

Detailed Appraisal		Intervention D11: (Strategic) Park-&-Ride/Park-&-Choose Strategy						
Estimated total Public Sector Funding Requirement:		<i>Capital Costs/grant</i> <i>Annual Revenue Support Present</i> <i>Value of Cost to Gvt</i> <i>BCR/PVB</i>				£50m - £100m - £10m - £50 m 0.75 - 1.25		
Summary Impact on STAG Criteria	Environment Safety Economy Integration Accessibility and Social Inclusion	---	--	-	0	+	++	+++
(Judgement based on available information against a 7pt. scale.)								
Intervention Description:								
<p>This intervention supports the objectives to make public transport more competitive against the car. Located on major commuting routes, these sites would also assist in maintaining and enhancing the labour catchment areas in the city regions and reducing CO₂e emissions. It would deliver a series of strategic Park-&-Ride / Park-&-Choose sites using common branding / marketing across Scotland. The sites would be served by either rail services or express bus links to and from the city centres and areas of economic activity, including appropriate bus priority measures at congested locations. These would interface with existing urban bus priority systems. Proposed sites for this strategy include creation of new facilities:</p> <ul style="list-style-type: none">• Serving Aberdeen from Dyce (A96) and Charleston;• Serving Dundee: Invergowrie, Forfar Road, A92 and Forgan;• Serving Edinburgh: Halbeath, Lothianburn, Pitreavie, and Tranent;• Serving Glasgow: Bargeddie (M8), St James (M8), Glasgow Southern Orbital (M77), Fullarton (M74), Robroyston (M80); and outside Ayr (M77);• At Bannockburn, serving Edinburgh, Glasgow and Stirling; and• A new station at Dalcross with Park-&-Ride facilities and interchange facilities with Inverness Airport. <p>In addition, this could incorporate expansion and complementary branding at existing sites at Bridge of Don, Hermiston, Ingliston and Todhill (Sheriffhall), with increased frequency for current bus services from these sites.</p>								
Summary: Rationale for Selection								
<p>This intervention would help to keep the city centres moving by reducing road congestion in the peak periods. It would also assist in maintaining the labour catchments and reducing emissions. In the case of Edinburgh, where this is a key objective, the proposed measures would increase the number of people able to commute to areas of economic activity, particularly central Edinburgh. It is a similar picture for Glasgow where sites are proposed on all major radial roads.</p> <p>This could be taken forward in conjunction with interventions aimed at providing priority vehicle lanes on sections of the strategic road network (D6 - Using Intelligent Transport Systems on Parts of the Road Network to Enhance Capacity and Operations).</p>								

Table D11.1.1 STPR Objectives

STPR Objectives	
<p>National Objective 1: To promote 'competitive' inter-urban journey times.</p>	<p>1: Positive - A strategy incorporating bus priority and Park-&-Ride measures in these locations could reduce peak hour traffic along some of the most congested sections of the strategic network. These decongestion benefits would be achieved primarily through a mode shift to public transport services on journeys originating in the suburbs and surrounding areas. Travellers using the network for strategic trips, including inter-urban journeys could experience decongestion benefits.</p>
<p>National Objective 2: To reduce inter-urban journey time on public transport.</p>	<p>2: Strongly Positive - Congestion is forecast to increase both within the urban networks and on parts of the strategic network. The development and expansion of sites will offer car drivers a viable alternative to driving into the most congested parts of the network.</p>
<p>National Objective 3: Promote journey time reduction on the trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) or provide improvements to journey time reliability.</p>	<p>3: Positive - Forecast journey time savings for public transport trips as a result of the creation of park and ride sites, priority measures and frequency enhancements are significant. Transport Model for Scotland (TMfS) forecasts that the improvements in the Glasgow area, where bus priority measures are proposed, would result in significant journey time savings along key corridors into the city centre. In 2017 and 2022, journey times for AM peak public transport journeys from Bargehall, St James, M77, GSO, Fullarton and Robroyston to Glasgow City Centre are forecast to be 15 per cent-30 per cent lower with the improvements in place, compared with the reference case. Bus lanes offering opportunities for use by buses and other High Occupancy Vehicles (HOV) could be introduced through the Intelligent Transport Systems (ITS) intervention (D6) proposed elsewhere under STPR and these would complement this intervention.</p>
<p>National Objective 4: To promote journey time reductions between the Central Belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day between these centres.</p> <p>[Any impacts identified here are relevant to similar, location specific objectives at Aberdeen, Dundee, Edinburgh and Glasgow, and corridor objectives on national Corridors 9 and 14.]</p>	<p>4: Slightly Positive - By providing Park-&-Ride sites and implementing bus priority measures on strategic approaches into key urban networks, this intervention would be effective in removing car trips from these approaches. TMfS forecasts indicate through the implementation of the intervention, that the number of Park-&-Ride trips across Scotland could be more than 40 per cent higher by 2022. Overall, the intervention is expected to generate significant journey time benefits for business trips between the Central Belt and Aberdeen, particularly during peak hours.</p>
<p>National Objective 5: Maximise the labour catchment area in city regions (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel).</p>	<p>5: Strongly Positive - Peak hour journey times into Glasgow, Edinburgh, Aberdeen and Dundee would reduce significantly from the measures taken forward in this intervention. Bus priority measures would generate faster bus journey times along key commuter corridors. TMfS forecasts significant journey time savings for bus passengers along routes where priority measures have been implemented, with reductions in peak hour journey times of 15 per cent-30 per cent in comparison with the reference case on some of the most congested routes. This intervention would therefore assist in maximising the size of the 60 minute commutable labour catchment accessible by public transport.</p>
<p>National Objective 6: Support the development and implementation of the emerging national development interventions.</p> <p>[Any impacts identified here are relevant to similar, location specific objectives at Edinburgh and on national corridors 10, 13</p>	<p>6: Positive - This intervention proposes the construction of Park-&-Ride sites at Halbeath and Pitreavie, serving journeys from the north into Edinburgh. These proposals could reduce the number of car trips crossing the Firth of Forth, thereby improving the operation on the Forth Crossing at the busiest times and complementing plans to construct a Replacement Forth Crossing. Public transport access to Glasgow and Edinburgh Airports could also be improved, depending on the service pattern of buses using these facilities.</p>

<p>and 14.]</p> <p><u>National Objective 7:</u> Reduce CO₂e emissions per person km.</p> <p><u>National Objective 8:</u> Stabilise total CO₂e emissions.</p> <p><u>National Objective 9:</u> Reduce CO₂e emissions in line with expectations from the emerging climate change bill.</p> <p><u>National Objective 10:</u> To promote continuing reduction in accident rates and severity rates across the strategic transport network, supporting the work of the Strategic Road Safety Plan.</p> <p><u>National Objective 11:</u> To promote seamless travel.</p> <p><u>National Objective 12:</u> Improve the competitiveness of public transport relative to the car.</p> <p><u>National Objective 13:</u> To improve overall perceptions of public transport.</p> <p>IN ADDITION TO THE NATIONAL OBJECTIVES ABOVE, THIS INTERVENTION WOULD ALSO POSITIVELY CONTRIBUTE TO THE FOLLOWING SELECTED URBAN NETWORK AND CORRIDOR OBJECTIVES:</p>	<p>7: Neutral – This intervention is forecast to transfer some longer distance journeys from private car to public transport. However, modelling outputs indicate a slight rise in CO₂e emissions against the future 2022 baseline, if this intervention was implemented. This could be due to an increase in traffic to the specified new Park-&-Ride sites outside of city / town centres. There is likely to be a decrease in CO₂e emissions in the urban centres served by the Park-&-Ride schemes.</p> <p>8: Neutral - This intervention is forecast to transfer some longer distance journeys from private car to public transport. However, modelling outputs indicate a slight rise in CO₂e emissions against the future 2022 baseline, if this intervention was implemented. This could be due to an increase in traffic to the specified new Park-&-Ride sites outside of city / town centres. There is likely to be a decrease in CO₂e emissions in the urban centres served by the Park-&-Ride schemes.</p> <p>9: Neutral - By the year 2050, the draft Climate Change Bill requires a reduction, in the total amount of CO₂e emitted, of 60 per cent in comparison with the 1990 baseline. By promoting smoother traffic flow and encouraging mode shift to public transport, the intervention could potentially lead to reduced CO₂e emissions per person km. This intervention would therefore promote carbon efficiency; however the potential of the measures to generate significant overall savings is doubtful.</p> <p>10: Neutral - The overall impact of the measures on accident rates and severity rates could be negligible. However, by promoting mode shift to bus, the intervention could make some contribution to accident savings.</p> <p>11: Strongly Positive - Park-&-Ride sites improve transport integration, by providing seamless connections between the car and bus services. This intervention comprises the provision of such facilities in key locations across the network, more specifically on key transport corridors into the key urban areas of Glasgow, Edinburgh, Aberdeen and Dundee. In addition to facilitating transfer between modes, this also facilitates transfer from strategic to urban networks. Overall, the intervention is expected to generate a strong positive impact on this objective.</p> <p>12: Positive – To complement the Park-&-Ride sites, it is assumed that bus priority measures or priority lanes would be introduced as appropriate along the key routes serving the main urban networks. These measures would result in differential journey time savings for all buses along busy routes, generating a competitive advantage relative to the car.</p> <p>13: Positive – This intervention envisages consistent branding and information at all Park-&-Ride sites and on bus services. Vehicle branding and high quality passenger information are powerful tools in raising public perception of bus services, and these benefits could extend to the overall perception of public transport.</p>
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<p><u>STPR Objective Aberdeen 1:</u> To improve accessibility, primarily by public transport, to and between the city centre, Dyce, the airport and south east Aberdeen.</p> <p><u>STPR Objective Dundee 1:</u> To reduce the conflict between long distance and local traffic.</p> <p><u>STPR Objective Dundee 3:</u> To improve the public transport accessibility and competitiveness to Dundee West.</p> <p><u>STPR Objective Edinburgh 1:</u> To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking the areas of economic activity.</p> <p><u>STPR Objective Edinburgh 3:</u> To increase public transport capacity and frequency between Fife and Edinburgh.</p> <p><u>STPR Objective Glasgow 1:</u> To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange.</p> <p><u>STPR Objective Glasgow 2:</u> To improve the efficiency of the M8 motorway during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic, increasing the people carrying capacity and freight carrying capacity of existing road, and demand management.</p>	<p>A1: Positive – This intervention proposes a network of Park-&-Ride sites on the approaches to Aberdeen, supported by bus priority measures and junction improvements to benefit bus journey times. This could deliver a competitive advantage for bus services, particularly during peak hours, encouraging commuters to shift from the car to bus services, in order to avoid congestion. By 2022, bus connections and service enhancements from the proposed Park-&-Ride sites at Charleston and Dyce are forecast to reduce bus journey times by approximately 15-20 per cent in comparison with the reference case, and so would contribute to improved accessibility at these sites.</p> <p>D1: Positive - Providing a network of Park-&-Ride sites on the key radial routes surrounding Dundee, with associated bus priority measures, could encourage a modal shift from the car to Park-&-Ride. These measures are primarily aimed at commuters and other trips into the city from the surrounding city region, and would remove local trips from the strategic network, particularly during peak hours, thus generating more reliable journey times for strategic users of the network and reducing conflict between long distance and local traffic.</p> <p>D3: Positive – Provision of Park-&-Ride on key routes into Dundee would increase the competitiveness of public transport and improve accessibility throughout the urban area. Priority measures on the route to Invergowrie Park-&-Ride, in particular, would benefit public transport accessibility to Dundee West.</p> <p>E1: Positive – The levels of road traffic congestion in the City of Edinburgh and on key approaches are forecast to grow without further intervention, with a resulting detrimental impact on car journey times. Providing bus priority and Park-&-Ride measures outside Edinburgh, on key radial routes into the city centre would help to maintain the 60-minute commutable labour market area at the current level.</p> <p>E3: Positive – This intervention would implement Park-&-Ride sites at Halbeath and Pitreavie. These measures would be complemented with additional bus services and bus priority en-route to Edinburgh, increasing public transport capacity and frequency between Fife and Edinburgh.</p> <p>G1: Positive – Within Glasgow, trends indicate that there would be a redistribution of employment opportunities from the centre to the periphery. Important areas of economic activity exist and continue to emerge on the east-west corridor comprising Glasgow Airport, the airport corridor, Clyde Waterfront, the city centre and Clyde Gateway. This intervention takes account of the importance of promoting efficient access along this corridor through proposals to implement Park-&-Ride facilities and bus priority measures. These measures would be effective in reducing bus journey times and promoting public transport accessibility between areas of economic activity, with minimal need to interchange.</p> <p>G2: Strongly Positive – The M8 currently suffers from congestion issues during peak time period and this is expected to continue to grow in the future, increasing pressure on the corridor. Complementing the Park-and-Ride sites, provision of bus priority on the M77 and M8, could be effective in promoting modal shift to public transport, and increasing the people carrying capacity of the M8. A modal shift to public transport among this target group could be effective in freeing capacity for longer-distance trips, including freight, reducing the conflict between local and strategic traffic. In comparison with the reference case, TMfS forecasts journey time savings of approximately 15-30 per cent for public transport and just under 5 per cent for car journeys along the M8, both east and west of Glasgow, indicating that the efficiency improvements associated with the intervention could be significant.</p>
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<p><u>STPR Objective Glasgow 6:</u> To promote efficient and effective transport links to support the development and implementation of the proposed national development at Glasgow Airport identified in the NPF2.</p> <p><i>[This objective is also relevant to Corridor 18 (Glasgow to northwest England).]</i></p> <p><u>STPR Objective 4.2 (Aberdeen to Inverness):</u> To improve journey time and increase opportunities to travel, particularly by public transport, between Aberdeen and Inverness.</p> <p><u>STPR Objective 9.1 (Glasgow to Perth):</u> To address current and forecast rail overcrowding into Glasgow.</p> <p><u>STPR Objective 9.2 (Glasgow to Perth):</u> To improve the efficiency and reliability of the operation of the southern sections of the M80 on approach to Glasgow, particularly for priority vehicles.</p> <p><u>STPR Objective 10.2 (Edinburgh to Perth):</u> To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share.</p> <p><u>STPR Objective 13.1 (Edinburgh to Glasgow):</u> To increase public transport capacity and reduce journey time between Edinburgh and Glasgow.</p> <p><u>STPR Objective 14.6 (Edinburgh to Dundee):</u> To improve the efficiency of the M90/A90 during periods of peak</p>	<p>G6: Positive – This intervention contains Park-&-Ride and bus priority measures that could improve network efficiency along the M8 corridor. Bus journey time savings of nearly 30 per cent and car journey time savings of nearly 5 per cent in comparison with the reference case are forecast on the M8 between St James and Glasgow City Centre. This intervention could therefore generate benefits in support of this objective.</p> <p>4.2: Positive – This intervention promotes bus priority measures on the A96, both in congested locations east of Inverness and north of Aberdeen. TMfS modelling of the Park-&-Ride measures at Dyce indicates bus journey time savings in excess of 20 per cent on the A96 approach to Aberdeen, minor car journey time savings are also forecast. This could contribute to faster bus journey times between the two centres, particularly during peak hours. In addition, the improvements west of Aberdeen would provide extended bus services and could therefore be effective in generating a significant mode shift from car to bus, with efficiency gains for all modes.</p> <p>9.1: Positive – Together with enhancements in the service frequency this could produce a step change in bus provision into the city, and provide a competitive and convenient alternative to both rail and car travel.</p> <p>9.2: Positive – Bus priority and potentially hard shoulder bus lanes would improve operation and reliability of bus travel. Moreover, these measures remove buses from the main carriageway, resulting in efficiency gains for cars. Based on TMfS forecasts, journey time savings of nearly 30 per cent for buses and approximately 5 per cent for cars are anticipated for trips between Robroyston and Glasgow City Centre, in comparison with the reference case. By giving buses the opportunity to bypass congestion and avoid parking charges in central Glasgow the implementation of Park-&-Ride measures along the corridor could be effective in promoting modal shift to public transport. These advantages would further compound the potential benefits of the intervention to the operation of the M80.</p> <p>10.2: Positive – A number of Park-&-Ride sites on key approaches to Edinburgh are proposed as part of this intervention. Bus priority measures would be implemented in connection with this intervention minimising delays and improving the reliability of bus services, which is crucial to encouraging greater use of buses. This intervention also proposes significant enhancements in service frequency and should therefore be effective in increasing public transport modal share across the city.</p> <p>13.1: Positive – This intervention would not enhance public transport capacity for journeys between Glasgow and Edinburgh, but would improve journey time reliability for public transport via priority bus measures. Priority measures would allow bus services to avoid some congested areas near Edinburgh and Glasgow along the M8/A8 corridor, reducing bus journey times. This is reflected in TMfS bus journey time forecasts, which predict reductions of approximately 15 per cent by 2022 on the M8 between Bargeddie and Glasgow, in comparison with the reference case.</p> <p>14.6: Positive - The Park-&-Ride proposals in this intervention are aimed at removing peak hour traffic from congested sections of the network, including the strategic approaches to Dundee and the M90 near Dunfermline. These measures are primarily aimed at commuters, and could remove trips that originate in the local area. This intervention would therefore free capacity for strategic trips and reduce the conflict between local and strategic traffic.</p>
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<p>demand with a focus on reducing the conflict between longer distance and local traffic.</p> <p><u>STPR Objective 18.1 (Glasgow to northwest England):</u> To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde.</p> <p><u>STPR Objective 18.3 (Glasgow to northwest England):</u> To improve the efficiency of the A8/M8 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.</p>	<p>18.1: Strongly Positive – The introduction of bus priority measures along the main routes serving Hillington, Glasgow Airport and Glasgow City Centre would reduce bus journey times for trips using the M8 corridor, including journeys between Glasgow and Inverclyde. Additional high frequency services along the corridor linking Bargeddie and St James via Glasgow City Centre would increase capacity. In comparison with the reference case, TMfS indicates journey time savings of approximately 30 per cent for public transport vehicles travelling along the M8 from St James to Glasgow City Centre in the year 2022. As a consequence, this intervention would help to make bus travel easier and quicker for passengers travelling to and from Glasgow City Centre increasing the capacity and attractiveness of public transport (i.e. bus).</p> <p>18.3: Positive – The provision of bus priority measures along the main routes serving Hillington, Glasgow Airport and Glasgow City Centre would help to improve the efficiency of this section of the M8 by reducing congestion affecting buses during periods of peak demand. It could also attract some modal shift from car to bus, thus removing cars from the road. Moreover, this intervention incorporates selected priority bus lanes. This would reduce obstruction from buses on the main carriageway and improve efficiency for car users. For trips between St James and Glasgow City Centre TMfS forecasts indicate that these impacts would result in journey time reductions by 30 per cent for buses and 5 per cent for cars in comparison with the reference case, by 2022. Similarly, Park-&-Ride measures at Bargeddie are forecast to generate journey time savings of approximately 15 per cent and 4 per cent for buses and cars respectively, on the M8 east of Glasgow.</p>
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Table D11.1.2 STAG Criteria

STAG Criteria		
Criteria:	Assessment Summary:	Supporting Information:
Environment:	Moderate Benefit/Minor Negative Impact	Mode share modelling indicates that the intervention would result in modal shift away from private car use and could contribute to an improvement in air quality. This would also improve the air quality of Air Quality Management Areas (AQMA) in the urban centres of Glasgow, Aberdeen, Edinburgh, Dundee and Perth. Further modelling indicates reduction to noise emissions through a slight decline in the number of noise sensitive receptors against the 2022 baseline. There is the potential for impacts on biodiversity, water, geology and soils, cultural heritage sites and landscape as a result of the Park-&-Ride sites, however, the exact location of the sites are uncertain, therefore there is insufficient information to undertake a full assessment.
Safety:	Neutral	By promoting modal shift the improvements should make some contribution to accident savings. However, the overall impact of the measures on accident rates and severity rates would be negligible.
Economy:	Moderate Benefit	<p>Transport Economic Efficiency (TEE): The Park-&-Ride measures proposed in this intervention are targeted to reduce congestion on the busiest areas of the network, i.e. key commuter corridors into urban centres, and these measures therefore have a high potential to generate efficiency benefits. By implementing a range of bus priority measures, the intervention would deliver journey time savings for bus passengers. Non-Park-&-Ride drivers should experience efficiency gains, both in terms of journey time savings and journey time reliability as cars are removed from the road through modal shift to bus services.</p> <p>Wider Economic Benefits (WEBs): This intervention could benefit strategic transport links by promoting appropriate use of these links. This would be achieved through the targeted removal of local commuter trips from busy sections of the network. TMfS forecasts indicate that, through the implementation of the intervention, the number of Park-&-Ride trips across Scotland could be more than 40% higher by 2022, in comparison with the reference case. This would reduce conflict between local trips and strategic journeys, including business travel, resulting in efficiency gains for businesses. Journey times including freight trips, would be reduced, resulting in an increase in productivity. Moreover, the intervention secures fast and efficient links to international gateways, including Glasgow and Edinburgh Airports.</p> <p>Economic Activity and Location Impacts (EALIs): The strategic Park-&-Ride intervention includes measures that promote strong commuter links to key areas of economic development and regeneration, including development areas at Altens and Dyce in Aberdeen and at Dundee West. Within Glasgow the intervention would facilitate travel to and between existing and emerging areas of economic activity on the east-west corridor comprising Glasgow Airport, Clyde Waterfront, the city centre and Clyde Gateway. More generally, the intervention promotes efficient commuter links into urban areas, maximising the 60-minute commutable labour area to these centres. This intervention would have beneficial impacts on employment and productivity in these areas, and would increase the attractiveness of strategic investment locations.</p>
Integration:	Moderate Benefit	<p>Transport Integration: This intervention promotes integration between bus and car by providing seamless interchange between the two modes in convenient locations. By providing Park-&-Ride sites on urban peripheries for travel into urban areas, the intervention achieves a combination of the strengths of the two modes, i.e. use the car to maximise the coverage of urban catchments and use bus to provide a sustainable and efficient alternative on busy areas of the network where economies of scale support a good service.</p> <p>Transport and Land-use Integration: Park-&-Ride and bus service improvements promoted as part of this intervention serve some key areas of economic development and integration across Scotland. Some benefits to transport and land-use integration should arise.</p>

		Policy Integration: This intervention comprises bus service enhancements and could therefore generate benefits to social inclusion. This intervention would promote modal shift and would deliver beneficial impacts in relation to road traffic reduction aspirations.
Accessibility and Social Inclusion:	Minor Benefit	<p>Community Accessibility: This intervention is not designed to improve public transport service network coverage and the benefits to community accessibility could remain limited. However, the intervention would deliver improved bus journey times and would therefore generate some benefits in terms of accessibility to services. Mode share modelling (whole of Scotland, 1 hour of AM peak, Non-Work) indicates that this intervention would result in changes in mode shares for bus (3 per cent increase), rail (4 per cent decrease), Light Rapid Transit (21 per cent increase). This intervention demonstrates a mode share shift to bus of over 3 per cent, and a significant increase in Light Rapid Transit patronage resulting from the increase in capacity at the Edinburgh Ingliston site.</p> <p>Comparative Accessibility: This intervention is not targeted at any specific group of people. However, bus priority measures along key congested routes would benefit individuals who do not have access to a car but are adversely affected by congestion.</p>

Table D11.1.3 Key Strategic Outcomes

Key Strategic Outcomes (KSOs)		
Objective:	Assessment Summary:	Supporting Information:
Improve Journey Times and Connections:	Moderate Benefit	This intervention contains proposals to implement bus priority, and would deliver journey time improvements for buses. Large journey time savings for public transport vehicles have been confirmed by TMfS modelling, particularly on the approaches into Glasgow and Aberdeen. This would promote modal shift along busy commuter corridors and some benefits in terms of journey time reductions and improved journey time reliability. The measures proposed in this intervention are targeted at transport corridors supporting key urban centres and economic development areas on urban peripheries, promoting good connections for businesses. Improved connections to Glasgow and Edinburgh Airports would also be delivered.
Reduce Emissions:	Minor Benefit	The five cities where Park-and-Ride schemes are proposed, currently experience problems from traffic congestion and associated air quality issues, reflected in the designation of Air Quality Management Areas in Glasgow, Edinburgh, Dundee and Aberdeen. The introduction and enhancement of Park-and-Ride schemes are envisaged to encourage modal shift to public transport which would reduce the number of cars on city centre roads and potentially contribute to an improvement in local air quality within these cities. The expected increase in vehicular movements travelling to the new and enhanced Park-and-Ride areas could contribute to increased CO2e emissions; however, this is likely to be offset by an associated decrease in the level of emissions from the city centres.
Improve Quality, Accessibility and Affordability:	Moderate Benefit	This intervention would improve the quality of the journey into urban centres by reducing congestion and promoting reliable and fast journey times. The use of consistent branding and information in implementing Park-&-Ride facilities would enhance the quality and image of public transport services. Improved accessibility would be achieved through bus priority measures, and the provision of additional bus services. However, although the bus priority measures implemented as part of this intervention would benefit all buses using a particular route, the additional services would mainly benefit Park-&-Ride users, and would not directly result in accessibility improvements for those who do not own a car. Mode share modelling (whole of Scotland, one hour of AM peak, Non-Work) indicates that this intervention would result in changes in mode shares for bus (three per cent), rail (remove four per cent), Light Rapid Transit (twenty-one per cent). This intervention would not impact on affordability.

Table D11.1.4 Scottish Government's Strategic Objectives

Scottish Government's Strategic Objectives		
Objective:	Assessment Summary:	Supporting Information:
Safer and Stronger:	Minor Benefit	<p>This intervention would remove cars from the road by promoting modal shift and improving the quality, accessibility and affordability of public transport. It would result in some reduction in accident rates as public transport is considered to be safer than the car. However, the intervention does not contain measures specifically targeted at improving safety and these benefits would therefore remain limited.</p> <p>Although the intervention would not directly improve accessibility to employment opportunities for those without the use of a car, the proposed Park-&-Ride measures would open urban economic opportunities to a wider rural catchment.</p>
Smarter:	Minor Benefit	<p>This intervention would increase access to schools, colleges and universities for those living along the various strategic corridors.</p>
Wealthier and Fairer:	Moderate Benefit	<p>TMfS modelling predicts overall growth in Park-&-Ride usage amounting to more than 40 per cent by 2022, in comparison with the baseline. This intervention would reduce journey times and enhance journey time reliability for all road users, buses in particular. Measures are targeted at key commuter corridors and would result in significantly improved accessibility to employment. The use of Park-&-Ride measures could be effective in extending these benefits to wider rural areas.</p>
Greener:	Minor Benefit	<p>This intervention promotes the use of public transport across Scotland encouraging a modal shift away from the car.</p>
Healthier:	Neutral	<p>The measures promoted in this intervention would improve journey times for bus services along busy corridors, and so achieve a modal shift from the car to buses. However, the intervention is primarily focused to enhance the provision of Park-&-Ride services that are accessed by the car. This intervention would therefore not result in an increased uptake of active modes of travel, i.e. walking and cycling and the benefits to health services would remain limited.</p>

Table D11.1.5 Implementability Appraisal

Implementability Appraisal	
Technical:	It is unlikely that any untried techniques would be required when implementing any aspects of this intervention, however as the design stages progress, localised issues could arise which require increased technical capabilities to overcome.
Operational:	No adverse factors would be expected to affect the operation of this intervention over its projected life.
Public:	Most measures envisaged as part of the intervention have not been presented to the public. However, in general the measures are expected to meet with public approval as they would improve public transport provision, encourage modal shift and reduce congestion along busy commuter routes.