

Detailed Appraisal		D24 Targeted Road Congestion / Environmental Relief Schemes - (Part 3) Junction improvements for the A720 Edinburgh City Bypass						
Estimated total Public Sector Funding Requirement:		Capital Costs/grant			£10m - £50m			
		Annual Revenue Support			-			
		Present Value of Cost to Govt			£10 - £50m			
		BCR/PVB			>3 / £50m - £100m			
Summary Impact on Key Strategic Outcomes	Environment Safety Economy Integration Accessibility and Social Inclusion	---	--	-	0	+	++	+++
(Judgement based on available information against a 7pt. scale.)								
Intervention Description:								
This intervention forms Part 3 of D24 and includes Junction improvements on the A720 Edinburgh City Bypass such as at Sheriffhall Roundabout.								

Summary: Rationale for Selection
<p>This intervention forms Part 3 of D24 to provide junction improvements for the A720 Edinburgh City Bypass such as at Sheriffhall Roundabout.</p> <p>The A720 improvements would help to maintain the 60-minute commutable labour market area around Edinburgh, and would provide benefits for journeys to or between two of Edinburgh's areas of economic activity, West Edinburgh and the Shawfair development. Journey time reductions of approximately 5 minutes are forecast with this improvement for all elements.</p> <p>The environmental impacts this intervention has on cultural heritage and landscape have been identified at the strategic level as part of the Strategic Environmental Assessment. Appropriate mitigation and avoidance measures have been identified and will be further refined should this intervention be taken forward.</p>

Table D24.3.1 STPR Objectives

STPR Objectives	
<p><u>STPR Objective 1:</u></p> <p>To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity.</p> <p><u>STPR Objective 2:</u></p> <p>To enhance public transport interchange opportunities.</p> <p><u>STPR Objective 3:</u></p> <p>To increase public transport capacity and frequency between Fife and Edinburgh.</p> <p><u>STPR Objective 4:</u></p> <p>To promote continuing reduction in accident rates and severity rates across the strategic transport network.</p> <p><u>STPR Objective 5:</u></p> <p>To promote journey time reductions, particularly by public transport, between the Central Belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.</p> <p><u>STPR Objective 6:</u></p> <p>To promote efficient and effective transport links to support the development and implementation of the proposed national development at Edinburgh Airport identified in the NPF2.</p>	<p><b>1: Positive</b> – The A720 experiences heavy congestion during peak hours. Without effective mitigation, future traffic growth will further reduce the efficiency of the route particularly during peak hours, resulting in a deterioration of Edinburgh's 60-minute commutable labour market area. The improvements would remove capacity constraints at the Sheriffhall roundabout, the only roundabout along the route which is not grade separated at present. By tackling bottlenecks, the improvements would generate significant efficiency savings for commuters travelling into Edinburgh from the west, south/south-east and east of the city via the M8, A7, A68 and A1. This would assist in reducing the impact of congestion on these users, reducing delays and helping to maintain their journey time to work.</p> <p><b>2: Neutral</b> – This intervention would not address public transport interchange opportunities.</p> <p><b>3: Neutral</b> – This intervention would not significantly address public transport capacity and frequency between Fife and Edinburgh.</p> <p><b>4: Positive</b> – Accidents at Sheriffhall Roundabout make up a high percentage of all accidents on the A720. Grade separation of this junction would therefore result in significant accident savings.</p> <p><b>5: Neutral</b> – This intervention would not have a significant effect on this objective.</p> <p><b>6: Positive</b> – Edinburgh Airport is a significant attractor of trips, and forecasts undertaken to underpin the Edinburgh Airport Masterplan indicate that the number of passengers using the airport will rise from 5.5 million passengers in 2005 to 23 million in 2030. This will result in significant additional pressure on the transport infrastructure supporting the airport, particularly during peak hours. The proposed improvement would help to promote efficient and effective transport links for all transport users approaching Edinburgh Airport from the east. The junction improvements would also complement the provision of an actively managed hard shoulder to benefit priority vehicles along the A720 as proposed in Intervention D6, which would further improve public transport links to Edinburgh Airport.</p>

Table D24.3.2 STAG Criteria

STAG Criteria		
Criteria:	Assessment Summary:	Supporting Information:
Environment:	Minor Benefit/ Moderate Negative Impact	Moderate adverse impacts to cultural heritage and landscape are likely to occur. Minor positive effects to local air quality and climatic factors are likely as the junction improvements would result in reduced road vehicle emissions from the A720 due to the reduction in congestion.
Safety:	Moderate Benefit	Accidents at Sheriffhall Roundabout make up approximately 10 per cent of all accidents on the A720. Based on these figures, the improvements are forecast to generate significant benefits in terms of road safety. These positive impacts of the intervention would be maximised at Sheriffhall Roundabout where grade separation is proposed.
Economy:	Major Benefit	<p><b>Transport Economic Efficiency (TEE):</b> The proposed junction improvements would result in travel time savings and vehicle operating cost benefits for those travelling to/from Edinburgh and along the A720. The current volume of traffic using the bypass is 40,000 vehicles per day and is forecast to rise to 50,000 vehicles per day by 2022. Latest figures for Sheriffhall Roundabout indicate that approximately 70,000 vehicles pass through the junction each day. Through a reduction of congestion along the A720, journey time savings of approximately 10 – 15 minutes over the length of the route are forecast. A STAG 1 assessment of improvement options at Sheriffhall Roundabout, undertaken in early 2008, forecast accident benefits of £3.5m over 60 years as a result of the implementation of a conventional grade separated roundabout at Sheriffhall Roundabout. Economic appraisal of the Sheriffhall Roundabout improvements indicate travel time benefits of between £50m - £100m, with a benefit cost ratio of greater than three, indicating good value for money.</p> <p><b>Wider Economic Benefits (WEBs):</b> The junction improvements along the A720 would improve efficiency for journeys to Edinburgh Airport from the south and south east of the city, providing businesses with improved connectivity to international transport links. Transport capacity and journey time reliability would increase and the journey times are expected to reduce, resulting in greater productivity.</p> <p><b>Economic and Location Impacts (EALIs):</b> This intervention would benefit key areas of economic activity in Shawfair (East Edinburgh), Gogarburn and Edinburgh Park (West Edinburgh) and support the development of the key national development at Edinburgh Airport, through improvements along the east-west access route to these locations via the A720. In addition, the measures would generate benefits by maintaining the 60-minute travel to work area into Edinburgh, benefiting employment sites in Edinburgh City Centre.</p>
Integration:	Neutral	<p><b>Transport Integration:</b> This proposal would have no effect on transport integration.</p> <p><b>Transport and Land-Use Integration:</b> This intervention would have a minor negative impact on the policy of reducing the need to travel. The improvements would facilitate development at key areas of economic activity in East and West Edinburgh by providing efficient road links to these areas. More specifically this would benefit strategic development at Gogarburn, Edinburgh Park and Edinburgh Airport as well as the strategic development site at Shawfair.</p> <p><b>Policy Integration:</b> The proposal would not affect wider policies on disability, health services, rural affairs or social inclusion. It would have a minor negative impact on road traffic reduction aspirations.</p>

Accessibility and Social Inclusion:	Neutral	<p><b>Community Accessibility:</b> This proposal would not directly improve public transport network coverage or promote non-motorised trips to access local services, but is a pre-requisite for the implementation of actively managed hard shoulders to benefit priority vehicles proposed in Intervention D6 (Using Intelligent Transport Systems on Parts of the Road Network to Enhance Capacity and Operations).</p> <p><b>Comparative Accessibility:</b> This intervention could improve access to employment opportunities in east and west Edinburgh, but would not provide greater accessibility for more deprived and socially excluded regeneration areas.</p>
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Table D24.3.3 Key Strategic Outcomes

Key Strategic Outcomes (KSO's)		
Objective:	Assessment Summary:	Supporting Information:
Improve Journey Times and Connections:	Major Benefit	<p>This intervention would remove capacity constraints on the A720, reducing junction delay along the route and on certain radial routes connecting with the A720. This would result in improved journey times both to/from Edinburgh City Centre and cross city movements, particularly during peak periods. It is forecast that the 40,000 vehicles using the route daily would experience journey time savings of 10-15 minutes. Based on traffic forecasts for the A720, these journey time savings would benefit approximately 50,000 vehicles per day by 2022. Journey time reliability would also improve as a result of this intervention.</p> <p>This intervention would also complement the introduction of actively managed hard shoulders along the route, proposed under Intervention D6. This intervention would therefore enable bus priority, resulting in opportunities for journey time savings for bus users. In addition, the intervention would significantly improve links to national and international connections at Edinburgh Airport.</p>
Reduce Emissions:	Minor Benefit	<p>This intervention would improve traffic flow, avoiding higher emissions from slow moving traffic. This could result in enhanced fuel efficiency for existing traffic, contributing to a reduction in CO<sub>2</sub>e emissions. However, any intervention comprising improvements in the provision for car trips may generate some additional traffic, thereby impacting on the level of CO<sub>2</sub>e emissions reductions achievable.</p>
Improve Quality, Accessibility and Affordability:	Minor Benefit	<p>This intervention would provide improved accessibility, especially to economic areas in East and West Edinburgh and Edinburgh City Centre. This intervention may have a small beneficial effect on quality through the improved junction provision on the A720. This intervention does not impact on affordability.</p>

Table D24.3.4 Scottish Government's Strategic Objectives

Scottish Government's Strategic Objectives		
Objective:	Assessment Summary:	Supporting Information:
Safer and Stronger:	Moderate Benefit	This intervention would improve road safety on the A720. It would not affect the quality, accessibility and affordability of public transport.
Smarter:	Moderate Benefit	This intervention would improve access to Herriot Watt University at Riccarton.
Wealthier and Fairer:	Moderate Benefit	This intervention would improve efficiency for cross-city trips and transport users commuting to/from Edinburgh. Forecast journey time savings could contribute to maintaining Edinburgh's 60-minute commutable labour market area, maintaining the city's economic competitiveness. Moreover businesses would benefit from improved access to national and international connections at Edinburgh Airport. Reduced journey times along key transport routes into Edinburgh and between areas east and west of the city would also generate productivity gains for businesses in the city, in West Edinburgh and Shawfair (East Edinburgh).
Greener:	Minor Benefit	If implemented on its own, this intervention would not directly promote the use of public transport. However, the proposed junction improvements would complement the implementation of managed hard shoulders benefiting priority vehicles. These measures would significantly improve public transport competitiveness along the corridor thereby encouraging mode shift to public transport.
Healthier:	Neutral	This intervention would not affect access to health services or encourage the uptake of physically active forms of transport.

Table D24.3.5 Implementability Appraisal

Implementability Appraisal	
Technical:	No untried techniques would be required when implementing any aspects of this intervention, however as the design stages progress, localised issues may arise which require increased technical capabilities to be addressed.
Operational:	The responsibility for operational issues on the proposed measures in this intervention would remain with Transport Scotland and its maintenance contractors. No factors are anticipated to adversely affect the operation of the intervention during its projected life.
Public:	This is an important intervention to the economy of Edinburgh and the surrounding area, with significant public interest at both local and regional levels.

