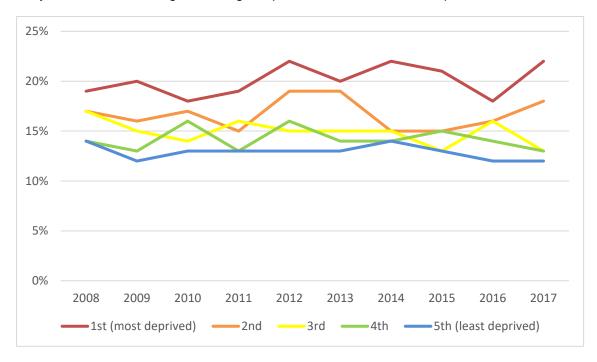


Figure 29-1: Levels of Cardiovascular Disease in Scotland by Deprivation Quartile⁵¹

⁴⁸ Scottish Government, Long-Term Monitoring of Health Inequalities, 2018, https://www.gov.scot/publications/long-term-monitoring-health-inequalities-december-2018-report/

⁴⁹ Scottish Government, Long-Term Monitoring of Health Inequalities, 2018, https://www.gov.scot/publications/long-term-monitoring-health-inequalities-december-2018-report/

⁵⁰ Scottish Government, Long-Term Monitoring of Health Inequalities, 2018, https://www.gov.scot/publications/long-term-monitoring-health-inequalities-december-2018-report/

⁵¹ Scottish Government, Long-Term Monitoring of Health Inequalities, 2018, https://www.gov.scot/publications/long-term-monitoring-health-inequalities-december-2018-report/



29.3.3 Health inequalities could, in part, be due to problems with accessing healthcare facilities. Connectivity to healthcare ranges across the country. Figure 29-2 shows the percentage of the population who are within a 15-minute drive and 15-minute public transport journey to a GP service. As shown, only 42% and 48% of those in remote rural and accessible rural communities respectively are able to access a GP service in 15 minutes by public transport compared to 93% of the population in the rest of Scotland. However, while access by public transport is limited, 91% and 99% of those living in these accessible and remote rural areas respectively are able to drive to a GP within 15 minutes. The high differential between public transport and driving in these areas is likely to contribute to forced car ownership and high car use as residents are reliant on private vehicles to access key services. Those unable to afford a car or unable to drive in these areas will experience clear inequalities in connectivity.

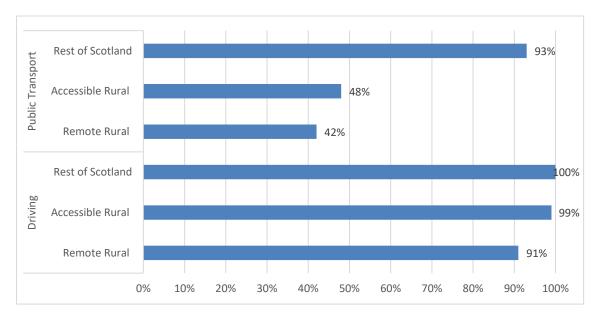


Figure 29-2: Percentage of Population who can access a GP Service within a 15-Minute Public Transport and Car Journey⁵²

- 29.4.1 The anticipated impacts of this enabler are set out in Figure 29-3. Overall, ensuring sustainable access to healthcare facilities will result in quicker, cheaper journeys to facilities. Patients can access healthcare facilities more easily, resulting in earlier diagnosis and treatment. Also, patients, visitors and staff are less dependent on family members providing transport to health care facilities. Health inequalities would reduce along with NHS costs.
- 29.4.2 When assessed against the NTS2 outcomes, this enabler will have a positive impact across 11 of the 12 outcomes. It will have a moderate to major positive impact in terms of providing fair access to services we need and a minor to moderate positive impact on being affordable for all. It will have other positive impacts on the environment as public transport becomes more attractive and on health and wellbeing as active travel options increase.

⁵² Rural Scotland: Key Facts 2018, https://www.gov.scot/publications/rural-scotland-key-facts-2018/

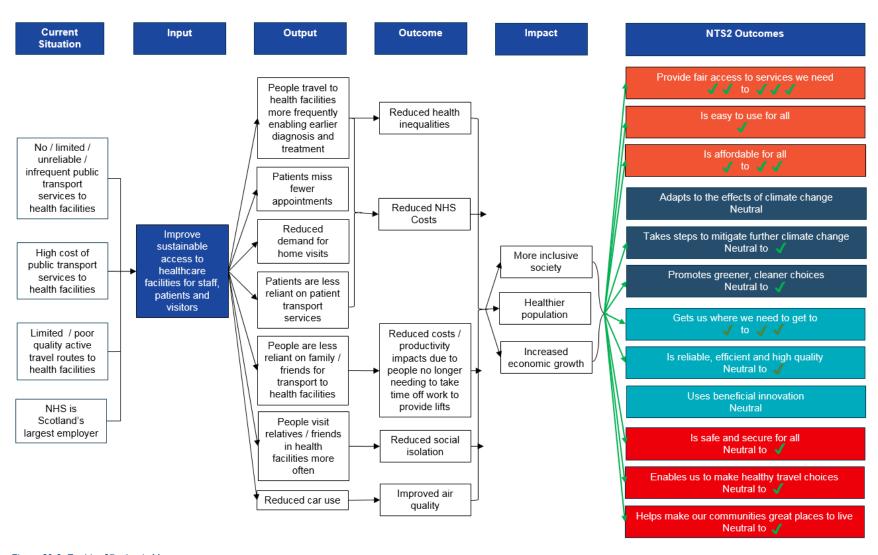


Figure 29-3: Enabler 27 - Logic Map



- 29.5.1 There are no conflicts with this enabler.
- 29.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 5 Ensure greater integration between transport, spatial planning, and how land is used;
 - Policy B: Enabler 6 Ensure that transport assets and services adopt the Place Principle;
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy E: Enabler 12 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas;
 - Policy E: Enabler 14 Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 15. Support improvements and innovations that enable all to make informed travel choices;
 - Policy F; Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing; and
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport.

29.6 Public Acceptability

29.6.1 Access to healthcare is seen as important for a number of groups, particularly those with special needs or disabilities, and also for people who work in the health service and would be acceptable to many.



30 Policy K: Enabler 28

30.1 Policy

30.1.1 Support the transport industry in meeting current and future employment and skills needs.

30.2 Enabler

30.2.1 To meet changing employment and skills demands of the transport industry and upskill workers.

30.3 Context

30.3.1 With technological innovations such as autonomous vehicles, there is a risk that humans, as part of the workforce, could be replaced in the transport industry. The employment skills required to deliver transport services are changing. Many skills will be replaced as a consequence of technological advances and new innovations, such as the potential shift to autonomous and ULEVs. While these advances in technology should be embraced, workers will need to be retrained and supported to gain new skills. This will be done in line with Scotland's Labour Market Strategy⁵³, Fair Work, Gender Pay Gap, Disability Employment Action Plans which aim to ensure that our workforce has the suitable skills and resilience to deliver fair, inclusive and sustainable economic growth.

- 30.4.1 The anticipated impacts of this enabler are set out in Figure 30-1 Overall, meeting the employment demands of the transport industry means that those in the industry will benefit from increased training opportunities. Ensuring employees have a high skill base will reduce the number of redundant workers due to technological changes and reduce staff turnover. This will increase productivity and strengthen economic growth.
- 30.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on creating a reliable, efficient and high-quality transport system. The enabler will also have a positive impact on gets us where we want to go. The enabler will also have positive impacts on promoting equality

⁵³ Scotland's Labour Market Strategy, 2016

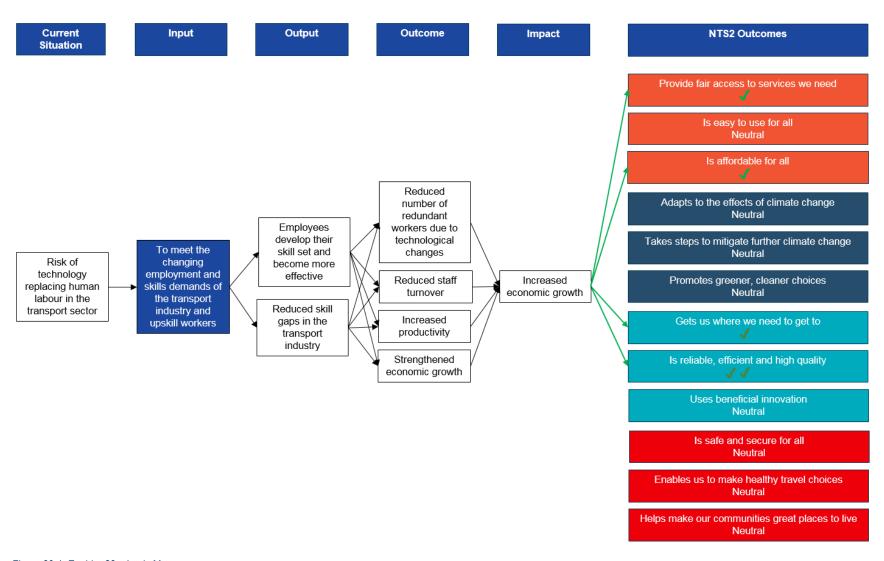


Figure 30-1: Enabler 28 – Logic Map



- 30.5.1 There are no conflicts with this enabler.
- 30.5.2 This enabler is a complement to the follow enabler:
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities; and
 - Policy K: Enabler 29: Support initiatives that promote the attraction and retention of an appropriately skilled work force across the transport sector.

30.6 Public Acceptability

30.6.1 Ensuring we have the right skills to provide transport services (eg bus and lorry drivers) is seen as important and is rated as highly acceptable.



31 Policy K: Enabler 29

31.1 Policy

31.1.1 Support the transport industry in meeting current and future employment and skills needs.

31.2 Enabler

31.2.1 Support initiatives that promote the attraction and retention of an appropriately skilled workforce across the transport sector.

31.3 Context

- 31.3.1 An increasing number of workers in the transport industry are retiring or leaving the industry. With very few young people entering the industry to replace them, a skills shortage is developing and therefore, there is a decreasing supply of labour. This applies in areas such as drivers of heavy goods vehicles, bus drivers, qualified maritime workers and skilled maintenance staff.
- 31.3.2 There are already issues around the availability of skilled labour in the logistics sector, with a particular concern around recruiting qualified HGV drivers where industry estimates that there will be a UK-wide shortage of between 35,00 to 60,000 drivers by 2020⁵⁴.
- 31.3.3 The average age of an HGV driver in the UK is 53, with their imminent retirement posing a demand for faster turnover at a time when too few younger people are being attracted to the profession. Whilst the average age is 53, the over 60s represent 13% of all drivers, and only 2% are under the age of 25.
- 31.3.4 ScotRail has committed contractually, in a Remedial Agreement with Transport Scotland, to implement existing and further enablers to address current staffing challenges. This included the recruitment of 55 additional drivers and 30 additional conductors in 2019.⁵⁵

- 31.4.1 The anticipated impacts of this enabler are set out Figure 31-1 Overall, the transport industry needs to attract new workers with appropriate skills while retaining their current workers. Supporting initiatives that promote the transport industry will result in new graduates entering the industry and attract experienced workers from other industries. As a result, there would be an increase in the transport industry labour force with the removal of skills gaps due to reduced staff turnover. This would lead to increased resilience, productivity and strengthened economic growth.
- 31.4.2 When assessed against the NTS2 outcomes, this enabler will have a moderate positive impact on getting us where we need to get to and creating a reliable, efficient and high-quality transport system by ensuring that the skills are available to provide services. It will also help ensure transport is available by providing the skills to deliver public transport, thus helping to make our communities great places to live.

⁵⁴ Shortage occupation list 2018

⁵⁵ Rural Economy and Connectivity Committee Agenda, Wednesday 27th March 2019, https://www.parliament.scot/S5 Rural/Meeting%20Papers/20190327 REC Committee - Public Papers.pdf

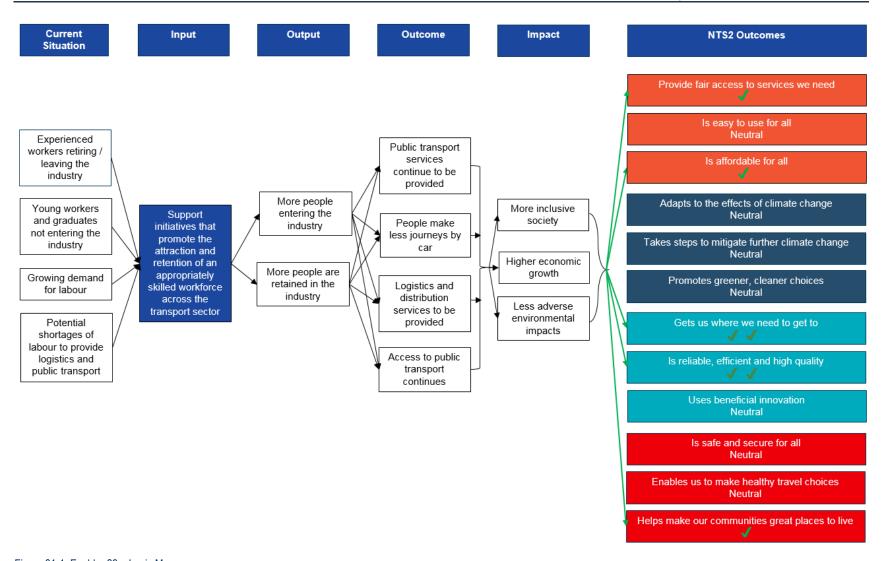


Figure 31-1: Enabler 29 - Logic Map



- 31.5.1 There are no conflicts with this enabler.
- 31.5.2 This enabler is a complement to the following enabler:
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities; and
 - Policy K: Enabler 28 To meet the changing employment and skills demands of the transport industry and upskill workers.

31.6 Public Acceptability

31.6.1 This enabler was considered highly important and was also very acceptable to the citizens who attended the panel, as they felt it would help meet current and future employment and skills needs.



32 Policy L: Enabler 30

32.1 Policy

32.1.1 Provide a transport system which promotes and facilitates travel choices which help to improve people's health and wellbeing.

32.2 Enabler

- 32.2.1 Promote and facilitate active travel choices across mainland Scotland and islands.
- 32.2.2 The importance of active travel is becoming more evident as the consequences of physical inactivity are studied. It is estimated that physical inactivity contributes to over 2,500 premature deaths in Scotland each year⁵⁶. According to the Scottish Government, physical inactivity is costing the Scottish NHS around £94.1 million annually⁵⁷. This equates to an average cost of £18 per Scottish resident per year.
- 32.2.3 A third of Scottish adults don't meet the guidelines for moderate or vigorous physical activity and inequalities exist, with people living in the least deprived areas more likely to meet the Chief Medical Officers guidelines for physical activity⁵⁸.

Moderate or Vigorous Physical Activity



Two thirds of adults (65%) met the guidelines for Moderate or Vigorous Physical Activity (MVPA) in 2017, a slight increase since 2012 (62%)

Figure 32-1: Physical Activity in Scotland 2017

32.2.4 Over the last few decades our increasing reliance on cars has contributed to Scotland becoming less active as a nation. The figure below shows the latest travel to work mode share in Scotland

⁵⁶ Scottish Health Survey: Topic Report: Physical Activity, November 2014

⁵⁷ NHS Health Scotland, 2013

⁵⁸ Scottish Health Survey 2017



- for 2017⁵⁹. Overall, over two thirds of commuters travel to work by car or van compared to just 12% who walk and 3% who cycle.
- 32.2.5 In 2017 there were 290 million vehicle kilometres travelled on Scotland's roads by pedal cycles⁶⁰. This was 6.5% lower than in 2012.
- 32.2.6 The *Preventing Overweight and Obesity in Scotland Strategy* states that one of the most effective ways to secure the required 30 minutes of moderate activity a day is to reduce reliance on motorised transport, changing the means of everyday travel to walking and cycling. Adaptions to wheelchairs for extended exercise is crucial to both psychological and physical health for disabled people.
- 32.2.7 Many journeys are relatively short and could be undertaken by walking and cycling more often. Just over 33% of journeys under 1km are made by car (either as a driver or a passenger)⁶¹. This rises to over 50% when the journey is between 1km and 2km.
- 32.2.8 Small changes in people's behaviour can have a big impact on individual health and wellbeing. For adults, achieving the recommended amount of 150 minutes of moderate to vigorous physical activity a week helps prevent and manage over 20 chronic conditions such as coronary heart disease, stroke, type-2 diabetes, cancer, obesity, and musculoskeletal conditions. It can also have a significant positive impact on people's wellbeing⁶². Importantly, it is estimated that by getting Scotland active, life expectancy would increase by more than a year, given our current inactivity level⁶³.
- 32.2.9 Currently, over a quarter (26%) of children travel to school by car⁶⁴. Many of these journeys can be made by walking or cycling. It is particularly important that people learn healthy behaviours when they are young. These behaviours will likely continue into later life. Research shows that around one quarter of children in all age groups between 5 and 15 do not meet physical activity guideline over an average week and this declines with age⁶⁵.

- 32.3.1 The anticipated impacts of this enabler are set out in Figure 32-. Overall, a greater level of active travel options will increase the level of physical activity, improve air quality and reduce carbon emissions.
- 32.3.2 The result of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome. The enabler would have a positive impact across all 12 outcomes. The most positive impact will likely be in enabling people to make healthy travel choices. There will also be moderate positive impacts on making our communities great places to live and adapting to the effects of climate change. All other impacts would be minor positive.

⁵⁹ Scottish Transport Statistics 2018, Table 11.18: Employed adults (16+) not working from home - usual method of travel to work: 2017

⁶⁰ Transport and Travel in Scotland 2017, Table i: Traffic and passenger numbers in Scotland, 2012 to 2017

⁶¹ Transport and Travel in Scotland 2017, Table TD2a: Percentage of journeys by main mode by road network distance 2017

⁶² World Health Organisation 2018

⁶³ The Lancet Series: Physical Activity, July 2012

⁶⁴ Transport and Travel in Scotland 2017, Table Sum 1: Summary of Scottish Household Survey results

^{65 2016} Scottish Health Survey

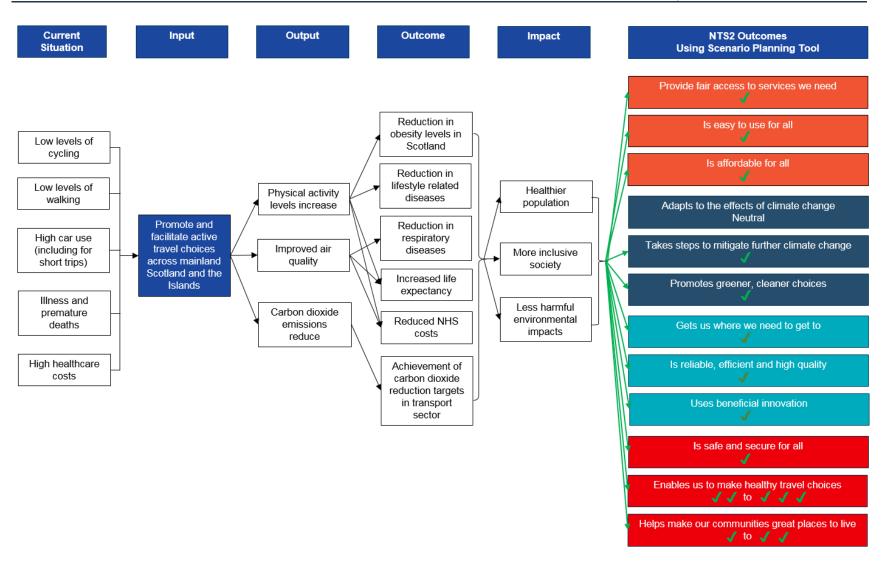


Figure 32-2: Enabler 30 – Logic Map



- 32.4.1 There are no conflicts with this enabler.
- 32.4.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 7 Ensure the transport system is embedded in regional decision making;
 - Policy E: Enabler 12 Ensure that infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy E: Enabler 13 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy H: Enabler 20 Promote the use of space-efficient transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change;
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

32.5 Public Acceptability

32.5.1 Active travel opportunities are seen as highly important to encourage a healthier lifestyle and the benefits this brings. This was reflected in the views of those who attended the citizens'

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panels. This would be seen as a very acceptable enabler, albeit reallocation of road space has often proved to be controversial.

32.5.2



33 Policy L: Enabler 31

33.1 Policy

33.1.1 Provide a transport system which promotes and facilitates travel choices which help to improve people's health and wellbeing.

33.2 Enabler

33.2.1 Integrate active travel options with public transport services.

33.3 Context

33.3.1 Every public transport journey requires access/egress, commonly on foot, so every journey starts with active travel. However, walking and cycling links to public transport services are very poor in some areas. This is particularly the case in remote and rural areas where, typically, there are longer journeys to access public transport and often lack of dedicated footways. This deters people from using the services as they cannot access the services readily or safely. There are also poor cycling facilities at many of Scotland's public transport interchange points (including bus stops/rail stations) and on public transport. This limits the transport options that cyclists have and the number of people that live within reasonable journey times of PT services.

- 33.4.1 The anticipated impacts of this enabler are set out in Figure 33-1. Overall, integrating active travel options with public transport services will make more multimodal trips available and encourage people to use the car less -and promote social inclusion, as PT becomes accessible to more people. Physical activity will increase, air quality will likely increase, and emissions should decrease, all of which will likely have further positive health impacts
- 33.4.2 Overall, the enabler will impact positively on all 12 outcomes. Specifically, the assessment highlighted that in plausible future 'multi-modal movers', this enabler will impact on the NTS2 outcome for reliable, efficient and high-quality transport more than under the other plausible future scenarios. Also, under 'multi-modal movers' demand for travel increases and therefore improving integration between active travel and public transport services is likely to result in greater benefits.



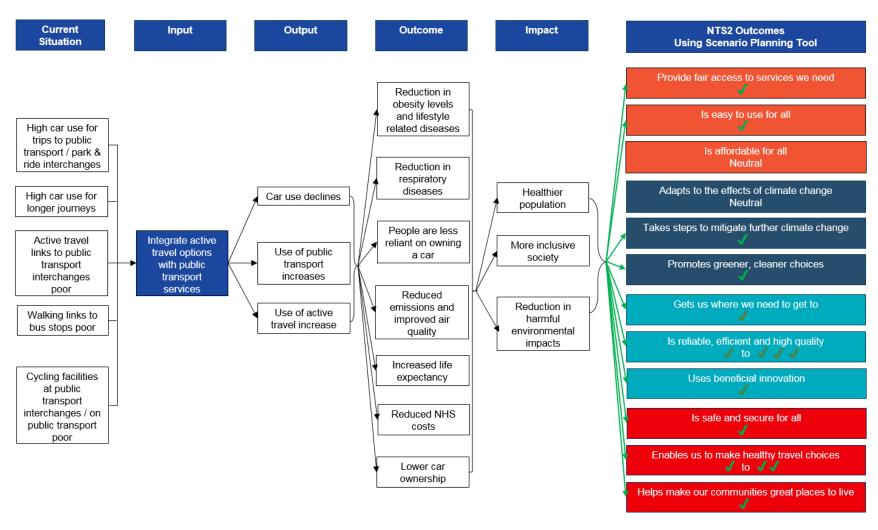


Figure 33-1: Enabler 31 – Logic Map



- 33.5.1 There are no conflicts with this enabler.
- 33.5.2 This enabler is a complement to the follow enablers:
 - Policy B: Enabler 6 Ensure that transport assets and service adopt the Place Principle;
 - Policy E: Enabler 12 Minimise the connectivity and cost disadvantages face by island communities and those in remote and rural areas;
 - Policy F: Enabler 16 Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 22 Identify and remove barriers to public transport connectivity and accessibility within Scotland;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands:
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality; and
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change.;

33.6 Public Acceptability

33.6.1 Integrating active travel with public transport services is seen as highly important for encouraging modal shift to more sustainable modes. This enabler would be very acceptable.



34 Policy L: Enabler 32

34.1 Policy

34.1.1 Provide a transport system which promotes and facilitates travel choices which help to improve people's health and wellbeing.

34.2 Enabler

34.2.1 Support transport's role in improving people's health and wellbeing.

34.3 Context

- 34.3.1 The importance of active travel is becoming more evident as the consequences of physical inactivity are studied. It is estimated that physical inactivity contributes to over 2,500 premature deaths in Scotland each year. According to the Scottish Government, physical inactivity is costing the Scottish NHS around £94.1 million annually. This equates to an average cost of £18 per Scottish resident per year.
- 34.3.2 A third of Scottish adults don't meet the guidelines for moderate or vigorous physical activity and inequalities exist, with people living in the least deprived areas more likely to meet the Chief Medical Officers guidelines for physical activity.
- 34.3.3 Over the last few decades our increasing reliance on cars has contributed to Scotland becoming less active as a nation. The figure below shows the latest travel to work mode share in Scotland for 2017. Overall, two thirds of commuters travel to work by car or van compared to just 12% who walk and 3% who cycle.
- 34.3.4 In 2017 there were 290 million vehicle kilometres travelled on Scotland's roads by pedal cycles. This was 6.5% lower than in 2012.
- 34.3.5 The Preventing Overweight and Obesity in Scotland Strategy states that one of the most effective ways to secure the required 30 minutes of moderate activity a day is to reduce reliance on motorised transport, changing the means of everyday travel to walking and cycling. Adaptions to wheelchairs for extended exercise is crucial to both psychological and physical health for disabled people.
- 34.3.6 Many journeys are relatively short and could be undertaken by walking and cycling more often. Just over 33% of journeys under 1km are made by car (either as a driver or a passenger). This rises to over 50% when the journey is between 1km and 2km.
- 34.3.7 Small changes in people's behaviour can have a big impact on individual health and wellbeing. For adults, achieving the recommended amount of 150 minutes of moderate to vigorous physical activity a week helps prevent and manage over 20 chronic conditions such as coronary heart disease, stroke, type-2 diabetes, cancer, obesity, and musculoskeletal conditions. It can also have a significant positive impact on people's wellbeing. Importantly, it is estimated that by getting Scotland active, life expectancy would increase by more than a year, given our current inactivity level.
- 34.3.8 Currently, over a quarter (26%) of children travel to school by car. Many of these journeys can be made by walking or cycling. It is particularly important that people learn healthy behaviours when they are young. These behaviours will likely continue into later life. Research shows that around one quarter of children in all age groups between 5 and 15 do not meet physical activity guideline over an average week and this declines with age.



- 34.3.9 There are links between poverty and ability to cycle. Household access to bikes increases with household income. Sixty per cent of households with an income of £40,000 or more have access to one or more bikes, compared to 16% of households with an income up to £10,000. Bicycle access is higher in rural areas than urban areas.
- 34.3.10 There are also links between household income and people walking just for pleasure or to keep fit. For those living in households with annual income up to £10,000, 58% walk or cycle 1 or more days per week. For those in households with more than £40,000 annual income the figure rises to 70%.

- 34.4.1 The anticipated impacts of this enabler are set out in Figure 34-1. Overall, supporting the role transport has in improving people's health and wellbeing will result in more active travel and public transport trips and the other factors highlighted in the comment above. Activity levels will increase, and people will be able to access key service which they previously couldn't. There are a range of positive health benefits including reduction of obesity levels and increased life expectancy.
- 34.4.2 The results of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome. The largest positive impact will be on enabling us to make healthy travel choices, while there will be negative impacts on adapts to the effects of climate change as a higher population will mean more car trips. All other impacts will be minor positive or minor negative. The negative impacts will occur particularly in a future where people are already highly dependent on the car.

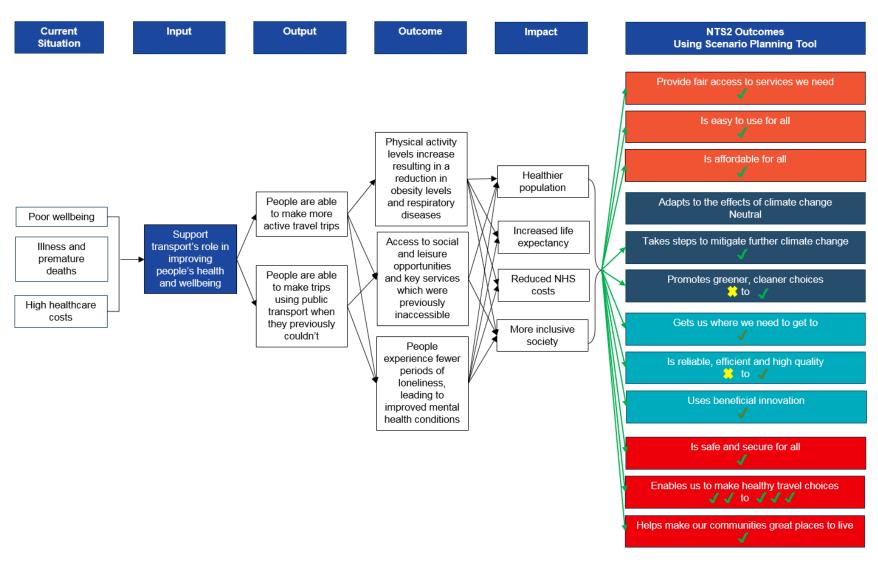


Figure 34-1: Enabler 32 – Logic Map



- 34.5.1 This enabler has no conflicts.
- 34.5.2 This enabler is a complement to the following enablers:
 - Policy A: Enabler 1 Increase safety of the transport system and meet casualty reduction targets;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy I: Enabler 21 Ensure transport in Scotland is accessible for all;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy I: Enabler 24 Continue to support the implementation of the recommendations from, and the development of, Scotland's Accessible Travel Framework;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel choices across mainland Scotland and islands;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality; and
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices.

34.6 Public Acceptability

34.6.1 It is recognised that transport has a crucial role in improving people's health and wellbeing and this enabler would be very acceptable, particularly if active travel modes are safe.



35 Policy M: Enabler 33

35.1 Policy

35.1.1 Reduce the transport sector's emissions to support our national objectives on air quality and climate change.

35.2 Enabler

35.2.1 Facilitate a shift to more sustainable modes of transport for people and commercial transport.

35.3 Context

35.3.1 There are high levels of car use in Scotland. In 2017, over two thirds of commuters were travelling to work by car or van compared to just 15% who travelled by public transport, 12% who walked, and 3% who cycled (see Figure 35-1).

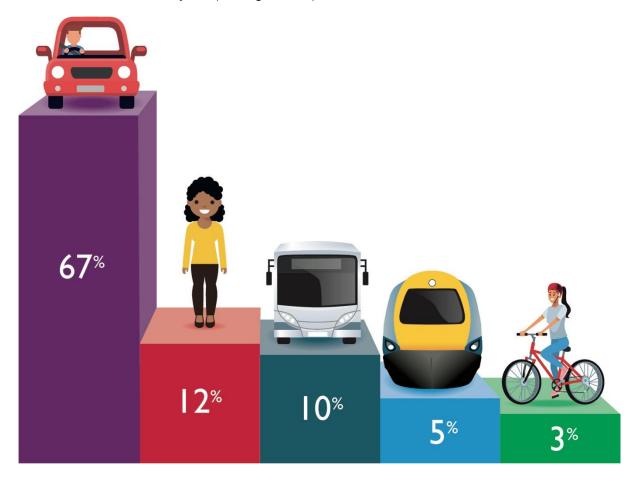


Figure 35-1: Transport Mode Share in 2017⁶⁶

35.3.2 Road transport is also the dominant mode for freight movement. In 2017, an estimated 122.6 million tonnes of domestic goods were transported by HGVs in Scotland⁶⁷. Figure 35-2 shows

https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/

 $^{^{66}}$ Scottish Transport Statistics No 37 2018, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/sct01193326941-14/

⁶⁷ Scottish Transport Statistics No 37 2018,



the level of freight transported by other modes based on the most recent data available. Overall, the combined total carried by coastwise shipping, inland waterway, air, and rail in 2013 (the most recent year for which data on all modes is available) accounted for less than 35 million tonnes, significantly less than road transport.

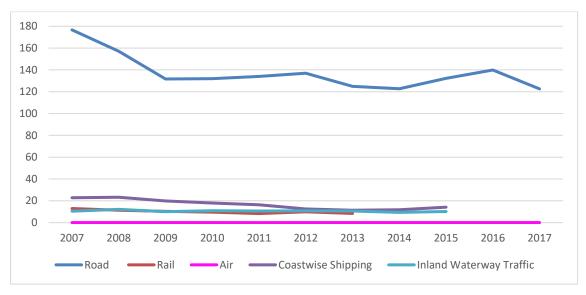


Figure 35-2: Total Freight Lifted in Scotland by Mode⁶⁸

35.3.3 Road transport is a significant contributor to emissions of carbon dioxide (CO₂), nitrogen (NO_x) and particulate matter (PM₁₀ and PM_{2.5}). Table 35.1 provides the estimated emissions of CO₂, NO_x, PM10, and PM2.5 in 2016 and the proportion which is attributable to road transport. In each case, road transport contributes a significant proportion.

Table 35-1: Estimated Emissions in 2016 and Proportion Attributable to Road Transport⁶⁹

Pollutant	2016 Emissions	Proportion Road Transport
CO ₂	38.6 MtCo ₂ e	25%
NOx	91kt	29%
PM ₁₀	14kt	12%
PM _{2.5}	9kt	13%

35.4 Logic Map

35.4.1 The anticipated impacts of this enabler are set out in Figure 35.3. Overall, facilitating a shift to more sustainable modes of transport for both people and freight would help reduce the reliance on road transport and contribute to a reduction in emissions. This would contribute to Scotland's carbon reduction targets in the transport sector and lead to improved air quality which in turn would lead to a reduction in respiratory diseases, increased life expectancy, and reduced NHS costs. Facilitating a growth in active travel would also contribute to better health outcomes through increases in physical activity and a reduction in obesity and lifestyle related diseases.

⁶⁸ Scottish Transport Statistics No 37 2018, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/

⁶⁹ Scottish Transport Statistics No 37 2018 Edition, p218, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/

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- 35.4.2 The result of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome.
- 35.4.3 The results of the analysis reveal a positive impact across all modes, but particularly for those outcomes focussing on climate change and air quality.

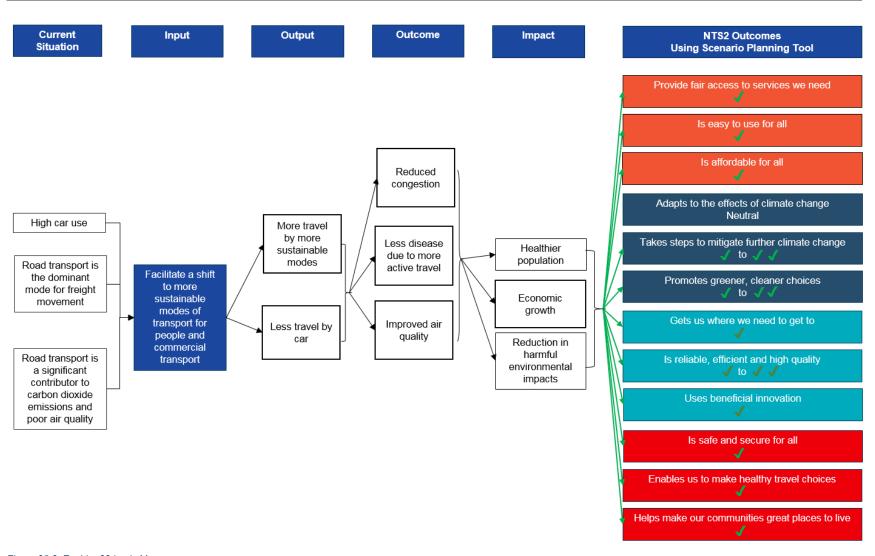


Figure 35-3: Enabler 33 Logic Map



- 35.5.1 There are no conflicts with this enabler.
- 35.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 6 Ensure that transport assets and service adopt the Place Principle;
 - Policy C: Enabler 8 Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure including the transport, energy and digital system;
 - Policy E: Enabler 12 Ensure the infrastructure hubs and links form an accessible integrated system that improves end-to-end journey for people and freight;
 - Policy F; Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy J: Enabler 25 Ensure sustainable labour market accessibility to employment locations;
 - Policy J: Enabler 26 Ensure sustainable access to education and training facilities;
 - Policy J: Enabler 27 Improve sustainable access to healthcare facilities for staff, patients and visitors:
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change;
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

35.6 Public Acceptability

35.6.1 Air quality and climate change are seen as highly important and the role transport plays is recognised. An enabler that encourages modal shift and positively impacts on these factors would be very acceptable, however the enabler could be strongly rejected by some people who will no longer be able to travel in the way they currently choose.



36 Policy M: Enabler 34

36.1 Policy

36.1.1 Reduce the transport sector's emissions to support our national objectives on air quality and climate change.

36.2 Enabler

36.2.1 Reduce emissions generated by the transport system to improve air quality.

36.3 Context

- 36.3.1 As well as adverse impacts on climate change, our transport system has negative impacts on our local air quality. Transport generates just over one-sixth of Scotland's total PM10 and over one-third of the total emissions of nitrogen oxides (NOx). The majority of these emissions are caused by road transport.
- 36.3.2 Emissions of NOx from road transport are improving but not at the expected rate. Between 2006 and 2016, transport emissions of NOx⁷⁰, PM10⁷¹, and PM2.5⁷² declined by 37%, 48%, and 54% respectively.

Change in total transport emissions 2006-2016

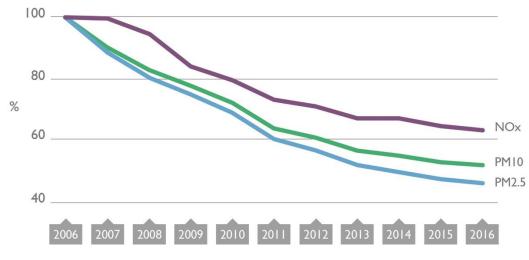


Figure 36-1: Change in Total Transport Emissions 2006-2016⁷³

36.3.3 Despite these falls, however, 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 such as the very

⁷⁰ NOx refers to oxides of nitrogen, especially as atmospheric pollutants.

⁷¹ PM10 refers to atmospheric particulate matter (PM) that have a diameter of less than 10 micrometers

⁷² PM2.5 refers to atmospheric particulate matter (PM) that have a diameter of less than 2.5 micrometers

⁷³ Scottish Transport Statistics 2018, Table 13.1a https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/sct01193326941-16/



young and the elderly or those with existing health conditions. Air quality is often worse in areas of deprivation and is a health inequality issue. In 2010, fine particulate matter was associated with around 2,000 premature deaths in Scotland and around 22,500 lost life-years across the population⁷⁴.

- 36.4.1 The anticipated impacts of this enabler are set out in Figure 36.1. Overall, improving air quality would result in a reduction in respiratory diseases, increased life expectancy, and reduced NHS costs and lead to improved quality of places and improved habitat quality. Overall, Scotland would have a healthier population.
- 36.4.2 The results of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome.

⁷⁴ Cleaner Air for Scotland Strategy, https://www2.gov.scot/Resource/0048/00488493.pdf

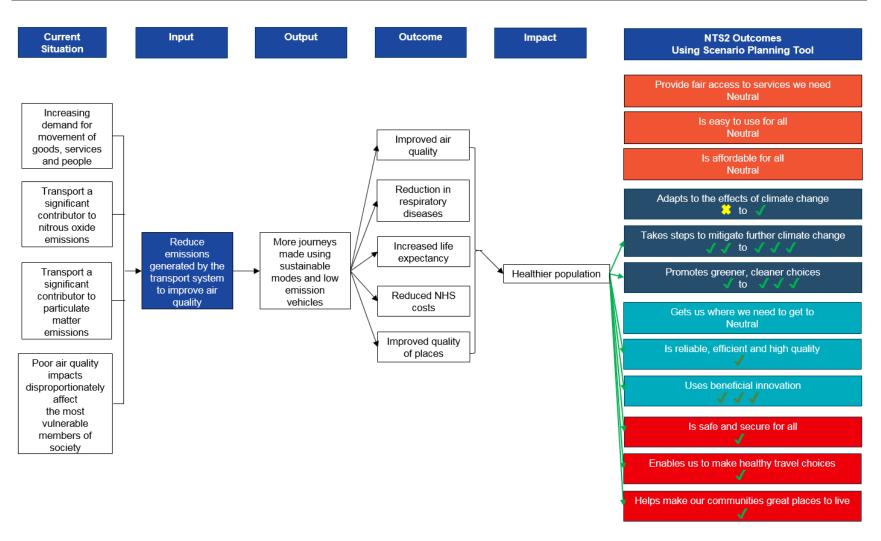


Figure 36-2: Enabler 34 – Logic Map



- 36.5.1 This enabler aims to reduce emissions. Therefore, any policy that encourage unsustainable modes of transport will conflict this enabler. The following enablers conflict:
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland; and
- 36.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 6 Ensure that transport assets and service adopt the Place Principle;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy H: Enabler 19 Ensure the Scottish transport system efficiently manages needs of people and freight;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change;
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices; and

36.6 Public Acceptability

36.6.1 There is recognition that Scotland's travel patterns are unsustainable and an enabler that improves local air quality would be acceptable, albeit some of the actions to deliver the enabler may not be.



37 Policy M: Enabler 35

37.1 Policy

37.1.1 Reduce the transport sector's emissions to support our national objectives on air quality and climate change.

37.2 Enabler

37.2.1 Reduce emissions generated by the transport system to mitigate climate change.

37.3 Context

- 37.3.1 We are facing a global climate emergency and we need to significantly reduce our greenhouse gas emissions. Scotland is leading the way and the Scottish Parliament is currently considering a target of net-zero emissions by 2045. This is an ambitious legally binding target and transport needs to play its part to ensure it is delivered.
- 37.3.2 In the last five years, reductions in emissions from the power sector have enabled Scotland to reduce its overall emissions. However, this has led to the proportionate share of Scotland's emissions from transport increasing substantially. Transport is currently Scotland's largest sectoral emitter, responsible for 37% of Scotland's total greenhouse gases in 2017.
- 37.3.3 The factors affecting transport emissions are numerous and complex. The economic downturn in 2008 was a contributing factor to a fall in emissions, alongside fuel efficiency improvements and fluctuations in the price of oil. Between the 2007 peak and 2013 the trend in emissions from transport was downward. However, since 2013 there has been an increase each year, despite more efficient vehicles, due to an increase in vehicle kilometres driven.
- 37.3.4 Car remains the dominant mode of transport in Scotland. In 2017, 65% of all journeys were made either as drivers or passengers in a car or a van. This was up from 64% in 2016 and 61% in 2012.
- 37.3.5 The proportion of single occupancy car trips also shows an underlying increasing trend. The figure of 66% in 2017 compares with the figure of 64% in 2012 and 62% in 2007.
- 37.3.6 There are currently over 11,000 Ultra-Low Emission Vehicles (ULEVs) licensed in Scotland, of which 10,858 are plug-in vehicles. Figures show that ULEVs made up 2% of new cars registered in Scotland in 2018 and there was a 46% growth in registrations of ULEVs in Scotland in 2018 compared to the previous year, 20% higher than the rest of the UK.

- 37.4.1 The anticipated impacts of this enabler are set out in Figure 37-1. Overall, more journeys will be made by low emission vehicles, helping to achieve carbon dioxide reduction targets and a decline in harmful roadside emissions.
- 37.4.2 The results of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar for each NTS2 outcome.

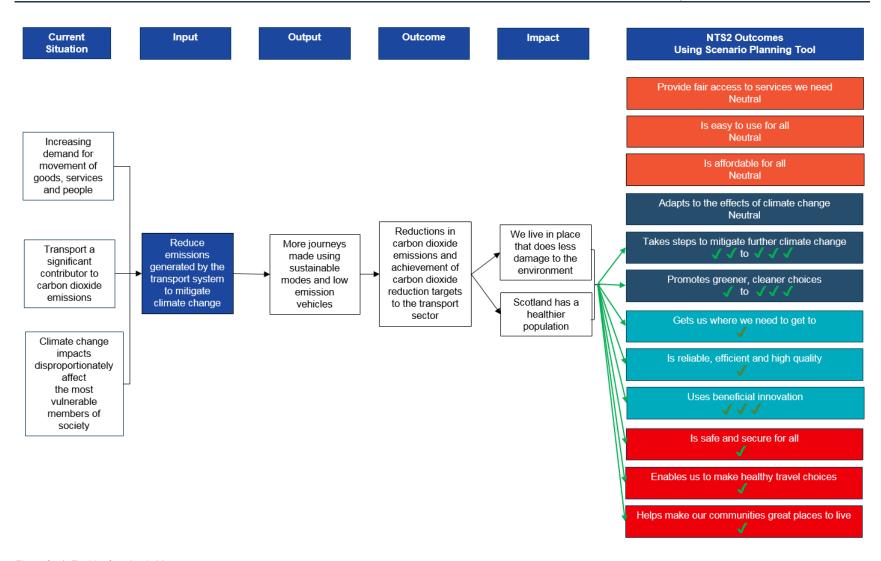


Figure 37-1: Enabler 35 – Logic Map



- 37.5.1 This enabler aims to reduce emissions to mitigate climate change. Therefore, any policy that encourage unsustainable modes of transport will conflict this enabler. The following enablers conflict:
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland; and
- 37.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 6 Ensure that transport assets and service adopt the Place Principle;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy H: Enabler 20 Promote the use of space efficient transport;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31 Integrate active travel options with public transport services;
 - Policy L: Enabler 32 Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 36 Support management of demand to encourage more sustainable transport choices;
 - Policy N: Enabler 37 Increase resilience of Scotland's transport network to climate change disruption and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

37.6 Public Acceptability

37.6.1 Similar to the enabler on air quality, this enabler will have positive impacts on climate change will have a medium level of acceptability.



38 Policy M: Enabler 36

38.1 Policy

38.1.1 Reduce the transport sector's emissions to support our national objectives on air quality and climate change.

38.2 Enabler

38.2.1 Support management of demand to encourage more sustainable transport choices.

38.3 Context

38.3.1 Our dominant mode of transport is the car, but it is a significant contributor to carbon dioxide emissions and air pollution, congestion and sedentary lifestyles. Figure 38-1 shows that 40.1% of the emissions in Scotland are from passenger cars. Most car journeys are made with a single occupant, at around two thirds.

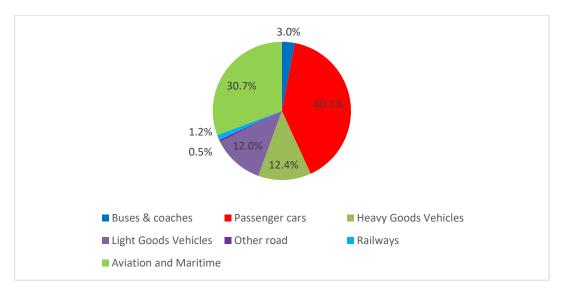


Figure 38-1: Emissions by Mode⁷⁵

- 38.4.1 The anticipated impacts of this enabler are set out in Figure 38-2. Overall, managing the transport network more effectively will result in reduced congestion, improved journey times, improved air quality and reduced emissions.
- 38.4.2 The results of the assessment show the enabler will have a positive impact across all 12 outcomes, but particularly on those related to climate change or air quality where the impacts range from moderate to major positive (adapts to the effects of climate change) or minor to moderate positive (takes steps to mitigate further climate change and promotes greener, cleaner choices).
- 38.4.3 The result of the assessment highlighted that in all plausible future scenarios the impact of this enabler will be similar against each NTS2 outcome.

⁷⁵ Table 13.1, Scottish Transport Statistics, Edition 37, 2018, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/

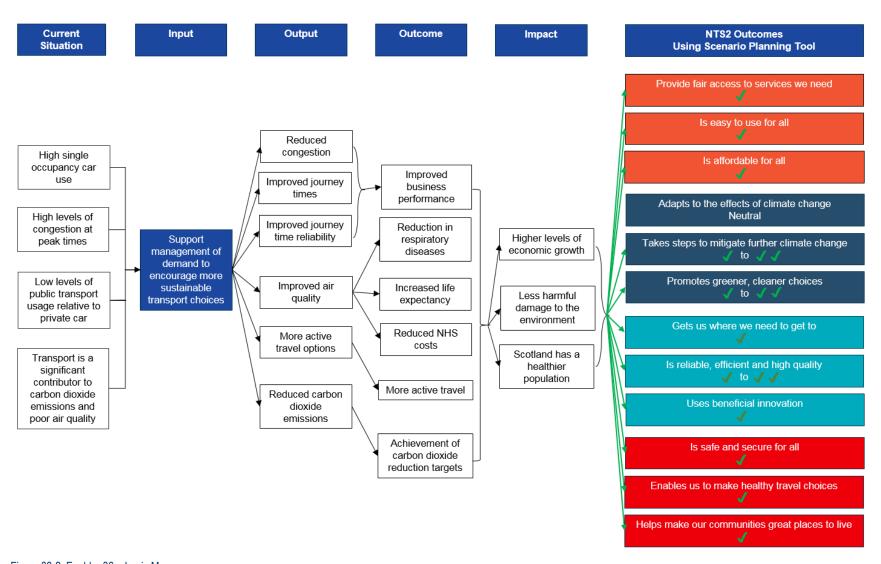


Figure 38-2: Enabler 36 – Logic Map



- 38.5.1 This enabler aims to encourage people to use sustainable transport. Therefore, the following enablers conflict:
 - Policy D: Enabler 10 Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study and invest in Scotland; and
- 38.5.2 This enabler is a complement to the following enablers:
 - Policy B: Enabler 6 Ensure that transport assets and service adopt the Place Principle;
 - Policy F: Enabler 15. Support improvements and innovations that enable all to make informed travel choices;
 - Policy F; Enabler 16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy L: Enabler 30 Promote and facilitate active travel choices across mainland Scotland and islands;
 - Policy L: Enabler 31. Integrate active travel options with public transport services;
 - Policy L: Enabler 32. Support transport's role in improving people's health and wellbeing;
 - Policy M: Enabler 33 Facilitate a shift to more sustainable modes of transport for people and commercial transport;
 - Policy M: Enabler 34 Reduce emissions generated by the transport system to improve air quality;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

38.6 Public Acceptability

38.6.1 Whilst enablers to manage demand are recognised by many as necessary, the acceptability will depend on the interventions chosen eg if single-occupancy car use is disincentivised without adequate improvements to public transport then this would be less acceptable.



39 Policy N: Enabler 37

39.1 Policy

39.1.1 Plan our transport system to cope with the effects of climate change.

39.2 Enabler

39.2.1 Increase resilience of Scotland's transport network to climate change disruption.

39.3 Context

- 39.3.1 Climate change directly impacts the transport sector through the increasing number of extreme weather events and the disruption they cause to the transport system. The disruption often disproportionately impacts on vulnerable communities with fewer and less resilient transport options, such as those in remote, rural and islands.
- 39.3.2 In recent years, there have been several weather events which have led to significant disruption and resulted in high economic costs. Perhaps most notable amongst these is the *Beast from the East* in February 2018 which was the costliest weather event in seven years⁷⁶. The extreme weather cost the UK economy at least £1 billion a day as gridlocked roads, no trains and no buses meant workers were unable to access employment⁷⁷.
- 39.3.3 The ScotRail Franchise Agreement sets a target of 92.5% of planned trains each day arriving at their destination within five minutes of the planned time. This is termed the Public Performance Measure (PPM). As shown in the figure below, the number of weather-related PPM failures has increased markedly in the recent period, with severe weather listed as the third most significant reason why PPM has declined. In addition to the *Beast from the East, the rail network was also impacted by* the hottest summer on record in 2018 and Storm Ali in early autumn 2018. Each event had a significant impact on performance due to line closures and safety-related speed restrictions⁷⁸.

⁷⁶ Freezing Weather costs UK economy £1bn a day, P Inman, G Topham, and A Vaughan, The Guardian, March 2018, https://www.theguardian.com/uk-news/2018/mar/03/freezing-weather-storm-emma-cost-uk-economy-1-billion-pounds-a-day

⁷⁷ Freezing Weather costs UK economy £1bn a day, P Inman, G Topham, and A Vaughan, The Guardian, March 2018, https://www.theguardian.com/uk-news/2018/mar/03/freezing-weather-storm-emma-cost-uk-economy-1-billion-pounds-a-day

⁷⁸The Scottish Parliament, Rural Economy and Connectivity Committee Agenda, Wednesday 27th March 2019, Annex A, Page 16, https://www.parliament.scot/S5_Rural/Meeting%20Papers/20190327_REC_Committee_-—Public Papers.pdf



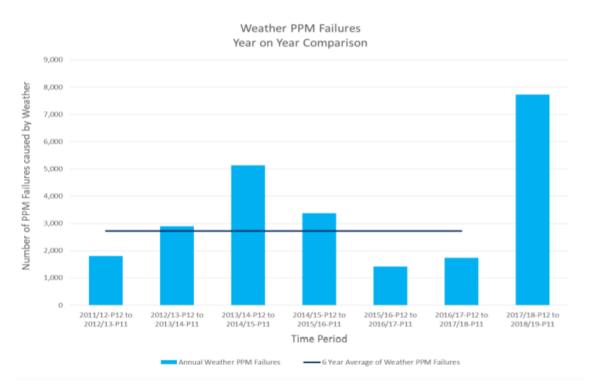


Figure 39-1: ScotRail Weather Related Public Performance Measure Failures⁷⁹

- 39.4.1 The anticipated impacts of this enabler are set out in Figure 39-2. Overall, increasing the resilience of the transport network to disruption will allow businesses to operate more efficiently and allow people to travel, when they previously couldn't. There would likely be higher levels of sustainable economic growth, improved levels of inclusion while reduced impacts from further climate change.
- 39.4.2 When assessed against the NTS2 outcomes, this enabler could have a major positive impact on adapting to the effects of climate change, while also having positive impacts against the other outcomes. This is likely to be the case under all future scenarios

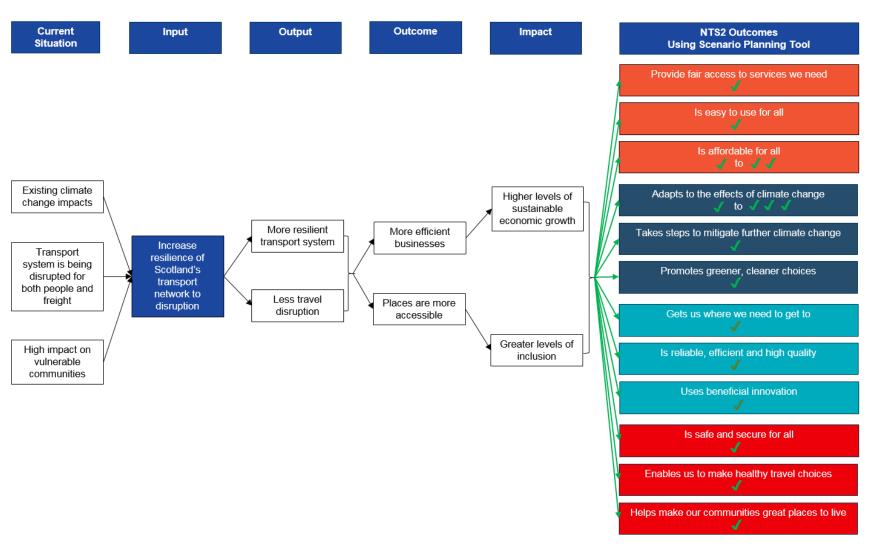


Figure 39-2: Enabler 37 - Logic Map



- 39.5.1 There are no conflicts with this enabler.
- 39.5.2 This enabler is a complement of the following enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy A: Enabler 4 Increase the use of asset management across the transport system;
 - Policy E: Enabler 13. Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas; and
 - Policy E: Enabler 14. Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 17 Ensure that appropriate real-time travel information is provided to allow all transport users to respond to extreme weather and incidents;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy M: Enabler 35 Reduce emissions generated by the transport system to mitigate climate change; and
 - Policy N: Enabler 38 Ensure the transport system adapts to the projected climate change impacts.

39.6 Public Acceptability

39.6.1 Reducing levels of disruption is seen as important and increasing the resilience of the transport system would be an acceptable enabler.



40 Policy N: Enabler 38

40.1 Policy

40.1.1 Plan our transport system to cope with the effects of climate change.

40.2 Enabler

40.2.1 Ensure the transport system adapts to the projected climate change impacts.

40.3 Context

- 40.3.1 In addition to minimising the future impacts of transport on our climate, our transport system needs to adapt to climate change impacts. Climate change directly impacts the transport sector through the increasing number of, more severe and more frequent extreme, weather events and the disruption they cause to the transport system, such as erosion of our coastal areas, landslides and rising water levels. Importantly, it is recognised the disruption often disproportionately impacts on vulnerable communities with fewer and less resilient transport options.
- 40.3.2 In recent years, there have been several weather events which have led to significant disruption and resulted in high economic costs. Perhaps most notable amongst these is the Beast from the East in February 2018 which was the costliest weather event in seven years. The extreme weather cost the UK economy at least £1 billion per day as gridlocked roads, no trains and no buses meant many workers were unable to access employment.

40.4 Logic Map

The anticipated impacts of this enabler are set out in Figure 40-1. Overall, making sure that the transport system adapts to projected climate change impacts will result in a shift towards low-carbon technologies. Congestion and emissions would reduce with more active travel and higher levels of technology leading to a healthier population, sustainable economic growth and less environmental damage.

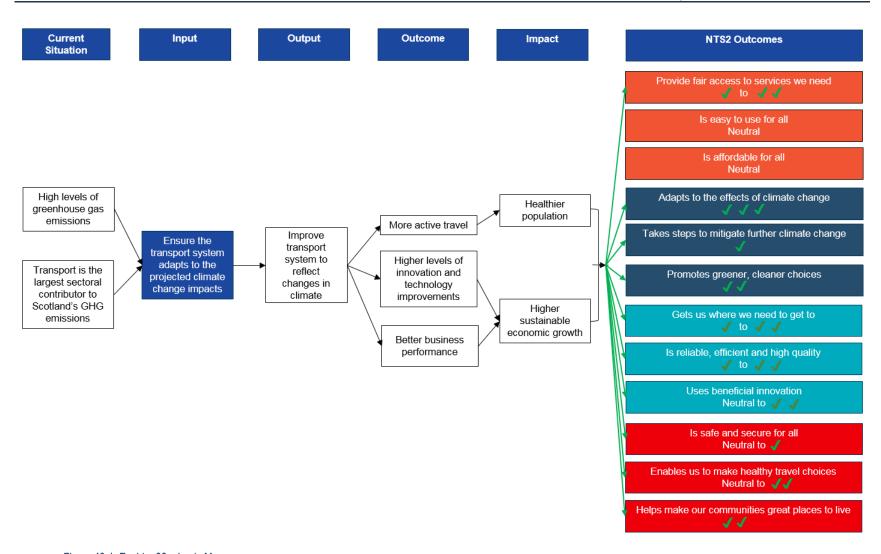


Figure 40-1: Enabler 38 – Logic Map



- 40.5.1 There are no conflicts with this enabler.
- 40.5.2 This enabler is a complement to the following enablers:
 - Policy A: Enabler 2 Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility;
 - Policy A: Enabler 4 Increase the use of asset management across the transport system;
 - Policy E: Enabler 13. Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas; and
 - Policy E: Enabler 14. Safeguard the provision of lifeline transport services and connections;
 - Policy F: Enabler 17 Ensure that appropriate real-time travel information is provided to allow all transport users to respond to extreme weather and incidents;
 - Policy G: Enabler 18 Support Scotland to become a market leader in the development and early adoption of beneficial transport innovation;
 - Policy H: Enabler 20 Promote the use of space-efficient transport;
 - Policy I: Enabler 23 Reduce the negative impacts which transport has on safety, health and wellbeing of people;
 - Policy N: Enabler 37 Ensure the transport system adapts to the projected climate change impacts.

40.6 Public Acceptability

40.6.1 Climate change is seen as a crucial issue that needs to be addressed and tackled and adapting our transport system to contribute to that would be a very acceptable enabler. However, this will depend to a large extent what the individual interventions are.



Appendix A Scenario Planning Tool Scoring

A.1.1 This Appendix sets out the approach which was used to convert the outputs from the Scenario Planning Tool into a set of scores for each enabler.

Scenario Planning Tool Outputs

A.1.2 Within the Scenario Planning Tool, under each scenario and NTS outcome combination, the enabler is assigned a percentage based on the extent to which the situation will improve or deteriorate as compared to a base scenario in which no action is taken. Table A.1 below provides an example of the outputs from the Scenario Planning Tool for an example enabler.



Table A-1: Example of Output from Scenario Planning Tool for Example Enabler

NTS Outcome Plausible Scenario	Healthy & Wealthy	Mindful travellers	Cyber- Ecos	Top Gear	Straighte ned stay- homers	White- collar Connecto rs	Multi- modal movers	Cyber- boomers
Is reliable, efficient and high quality	8%	12%	8%	11%	10%	9%	9%	17%
Gets us where we need to get to	4%	2%	4%	3%	3%	4%	4%	1%
Uses beneficial innovation	-1%	0%	0%	0%	-1%	0%	-1%	-1%
Is safe and secure for all	6%	7%	6%	6%	6%	6%	6%	6%
Enables us to make healthy travel choices	12%	8%	15%	7%	10%	9%	12%	4%
Helps make our communities great places to live	-6%	0%	-4%	-1%	-6%	-7%	-7%	-1%
Adapts to the effects of climate change	21%	31%	19%	32%	25%	24%	21%	47%
Takes steps to mitigate further climate change	0%	7%	1%	8%	1%	2%	0%	12%
Promotes greener, cleaner choices	-4%	4%	-1%	4%	-3%	-3%	-5%	5%
Provides fair access to services we need	2%	2%	2%	2%	2%	2%	2%	1%
Is easy to use for all	-1%	-5%	-2%	-5%	-3%	-1%	-1%	-7%



Assessment Approach

A.1.3 For the purposes of the assessment, the percentages under each scenario / NTS outcome combination were converted into a score ranging from Major Positive to Major Negative set out in Table A.2.

Table A-2: STAG Seven Point Scoring Scale

Impact	Scoring
Major Positive	$\checkmark\checkmark\checkmark$
Moderate Positive	√√
Minor Positive	√
No benefit or impact	0
Minor Negative	×
Moderate Negative	xx
Major Negative	xxx

- A.1.4 The approach taken to calculate the scores was as follows:
 - The maximum absolute value across all scenarios for each enabler was set as the percentage equating to both the Major Positive and Major Negative for that specific enabler e.g. in the above example the highest percentage across all scenarios and all outcomes was 47% and therefore +47% was classed as Major Positive and -47% was classed as Major Negative.
 - Using these Major Positive and Major Negative values as the maximum and minimum values, the percentages equating to each of the other scores within the seven-point scale (Moderate Positive, Minor Positive, No Benefit / Neutral, Minor Negative, Moderate Negative) were calculated for each enabler e.g. for the example enabler above, the percentages equating to each of the other scores would be as follows:

Major Positive: +35% to +47%;

Moderate Positive: +21% to +35%;

Minor Positive: +7% to +21%;

No Impact / Neutral: -7% to +7%;

Minor Negative: -7% to -21%;

Moderate Negative: -21% to -35%; and

Major Negative: -35% to -47%.

• For each enabler, the percentages under each outcome / scenario combination were assigned the appropriate score based on the above as shown in example in Table A3.

Table A3: Scoring Assigned to Example Enabler for each Outcome / Scenario Combination

NTS Outcome Plausible Scenario	Healthy & Wealthy	Mindful travellers	Cyber- Ecos	Top Gear	Straighte ned stay- homers	White- collar Connecto rs	Multi- modal movers	Cyber- boomers
Is reliable, efficient and high quality	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Gets us where we need to get to	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Uses beneficial innovation	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Is safe and secure for all	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Enables us to make healthy travel choices	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Helps make our communities great places to live	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Negative	Minor Positive
Adapts to the effects of climate change	Moderate Positive	Moderate Positive	Minor Positive	Moderate Positive	Moderate Positive	Moderate Positive	Moderate Positive	Major Positive
Takes steps to mitigate further climate change	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Promotes greener, cleaner choices	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Provides fair access to services we need	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Is easy to use for all	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive



• Finally, rather than reporting the scores for each outcome / scenario combination, the scores for each outcome were combined into a range as set out in Table A4.

Table A4: Example of Final Scoring assigned to Example Enabler

NTS Outcome	Final Scoring	
Is reliable, efficient and high quality	Minor Positive to Minor Positive	√
Gets us where we need to get to	Minor Positive to Minor Positive	✓
Uses beneficial innovation	Moderate Positive to Minor Positive	✓ to ✓✓
Is safe and secure for all	Minor Positive to Minor Positive	✓
Enables us to make healthy travel choices	Minor Positive to Minor Positive	✓
Helps make our communities great places to live	Minor Positive to Minor Positive	✓
Adapts to the effects of climate change	Minor Positive to Minor Positive	✓
Takes steps to mitigate further climate change	Minor Positive to Minor Positive	× to √
Promotes greener, cleaner choices	Minor Positive to Minor Negative	✓ to ✓✓✓
Provides fair access to services we need	Major Positive to Minor Positive	✓
Is easy to use for all	Minor Positive to Minor Positive	✓



Appendix B Enablers Against Outcomes Summary Matrix

Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
1. Increase safety of the transport system and meet casualty reduction targets	N	√	N	N	N	N	to	N	N	///	√	√ to √√
2. Increase resilience of Scotland's transport system from disruption and promote a culture of shared responsibility	N to ✓	N	N	N to ✓	N	N	√ √ to √ √ √	√ √ to √ √ √	N	√	Z	√
3. Implement measures that will improve perceived and actual security of Scotland's transport system	√ to √√	√	N	N	N	√	√	✓	√	to	N	N
4. Increase the use of asset management across the transport system	✓	N to ✓	N	N to ✓	✓	N	√ to √√	√√	✓	✓	N	N
5. Ensure greater integration between transport, spatial planning, and how land is used	√	√	✓	√ to √√	✓	√	√	√ to √√√	√	√	√	√



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
6. Ensure that transport assets and services adopt the Place Principle	N to ✓	√	N to	N to	N to	to	√	√	N	to	to	√√ to √√√
7. Ensure the transport system is embedded in regional decision making	√	√	√	N to	N	to	/ /	N to ✓	N	N to ✓	to	√ to √√
8. Ensure that local, national and regional policies offer an integrated approach across all aspects of infrastructure investment including the transport, digital, and energy system	√	×	√	√	√	√	√	√ to √√√	√	√	×	to
9. Optimise accessibility and connectivity within business-business and business- consumer markets by all modes of transport	√	N	N	√ to √√√	√	N	√	✓	√	√	N	N



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
10. Ensure gateways to and from domestic and international markets are resilient and integrated into the wider transport networks to encourage people to live, study, visit and invest in Scotland	√	Z	Z	××	x to ✓	✓	✓	✓	✓	√	√ √ √	N
11. support measures to improve sustainable surface access to Scotland's airports and seaports	✓	N	N	N	N	to N	√	✓	N	N	N	✓
12. Ensure that infrastructure hubs and links form an accessible integrated system that improves the end-to-end journey for people and freight	√	√	√ to √√	√ √ to √ √ √	✓	✓	✓	✓	✓	√	√	√
13. Minimise the connectivity and cost disadvantages faced by island communities and those in remote and rural areas	√ to √√	N	√ √	N	N	N	√ to √√	N to ✓	N	N	N	√



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
14. Safeguard the provision of lifeline transport services and connections	√	N	√ √	N	N	√	√	N	N	N	N	✓
15. Support improvements and innovations that enable all to make informed travel choices	√	to	√ to √√	√ to √√√	√	√	√	√	√	√	√	to
16. Support seamless journeys providing the necessary infrastructure, information and interchange facilities to connect all modes of transport.	✓	to	N	to	✓	✓	√	✓	✓	√	√	to
17. Ensure that appropriate real-time information is provided to allow all transport users to respond to extreme weather and incidents	N	√	N	√	N	N	√	✓	√	√ √	N	N
18. Support Scotland to become a market leader in the development and early adoption of beneficial transport innovations	✓	N	N	N	√	✓	√	√√	to	N	N	√



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
19. Ensure the Scottish transport system efficiently manages needs of people and freight	√	√	N to ✓	N	to N	to N	to	√ √ to √ √ √	N	N	N	N
20. Promote the use of space-efficient transport	✓	✓	✓	√ to √√	✓	√	√	√ to √√√	√	✓	√	√
21. Ensure transport in Scotland is accessible for all	√ √	*	√√ to √√√	N	✓	✓	√ √	√ √	N	✓	to	√
22. Identify and remove barriers to public transport connectivity and accessibility within Scotland	✓	√	√ to √√	N	✓	✓	√	✓	✓	✓	√	√
23. Reduce the negative impacts which transport has on the safety, health and wellbeing of people	√	√ to √√	N	Z	✓	✓	N to	N	√	√√ to √√√	√ √ to √ √ √	√ √
24. Continue to support the implementation of the recommendations from, and the development of,	√ to √√	√ to √√	✓	N	N	N	√	N	N	✓	√	√



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
Scotland's Accessible Travel Framework												
25. Ensure sustainable labour market accessibility to employment locations	√	√	√ to √√	N	✓	√	√	√	√	√	✓	to
26. Ensure sustainable access to education and training facilities	√ √	✓	✓	N	✓	✓	√	N	N	N	✓	√
27. Improve sustainable access to healthcare facilities for staff, patients and visitors	to	✓	to	Z	N to ✓	N to ✓	to	N to ✓	N	N to ✓	N to ✓	N to ✓
28. To meet the changing employment and skills demands of the transport industry and upskill workers.	√	N	√	N	N	N	√	√√	N	N	N	N
29. Support initiatives that promote the attraction and retention of an appropriately skilled workforce across the transport sector	✓	N	✓	N	N	N	√ √	√√	N	N	N	√



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
30. Promote and facilitate active travel choices across mainland Scotland and islands	√	√	√	N	✓	✓	√	✓	√	√	to	√ to √√
31. Integrate active travel options with public transport services.	√	✓	N	Ν	✓	✓	√	√ to √√√	√	√	to	✓
32. Support transport's role in improving peoples' health and wellbeing	✓	✓	√	N	√	to	√	to	✓	✓	to	√
33. Facilitate a shift to more sustainable modes of transport for people and commercial transport	✓	✓	√	N	√ to √√	√ to √√	√	√ to √√	✓	✓	√	√
34. Reduce emissions generated by the transport system to improve air quality	N	N	N	to	√√ to √√√	√ to √√√	Z	✓	**	✓	✓	✓
35. Reduce emissions generated by the transport system to mitigate climate change	N	N	N	Z	to	√ to √√√	√	✓	**	✓	✓	√



Measure	Will provide fair access to services we need	Will be easy for all to use	Will be affordable for all	Will adapt to the effects of climate change	Will take steps to mitigate further climate change	Will promote greener, cleaner choices	Will get us where we need to go	Will be reliable, efficient and high quality	Will use beneficial innovation	Will be safe and secure for all	Will enable us to make healthy travel choices	Will help make our communi ties great places to live
36. Support management of demand to encourage more sustainable transport choices	✓	√	√	N	to	to	√	to	√	√	√	✓
37. Increase resilience of Scotland's transport system to climate change related disruption	√	1	to	√ to √√√	1	1	1	√	√	1	1	√
38. Ensure the transport system adapts to the projected climate change impacts.	to	N	N	V V V	√	/ /	to	to	N to	N to ✓	N to	√ √