



STRATEGIC TRANSPORT PROJECTS REVIEW

PROTECTING OUR CLIMATE
AND IMPROVING LIVES



Appendix I: Recommendation Appraisal Summary Tables

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1. Detailed Appraisal Summary

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

1.1. Recommendation 10 - Expansion of 20mph limits and zones

Recommendation Description

This recommendation would provide for new or expanded 20mph schemes across Scotland, on appropriate roads in cities, towns and villages (typically residential streets and those in neighbourhood centres and near other key trip generators where there are high levels of pedestrian activity), delivering the commitment made in the [Programme for Government 2021-22](#)ⁱ.

This recommendation would reduce traffic speeds, creating streets that provide a more equitable balance between different road users, alongside the creation of safer environments which promotes inclusivity and encourages people to make active travel choices.

Interventions being considered in this recommendation include:

- Development of best practice guidance to aid project implementation;
- Supporting local authorities (and other partners, where appropriate) to implement and enforce 20mph zones and limits on appropriate streets and in the vicinity of key trip generators; and
- Implementation of complementary campaigns aimed at managing speed compliance and to promote better driver behaviour in relation to 20mph zones and limits.

Given that most 20mph interventions would be on local (non-trunk) roads, the role of Transport Scotland would be to support and facilitate implementation, in part in a funding role and through the development of guidance and best practice.

1.2. Relevance

Relevant to many roads in cities, towns and villages

The expansion of 20mph zones and limits would be rolled out to all appropriate roads in built-up areas and is likely to be relevant to:

- Residential streets in Scotland’s cities, towns and villages; and
- Urban roads with high levels of pedestrian/cyclist activity.

Their implementation could help address problems of perceptions of road danger and unattractive active travel choices that have been identified in STPR2.

1.3. Estimated Cost

£26 million - £50 million

Capital costs for implementation of 20mph schemes would depend on local infrastructure circumstances but could typically be in the range of £25,000 to £1.7 millionⁱⁱ per scheme, with costs highly dependent on the size of the settlement.

It is estimated that 20mph schemes could be implemented in over 500 towns and villages in Scotland (building on experience from the recently-funded schemes in the Scottish Bordersⁱⁱⁱ) and three larger scale schemes in other urban areas across Scotland, giving total central capital cost estimates of £16 million. Detailed costings would need to be developed in conjunction with local authorities, but an indicative capital budget requirement in the range of £10 million - £30 million is anticipated.

Revenue funding would also be required to undertake the review of the existing schemes, the development of national strategy and guidance in relation to 20mph schemes and road safety campaign work managing the compliance and to promote better driver behaviours. It would also be needed to ensure that schemes are maintained and enforced.

1.4. Position in Sustainable Investment Hierarchy

Reduces the need to travel unsustainably (1)

This recommendation would contribute to 10 of the 12 NTS2 outcomes, as follows:

- Provide fair access to services we need;
- Be easy to use for all;
- Be affordable for all;
- Be reliable, efficient and high quality;
- Help deliver our net-zero target;
- Promote greener, cleaner choices;
- Be safe and secure for all;
- Get people and goods to where they need to get to;
- Enable us to make healthy travel choices; and
- Help make our communities great places to live.

1.5. Summary Rationale

Summary of Appraisal

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

This recommendation makes a positive contribution to STPR2 Transport Planning Objectives (TPOs), STAG criteria, and Statutory Impact Assessment criteria. It is, with support from local authorities, implementable on a wide scale across Scottish cities, towns and villages.

Expansion of 20mph zones and limits was a recommendation from Phase 1 of STPR2, is

a commitment made in the 2021-22 Programme for Government, and complements other STPR2 recommendations that seek to improve road safety and to promote inclusive accessibility by healthy and sustainable modes.

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

2. Context

2.1. Problems and Opportunities

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

Relevant Problem & Opportunity Themes Identified in National Case for Change

- **Safety and Security:** Scotland’s transport system needs to be safe. Whilst [the number of road accident casualties reduced by 11% between 2017 and 2018^{iv}](#), the number of fatalities has increased. Women and disabled people in particular feel vulnerable when using public transport – particularly at bus stops, train stations or other transport interchanges.
- **Physical Activity:** [the importance of active travel is becoming more evident as the consequences of physical inactivity are studied](#). It is recognised that one of the most effective ways to secure the required 30 minutes of moderate activity per day is to reduce reliance on motorised transport, changing the means of everyday travel to walking and cycling^v.
- **Changing Travel Behaviour:** changing people’s travel behaviour to use more sustainable modes would have a positive impact on the environment, as well as health and wellbeing.

2.2. Interdependencies

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

Other STPR2 Recommendations

- Connected neighbourhoods (1)
- Behavioural change initiatives (6);
- Changing road user behaviour (7);
- Increasing active travel to school (8);
- Improving active travel on trunk roads through communities (37); and
- Speed Management Plan (38).

Other areas of Scottish Government activity

- [Active Travel Framework \(2020\)^{vi}](#);
- [The National Walking Strategy \(2014\)^{vii}](#);
- [Cycling Action Plan for Scotland \(CAPS\) \(2017\)^{viii}](#);
- [Scotland’s Road Safety Framework to 2030 \(2021\)^{ix}](#);
- [Town Centre Action Plan \(2013\)^x](#); and
- [The Place Principle^{xi}](#).

3. Appraisal

This section provides an assessment of the recommendation against:

- STPR2 Transport Planning Objectives (TPOs);
- STAG criteria;
- Deliverability criteria; and
- Statutory Impact Assessment criteria.

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

3.1. Transport Planning Objectives

1. A sustainable strategic transport system that contributes significantly to the Scottish Government’s net-zero emissions target

Low Scenario	High Scenario
+	+

[The relationship between vehicle speed and air quality is complex and can be influenced by several factors](#), including consistency of driving speed and road environment^{xii}. However, as [fear of road danger is the biggest deterrent to use of active modes](#)^{xiii}, measures to reduce traffic speed are likely to have a positive impact on the share of trips made by walking, wheeling and cycling, contributing to a reduction in vehicle emissions.

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

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

Low Scenario	High Scenario
+	+

[The introduction of 20mph schemes can support increased active travel](#)^{xiv}, the most affordable and accessible modes for many people, and which in turn can make access to public transport more inclusive. [Benefits arise especially for those for which road danger is the biggest deterrent](#), in particular older people, disabled people and children^{xv}.

[Evidence from 20mph scheme implementation in Portsmouth shows that individuals increased their levels walking, cycling and public transport use in areas with the 20mph limits](#)^{xvi}.

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

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

Low Scenario	High Scenario
+++	+++

[Evidence suggests that 20mph schemes in urban areas can positively enhance communities and neighbourhoods](#) and can have a positive impact on the quality of life^{xvii}.

[The main barrier to active travel is road danger](#), and a reduction in local road speeds can be an important motivator to taking up walking, wheeling and cycling^{xviii}. [Active travel is good for health and wellbeing](#), helping to reduce the risk of chronic conditions and mitigate health inequalities^{xix}. [Therefore, there are likely health and wellbeing benefits arising from the implementation of effective 20mph schemes](#), with lower road speeds encouraging more people to walk and cycle^{xx}. The measures may also, by increasing the number of people out and about within their communities, make a positive contribution to places.

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

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

Low Scenario	High Scenario
+	+

20mph schemes can positively impact sustainable and inclusive growth in Scotland by reducing the number of traffic accidents and associated casualties in urban areas. [It is estimated that the value of accident and causality prevention based on 20mph speed reduction in Scotland could be between £27.1 million and £39.9 million annually](#)^{xxi}.

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

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

Low Scenario	High Scenario
++	++

Research by the [UK Transport Research Laboratory](#) has shown that every 1mph reduction in average urban vehicle speeds can be expected to result in a 6% fall in the number of casualties^{xxii}. [The risk of fatal injury to pedestrians rose from under 1% at a vehicular impact speed of 20mph to 5.5% at 30mph](#)^{xxiii}. [Research also shows that a child is much less likely to be seriously injured or killed if hit by a car at 20mph compared to 30mph](#)^{xxiv}.

[Evidence from the Edinburgh 20mph scheme has suggested that traffic speeds fell by 1.3mph on average and that casualties fell by 38%](#) (though the report notes that casualties are also generally falling on roads throughout Scotland)^{xxv}. [A study on the impact of 20mph limits on urban roads in Scotland found that reducing speed limits from 30mph to 20mph could potentially prevent 530- 750 casualties annually](#) (across Scotland)^{xxvi}.

Some small benefits to security may result, if more people are out and about within their communities. No impact on transport system reliability or resilience is anticipated.

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

3.2. STAG Criteria

1. Environment

Low Scenario	High Scenario
+	+

See Strategic Environmental Assessment (SEA) below.

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

2. Climate Change

Low Scenario	High Scenario
+	+

This recommendation would, by making walking, wheeling and cycling more attractive, help generate a modal shift from car to active modes for short journeys in urban areas and hence contribute a minor positive reduction in greenhouse gas emissions.

No impact on the Vulnerability to Effects of Climate Change or Potential to Adapt to Effects of Climate Change is anticipated.

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

3. Health, Safety and Wellbeing

Low Scenario	High Scenario
+++	+++

Research by the [UK Transport Research Laboratory](#) has shown that every 1mph reduction in average urban vehicle speeds can be expected to result in a 6% fall in the number of casualties^{xxvii}. [The risk of fatal injury to pedestrians rose from under 1% at a vehicular impact speed of 20mph to 5.5% at 30mph^{xxviii}](#). [Research also shows that a child is much less likely to be seriously injured or killed if hit by a car at 20mph compared to 30mph^{xxix}](#).

[Evidence from the Edinburgh 20mph scheme has suggested that traffic speeds fell by 1.3mph on average and that casualties fell by 38% \(though the report notes that casualties are also generally falling on roads throughout Scotland\)^{xxx}](#). [A study on the impact of 20mph limits on urban roads in Scotland found that reducing speed limits from 30mph to 20mph could potentially prevent 530- 750 casualties annually \(across Scotland\)^{xxxi}](#).

Slower traffic speeds are also anticipated, by making walking, wheeling and cycling more attractive, to increase levels of active travel, contributing to physical health and mental wellbeing. No impact on access to health and wellbeing infrastructure is anticipated, but some small benefits to security may result, if more people are out and about within their communities as a result of the placemaking and social inclusion aspects these schemes

often introduce.

There is an uncertain relationship between the recommendation and visual amenity at this time, however any effect is not anticipated to be significant in the context of the existing road network.

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

4. Economy

Low Scenario	High Scenario
+	+

This recommendation has the potential to reduce the annual cost of road traffic accidents to the Scottish Economy. [The average annual, socio-economic cost of road traffic crashes represents between 1.5% and 2% GDP in middle to high income countries^{xxxii}.](#)

[It is estimated that the value of accident and casualty prevention based on 20mph limit and zone speed reduction in Scotland could be between £27.1 million and £39.9 million annually^{xxxiii}.](#)

No significant impact on Transport Economic Efficiency or Wider Economic Impacts is anticipated.

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

5. Equality and Accessibility

Low Scenario	High Scenario
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[Research has shown that people living in deprived areas are more likely to be injured in road crashes^{xxxiv}. Children in low socio-economic income groups are over four times more likely to be killed or seriously injured while using local streets](#) than children of the wealthiest income group^{xxxv}, so are likely to benefit most from speed reduction.

Poorer communities experience higher levels of traffic and associated local air pollution, road safety risks and physical inactivity, and thus have more to benefit when road danger is reduced and active travel opportunities increased. [The main barrier to active travel is road danger](#), and a reduction in local road speeds can be an important motivator to taking up walking, wheeling and cycling^{xxxvi}. [Barriers to transport, including active travel, are amplified when inequities already exist](#); this is the case for women, older people, disabled people, people from ethnic minority groups and people at risk of deprivation^{xxxvii}, so members of these groups may realise particular benefits.

[Evidence from Edinburgh found that 20mph schemes can positively enhance communities and neighbourhoods](#) and have a positive impact on the quality of life in neighbourhoods^{xxxviii}.

Further to this there are likely to be health benefits arising from the implementation of 20mph schemes by reducing accidents and casualties, promoting inclusivity and encouraging people to make active travel choices.

No impact on the affordability of transport, or on public transport network coverage, is expected.

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

3.3. Deliverability

1. Feasibility

20mph schemes are readily feasible from a technical perspective with a number of schemes in Scotland already in existence. There is significant experience of implementing 20mph schemes in both Scotland and UK-wide. Some local authorities are working to expand existing or create new schemes, and further work is anticipated to arise as a result of the 2021-22 Programme for Government commitment.

20mph schemes would be implemented in urban areas using existing road traffic guidance and directives by local authorities, for whom the capacity and resource requirements could be significant. Schemes would be subject to consultation in relation to traffic orders and statutory process.

The role of Transport Scotland would be to support and facilitate implementation, in part in a funding role and through the development of guidance and best practice.

2. Affordability

Overall, the implementation costs for a network of 20mph schemes in urban areas is likely to be substantial, with a capital cost estimated to be in the range of £10 million - £30 million. Schemes would also require some revenue funding which could be a determining factor in the timing of schemes' roll out. There are also likely to be some revenue costs to ensure that schemes are maintained and enforced. The roll out of the recommendation would be phased to match funding availability.

3. Public Acceptability

Existing schemes which have delivered 20mph limits and zones have found broad public support for their introduction. [Evidence from the Edinburgh scheme highlights generally a very good level of public support for the reductions in speed limits and traffic speed](#), although some pre-implementation concerns about local effects on congestion and increased journey times were recorded^{xxxix}, which could be expected for new or expanded schemes elsewhere.

[The strength of support tends to reflect levels of concern about traffic speeds](#); for example, those households with children tended to be most concerned about safety and are also more supportive of the speed limits^{xl}.

3.4. Statutory Impact Assessment Criteria

1. Strategic Environmental Assessment (SEA)

Low Scenario	High Scenario
+	+

This recommendation is likely to result in positive effects for four SEA Objectives that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the aims of this recommendation to improve safety of the road network and street environments, which in turn would encourage greater use of sustainable active travel methods and would prioritise pedestrians in the public realm.

In addition, road traffic travelling at slower speeds may also result in positive effects in relation to a reduction in noise and vibration; though evidence is unclear as to whether 20 mph limits have benefits or disbenefits for air quality (Objective 3) or reducing greenhouse gas emissions (Objective 1).

There is an uncertain relationship between the recommendation and the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). However, these are not anticipated to be significant effects in the context of the existing road network. It is recommended that further environmental assessment is undertaken as the recommendation develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.

It is considered that the recommendation would have neutral effects on the remaining SEA objectives (Objectives 2, 8 and 9).

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

2. Equalities Impact Assessment (EqIA)

Low Scenario	High Scenario
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Barriers to transport, including active travel, are amplified when inequities already exist; this is the case for women, older people, disabled people, people from ethnic minority groups and people at risk of deprivation^{xli}.

The introduction of 20mph schemes can support increased active travel^{xlii} which can support improved physical and health for groups with protected characteristics. 20mph schemes can reduce the risk and level of road accidents and, as such, benefits also arise for those for whom road danger is the biggest deterrent to walking and cycling, in particular older people and children^{xliii}.

Reductions in noise and vibration and potential improvements in air quality, as a result of traffic travelling at slower speeds and reductions in fuel consumption, are likely to benefit those who are more vulnerable to the adverse effects of traffic related noise and emissions

including children, older people and disabled people.

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

3. Island Communities Impact Assessment (ICIA)

Low Scenario	High Scenario
+	+

This recommendation is relevant to urban/suburban areas across Scotland, including towns and villages on the islands.

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

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

Low Scenario	High Scenario
++	++

[The biggest concern of adults when it comes to children walking and cycling is traffic danger^{xiv}](#), so lessening this danger by reducing traffic speeds can enable many more children to gain access to a wider variety of opportunities using healthy modes. [Children, in low socio-economic income groups are over four times more likely to be killed or seriously injured while using local streets](#) than children of the wealthiest income group^{xiv}, so may particularly benefit from investments to improve road safety.

Improving the safety of active travel could also promote a modal switch from car travel, thereby reducing the impact of car related issues, such as accidents and emissions, which disproportionately affect children and young people.

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

5. Fairer Scotland Duty Assessment (FSDA)

Low Scenario	High Scenario
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Deprived communities commonly experience higher levels of traffic and associated local air pollution, road safety risks and physical inactivity with evidence showing that low socioeconomic status is associated with higher road traffic fatalities. People living in deprived areas are more exposed to road traffic injuries amongst vulnerable groups such as pedestrians, cyclists and motorcyclists and nearly half of the victims in road collisions are also more concentrated in deprived neighbourhoods. 20mph schemes can encourage active travel and reduce traffic emissions and noise. This helps to reduce inequalities of

outcome associated with poor physical and mental health and life chances by reducing road danger, traffic emissions and noise and increasing active travel opportunities.

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

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