

Detailed Appraisal		E3 – Construction of Glasgow Crossrail						
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>				£100m – £250m – £50m – £100m 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 address rail capacity issues in central Glasgow and increase public transport access to areas of economic activity.</p> <p>Glasgow Crossrail consists of a range of infrastructure measures that could be implemented in phases over time. For the purposes of this assessment, the intervention consists of the reopening of the Glasgow City Union Line over the Clyde to passenger trains, with two new spurs:</p> <ul style="list-style-type: none"><li>• The Strathbungo Link from Muirhouse to the City Union Line allowing trains from East Kilbride and Kilmarnock to access the City Union Line; and</li><li>• The High Street curve from the City Union Line to the North Electric Line heading west at High Street.</li></ul> <p>Additional services would be provided, such as Ayr to Edinburgh and Croy to Barrhead, with a new turnback facility at Croy.</p> <p>Some services that currently operate into Central High Level would be diverted to Charing Cross via Queen Street Low Level, such as East Kilbride services, with a new turnback facility at Kelvinhaugh.</p>								
Summary: Rationale for Not Recommending								
<p>On balance, as a ‘stand alone’ intervention, Glasgow Crossrail performs reasonably well, however, it does not make best use of the rail network or integrate well with the menu of schemes required to satisfy the objectives of the STPR. The interventions set out in D25 (West of Scotland Strategic Rail Enhancements) offer better opportunities to enhance connectivity for the heaviest rail demand patterns in and around Glasgow, and could use elements of this intervention.</p> <p>The committed improvements on the rail network between Edinburgh and Glasgow also provide a ‘step change’ in the connectivity of Glasgow Central to Edinburgh, resulting in enhanced connections for those travelling to and from the south and south west of Glasgow. This is likely to negate much of the potential benefit of Glasgow Crossrail.</p>								

Table E3.1.1 STPR Objectives

STPR Objectives	
<p><b>STPR Objective 1:</b> To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange.</p> <p><b>STPR Objective 2:</b> 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><b>STPR Objective 3:</b> To address rail capacity and connectivity issues in central Glasgow.</p> <p><b>STPR Objective 4:</b> To promote continuing reduction in accident rates and severity rates across the strategic transport network.</p> <p><b>STPR Objective 5:</b> 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><b>STPR Objective 6:</b> 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><b>1: Positive</b> – This intervention would contribute to the redevelopment of the Glasgow Cross area, Gorbals and the east end of the city centre. Although the intervention would provide new journey opportunities, these would have limited impact across the city region. There would be improvements to connectivity from the south of Glasgow to the north west and connecting across a wider area but the intervention would not provide a direct link between Glasgow Queen Street and Glasgow Central.</p> <p><b>2: Slightly Positive</b> - There would be the opportunity to serve some movements from the south to north west that may result in modal shift, but this would be limited.</p> <p><b>3: Slightly Positive</b> - The new infrastructure would allow the diversion of some existing services from Glasgow Central High Level to Glasgow Queen Street Low Level. However, it would increase the number of services on the North Electric Line through Glasgow city centre. The level of relief that the intervention would be able to provide to Central High Level is limited and there would be no improvement for Glasgow Queen Street High Level.</p> <p><b>4: Neutral</b> – While the intervention provides for modal shift from car to rail, the level of impact of this intervention on accident rates would not be significant.</p> <p><b>5: Neutral</b> – This intervention would have no significant effect on journey times from the Central Belt to Aberdeen and Inverness.</p> <p><b>6: Positive</b> - This intervention would improve connections to Glasgow Airport from a number of locations. From Ayr, the intervention would facilitate an increase in the number of services to Paisley Gilmour Street, which would improve connections with trains from Glasgow to Glasgow Airport. From Edinburgh and Airdrie, it would provide a new direct service calling at Paisley Gilmour Street, resulting in a direct connection with services from Glasgow to Glasgow Airport.</p>

Table E3.1.2 STAG Criteria

STAG Criteria		
Criteria:	Assessment Summary:	Supporting Information:
Environment:	Minor Benefit/Minor Negative Impact	Improved services would promote modal shift from road to rail, though the overall level of impact would be limited. This would bring associated minor beneficial effects in relation to air quality, especially in light of the current air quality issues in Glasgow. However, there is the potential for impacts on several A-Listed buildings within Glasgow, however, the extent of these impacts is uncertain at this stage of the decision making process. There would also be increases in noise and vibration at some locations as a result of operating new or diverted services.
Safety:	Minor Benefit	The primary impact on safety would be as a result of modal shift away from road transport, which has higher accident rates. By achieving a reduction in trips on the road network it is anticipated that road accident numbers and severity are likely to decrease. The level of impact of this would, however, be limited. Providing new and improved station facilities within regeneration areas would have a positive impact on personal security.
Economy:	Moderate Benefit	<p><b>Transport Economic Efficiency (TEE):</b> This intervention would remove the need for rail passengers to change between services and city centre stations when travelling on some routes between stations to the north and east of Glasgow (such as Airdrie and Croy) and to the south and west of the city (such as Barrhead and Ayr). This would result in significant efficiency benefits for passengers travelling between these stations. Passengers travelling from north and east or south and west of Glasgow would benefit from more frequent services into the east end of the city centre.</p> <p><b>Wider Economic Benefits (WEBs):</b> This intervention would provide wider economic impacts through improving public transport provision and accessibility, not just within Glasgow, but across much of the Central Belt. It would be possible to make long distance journeys such as Ayr to Edinburgh without the need to transfer between Central and Queen Street stations in Glasgow. However, the level and scope of the impact would be limited to quite specific movements and corridors.</p> <p><b>Economic Activity and Location Impacts (EALIs):</b> Construction of new stations at West Street, in the Gorbals and at Glasgow Cross would provide these areas with direct rail connection from stations between Ayr, Edinburgh, Barrhead and Croy. It would also support key economic regeneration areas in the East End of Glasgow. Similarly, service enhancements would improve rail accessibility to Airdrie, Barrhead, Croy and Glasgow, with a beneficial impact on employment and productivity in these locations.</p>
Integration:	Minor Benefit	<p><b>Transport Integration:</b> A new station at West Street would integrate with Subway services. New stations at Glasgow Cross and Gorbals would integrate with other local transport facilities. Same station interchanges would also be possible at locations such as Queen Street Low Level and Bellgrove.</p> <p>The benefits to integration with other routes and modes in the city centre would be limited by the lack of connectivity to Central station and extended journey times for diverted services to access the city centre via Queen Street Low Level.</p> <p><b>Transport and Land-Use Integration:</b> The intervention includes the construction of a new rail station at Glasgow Cross with direct access to the regeneration area in Glasgow's East End and new rail stations in the Gorbals and at West Street. This would provide efficient rail links to support development at these sites, with benefits to transport and land-use integration.</p>

		<b>Policy Integration:</b> This intervention would provide new rail services, removing the need for some movements to require interchange, and encourage modal shift from car to rail. There would be some benefit to health and a positive impact on congestion and emissions from reduced car use. There would be a positive impact on accessibility and social inclusion. The new stations would be fully DDA compliant, thus having a positive effect on disability access. This intervention would also support regeneration in the east of the city centre.
<b>Accessibility and Social Inclusion:</b>	<b>Minor Benefit</b>	<p><b>Community Accessibility:</b> The proposed new stations and services represent improvements in rail network coverage. The intervention would provide improved access to employment opportunities across the routes being served, with improved access to the regeneration area in the East End of Glasgow and improved cross-Glasgow connections to cities and towns such as Edinburgh and Barrhead.</p> <p><b>Comparative Accessibility:</b> The intervention would provide greater accessibility for deprived and socially excluded regeneration areas around the Gorbals and East End of Glasgow.</p>

Table E3.1.3 Key Strategic Outcomes

Key Strategic Outcomes (KSOs)		
Objective:	Assessment Summary:	Supporting Information:
<b>Improve Journey Times and Connections:</b>	<b>Moderate Benefit / Minor Negative Impact</b>	<p>This intervention would have a benefit in reducing cross-Glasgow journey times by reducing the need to interchange between Glasgow Central and Glasgow Queen Street for some corridors and services. It would also provide a direct rail service connection between some areas currently requiring interchange.</p> <p>Journey times to access the city centre for some services would be negatively impacted by the additional time taken for trains to cross from the south side of Glasgow to Queen Street Low Level compared with accessing Central High Level.</p>
<b>Reduce Emissions:</b>	<b>Minor Benefit</b>	This intervention is likely to promote a modal shift from road to rail thereby reducing the number of private cars on the road, and so contributing to reductions in CO <sub>2</sub> e emissions. However, the overall impact of this would be limited.
<b>Improve Quality, Accessibility and Affordability:</b>	<b>Moderate Benefit</b>	This intervention would have a benefit in terms of improved access and quality of public transport for job seekers in socially deprived areas such as the Gorbals and provide better access to employment in the regeneration area in the East End of Glasgow. It is anticipated that the intervention would have a neutral impact on affordability.

Table E3.1.4 Scottish Government's Strategic Objectives

Scottish Government's Strategic Objectives		
Objective:	Assessment Summary:	Supporting Information:
<b>Safer and Stronger:</b>	<b>Minor Benefit</b>	The intervention would have a minor benefit for this objective by improving the quality and journey time reliability of public transport in Glasgow thereby increasing safety through promoting the use of public transport ahead of private car use. By removing traffic from roads, it is anticipated that this measure would also contribute to reducing road accidents in line with this objective.

<b>Smarter:</b>	<b>Minor Benefit</b>	This intervention would improve access to schools, colleges and universities.
<b>Wealthier and Fairer:</b>	<b>Minor Benefit</b>	This intervention would improve journey times, service frequency and journey time reliability on some routes, sustaining and promoting economic growth in Glasgow and the West of Scotland.
<b>Greener:</b>	<b>Minor Benefit</b>	This intervention would promote modal shift to rail, with improvements in air quality and reduced CO <sub>2</sub> e emissions. It would also promote the use of public transport. However, the level and scope of the impact would be limited.
<b>Healthier:</b>	<b>Minor Benefit</b>	This intervention would encourage modal shift from road vehicles to more sustainable rail trips for passenger and freight journeys. It is not likely to significantly affect trips to health services and community services.

Table E3.1.5 Implementability Appraisal

Implementability Appraisal	
<b>Technical:</b>	<p>It is expected that no untried techniques would be required when implementing any aspects of this intervention. However, as the design stages progress, localised issues may arise, such as the risk of subsidence due to mining, which may require increased technical capacities to overcome.</p> <p>Construction of some aspects of this intervention may have an impact on operating existing services. However, much of this work could be carried out at times when the disruption would be minimised.</p>
<b>Operational:</b>	<p>Running additional rail services places extra pressure on the rail network and can increase the risk of delays. However, it is expected that these issues would be mitigated by ensuring that the works included within the intervention have sufficient capacity for the proposed service levels. No significant operational impacts are anticipated from this intervention.</p> <p>Diverting East Kilbride services from Central High Level to Queen Street Low Level would release some capacity at Central for additional services to Ayrshire, as proposed in D27. However, the benefits of this would be limited and further capacity would be required to allow D27 to be implemented.</p>
<b>Public:</b>	Various proposals for a cross-Glasgow scheme have been placed into the public domain over a significant period of time and have received widespread support.