



# 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 14 - Provision of strategic bus priority measures

#### Recommendation Description

This recommendation seeks to implement schemes targeted at delivering faster and more reliable journey times for bus passengers, particularly within Scotland's cities and towns, where congestion is highest. Interventions would differ by location, with consideration given to:

- Road space reallocation on both trunk roads and local roads;
- Introduction of bus lanes;
- Introduction of bus gates;
- Traffic signal priority;
- Bus Rapid Transit; and
- Actively Managed Hard Shoulder for bus.

Bus priority measures are important given the climate emergency and consequent [national targets to reduce car kilometres by 20% by 2030<sup>i</sup>](#) and to [cut greenhouse gas emissions to net zero by 2045<sup>ii</sup>](#). As envisaged in [NTS2<sup>iii</sup>](#), it is also anticipated that through a circle of growth, provision of bus priority measures would leverage other bus service improvements, such as reduced fares and increased mileage, with faster bus speeds and punctuality improvements resulting in increased patronage and lower car use, reducing congestion further.

Over and above the emissions benefit, improving bus services contributes to a just transition to net zero by tackling inequalities. This is owing to the [demographics of bus users and the reliance of some people on bus](#), given that 48% of the most deprived households (Scottish Index of Multiple Deprivation quintile 1) do not have access to a car and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles<sup>iv</sup>.

The Scottish Government has already committed to investing in bus priority, with the [Bus Partnership Fund \(BPF\)](#) launched in November 2020 and an ongoing assessment of proposals for managed motorways in Glasgow City Region also underway<sup>v</sup>. If the current round of BPF grants and the managed motorway programme prove to be successful, this recommendation suggests that funding is either extended or that there is a subsequent round of funding, especially if there is evidence of bus priority investment being leveraged to support other improvements from operators and local transport authorities.

## 1.2. Relevance

### Relevant to all of Scotland

While bus priority measures are likely to be relevant across much of Scotland, they would be most relevant in the areas with the highest levels of congestion, namely Scotland's cities and towns. However, through engagement with local authorities and Regional Transport Partnerships, it is understood that the positive effects can also radiate out to more rural areas, given the need for communities to travel into centres.

Work undertaken during STPR2 indicated that, measured on the basis of vehicle kilometres per kilometre of road in 2017/18, the following regions had the highest levels of congestion:

- Glasgow City Region (eight of its constituent authorities);
- Edinburgh & South East (five authorities);
- Forth Valley (three authorities);
- Tay Cities (three authorities); and
- North East Region (two authorities).

In addition, this recommendation suggests that Transport Scotland may wish to deliver additional measures on the trunk road and motorway network. In this case, Transport Scotland would build on the current work progressing plans for the M8, M77 and M80, as well as the [CAVForth project between Fife and Edinburgh](#)<sup>vi</sup>.

Analysis of INRIX congestion data for the 2019 AM Peak period in conjunction with bus service information from the Traveline National Dataset suggested that there may be scope for schemes on the:

- M90 southbound between junctions 1C and 1B, linking the existing southbound bus lane to the Forth Road Bridge; and
- A90 Forfar Road southbound at the Kingsway Bypass in Dundee.

## 1.3. Estimated Cost

### £501 million – £1 billion Capital

Based on the work carried out to date on delivering bus priority, including the managed motorways proposals for Glasgow City Region, it has been assumed that between £501 million and £1 billion of funding would be required to cover the schemes to be delivered through this recommendation. Increased revenue funding may also be required if the new facilities are to be maintained and enforced.

## 1.4. Position in Sustainable Investment Hierarchy

### Targeted infrastructure improvements

In addition to requiring targeted infrastructure improvements, increased bus priority may also deliver mode transfer, therefore additionally making better use of existing capacity and reducing the need to travel unsustainably.

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

- Help deliver our net-zero target;
- Adapt to the effects of climate change;
- Promote greener, cleaner choices
- Be reliable, efficient and high quality; and
- Use beneficial innovation.

## 1.5. Summary Rationale

### Summary of Appraisal

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

Provision of strategic bus priority measures could have a positive impact against all of STPR2’s Transport Planning Objectives and STAG criteria, as well as delivering positive benefits against most of the statutory impact assessment criteria.

By delivering faster and more reliable journey times for bus passengers, this could increase the attractiveness of bus as a mode of transport, resulting in mode transfer from car. In addition, provision of bus priority measures could reduce bus operating costs, providing the opportunity to leverage other bus service improvements from operators, such as reduced fares and increased mileage.

With long-term investment in bus priority already being evaluated through the BPF and the managed motorways proposals, this recommendation seeks funding to provide additional measures on both local roads and the trunk road network once the current funding period has ended, if monitoring and evaluation of outputs from the current round of funding confirms that there is likely to be a business case for doing so.

Delivery of bus priority measures is generally feasible, making use of interventions for which there is already significant experience of implementation in Scotland and elsewhere, and should be affordable, with the ability to tailor funding to suit local circumstances. However, there may be challenges associated with public acceptability, especially where provision of bus priority measures requires reallocation of roadspace or removal of parking.

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

- **Decline in Bus Use:** bus is particularly important to areas which are not served by the rail network, including much of rural Scotland. It can be an important element in multi-modal journeys and is a sustainable and space-efficient mode of travel. [Reducing passenger numbers risks driving down revenues and making some services unviable, resulting in cancellations and, in some cases, communities being isolated](#)<sup>vii</sup>.
- **Reliability:** without intervention, forecast increases in traffic volumes on the road network will impact negatively on reliability through increased congestion and more roadworks as greater pressure is placed on the operational efficiency of the network. [Reliability can also be an issue on the rail network](#)<sup>viii</sup>.
- **Changing Travel Behaviour:** changing people’s travel behaviour to use more sustainable modes will have a positive impact on the environment, as well as health and wellbeing.
- **Labour Markets:** people often 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 ensure 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.
- **Poverty and Child Poverty:** public transport is very important to those on low incomes, yet in many areas of high social deprivation public transport options can be limited and relatively expensive. A key challenge is providing fair and affordable access to the services people need.

### 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

- Clyde Metro (11);
- Edinburgh and South East Scotland Mass Transit (12);
- Aberdeen Rapid Transit (13);
- Future Intelligent Transport Systems (33);
- Traffic Scotland System renewal (34);
- Intelligent Transport Systems renewal and replacement (35); and
- Sustainable access to Grangemouth Investment Zone (39).

However, it is possible that, in some locations, aspirations to promote bus priority may conflict with certain other recommendations, such as Connected Neighbourhoods (1) and Improving Active Travel on Trunk Roads through Communities (37) and, therefore, there would need to be a holistic approach to planning across these recommendations.

#### Other areas of Scottish Government activity

- [City Region Deals](#)<sup>ix</sup>;
- [Bus Partnership Fund](#)<sup>x</sup> and
- [Revised Draft Fourth National Planning Framework](#) (Revised Draft NPF4)<sup>xi</sup> National Developments 6: Urban Mass/Rapid Transit Networks, 9: Edinburgh Waterfront, 10: Dundee Waterfront and 13: Clyde Mission

### 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
++	++

If bus priority measures increase the attractiveness of bus as a mode of transport it could result in transfer from car, with [evidence suggesting that implementation of extensive bus lanes can reduce car use by up to 6%<sup>xii</sup>](#), which would reduce pollution. Bus priority measures would also reduce pressures on operating costs, which could support greater levels of investment in new, lower emission vehicles.

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

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

Low Scenario	High Scenario
+++	+++

Bus priority measures should reduce both journey times and journey time variability, with [evidence suggesting that along a 10-kilometre highly congested bus route, fully enforced bus lanes could reduce bus travel times by 7 to 9 minutes and traffic signal priorities could reduce bus travel times by 2 to 4 minutes<sup>xiii</sup>](#). This would reduce pressures on operating costs, which should reduce the extent to which operators need to increase vehicle requirement or reduce frequency. These efficiencies may be passed onto passengers by operators through increased levels of service, improved quality of services and/or reduced fares.

This recommendation is therefore expected to have a major 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
+	+

The [NTS2](#) highlighted that the transport system can help to improve the sustainability of placemaking if it can discourage people from owning or using cars<sup>xiv</sup>. Given that [research by Living Streets across 20 communities in Scotland indicated that 83% of passengers value bus reliability as their top consideration](#)<sup>xv</sup>, bus priority measures could increase the attractiveness of bus as a mode of transport by improving reliability, which could consequently result in transfer from car, enhancing communities as places and reducing pollution. Given that bus travel requires walking to and from stops, this would also increase active travel.

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

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

Low Scenario	High Scenario
+	+

The STPR2 public survey indicated that only 22% of respondents were satisfied with bus journey times relative to car speeds, the lowest level of satisfaction across the bus related questions. Therefore, actions taken to improve bus journey times should improve accessibility to employment, education, healthcare and leisure activities, especially for passengers from the most deprived households, who are less likely to own a car and are therefore more reliant on travel by bus.

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
+	+

Bus priority measures should improve the reliability of the bus network by reducing journey times and reducing journey time variability, with [evidence suggesting that along a 10-kilometre highly congested bus route, traffic signal priorities could reduce the variability of travel time by up to 16%](#)<sup>xvi</sup>. Schemes could also increase the likelihood of buses being able to pull in level with the kerb at stops, allowing safer access for those passengers with reduced mobility.

However, this recommendation would have limited impact on resilience and security, so overall, it is expected to have a minor positive impact on this objective in both Low and High scenarios.

**3.2. STAG Criteria**

**1. Environment**

Low Scenario	High Scenario
+	+

See Strategic Environmental Assessment (SEA) below.

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

**2. Climate Change**

Low Scenario	High Scenario
+	+

If bus priority measures increase the attractiveness of bus as a mode of transport it could result in transfer from car, with [evidence suggesting that implementation of extensive bus lanes can reduce car use by up to 6%](#)<sup>xvii</sup>, although the impact on greenhouse gases, and hence climate change, would depend on the fuel being used by the affected buses and cars. Bus priority measures would also reduce pressures on operating costs, which could support greater levels of investment in new, lower emission vehicles.

However, the impact on the vulnerability to effects of climate change and the potential to adapt to effects of climate change are expected to be neutral.

Overall, 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
+	+

The [NTS2](#) highlighted that the transport system can help to improve the sustainability of placemaking if it can discourage people from owning or using cars<sup>xviii</sup>, which may improve wellbeing by enhancing communities. Given that bus travel requires walking to and from stops, this would also increase active travel, which should improve health.

There could also be a slightly beneficial impact on accidents if car use was reduced. If bus priority measures resulted in increased patronage, there could additionally be benefits in terms of perceived security concerns, such as for vulnerable people travelling alone. Improved journey times could also deliver minor benefits in terms of access to health and wellbeing infrastructure. However, the impacts on visual amenity would depend on the location and the nature of the scheme.

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

### 4. Economy

Low Scenario	High Scenario
+	+

There could be a slightly beneficial economic impact if a circle of growth can be unlocked, with priority measures resulting in reduced bus journey times and improved journey time reliability, which may support operator reinvestment in fare reductions and improved frequency/connectivity, increasing access to education, jobs and services. While it can be difficult to determine causality, an ex-post evaluation of Fastlink in Glasgow (analysis carried out by AECOM for SPT)<sup>xix</sup> did identify economic growth in the corridor following scheme completion. Similarly, with Transport for Greater Manchester noting that residential appeal had increased following the completion of the Leigh Guided Busway (from case study interviews carried out to inform [STPR2](#))<sup>xx</sup>.

In addition to the potential for economic growth in the bus priority corridors themselves, this recommendation could deliver positive wider economic impacts in terms of increased employment for those from more deprived households (see Equality and Accessibility), although the impact on specific markets is expected to be neutral.

Overall, 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
++	++

There could be a beneficial impact if a circle of growth can be unlocked, with priority measures resulting in reduced bus journey times that may support operator reinvestment in improved public transport network coverage, which may also provide better comparative access to locations with employment, education, healthcare and leisure activities. A circle of growth may also have a slightly beneficial impact on affordability, if it allows fares to be reduced.

[There could be a beneficial impact on improving social inclusion, given that 48% of the most deprived households \(Scottish Index of Multiple Deprivation quintile 1\) do not have access to a car](#) and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles<sup>xxi</sup>. This would improve comparative access for those affected.

The impact on active travel network coverage would depend on the nature and the location of the scheme, although schemes should not be allowed to reduce the active travel network.

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

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

### 3.3. Deliverability

#### 1. Feasibility

Provision of strategic bus priority measures is largely feasible, subject to an assessment of specific sites. The targeting of bus priority measures, evaluation of the business case and subsequent construction are in common practice and therefore also raise no concerns regarding feasibility.

#### 2. Affordability

Provision of strategic bus priority measures generally involves relatively low-cost measures and the Scottish Government has already committed to long-term investment in bus priority infrastructure and the Glasgow City Region managed motorways programme. If bids received through the current round of the BPF and outcomes of the managed motorway programme demonstrate value for money, funding could be extended, especially if there is evidence of bus priority investment being leveraged to support other improvements from operators and local transport authorities.

### 3. Public Acceptability

There are public acceptability risks associated with the provision of strategic bus priority measures, especially where this requires reallocation of roadspace or removal of parking. This could particularly be the case amongst non-bus users, especially if bus use remains low post-COVID-19. It would therefore be essential for scheme promoters to take this into account when developing schemes. However, bus priority is likely to be popular with bus users and could improve accessibility to employment, education and other services for those without access to a car.

### 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 SEA Objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), particularly in relation to the achievement of a reduction in transport related emissions, as it seeks to encourage a modal shift to more sustainable public transport forms. There is [evidence that implementation of extensive bus lanes can reduce car use by up to six percent](#)<sup>xxii</sup>. Positive environmental effects are anticipated, particularly if the interventions support reinvestment in a low carbon fleet. It would also have a positive effect on quality of life, sustainable accessibility and safety (Objectives 4 and 7) by providing a sustainable alternative for users to travel to employment, education, healthcare and leisure activities, which has potential for improved safety on the transport network. It could also result in a beneficial effect on noise and vibration; however, this would depend on the location of the measures / upgrades and is therefore uncertain at this stage.

The recommendation would also have a positive effect on achieving a sustainable transport network (Objective 8) as it promotes a more sustainable use and management of the existing transport network.

There is potential for possible positive effects on biodiversity (Objective 11) as a result of a reduction in diffuse pollution on key receptors; however, the significance of effects are uncertain at this stage as the overall effect would depend on whether physical construction works are required.

Depending on the location of the bus priority measures, there is *potential for* negative environmental effects during construction and operation of the improvements, for example on noise and vibration (Objective 5), natural resource usage, Water Environment, Soil, Cultural Heritage and Landscape and Visual Amenity (Objectives 9 to 14). It is therefore recommended that further environmental assessment is undertaken as the recommendation is implemented, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. It is anticipated that mitigation would be able to avoid or reduce any potential negative environmental effects.

The recommendation is related to, but unlikely to have any effect on, the achievement of Objective 6 (relating to improvements in the public realm and pedestrian prioritisation) and,

given the nature of the recommendation, it has no (or negligible) clear relationship to the achievement of Objective 2 (climate change adaptation).

For the cumulative assessment, across all SEA objectives, 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
+	+

There could be a minor beneficial impact of reduced barriers to bus use for those with reduced mobility, where schemes increase the likelihood of buses being able to pull in level with the kerb at stops, allowing easier access.

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

## 3. Island Communities Impact Assessment (ICIA)

Low Scenario	High Scenario
0	0

Bus priority is unlikely to be required in most island locations because there are much lower levels of congestion affecting bus services, so this recommendation is therefore expected to have a neutral impact on this criterion in both the Low and High scenarios.

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

Low Scenario	High Scenario
+	+

[Improved bus connectivity could have a beneficial impact on children and young people, given that 16% of children travel to school by bus<sup>xxiii</sup>](#), and children and young people may be more likely to use buses for leisure travel, given that those under 17 would not be able to drive. Free bus travel for those under 22 would also improve the attractiveness of bus, supporting the recommendation.

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

**5. Fairer Scotland Duty Assessment (FSDA)**

Low Scenario	High Scenario
++	++

There could be a beneficial impact on tackling inequality. [48% of the most deprived households \(Scottish Index of Multiple Deprivation quintile 1\) do not have access to a car](#) and are twice as likely to use the bus to travel to work as households in the least deprived three quintiles<sup>xxiv</sup>. Therefore, actions taken to improve bus journey times could improve accessibility to employment, education, healthcare and leisure activities for those most in need.

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

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