Appraisal Summary Table	Document Reference Number: HE514503-ACM-GEN-A38_SW_01_ZZ-FM-TR-0001; revision P04; status S4	**Date produced:**	March-2019	**Contact:**	
Name of scheme:	**A38 Derby Junctions**			**Name**	[redacted]
Description of scheme:	This Scheme is to grade-separate the three junctions on the A38 through Derby, namely: • A38 / A5111 Kingsway junction; • A38 / A52 Markeaton junction; • A38 / A61 Little Eaton junction.			**Organisation**	Highways England
				Role	Promoter/Official

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The average journey time along the A38 through the junctions would be reduced with the Scheme in place. The Scheme would result in time savings for business users and transport providers of 110,670 person-hours in the opening year.	**Value of journey time changes(£)** £110.7m **Net journey time changes (£)** 0 to 2min: £52.3m; 2 to 5min: £38.7m; > 5min: £19.7m	N/A	£120.5m	Not applicable
	Reliability impact on Business users	The grade-separation of the three junctions would reduce the variability of speeds (and hence the variability of journey times) thereby making journey times more predictable (reliable).	-	N/A	£3.1m	
	Regeneration	Not applicable	-	-	-	
	Wider Impacts	Not applicable	-	-	-	
Environmental	Noise	As the Scheme would resolve existing congestion issues and attract traffic to the area, the overall trend in the study area is for a slight increase in operational traffic noise levels. Only one receptor (the Royal School for the Deaf) is predicted to experience a moderate (significant) increase in traffic noise on the worst affected façades of Lydia House (used by boarding pupils during the week) and the Karten building (used for offices/meeting rooms). Reductions in operational traffic noise (predominantly not significant) are predicted in the vicinity of those existing accesses onto the A38 that would be removed by the Scheme. Traffic would re-routing within Markeaton, New Zealand and Allestree, due to the closure of local accesses onto the A38, resulting in negligible or minor (not significant) traffic noise effects. 13No. residential buildings are provisionally identified as meeting the Noise Insulation Regulations criteria.	Households experiencing increased daytime noise: 2,242 Households experiencing decreased daytime noise: 49 Households experiencing increased night-time noise: 233 Households experiencing decreased night-time noise: 716 Based on number of households in 2039 that would change 3dB band (increase or decrease), as per TAG Noise Workbook.	N/A	-£3.2m	Moderate adverse for: • most deprived income quintile • children & young people
	Air Quality	An Air Quality Management Area (AQMA) for NO_2 has been declared within the study area that encompasses the Inner and Outer Ring Roads in the city as well as some sections of radial roads. By the opening year (2024) without the Scheme, air quality has improved such that all receptors except for one in Stafford Street are predicted to achieve applicable objectives and limit values. A receptor in Stafford Street is at risk of exceeding the NO_2 annual mean limit value and objective if vehicle emissions do not decrease in the future as quickly as expected. Operation of the Scheme is predicted to improve air quality in Stafford Street. The Scheme is expected to be beneficial at properties overall. Seventeen properties next to the A38 would be demolished as part of the Scheme. Regional emissions of PM_{10} and NO_X are expected to increase with the Scheme.	In the opening year: PM_{10} air quality would be improved at 4,882 properties and worsen at 4,105 properties. NO_2 air quality would be improved at 4,492 properties and worsen at 4,664 properties. Net Total Assessment score for PM_{10}: -1,830 Net Total Assessment score for NO_2: -1,903 Emissions: PM_{10} +1.3 tonnes/year, NO_X +4.1 tonnes/year.	N/A	Value of change in: • PM_{10} concentration: £3.3m • NO_X emissions: £-0.1m Total value of change in air quality: £3.2m	PM_{10}: Large beneficial for most deprived income quintile. NO_2: Large adverse for most deprived income quintile. Slight adverse for children & young people.
	Greenhouse gases	Predictions indicate that there would be an increase in greenhouse gas emissions over 60 years due to an increase in vehicle-kilometres travelled with the Scheme. In the Scheme's opening year (2024) the increase would be 856 tonnes. The increase in the 4th carbon budget period would be 4,172 tCO_2e.	Change in non-traded carbon over 60y (CO_2e): 148,455 Change in traded carbon over 60y (CO_2e): 0	N/A	-£6.7m	
	Landscape	The Scheme would impact upon the prevailing landscape due to vegetation clearance during the construction phase, an increase in visibility of the highway, and the introduction of gantries, noise/screening barriers and new earthworks. In the operational phase, impacts would reduce with time due to the maturing vegetation, thus reducing the perceived vegetation loss and helping to screen the Scheme. Construction would cause temporary large adverse effects to four Local Character Areas (LCAs), moderate adverse temporary effects to two LCAs, slight adverse temporary effects to two LCAs and neutral temporary effects to two LCAs. During operation year 1, there would be moderate adverse effects to four LCAs, slight adverse effects to four LCAs and neutral effects to two LCAs. By year 15 of Scheme operation, there would be slight adverse effects to three LCAs and neutral effects to seven LCAs. This indicates that, as the Scheme landscape design matures, landscape effects would reduce such that, by the 15th year of Scheme operation, there would be no significant effects.	Not applicable	Slight Adverse	Not applicable	
	Townscape	The main impacts on townscape character are similar to those on landscape character and largely arise from vegetation clearance during the construction phase, an increase in the visibility of the highway, and the introduction of gantries, noise/screening barriers and new earthworks. In the operational phase, impacts would reduce with time as the landscaping matures, reducing the perceived vegetation loss and helping to screen the Scheme from surrounding areas.	Not applicable	Neutral	Not applicable	
	Historic Environment	The Scheme would introduce new urbanising features into the Derwent Valley Mills World Heritage Site (WHS) with the potential to change the setting of some attributes and the historic landscape character within the WHS. Scheme effects upon the WHS are assessed as being slight adverse. Construction of the Scheme would remove archaeological remains of negligible and low value resulting in a slight adverse effect. The Scheme would also involve the relocation of sections of the Markeaton Park boundary wall. With mitigation, the Scheme would have neutral or slight adverse effects on fifteen archaeology assets that are all non-designated; neutral or slight adverse effects on six historic building assets (including four that are designated: Breadsall Manor, Breadsall Conservation Area, Church of All Saints and Allestree Hall); neutral or slight adverse effects on nine historic landscape character types that are all non-designated, and a beneficial effect on one that is also non-designated.	N/A	Slight adverse	Not applicable	
	Biodiversity	The Scheme would result in the total loss of the A38 Roundabout Local Wildlife Site (LWS) at Kingsway junction; a veteran tree at Markeaton junction and temporary adverse effects on local habitats in the short to medium term until habitats re-establish. Overall, the Scheme would have benefits in the long term to biodiversity - this would be achieved through the implementation of mitigation measures within the Scheme boundary to deliver no-net loss of biodiversity. Such measures would include the protection, creation and translocation of habitats on site (including grassland, trees, species-rich hedgerows, woodland, ponds and running water habitats), which in turn would enhance habitat for species (particularly aquatic macroinvertebrates, fish and otter in association with the Dam Brook realignment); and also would protect fauna in the long term through the incorporation of screening and shelterbelts for barn owl, farmland birds, lapwing, little ringed plover, oystercatcher, and wintering birds, as well as wildlife fencing for badger and appropriate lighting for bats.	Not applicable	Slight beneficial	Not applicable	
	Water Environment	Water environment features within the study area include: Bramble Brook, Markeaton Lake, Mill Pond, Markeaton Brook, the River Derwent and Dam Brook (and their associated tributaries), as well as local surface water abstraction from the River Derwent, a surface water safeguard zone and a groundwater Source Protection Zone. Kingsway junction is in an area of flood risk, whilst parts of the Scheme at Little Eaton junction occupy areas of floodplain. The Scheme design would provide flood storage areas at Kingsway junction, a floodplain compensation area at Little Eaton junction, and would provide of a highway drainage system to attenuate and treat highway drainage flows prior to discharge to the receiving water environment. The Scheme's effects on the water environment have been assessed as not significant, whilst alterations to the alignment of Bramble Brook at Kingsway junction would have potential to generate slight benefits for downstream flood risks.	Not applicable	Neutral	Not applicable	
Social	Commuting and Other users	The average journey time along the A38 through the junctions would be reduced with the Scheme in place. The Scheme would result in time savings for Commuting and Other users of 249,453 person-hours in the opening year.	**Value of journey time changes(£)** £249.5M **Net journey time changes (£)** 0 to 2min: £103.2M; 2 to 5min: £86.1M; > 5min: £60.1M	N/A	£231.3m	Slight beneficial for most deprived income quintile
	Reliability impact on Commuting & Other users	The grade separation of the three junctions would reduce the variability of speeds (and hence the variability of journey times) thereby making journey times more predictable (reliable).	-	N/A	£20.9m	
	Physical activity	The proposed non-motorised user facilities would encouraging more use and provide moderate benefits to physical activity: because of improved amenity and convenience and also an improved perception of personal safety.	Not applicable	Moderate beneficial	Not applicable	
	Journey quality	**Kingsway and Markeaton junctions**: Views from the road are currently limited by existing vegetation and adjacent residential and commercial properties. Views would be temporary restricted at these junctions as the road would be in cutting and the installation of noise barriers on both sides of the new A38 between the bridge over Brackensdale Avenue and Markeaton junction and at the Royal School for the Deaf. The change in view would have a low impact on journey quality, resulting in a slight adverse effect. **Little Eaton junction**: The provision of noise and screening barriers would screen some driver views from the Scheme resulting in limited views of the surrounding area, where views are currently intermittent. With regard to the junction at ground level, views would be restricted by the A38 embankment. The change in view would have a low impact on journey quality. In terms of drivers' stress and frustration, the Scheme would improve the drivers' experience, from high driver stress to moderate driver stress along the A38 route.	Not applicable	Slight adverse	Not applicable	
	Accidents	The Scheme is expected to deliver accident benefits over the 60-year appraisal period.	Savings of: • 1,396 personal injury collisions • 1,875 casualties.	N/A	£54.8m	Neutral
	Security	It is expected that the Scheme would not have any material impact on personal security in the area.	-	Neutral	Not applicable	Neutral
	Access to services	It is expected that the Scheme would lead to no changes to the bus routes or service times.	-	Neutral	Not applicable	Neutral
	Affordability	-	-			Slight adverse for most deprived income quintile
	Severance	Grade-separation would remove traffic movements from the junctions and would result in an overall reduction in severance for motorised users, including users of public transport. In terms of pedestrians and cyclists, overall, the Scheme would maintain and enhance connectivity to the wider environment.	Not applicable	Slight beneficial	Not applicable	Slight adverse for children and older people
	Option and non-use values	Not assessed.	-	-	-	
Public Accounts	Cost to Broad Transport Budget	Most likely range estimate (including construction, preparation, supervision, and land costs) was supplied by Highways England in June 2018. An estimate of the ongoing yearly maintenance costs for the A38 Derby Junctions was prepared in June 2016.	-		-£163.1m	
	Indirect Tax Revenues	The Scheme would result in an increase in fuel use, which would increase indirect tax revenues (ITR).	-		£17.7m	