Appraisal Summary Table

Date produced:	05th February 2024	**Contact:**	
Name of scheme:	A29 Cookstown Bypass	**Name**	
Description of scheme:		**Organisation**	
		Role	Promoter/Official
Scenario:			

	Impacts	Summary of key impacts	Assessment: Quantitative	Qualitative	Monetary £(NPV)	Distributional 7 pt scale/ vulnerable grp
Economy	Business users & transport providers	There is forecast to be large benefits to business users and transport providers of the current A29 and the proposed A29 Cookstown bypass, due to the transfer of strategic traffic from the town centre routes to the bypass. The provision of a high standard bypass will increases the overall network capacity and reduce incidences of congestion, reduce journey times and enhance journey time reliability. Benefits will be realised by businesses due to improved accessibility between key economic centres. The economic benefit to business users and transport providers is demonstrated by the highly positive TUBA economic assessment.	**Value of journey time changes(£)** **Net journey time changes (£)** 0 to 2min: N/A; 2 to 5min: N/A; > 5min: N/A	Large beneficial	£42,590,000	N/A
	Reliability impact on Business users	Reliability impact assessment has not yet been undertaken at this Stage				
	Regeneration	A regeneration assessment has not yet been undertaken at this Stage				
	Wider Impacts	Wider Impacts assessment has not yet been undertaken at this Stage				
Environmental	Noise	The Proposed Scheme will introduce a major new road traffic noise source through what is currently a comparatively quiet rural area. Consequently, significant adverse noise impacts are predicted at receptors close to the Proposed Scheme carriageways. The introduction of the Proposed Scheme will also reduce noise levels along the existing A29, which passes through urban areas through the centre of Cookstown. Consequently, significant beneficial noise impacts are predicted for receptors close to the existing A29. The assessment includes mitigation by 2m high environmental barriers at targeted locations and low noise road surfacing (LNRS) on a section of the proposed scheme carriageways .	503 households are predicted to experience increased daytime noise in the forecast year 1702 households are predicted to experience reduced daytime noise in the forecast year 105 households are predicted to experience increased night time noise in the forecast year 892 households are predicted to experience reduced night time noise in the forecast year	N/A	Net present value (NPV) of impact on sleep disturbance £3,847,098. NPV of impact on amenity £2,940,798. NPV of impact on AMI £881,537. NPV of impact on stroke £247,700. NPV of impact on dementia £373,504. **Total NPV of change in noise £8,290,637 (net benefit).**	**Distributed Impacts across Income Deprivation Quintiles** **Future Year (2042) - Daytime noise** Large Beneficial for one quintile (80-100% - this quintile represents the least deprived areas) Moderate Beneficial for three quintiles (0-20%, 20-40% and 60-80%) Slight Beneficial for one quintile (20-40%)
	Air Quality	In the opening year (2027) of the Proposed Scheme, no exceedances of the Air Quality Strategy objectives for NO2 or PM2.5 are predicted at any considered sensitive receptor locations. Annual mean concentrations of NO2 are predicted to deteriorate at 6.1% of the total number of receptors, while 84.0% are predicted to experience improvements in concentrations. This results in an overall net score of -10,047.3 which reflects an overall improvement in local air quality conditions with regard to annual mean concentrations of NO2 in the opening year. Total concentrations of PM2.5 are predicted to experience a deterioration at 3.3% of the total number of receptors while 38.8% are predicted to experience improvements in concentrations. This results in an overall net score of -442.9 which reflects an improvement in local air quality conditions with regard to annual mean concentrations of PM2.5 in the opening year. Forecast Year (2042): In the forecast year of the Proposed Scheme, no exceedances of the Air Quality Strategy objectives for NO2 or PM2.5 are predicted at any considered sensitive receptor locations. In regard to annual mean concentrations of NO2, it is predicted that deterioration will occur at 14.1% of the total number of receptors while 82.9% are predicted to experience improvements in concentrations. This results in an overall net score of -9,748 which reflects an overall improvement in local air quality conditions with regard to annual mean concentrations of NO2 in the forecast year. Total concentrations of PM2.5 are predicted to experience a deterioration at 16.5% of the total number of receptors while 62.8% are predicted to experience improvements in concentrations. This results in an overall net score of -434.0 which reflects an improvement in local air quality conditions with regard to annual mean concentrations of PM2.5 in the forecast year. In the distributional assessment there are 11 SOAs either wholly or partially within the considered operational air quality study area. These areas are categorised into quintiles based on their national Multiple Deprivation Measure (MDM) ranking. The majority of SOAs are in the median quintile (40-60%); with no SOAs identified under the most deprived quintile (0-20%) or least deprived quintile (80-100%).	**Local Air Quality Assessment - Assessment Scores** Nitrogen Dioxide (NO_2) - Opening Year (2027) Properties with improvement: 6,162 Properties with no change: 75 Properties with deterioration: 1,060 DM Assessment Score: 91,295.0 DS Assessment Score: 81,247.7 **Net Total Assessment = -10,047.3** Particulate Matter ($PM_{2.5}$) - Opening Year (2027) Properties with Improvement: 4,625 Properties with no change: 1,786 Properties with deterioration: 886 DM Assessment Score: 47,547.4 DS Assessment Score: 47,104.5 **Net Total Assessment = -442.9** Nitrogen Dioxide (NO_2) - Forecast Year (2042) Properties with improvement: 6,184 Properties with no change: 62 Properties with deterioration: 1,051 DM Assessment Score: 91,207.2 DS Assessment Score: 81,459.2 **Net Total Assessment = -9,478.0** Particulate Matter ($PM_{2.5}$) - Forecast Year (2042) Properties with Improvement: 4,684 Properties with no change: 1,383 Properties with deterioration: 1,230 DM Assessment Score: 47,430.0 DS Assessment Score: 46,996.0 **Net Total Assessment = -434.0**	N/A	Present value of change in NO_2 concentrations: £3,862,016 Present value of change in $PM_{2.5}$ concentrations: £1,362,930 **Total value of change in air quality: Net Benefit - £5,224,946**	**MDM Quintiles** **Opening Year (2027) - NO_2** Beneficial for three quintiles (20-40%, 40-60% and 60-80%) Neutral for two quintiles (0-20% and 80-100%) **Opening Year (2027) - $PM_{2.5}$** Beneficial for three quintiles (20-40%, 40-60% and 60-80%) Neutral for two quintiles (0-20% and 80-100%) **Forecast Year (2042) - NO_2** Beneficial for three quintiles (20-40%, 40-60% and 60-80%) Neutral for two quintiles (0-20% and 80-100%) **Forecast Year (2042) - $PM_{2.5}$** Beneficial for three quintiles (20-40%, 40-60% and 60-80%) Neutral for two quintiles (0-20% and 80-100%)
	Greenhouse gases	Opening Year (2027): GHG emissions associated with construction arising from the product stage (A1-3), transport of materials to site (A4), transport of waste from site (A5), and construction plant equipment (A5) are expected to be Moderate Adverse and could be minimised though design optimisation to reflect the carbon reduction hierarchy as well as other measures. There is likely to be a significant residual effect on GHG emissions despite following the implementation of mitigation measures during the construction stage. Forecast Year (2042): GHG emissions arising from end-user traffic emissions during the operation of the Proposed Scheme are not significant as there will be beneficial effects. Operational emissions could still be minimised by specifying high efficiency mechanical and electrical equipment, using low carbon road surface options and using road surface options with greater longevity as well as other measures.	Change n non traded carbon over 60y (CO_2e): -44007 Change n traded carbon over 60y (CO_2e): 150	N/A	£3,281,642	
	Landscape	The Proposed Scheme would introduce a major linear infrastructure element into a characteristically rural landscape. It would bisect existing field patterns, result in the loss of mature vegetation and fundamentally change the relationship between the eastern, urban edge of Cookstown and the wider agricultural landscape. Locally, perceptions of tranquility within the Ballinderry River corridor would be diminished and the drumlin landscape to the north of the study area would be affected by landform change through the introduction of engineered cuttings. Elements of the scheme will be visually intrusive including the presence of large engineered earthworks and structures some of these structures will become assimilated into the landscape through the introduction of mitigation planting. However, it will not be possible to fully integrate all built elements of the scheme into the local landscape through environmental mitigation measures. Although the proposed mitigation planting will help visually integrate the scheme into the local landscape once it has sufficiently established, it will not prevent the Proposed Scheme from scarring the river valley and drumlin landscapes in the longer term. The Proposed Scheme affects a number of landscape resources and each resource has been identified and assigned an assessment score. To derive an overall assessment score the Propsoed Scheme has been assessed against the most adverse assessment of the four Local Landscape Character Areas (LLCA 2, 4, 5 and 6).	N/A	Slight Adverse	N/A	

	Townscape	The Proposed Scheme affects only one townscape resource (LLCA7) where the Sandholes Link Road is proposed. Local Landscape Character Area (LLCA) 7 Urban River Corridor - the existing townscape character would be maintained due to the limited nature and scale of change resulting from the introduction of the Sandholes Link Road. The local townscape layout, density, scale, appearance, cultual associations, land use and how people interact within it will not be fundamentally changed.	N/A	Neutral	N/A	
	Historic Environment	Designated heritage assets: there are eight designated heritage assets within the study areas surrounding the Proposed Scheme, none of which are within the Proposed Scheme Boundary. There are potential impacts on the Killymoon Historic Park, Garden and Demesnes, and lesser impacts on the Grade A Killymoon Castle (HB09/05/001A), and a scheduled rath (LDY048:026), resulting in probable slight adverse effects that may be reduced through further mitigation. Undesignated heritage assets: there are 92 undesignated heritage assets within the study areas surrounding the Proposed Scheme, 15 of which are within the Proposed Scheme boundary and will be impacted upon to varying levels. The key impact will be to Bronze Age archaeological remains (2008:1188), resulting in a moderate adverse effect that would be reduced through mitigation.	N/A	Slight Adverse	N/A	
	Biodiversity	Potential impacts are predicted on the Upper Ballinderry River SAC and ASSI; sites of local wildlife conservation importance; woodland, hedgerow and watercourse habitats; and locally occuring protected and notable species of conservation concern, including otter, badger, bats, freshwater pearl mussel, fish, white-clawed crayfish, hedgehog, Irish hare and birds. However, with the implemetation of appropriate mitigation these impacts could be avoided of minimised resulting in residual adverse effects of no more than slight adverse.	N/A	Slight Adverse	N/A	
	Water Environment	Surface water features in the study area comprise Lissan Water, Ballinderry River (Cookstown), Fountain Road Stormwater Drain, Molesworth Stormwater Drain and other unnamed watercourses. The Proposed Scheme lies entirely within the Cookstown and Moneymore groundwater bodies. The Proposed Scheme is likely to have Low Significance effects upon the surface water environment, with the largest risks associated to risk of sedimentation / mobilisation of contamination during construction and accidental spillage of pollutants such as oil, fuel and concrete during construction. Localised and temporary impacts on groundwater levels and flow within the superficial aquifers and on groundwater quality may occur during the construction phase due to pollutants and sediments discharged at the surface during excavation works (overall Insignificance effect). During the operation phase, the Proposed Scheme may have impacts on localised changes to groundwater levels and flow and on recharge to the aquifers due to a reduced permeable surface area. (Overall Insignificant or Low Significance effects).	N/A	Slight Adverse	N/A	
Social	Commuting and Other users	There is forecast to be significant benefits to commuters and other users of the current A29 and the proposed A29 Cookstown bypass, due to rerouting of strategic traffic from the town centre routes to the A29 bypass. The provision of a high standard bypass will increases the overall network capacity and ensure large benefits to users through time savings and higher average speeds, reduced congestion and journey time reliability. Local traffic on the existing A29 will experience less congestion and improved journey time reliability. The economic benefits to commuters and other users is highlighted by the highly positive TUBA economic assessment.	**Value of journey time changes(£)** **Net journey time changes (£)** 0 to 2min: N/A; 2 to 5min: N/A; > 5min: N/A	Large beneficial	£67,089,000	
	Reliability impact on Commuting and Other users	Reliability impact assessment has not yet been undertaken at this Stage				
	Physical activity	A regeneration assessment has not yet been undertaken at this Stage				
	Journey quality	Wider Impacts assessment has not yet been undertaken at this Stage				
	Accidents	There will be a reduction in the number and severity of accidents, as forecast by COBALT, occurring as a result of the construction of a high standard bypass. This is a result of a transfer of traffic from the existing A29 onto the new bypass. The benefits of reducing the number of accidents have been quantified and monetised using COBALT.		Large beneficial	£13,165,000	N/A
	Security	Not assessed for this stage				
	Access to services	Not assessed for this stage				
	Affordability	Not assessed for this stage				
	Severance	Not assessed for this stage				
	Option and non-use values	Not assessed for this stage				
Public Accoun	Cost to Broad Transport Budget	These consist of the scheme investment costs and operating costs (i.e. annual maintenance costs and capital renewal costs).			£34,214,619	
	Indirect Tax Revenues	Decreased indirect tax revenues as a result of reduced fuel spends.			£2,563,000	