

1.0 Assessment Summary Tables

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:		
Preliminary Option 1		Provision of a partially grade separated junction with the separation of M2-Westlink movement achieved through use of an underpass located underneath the existing Lagan and Dargan Bridges. The M3-Westlink movement is maintained through an at-grade junction with York Street.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 45.694m (excl. Optimism Bias) £ 65.800m (incl. 44% Optimism Bias)		
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT		
ENVIRONMENT (DMRB Vol 11)	Air Quality	The depressed links, especially M2-Westlink link would result in a 'canyon' effect with potentially higher concentration of airborne contaminants at portals. Likely to be net improvement in air quality due to freer flowing/less congested traffic conditions; however assessed receptor fails to achieve the 2010 UK National Air Quality Objectives for PM ₁₀ .	Receptor: 2 Thomas Street (NAQS Limit Values)	NO ₂ (Ann. mean µg/m ³)		PM ₁₀ (Ann. mean µg/m ³)		Slight Beneficial	
				PM ₁₀ (Days >50µg/m ³)					
	Do-Min	Do-Som		Do-Min	Do-Som	Do-Min	Do-Som		
			29.81 (40)	29.74 (40)	27.07 (20)	26.96 (20)	17.87 (7)	17.56 (7)	
	Cultural Heritage	There are no areas of known archaeological remains or historic landscapes in close proximity, although the area is within an 'Area of Archaeological Potential'. Four listed buildings in proximity, though no impact upon historic setting expected. High number of Industrial heritage sites in proximity, though only two sites may be directly affected.	2 Industrial Heritage Sites (Bonded Store and Oatmeal Mill) affected (though no above ground features remain of these sites due to site clearance).				Slight Adverse		
	Disruption due to Construction	Proximal properties would be exposed to significant disruption related impacts (e.g. noise, vibration, dust creation, etc). The depressed links, especially M2-Westlink link construction likely to have significant impacts. Vehicle and NMU movements likely to be severely disrupted.	N/A.				Large Adverse		
	Ecology and Nature Conservation	No designated ecological sites in proximity. Main ecological impact associated with the loss of amenity planting.	N/A.				Slight Adverse		
	Landscape Effects	Incorporation of the depressed links would minimise visual impact, however from a cityscape perspective the footprint of the interchange would cause greater disruption to the urban fabric.	N/A.				Moderate Adverse		
	Land Use	One property at risk of demolition and four planning applications affected. Three Development Opportunity Sites affected.	1 Property at risk of demolition (DRD Section Office). 2 full/approved (conversion of existing vehicle workshop into office & interview room & an office development) and 2 advertisement/approved planning applications potentially affected. 3 Development Opportunity Sites affected (CC 080, CC 076 and CC 073).				Slight Adverse		
	Noise and Vibration	Noise levels are unlikely to significantly change with scheme implementation. Potential reduction in stop-start driving/braking/accelerating etc; smoother transition between links.	8 particularly sensitive facilities within 50m.				Slight Beneficial		
Pedestrians, Cyclists, Equestrians and Community Effects	Direct loss of Northside Park & Ride facility. At-grade M3-Westlink link junction with York St would provide least benefit to NMU's passing through the interchange	1 Community facility (Northside Park & Ride) directly affected.				Slight Adverse			
Vehicle Travellers	The depressed links, especially M2-Westlink would hinder views from the road. M3-Westlink link at-grade junction with York St would hinder the through flow of strategic traffic though likely net reduction in driver stress expected.	N/A.				Slight Beneficial			
Road Drainage and the Water Environment	No known waterbodies traversed. Potentially significant flood risk associated with depressed links, especially M2-Westlink link. Majority of option is within floodplain.	N/A.				Slight Adverse			
Geology and Soils	No significant impact on geology and soils. Three areas of potentially contaminated land may be affected.	3 areas of potentially contaminated land may be affected (2 Petrol Station/Storage sites and a food preparation & processing site).				Slight Beneficial			

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:
Preliminary Option 1		Provision of a partially grade separated junction with the separation of M2-Westlink movement achieved through use of an underpass located underneath the existing Lagan and Dargan Bridges. The M3-Westlink movement is maintained through an at-grade junction with York Street.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 45.694m (excl. Optimism Bias) £ 65.800m (incl. 44% Optimism Bias)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT
	Impact of Road Schemes on Policies and Plans	Conforms to policies in RDS and RTS by providing a linkage which improves the efficiency of the Eastern Seaboard Corridor and thus supporting economic development along this corridor. It is specifically included in the IDP for Roads document.	N/A.				Slight Beneficial
SAFETY	Accidents	The COBA model results indicate that, if traffic conditions on the weaving sections reflect urban characteristics more than rural characteristics, the number of accidents would increase under both the low and central traffic growth scenarios based on the application of default accident rates.		Accidents	Deaths	Serious	Slight
			Low Central	-400.1 -438.0	-2.0 -2.2	-27.5 -30.1	-573.1 -627.4
ECONOMY	Transport Economic Efficiency	Improved transport economic efficiency due to reduced peak and off-peak journey times compared to the existing network by providing a number of new transport links for strategic traffic and the removal of three signalised junctions, to the benefit of consumer and business users. It should be noted that the economic impact of delays during construction and the displacement of traffic around the wider road network have not been assessed at this stage, but could be significant. This option yields mid-range levels of benefit and the highest benefit to cost ratio.	For the Opening Year	Low	Central	TEE (Low / Central)	
	Reliability	Improved journey time reliability for both strategic and some local traffic through the removal of signalised junctions and the provision of new transport links, although some local routes would be severed resulting in traffic re-routing.	Total vehicle-hours saved (2-way) Peak journey time change (mins/veh) Off-peak journey time change (mins/veh)	492,000 West-M2 2.11 West-M3 1.27 West-M2 1.02 West-M3 0.42	539,000 2.37 1.44 1.05 0.44	Consumer PVB: £107.496m / £175.689m Business PVB: £106.712m / £181.649m Private Sector PVB: £0.123m / £0.126m Emissions PVB: £0.129m / £0.135m Invest+Op PVC: £44.534m / £44.534m Ind Tax Rev PVC: £1.126m / £1.184m	
ACCESSIBILITY	Option Values	Scheme will not provide additional transport options.	N/A.				Neutral
	Severance	There may be some hindrance to existing pedestrian movements.	N/A.				Slight Adverse
	Access to the Transport System	Improved transport links should contribute to service improvements for road-based public transport. Rail based public transport would be unaffected.	N/A.				-
INTEGRATION	Transport Interchange	Passenger/freight interchanges do not form part of this scheme.	N/A.				Neutral
	Land Use Policy	Would impact on Development Opportunity Sites in the area, as defined in the Draft BMAP but would not sterilise them completely. Would not impact on zoned housing land.	N/A.				Slight Adverse
	Other Government Policies	Improved transport links should contribute towards economic growth and a more inclusive society.	N/A.				Beneficial
Overall Economic Assessment including Accident Benefits		Costs expressed in £m (2002 prices) discounted to 2002 at 3.5% p.a. for 30 years thereafter 3.0% for 46 years thereafter 2.5%.	Zero Growth	PVC = £ 45.315m	PVB = £ 115.642m	NPV = £ 70.327m	BCR = 2.552
			Low Growth	PVC = £ 45.661m	PVB = £ 201.131m	NPV = £ 155.471m	BCR = 4.405
			Central Growth	PVC = £ 45.718m	PVB = £ 343.059m	NPV = £ 297.341m	BCR = 7.504

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:		
Preliminary Option 2		Provision of an interchange with the separation of M2–Westlink movement achieved through use of an overbridge structure above the existing Lagan and Dargan Bridges. The M3–Westlink movement is also grade separated from York Street via an overbridge structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 66.505m (excl. Optimism Bias) £ 95.767m (incl. 44% Optimism Bias)		
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT		
ENVIRONMENT (DMRB Vol 11)	Air Quality	The elevated links would provide greater opportunity for airborne contaminant dispersion. Likely to be net improvement in air quality due to freer flowing/less congested traffic conditions; however assessed receptor fails to achieve the 2010 UK National Air Quality Objectives for PM ₁₀ .	Receptor: Stella Maris Hostel (NAQS Limit Values)	NO ₂ (Ann. mean µg/m ³)		PM ₁₀ (Ann. mean µg/m ³)		Slight Beneficial	
				PM ₁₀ (Days >50µg/m ³)					
	Do-Min	Do-Som		Do-Min	Do-Som	Do-Min	Do-Som		
			32.26 (40)	34.43 (40)	28.11 (20)	29.05 (20)	21.05 (7)	24.15 (7)	
	Cultural Heritage	There are no areas of known archaeological remains or historic landscapes in close proximity, although the area is within an 'Area of Archaeological Potential'. Four listed buildings in proximity, though no impact upon historic setting expected. High number of Industrial heritage sites in proximity, though only one site may be directly affected.	1 Industrial Heritage Site (Bonded Store) affected (though no above ground features remain of this site due to site clearance).				Slight Adverse		
	Disruption due to Construction	Proximal properties would be exposed to significant disruption related impacts (e.g. noise, vibration, dust creation, etc). Vehicle and NMU movements likely to be severely disrupted.	N/A.				Large Adverse		
	Ecology and Nature Conservation	No designated ecological sites in proximity. Main ecological impact associated with the loss of amenity planting.	N/A.				Slight Adverse		
	Landscape Effects	Incorporation of the elevated links would maximise visual impact, however from a cityscape perspective and the potential for future mitigation of the structures, the footprint of the interchange would more easily allow integration into the urban fabric.	N/A.				Slight Beneficial		
	Land Use	No properties at risk of demolition. Three planning applications affected. Development Opportunity Site west of York St affected.	1 full/approved (conversion of existing vehicle workshop into office & interview room) and 2 advertisement/approved planning applications potentially affected. 1 Development Opportunity Site affected (CC 073).				Slight Adverse		
	Noise and Vibration	Noise levels are unlikely to significantly change with scheme implementation. Potential reduction in stop-start driving/braking/accelerating etc; smoother transition between links.	8 particularly sensitive facilities within 50m.				Slight Beneficial		
Pedestrians, Cyclists, Equestrians and Community Effects	Direct loss of Northside Park & Ride facility. Carr's Glen / Waterworks Community Greenway (BT 162/01) traversed. Grade separation of York St would reduce severance, improving movements along York St.	1 Community facility (Northside Park & Ride) directly affected and 1 Community Greenway traversed.				Slight Beneficial			
Vehicle Travellers	The elevated links, especially M2-Westlink would enhance and offer greater views from the road. Left turn from M3 to Nelson St closed though likely net reduction in driver stress expected.	N/A.				Slight Beneficial			
Road Drainage and the Water Environment	No known waterbodies traversed. Majority of option is within floodplain.	N/A.				Slight Adverse			
Geology and Soils	No significant impact on geology and soils. One area of potentially contaminated land may be affected.	1 area of potentially contaminated land may be affected (Petrol Station/Storage site).				Slight Beneficial			

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:
Preliminary Option 2		Provision of an interchange with the separation of M2–Westlink movement achieved through use of an overbridge structure above the existing Lagan and Dargan Bridges. The M3–Westlink movement is also grade separated from York Street via an overbridge structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 66.505m (excl. Optimism Bias) £ 95.767m (incl. 44% Optimism Bias)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT
	Impact of Road Schemes on Policies and Plans	Conforms to policies in RDS and RTS by providing a linkage which improves the efficiency of the Eastern Seaboard Corridor and thus supporting economic development along this corridor. It is specifically included in the IDP for Roads document.	N/A.				Slight Beneficial
SAFETY	Accidents	The COBA model results indicate that, if traffic conditions on the weaving sections reflect urban characteristics more than rural characteristics, the number of accidents would increase under both the low and central traffic growth scenarios based on the application of default accident rates.		Accidents	Deaths	Serious	Slight
			Low Central	-546.8 -598.6	-2.6 -2.9	-39.0 -42.7	-770.1 -843.0
ECONOMY	Transport Economic Efficiency	Improved transport economic efficiency due to reduced peak and off-peak journey times compared to the existing network by providing a number of new transport links for strategic traffic and the removal of three signalised junctions, to the benefit of consumer and business users. It should be noted that the economic impact of delays during construction and the displacement of traffic around the wider road network have not been assessed at this stage, but could be significant. This option yields one of the highest levels of benefit and a mid-range benefit to cost ratio.	For the Opening Year	Low	Central	TEE (Low / Central)	
	Reliability	Improved journey time reliability for both strategic and some local traffic through the removal of signalised junctions and the provision of new transport links, although some local routes would be severed resulting in traffic re-routing.	Total vehicle-hours saved (2-way) Peak journey time change (mins/veh) Off-peak journey time change (mins/veh)	558,000 West-M2 2.20 West-M3 1.58 West-M2 1.09 West-M3 0.62	611,000 2.46 1.77 1.12 0.66	Consumer PVB: £121.451m / £190.830m Business PVB: £119.904m / £195.795m Private Sector PVB: £0.121m / £0.127m Emissions PVB: £0.127m / £0.132m Invest+Op PVC: £64.635m / £64.635m Ind Tax Rev PVC: £1.118m / £1.159m	
ACCESSIBILITY	Option Values	Scheme will not provide additional transport options.	N/A.				Neutral
	Severance	There may be some hindrance to existing pedestrian movements.	N/A.				Slight Adverse
	Access to the Transport System	Improved transport links should contribute to service improvements for road-based public transport. Rail based public transport would be unaffected.	N/A.				-
INTEGRATION	Transport Interchange	Passenger/freight interchanges do not form part of this scheme.	N/A.				Neutral
	Land Use Policy	Would impact on Development Opportunity Sites in the area, as defined in the Draft BMAP but would not sterilise them completely. Would not impact on zoned housing land.	N/A.				Slight Adverse
	Other Government Policies	Improved transport links should contribute towards economic growth and a more inclusive society.	N/A.				Beneficial
Overall Economic Assessment including Accident Benefits		Costs expressed in £m (2002 prices) discounted to 2002 at 3.5% p.a. for 30 years thereafter 3.0% for 46 years thereafter 2.5%.	Zero Growth	PVC = £ 65.515m	PVB = £ 128.554m	NPV = £ 63.039m	BCR = 1.962
			Low Growth	PVC = £ 65.753m	PVB = £ 223.422m	NPV = £ 157.669m	BCR = 3.398
			Central Growth	PVC = £ 65.794m	PVB = £ 367.049m	NPV = £ 301.255m	BCR = 5.579

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:			
Preliminary Option 3		Provision of a partially grade separated junction with the separation of M2-Westlink movement achieved through use of an underpass located underneath the existing Lagan and Dargan Bridges. The M3-Westlink movement is grade separated from York Street via an overbridge structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 52.446m (excl. Optimism Bias) £ 75.522m (incl. 44% Optimism Bias)			
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT			
ENVIRONMENT (DMRB Vol 11)	Air Quality	The depressed links, especially M2-Westlink link would result in a 'canyon' effect with potentially higher concentration of airborne contaminants at portals. Likely to be net improvement in air quality due to freer flowing/less congested traffic conditions; however assessed receptor fails to achieve the 2010 UK National Air Quality Objectives for PM ₁₀ .	Receptor: Sinclair Seamen's Presbyterian Church (NAQS Limit Values)	NO ₂ (Ann. mean µg/m ³)		PM ₁₀ (Ann. mean µg/m ³)		PM ₁₀ (Days >50µg/m ³)		Slight Beneficial
		Do-Min		Do-Som	Do-Min	Do-Som	Do-Min	Do-Som		
		28.47 (40)		30.01 (40)	26.24 (20)	26.98 (20)	15.56 (7)	17.60 (7)		
		Cultural Heritage	There are no areas of known archaeological remains or historic landscapes in close proximity, although the area is within an 'Area of Archaeological Potential'. Four listed buildings in proximity, though no impact upon historic setting expected. High number of Industrial heritage sites in proximity, though only two sites may be directly affected.	2 Industrial Heritage Sites (Bonded Store and Oatmeal Mill) affected (though no above ground features remain of these sites due to site clearance).				Slight Adverse		
		Disruption due to Construction	Proximal properties would be exposed to significant disruption related impacts (e.g. noise, vibration, dust creation, etc). The depressed links, especially M2-Westlink link construction likely to have significant impacts. Vehicle and NMU movements likely to be severely disrupted.	N/A.				Large Adverse		
		Ecology and Nature Conservation	No designated ecological sites in proximity. Main ecological impact associated with the loss of amenity planting.	N/A.				Slight Adverse		
		Landscape Effects	Incorporation of the depressed links would minimise visual impact, however from a cityscape perspective the footprint of the interchange would cause greater disruption to the urban fabric.	N/A.				Moderate Adverse		
		Land Use	One property at risk of demolition and four planning applications affected. Three Development Opportunity Sites affected.	1 Property at risk of demolition (DRD Section Office). 2 full/approved (conversion of existing vehicle workshop into office & interview room & an office development) and 2 advertisement/approved planning applications potentially affected. 3 Development Opportunity Sites affected (CC 080, CC 076 and CC 073).				Slight Adverse		
		Noise and Vibration	Noise levels are unlikely to significantly change with scheme implementation. Potential reduction in stop-start driving/braking/accelerating etc; smoother transition between links.	8 particularly sensitive facilities within 50m.				Slight Beneficial		
		Pedestrians, Cyclists, Equestrians and Community Effects	Direct loss of Northside Park & Ride facility. Grade separation of York St would reduce severance, improving movements along York St.	1 Community facility (Northside Park & Ride) directly affected.				Slight Beneficial		
	Vehicle Travellers	The depressed links, especially M2-Westlink would hinder views from the road. M3-Westlink link at-grade junction with York St would hinder the through flow of strategic traffic. Closure of the Westlink (southbound) off-slip to Clifton St. Left turn from M3 to Nelson St closed though likely net reduction in driver stress expected.	N/A.				Slight Beneficial			
	Road Drainage and the Water Environment	No known waterbodies traversed. Potentially significant flood risk associated with depressed links, especially M2-Westlink Link. Majority of option is within floodplain.	N/A.				Slight Adverse			

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:	
Preliminary Option 3		Provision of a partially grade separated junction with the separation of M2-Westlink movement achieved through use of an underpass located underneath the existing Lagan and Dargan Bridges. The M3-Westlink movement is grade separated from York Street via an overbridge structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 52.446m (excl. Optimism Bias) £ 75.522m (incl. 44% Optimism Bias)	
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT	
	Geology and Soils	No significant impact on geology and soils. Three areas of potentially contaminated land may be affected.	3 areas of potentially contaminated land may be affected (2 Petrol Station/Storage sites and a food preparation and processing site).				Slight Beneficial	
	Impact of Road Schemes on Policies and Plans	Conforms to policies in RDS and RTS by providing a linkage which improves the efficiency of the Eastern Seaboard Corridor and thus supporting economic development along this corridor. It is specifically included in the IDP for Roads document.	N/A.				Slight Beneficial	
SAFETY	Accidents	The COBA model results indicate that, if traffic conditions on the weaving sections reflect urban characteristics more than rural characteristics, the number of accidents would increase under both the low and central traffic growth scenarios based on the application of default accident rates.		Accidents	Deaths	Serious	Slight	PVB: Accidents (Low / Central) -£15.807m / -£17.245m
			Low Central	-479.4 -524.8	-2.2 -2.4	-33.6 -36.8	-675.4 -739.3	
ECONOMY	Transport Economic Efficiency	Improved transport economic efficiency due to reduced peak and off-peak journey times compared to the existing network by providing a number of new transport links for strategic traffic and the removal of three signalised junctions, to the benefit of consumer and business users. It should be noted that the economic impact of delays during construction and the displacement of traffic around the wider road network have not been assessed at this stage, but could be significant. This option yields one of the lowest levels of benefit and a mid-range benefit to cost ratio.	For the Opening Year	Low	Central	TEE (Low / Central)		Consumer PVB: £84.417m / £140.893m Business PVB: £82.049m / £144.708m Private Sector PVB: -£0.033m / -£0.056m Emissions PVB: -£0.017m / -£0.027m Invest+Op PVC: £51.073m / £51.073m Ind Tax Rev PVC: -£0.121m / -£0.202m
	Reliability	Improved journey time reliability for both strategic and some local traffic through the removal of signalised junctions and the provision of new transport links, although some local routes would be severed resulting in traffic re-routing.	Total vehicle-hours saved (2-way) Peak journey time change (mins/veh) Off-peak journey time change (mins/veh)	410,000 West-M2 2.14 West-M3 1.62 West-M2 1.00 West-M3 0.67	439,000 2.41 1.81 1.03 0.69	-		
ACCESSIBILITY	Option Values	Scheme will not provide additional transport options.	N/A.				Neutral	
	Severance	There may be some hindrance to existing pedestrian movements.	N/A.				Slight Adverse	
	Access to the Transport System	Improved transport links should contribute to service improvements for road-based public transport. Rail based public transport would be unaffected.	N/A.				-	
INTEGRATION	Transport Interchange	Passenger/freight interchanges do not form part of this scheme.	N/A.				Neutral	
	Land Use Policy	Would impact on Development Opportunity Sites in the area, as defined in the Draft BMAP but would not sterilise them completely. Would not impact on zoned housing land.	N/A.				Slight Adverse	
	Other Government Policies	Improved transport links should contribute towards economic growth and a more inclusive society.	N/A.				Beneficial	
Overall Economic Assessment including Accident Benefits		Costs expressed in £m (2002 prices) discounted to 2002 at 3.5% p.a. for 30 years thereafter 3.0% for 46 years thereafter 2.5%.	Zero Growth	PVC = £ 50.968m	PVB = £ 96.312m	NPV = £ 45.344m	BCR = 1.890	
			Low Growth	PVC = £ 50.951m	PVB = £ 150.609m	NPV = £ 99.657m	BCR = 2.956	
			Central Growth	PVC = £ 50.870m	PVB = £ 268.272m	NPV = £ 217.402m	BCR = 5.274	

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:		
Preliminary Option 4		Provision of an interchange with the separation of M2–Westlink movement achieved through use of an underpass underneath the existing Lagan and Dargan Bridges. The M3–Westlink movement is grade separated from York Street via a underpass structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 63.673m (excl. Optimism Bias) £ 91.690m (incl. 44% Optimism Bias)		
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT		
ENVIRONMENT (DMRB Vol 11)	Air Quality	The depressed links, especially M2-Westlink Link would result in a 'canyon' effect with potentially higher concentration of airborne contaminants at portals. Likely to be net improvement in air quality due to freer flowing/less congested traffic conditions; however assessed receptor fails to achieve the 2010 UK National Air Quality Objectives for PM ₁₀ .	Receptor: Stella Maris Hostel (NAQS Limit Values)	NO ₂ (Ann. mean µg/m ³)		PM ₁₀ (Ann. mean µg/m ³)		Slight Beneficial	
				PM ₁₀ (Days >50µg/m ³)					
	Do-Min	Do-Som		Do-Min	Do-Som	Do-Min	Do-Som		
			32.26 (40)	34.97 (40)	28.11 (20)	29.08 (20)	21.05 (7)	24.23 (7)	
	Cultural Heritage	There are no areas of known archaeological remains or historic landscapes in close proximity, although the area is within an 'Area of Archaeological Potential'. Four listed buildings in proximity, though no impact upon historic setting expected. High number of Industrial heritage sites in proximity; three sites may be directly affected.	3 Industrial Heritage Sites (Bonded Store, Oatmeal Mill and Engineering Works) affected (though no above ground features remain of these sites due to site clearance).				Slight Adverse		
	Disruption due to Construction	Proximal properties would be exposed to significant disruption related impacts (e.g. noise, vibration, dust creation, etc). The depressed links, especially M2-Westlink Link construction likely to have significant impacts. Vehicle and NMU movements likely to be severely disrupted.	N/A.				Large Adverse		
	Ecology and Nature Conservation	No designated ecological sites in proximity. Main ecological impact associated with the loss of amenity planting.	N/A.				Slight Adverse		
	Landscape Effects	Incorporation of the depressed links would minimise visual impact, however from a cityscape perspective the footprint of the interchange would cause the greatest disruption to the urban fabric due to the highest number of depressed links.	N/A.				Large Adverse		
	Land Use	Four properties at risk of demolition and seven planning applications affected. Three Development Opportunity Sites affected.	4 properties at risk of demolition (DRD Section Office, Driver & Vehicle Agency, Jack Kirk Automobile Engineers & Focus Security Solutions). 4 full/approved (conversion of existing vehicle workshop into office & interview room, an office development, solar panels on roof of the DVA building and refurbishment of an existing building), 1 outline/approved (solar panels on the roof of the DVA building) and 2 advertisement/approved planning applications potentially affected. 3 Development Opportunity Sites affected (CC 080, CC 076 and CC 073).				Moderate Adverse		
	Noise and Vibration	Noise levels are unlikely to significantly change with scheme implementation. Potential reduction in stop-start driving/braking/accelerating etc; smoother transition between links.	8 particularly sensitive facilities within 50m.				Slight Beneficial		
Pedestrians, Cyclists, Equestrians and Community Effects	Direct loss of Northside Park & Ride facility and Jack Kirk Auto. Engineer business. Carr's Glen / Waterworks Community Greenway (BT 162/01) traversed. Grade separation of York St would reduce severance, improving movements along York St.	2 Community facilities (Northside Park & Ride and Jack Kirk Automobile Engineers) directly affected and 1 Community Greenway traversed.				Slight Beneficial			
Vehicle Travellers	The depressed links, especially M2-Westlink would hinder views from the road. Left turn from M3 to Nelson St closed though likely net reduction in driver stress expected.	N/A.				Slight Beneficial			
Road Drainage and the Water Environment	No known waterbodies traversed. Potentially significant flood risk associated with depressed links, especially M2-Westlink Link. Majority of option is within floodplain.	N/A.				Slight Adverse			

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:	
Preliminary Option 4		Provision of an interchange with the separation of M2–Westlink movement achieved through use of an underpass underneath the existing Lagan and Dargan Bridges. The M3–Westlink movement is grade separated from York Street via a underpass structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 63.673m (excl. Optimism Bias) £ 91.690m (incl. 44% Optimism Bias)	
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT	
	Geology and Soils	No significant impact on geology and soils. Four areas of potentially contaminated land may be affected.	4 areas of potentially contaminated land may be affected (2 Petrol Station/Storage sites, a food preparation and processing site and a former engineering works).				Slight Beneficial	
	Impact of Road Schemes on Policies and Plans	Conforms to policies in RDS and RTS by providing a linkage which improves the efficiency of the Eastern Seaboard Corridor and thus supporting economic development along this corridor. It is specifically included in the IDP for Roads document.	N/A.				Slight Beneficial	
SAFETY	Accidents	The COBA model results indicate that, if traffic conditions on the weaving sections reflect urban characteristics more than rural characteristics, the number of accidents would increase under both the low and central traffic growth scenarios based on the application of default accident rates.		Accidents	Deaths	Serious	Slight	PVB: Accidents (Low / Central) -£17.288m / -£18.861m
			Low Central	-520.2 -569.4	-2.5 -2.8	-36.3 -39.8	-738.6 -808.5	
ECONOMY	Transport Economic Efficiency	Improved transport economic efficiency due to reduced peak and off-peak journey times compared to the existing network by providing a number of new transport links for strategic traffic and the removal of three signalised junctions, to the benefit of consumer and business users. It should be noted that the economic impact of delays during construction and the displacement of traffic around the wider road network have not been assessed at this stage, but could be significant. This option yields the highest levels of benefit and a mid-range benefit to cost ratio.	For the Opening Year	Low	Central	TEE (Low / Central)		Consumer PVB: £122.279m / £191.954m Business PVB: £120.304m / £196.585m Private Sector PVB: £0.130m / £0.136m Emissions PVB: £0.150m / £0.158m Invest+Op PVC: £62.587m / £62.587m Ind Tax Rev PVC: £1.307m / £1.379m
	Reliability	Improved journey time reliability for both strategic and some local traffic through the removal of signalised junctions and the provision of new transport links, although some local routes would be severed resulting in traffic re-routing.	Total vehicle-hours saved (2-way) Peak journey time change (mins/veh) Off-peak journey time change (mins/veh)	560,000 West-M2 2.16 West-M3 1.56 West-M2 1.07 West-M3 0.63	613,000 2.42 1.75 1.09 0.65	-		
ACCESSIBILITY	Option Values	Scheme will not provide additional transport options.	N/A.				Neutral	
	Severance	There may be some hindrance to existing pedestrian movements.	N/A.				Slight Adverse	
	Access to the Transport System	Improved transport links should contribute to service improvements for road-based public transport. Rail based public transport would be unaffected.	N/A.				-	
INTEGRATION	Transport Interchange	Passenger/freight interchanges do not form part of this scheme.	N/A.				Neutral	
	Land Use Policy	Would impact on Development Opportunity Sites in the area, as defined in the Draft BMAP but would not sterilise them completely. Would not impact on zoned housing land.	N/A.				Slight Adverse	
	Other Government Policies	Improved transport links should contribute towards economic growth and a more inclusive society.	N/A.				Beneficial	
Overall Economic Assessment including Accident Benefits		Costs expressed in £m (2002 prices) discounted to 2002 at 3.5% p.a. for 30 years thereafter 3.0% for 46 years thereafter 2.5%.	Zero Growth	PVC = £ 63.612m	PVB = £ 130.547m	NPV = £ 66.934m	BCR = 2.052	
			Low Growth	PVC = £ 63.893m	PVB = £ 225.574m	NPV = £ 161.861m	BCR = 3.530	
			Central Growth	PVC = £ 63.966m	PVB = £ 369.972m	NPV = £ 306.007m	BCR = 5.784	

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:		
Preliminary Option 5		Provision of a partially grade separated junction with the separation of M2–Westlink movement achieved through use of an underpass located underneath the existing Lagan and Dargan Bridges. The M3–Westlink movement is maintained through an at-grade junction with York Street whilst the Westlink to M3 and Docks movement is provided via an overbridge structure over the Lagan and Dargan Bridges.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 66.595m (excl. Optimism Bias) £ 95.897m (incl. 44% Optimism Bias)		
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT		
ENVIRONMENT (DMRB Vol 11)	Air Quality	The elevated links would provide greater opportunity for airborne contaminant dispersion. Likely to be net improvement in air quality due to freer flowing/less congested traffic conditions; however assessed receptor fails to achieve the 2010 UK National Air Quality Objectives for PM ₁₀ .	Receptor: 13 Little George's Street (NAQS Limit Values)	NO ₂ (Ann. mean µg/m ³)		PM ₁₀ (Ann. mean µg/m ³)		Slight Beneficial	
				PM ₁₀ (Days >50µg/m ³)					
	Do-Min	Do-Som		Do-Min	Do-Som	Do-Min	Do-Som		
			29.95 (40)	31.99 (40)	26.77 (20)	27.86 (20)	17.01 (7)	20.24 (7)	
	Cultural Heritage	There are no areas of known archaeological remains or historic landscapes in close proximity, although the area is within an 'Area of Archaeological Potential'. Four listed buildings in proximity, though no impact upon historic setting expected. High number of Industrial heritage sites in proximity, though only two sites may be directly affected.	2 Industrial Heritage Sites (Bonded Store and Oatmeal Mill) affected (though no above ground features remain of these sites due to site clearance).				Slight Adverse		
	Disruption due to Construction	Proximal properties would be exposed to significant disruption related impacts (e.g. noise, vibration, dust creation, etc). Vehicle and NMU movements likely to be severely disrupted.	N/A.				Large Adverse		
	Ecology and Nature Conservation	No designated ecological sites in proximity. Main ecological impact associated with the loss of amenity planting.	N/A.				Slight Adverse		
	Landscape Effects	Incorporation of the elevated links would maximise visual impact, however from a cityscape perspective and the potential for future mitigation of the structures, the footprint of the interchange would more easily allow integration into the urban fabric.	N/A.				Slight Beneficial		
	Land Use	Three properties at risk of demolition and four planning applications affected. Three Development Opportunity Sites affected.	3 properties at risk of demolition (DRD Section Office, Driver & Vehicle Agency, & Stella Maris Hostel). 3 full/approved (conversion of an existing vehicle workshop into office & interview room and an office development) 1 full/pending (erection of an apartment block) and 2 advertisement/approved planning applications potentially affected. 3 Development Opportunity Sites affected (CC 080, CC 076 and CC 073).				Moderate Adverse		
Noise and Vibration	Noise levels are unlikely to significantly change with scheme implementation. Potential reduction in stop-start driving/braking/accelerating etc; smoother transition between links.	7 particularly sensitive facilities within 50m.				Slight Beneficial			
Pedestrians, Cyclists, Equestrians and Community Effects	Direct loss of Northside Park & Ride facility. At-Grade M3 – Westlink link junction with York St would provide no added benefit to vehicle and NMU movements in this area. Closure of the northbound bus lane on Corporation St.	One Community facility (Northside Park & Ride) directly affected.				Neutral			
Vehicle Travellers	The elevated links would enhance and offer greater views from the road. M3–Westlink link at-grade junction with York St would hinder the through flow of strategic traffic. Diverge to York St from the Westlink closed. Closure of the Westlink (northbound) on-slip from Clifton St. Left turn from M3 to Nelson St closed though likely net reduction in driver stress expected.	N/A.				Slight Beneficial			
Road Drainage and the Water Environment	No known waterbodies traversed. Majority of option is within floodplain.	N/A.				Slight Adverse			

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:	
Preliminary Option 5		Provision of a partially grade separated junction with the separation of M2–Westlink movement achieved through use of an underpass located underneath the existing Lagan and Dargan Bridges. The M3–Westlink movement is maintained through an at-grade junction with York Street whilst the Westlink to M3 and Docks movement is provided via an overbridge structure over the Lagan and Dargan Bridges.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 66.595m (excl. Optimism Bias) £ 95.897m (incl. 44% Optimism Bias)	
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT	
	Geology and Soils	No significant impact on geology and soils. Three areas of potentially contaminated land may be affected.	3 areas of potentially contaminated land may be affected (2 Petrol Station/Storage sites and a food preparation and processing site).				Slight Beneficial	
	Impact of Road Schemes on Policies and Plans	Conforms to policies in RDS and RTS by providing a linkage which improves the efficiency of the Eastern Seaboard Corridor and thus supporting economic development along this corridor. It is specifically included in the IDP for Roads document.	N/A.				Slight Beneficial	
SAFETY	Accidents	The COBA model results indicate that, if traffic conditions on the weaving sections reflect urban characteristics more than rural characteristics, the number of accidents would increase under both the low and central traffic growth scenarios based on the application of default accident rates.		Accidents	Deaths	Serious	Slight	PVB: Accidents (Low / Central) -£20.090m / -£21.918m
			Low Central	-607.2 -664.7	-2.8 -3.1	-43.4 -47.5	-853.3 -934.1	
ECONOMY	Transport Economic Efficiency	Improved transport economic efficiency due to reduced peak and off-peak journey times compared to the existing network by providing a number of new transport links for strategic traffic and the removal of three signalised junctions, to the benefit of consumer and business users. It should be noted that the economic impact of delays during construction and the displacement of traffic around the wider road network have not been assessed at this stage, but could be significant. This option yields the lowest levels of benefit and the lowest benefit to cost ratios.	For the Opening Year		Low	Central	TEE (Low / Central) Consumer PVB: £82.502m / £148.225m Business PVB: £85.794m / £158.729m Private Sector PVB: -£0.423m / -£0.470m Emissions PVB: -£0.393m / -£0.428m Invest+Op PVC: £64.748m / £64.748m Ind Tax Rev PVC: -£3.318m / -£3.609m	
	Reliability	Improved journey time reliability for both strategic and some local traffic through the removal of signalised junctions and the provision of new transport links, although some local routes would be severed resulting in traffic re-routing.	Total vehicle-hours saved (2-way) Peak journey time change (mins/veh) Off-peak journey time change (mins/veh)		361,000 West-M2 2.15 West-M3 1.20 West-M2 0.95 West-M3 0.45	414,000 2.40 1.37 0.98 0.46		
ACCESSIBILITY	Option Values	Scheme will not provide additional transport options.	N/A.				Neutral	
	Severance	There may be some hindrance to existing pedestrian movements.	N/A.				Slight Adverse	
	Access to the Transport System	Improved transport links should contribute to service improvements for road-based public transport. Rail based public transport would be unaffected.	N/A.				-	
INTEGRATION	Transport Interchange	Passenger/freight interchanges do not form part of this scheme.	N/A.				Neutral	
	Land Use Policy	Would impact on Development Opportunity Sites in the area, as defined in the Draft BMAP but would not sterilise them completely. Would not impact on zoned housing land.	N/A.				Slight Adverse	
	Other Government Policies	Improved transport links should contribute towards economic growth and a more inclusive society.	N/A.				Beneficial	
Overall Economic Assessment including Accident Benefits		Costs expressed in £m (2002 prices) discounted to 2002 at 3.5% p.a. for 30 years thereafter 3.0% for 46 years thereafter 2.5%.	Zero Growth	PVC = £ 62.151m	PVB = £ 58.534m	NPV = - £ 3.617m	BCR = 0.942	
			Low Growth	PVC = £ 61.430m	PVB = £ 147.390m	NPV = £ 85.960m	BCR = 2.399	
			Central Growth	PVC = £ 61.139m	PVB = £ 284.138m	NPV = £ 222.999m	BCR = 4.647	

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:		
Preliminary Option 6		Provision of a partially grade separated junction with the separation of Westlink-M2 movements achieved through use of overbridge structures over the Lagan and Dargan Bridges. The M3-Westlink movement is grade separated from York Street via an overbridge structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 64.306m (excl. Optimism Bias) £ 92.600m (incl. 44% Optimism Bias)		
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT		
ENVIRONMENT (DMRB Vol 11)	Air Quality	The elevated links would provide greater opportunity for airborne contaminant dispersion. Likely to be net improvement in air quality due to freer flowing/less congested traffic conditions; however assessed receptor fails to achieve the 2010 UK National Air Quality Objectives for PM ₁₀ .	Receptor: 47 Little George's Street (NAQS Limit Values)	NO ₂ (Ann. mean µg/m ³)		PM ₁₀ (Ann. mean µg/m ³)		Slight Beneficial	
				PM ₁₀ (Days >50µg/m ³)					
	Do-Min	Do-Som		Do-Min	Do-Som	Do-Min	Do-Som		
			31.26 (40)	33.05 (40)	27.91 (20)	28.19 (20)	20.39 (7)	21.28 (7)	
	Cultural Heritage	There are no areas of known archaeological remains or historic landscapes in close proximity, although the area is within an 'Area of Archaeological Potential'. Four listed buildings in proximity, though no impact upon historic setting expected. High number of Industrial heritage sites in proximity, though only one site may be directly affected.	1 Industrial Heritage Site (Bonded Store) affected (though no above ground features remain of this site due to site clearance).				Slight Adverse		
	Disruption due to Construction	Proximal properties would be exposed to significant disruption related impacts (e.g. noise, vibration, dust creation, etc). Vehicle and NMU movements likely to be severely disrupted.	N/A.				Large Adverse		
	Ecology and Nature Conservation	No designated ecological sites in proximity. Main ecological impact associated with the loss of amenity planting.	N/A.				Slight Adverse		
	Landscape Effects	Incorporation of the elevated links would maximise visual impact, however from a cityscape perspective and the potential for future mitigation of the structures, the footprint of the interchange would more easily allow integration into the urban fabric, particularly due to its greater simplicity in design.	N/A.				Moderate Beneficial		
	Land Use	No properties at risk of demolition. No planning applications affected. Development Opportunity Site west of York St affected.	1 Development Opportunity Site affected (CC 073).				Slight Adverse		
	Noise and Vibration	Noise levels are unlikely to significantly change with scheme implementation. Potential reduction in stop-start driving/braking/accelerating etc; smoother transition between links.	6 particularly sensitive facilities within 50m.				Slight Beneficial		
Pedestrians, Cyclists, Equestrians and Community Effects	Carr's Glen / Waterworks Community Greenway (BT 162/01) traversed. At-grade Westlink- M3 link junction with York St and Nelson St would provide no added benefit to vehicle and NMU movements in this area.	1 Community Greenway traversed.				Neutral			
Vehicle Travellers	The elevated links, especially M2-Westlink would enhance and offer greater views from the road. Westlink-M3 link at-grade junction with York St and Nelson St would hinder the through flow of strategic traffic. Closure of the Westlink (northbound) on-slip from Clifton St though likely net reduction in driver stress expected.	N/A.				Slight Beneficial			
Road Drainage and the Water Environment	No known waterbodies traversed. Majority of option is within floodplain.	N/A.				Slight Adverse			

OPTION:		DESCRIPTION	PROBLEMS:				TOTAL SCHEME COST:
Preliminary Option 6		Provision of a partially grade separated junction with the separation of Westlink-M2 movements achieved through use of overbridge structures over the Lagan and Dargan Bridges. The M3-Westlink movement is grade separated from York Street via an overbridge structure.	Reliability of journey times on the Eastern Seaboard Key Transport Corridor at the existing York Street junction.				£ 64.306m (excl. Optimism Bias) £ 92.600m (incl. 44% Optimism Bias)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE				ASSESSMENT
	Geology and Soils	No significant impact on geology and soils. No impact upon potentially contaminated land.	N/A.				Slight Beneficial
	Impact of Road Schemes on Policies and Plans	Conforms to policies in RDS and RTS by providing a linkage which improves the efficiency of the Eastern Seaboard Corridor and thus supporting economic development along this corridor. It is specifically included in the IDP for Roads document.	N/A.				Slight Beneficial
SAFETY	Accidents	The COBA model results indicate that, if traffic conditions on the weaving sections reflect urban characteristics more than rural characteristics, the number of accidents would increase under both the low and central traffic growth scenarios based on the application of default accident rates.		Accidents	Deaths	Serious	Slight
			Low Central	-388.3 -425.1	-1.6 -1.8	-26.2 -28.7	-550.4 -602.5
ECONOMY	Transport Economic Efficiency	Improved transport economic efficiency due to reduced peak and off-peak journey times compared to the existing network by providing a number of new transport links for strategic traffic and the removal of one signalised junction, to the benefit of consumer and business users. It should be noted that the economic impact of delays during construction and the displacement of traffic around the wider road network have not been assessed at this stage, but could be significant. This option yields mid-range levels of benefit and a mid-range benefit to cost ratio.	For the Opening Year	Low	Central	TEE (Low / Central)	
	Reliability	Improved journey time reliability for both strategic and some local traffic through the removal of signalised junctions and the provision of new transport links, although some local routes would be severed resulting in traffic re-routing.	Total vehicle-hours saved (2-way) Peak journey time change (mins/veh) Off-peak journey time change (mins/veh)	505,000 West-M2 2.35 West-M3 1.31 West-M2 1.19 West-M3 0.51	553,000 2.60 1.48 1.22 0.53	Consumer PVB: £113.482m / £177.919m Business PVB: £111.797m / £182.564m Private Sector PVB: £0.247m / £0.252m Emissions PVB: £0.251m / £0.263m Invest+Op PVC: £62.507m / £62.507m Ind Tax Rev PVC: £2.156m / £2.263m	
ACCESSIBILITY	Option Values	Scheme will not provide additional transport options.	N/A.				Neutral
	Severance	There may be some hindrance to existing pedestrian movements.	N/A.				Slight Adverse
	Access to the Transport System	Improved transport links should contribute to service improvements for road-based public transport. Rail based public transport would be unaffected.	N/A.				-
INTEGRATION	Transport Interchange	Passenger/freight interchanges do not form part of this scheme.	N/A.				Neutral
	Land Use Policy	Would impact on Development Opportunity Sites in the area, as defined in the Draft BMAP but would not sterilise them completely. Would not impact on zoned housing land.	N/A.				Slight Adverse
	Other Government Policies	Improved transport links should contribute towards economic growth and a more inclusive society.	N/A.				Beneficial
Overall Economic Assessment including Accident Benefits		Costs expressed in £m (2002 prices) discounted to 2002 at 3.5% p.a. for 30 years thereafter 3.0% for 46 years thereafter 2.5%.	Zero Growth	PVC = £ 64.215m	PVB = £ 123.707m	NPV = £ 59.492m	BCR = 1.926
			Low Growth	PVC = £ 64.663m	PVB = £ 213.087m	NPV = £ 148.424m	BCR = 3.295
			Central Growth	PVC = £ 64.771m	PVB = £ 347.155m	NPV = £ 282.384m	BCR = 5.360