

Appraisal Summary Table		Date produced:	20-Mar-20		Contact:			
Name of scheme:		West Cheltenham Transport Improvements Scheme - UK Cyber Business Park Phases 3 & 4			Name	IS		
Description of scheme:		West Cheltenham Transport Improvement Scheme (WCTIS) Phases 3 and 4. This scheme covers proposals to widen sections of the A40 carriageway through Cheltenham from Arle Court roundabout to the TGI Fridays Lights (A40/B4633), and improve the layout of junctions at Teistar Way and Benhall Roundabout.			Organisation	Atkins.GCC		
					Role	Promoter		
Impacts	Summary of key impacts	Assessment						
		Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp	
Economy	Business users & transport providers	Value of journey time changes(£)			N/A	£7.66m	Moderate beneficial	
		Net journey time changes (£)						
		0 to 2min	2 to 5min	> 5min				
		£3.88m	£0.93m	£2.84m				
Reliability impact on Business users	Reliability impacts have not been explicitly monetised following WebTAG guidelines. However, it is expected that the additional capacity will improve reliability due to the reduction in congestion and result in consistent benefits throughout the day but most significantly during peak hours.	N/A			Moderate beneficial	N/A		
Regeneration	This project does not have any specific regeneration aims, however, it is accepted that it will enable development in the area to start sooner, and faster. The scheme will not however be enough to mitigate for the full quantum of development in the area, but will contribute to the enhancement of the highway network.	N/A			Slight beneficial	N/A		
Wider Impacts	The proposed road layout improvements will lead to improved transport capacity, which will ultimately help facilitate the construction of the new Cyber Business Park in the site adjacent to the GCHQ headquarters.	N/A			Moderate beneficial	N/A		
Environmental	Noise	The Scheme would have no significant, adverse environmental effects in the short term at most of the receptors considered, and in the short-term at the remaining receptors considering additional contextual factors in accordance with DMRB 11:3:7 (marginal nature of impacts and results in the long-term). The Scheme would have no significant, adverse environmental effects on any receptor in the long-term. The Scheme is expected to result in increases in noise levels within NIA 6036. Therefore, in accordance with DEFRA's Noise Action Plan: Roads (2 July 2019), the highway authority will therefore be responsible for forming a view about what measures, if any, might be taken in order to assist with the implementation of the Government's policy on noise. Analysis of the modelling data indicates that there are 22 No. properties on Miserden Road, south of the A40 between the Arle Court and Benhall where all of the qualifying criteria for works or grants under the Noise Insulation Regulations 1975 (as amended 1988) criteria are met. The highways authority will therefore have a duty to undertake sound insulation works or make grants in respect of the NIPs at these properties.				-£2,279,613	Neutral. The noise assessment has shown that there is a slight beneficial impact for the 20% most income deprived residents, (two receptors experiencing a reduction in noise levels vs. 465 with no change in noise levels). There are neutral impacts for children and income quintile 2 and adverse impacts (minor increases as indicated in the noise modelling) for less income deprived residents. The overall impact of the scheme to noise is neutral.	
	Air Quality	Overall there is a net deterioration in local air quality with the scheme. There is an increase in the net total emissions of PM2.5 and NOx over the 60 year appraisal period due to a commensurate increase in total annual vehicle kilometers travelled. In addition to this, the change in traffic data as a result of the scheme has been analysed and will not result in any significant change to pollutant concentrations at selected sensitive receptors. There is no evidence to suggest that the scheme would affect local air quality within the Cheltenham Borough Council Air Quality Management Area.	Emissions 60 year period (tonnes): PM2.5: 7 NOx: 44			Value of change in PM2.5 emissions: NPV: -£651,985 Value of change in NOx emissions: NPV: -£205,440 Total value of change in air quality: NPV: -£857,425	Moderate adverse: there is a neutral impact to air quality for the most income deprived residents and a moderate adverse impact for children and for residents in income quintiles 4 and 5. On the contrary, a slight adverse impact is anticipated for income quintile 2. Therefore, the overall impact of the scheme to air quality is considered moderate adverse.	
	Greenhouse gases	There is an overall increase in CO2 emissions with the scheme over the 60 year appraisal period, due to a commensurate increase in total annual vehicle kilometers travelled. A decrease in CO2 emissions in the 'with scheme' scenario in the opening year of 0.1% compared with the 'without scheme' scenario reflects an increase in average speed resulting in lower CO2 emissions in the opening year only. In 2031 emissions of CO2 are 0.7% higher in the 'with scheme' when compared with the 'without scheme' results.	Change in non-traded carbon over 60y (CO2e tonnes)	39,846		-£1,577,000		
			Change in traded carbon over 60y (CO2e tonnes)	0				
	Landscape	There would be some loss of trees and loss of strips of amenity grass, these are not expected to affect the overall landscape character or visual amenity of the area and there is not expected to be any loss of visual screening for receptors. Replacement planting of trees on a 2 for 1 basis within or just beyond the Scheme would be provided to limit any overall loss of biodiversity. Opportunities for enhancement would also be explored in the final design to help enhance the context and soften the built features and prominence of the highway corridor within this area and ensure the qualities of this Greenbelt edge location are retained and enjoyed by those nearby or passing through.	N/A			Neutral (with mitigation)	N/A	
	Townscape	As Landscape above.	N/A			Neutral (with mitigation)	N/A	
	Historic Environment	The settings of two Listed Buildings and an associated 19th century pleasure ground will be changed during the construction phase and will result in a neutral effect. These are: •Grade II Listed Lodge for Arle Court, NHLE 34717; and •Grade II Listed gate piers, railings and gates to Arle Court, NHLE 34716 There is a low chance of the scheme resulting in the removal of unknown non-designated archaeological remains. Whilst archaeological investigation works would provide a permanent record of these assets, investigation cannot mitigate the adverse effects.	N/A			Neutral	N/A	Neutral
	Biodiversity	Habitats within Phases 3 and 4 of the Scheme are all within the urban landscape and planted or managed. None are considered to be rare or distinctive (in a biodiversity context). The scheme will result in a net loss of some 'soft landscaped' habitats, but others will be retained and areas will be planted to managed for nature conservation benefit. Surveys have identified potential for protected species including bats, hazel dormice, reptiles, otter, water vole, white-clawed crayfish and great crested newts. Pre-works surveys will identify mitigation appropriate to any protected species on the site.	N/A			Slight Adverse	N/A	Slight Adverse
	Water Environment	The Scheme would potentially encroach onto Hatherley Brook Floodplain Zones 2 and 3, meaning floodplain storage compensation may be required. Surface water runoff is assumed to be discharging to Hatherley Brook so potentially implications for surface water quality. The Scheme also introduces a retaining wall which could require deep foundations and thereby potentially impact groundwater flow and quality. It should be noted that potential impacts on water quality could be under-represented by Webtag scoring. Other methods (such as LA 113) are more sensitive and the overall significance could become higher. However, potential impacts on water quality caused by highway drainage entering watercourses or groundwater can be mitigated through SuDS pollution control measures. These solutions, particularly in relation to SuDS that attenuate runoff volumes, would also mitigate an increase in surface water flood risk or fluvial flood risk associated with more water entering a watercourse. Applying mitigation proportionally to the level of risk would reduce the significance of effects to neutral.	N/A			Neutral (with mitigation)	N/A	Neutral (with mitigation)
	Social	Commuting and Other users	The scheme will benefit Commuting and Other users due to reduction in congestion and reduction in travel time.	Value of journey time changes(£)			N/A	£20.30m
		Net journey time changes (£)						
		0 to 2min	2 to 5min	> 5min				
		£11.15m	£2.04m	£6.51m				
Reliability impact on Commuting and Other users		The reliability impacts on commuting and other users has not been explicitly monetised. However, additional capacity on the current network is expected to reduce congestion and as a result reduce journey times for commuters and other users.	N/A			Moderate beneficial	N/A	
Physical activity		The scheme proposes the addition of two signalised pedestrian crossings across the northern and western exits of Benhall Roundabout. This may make walking along this route a more attractive mode, as it will be easier to cross at this location. Therefore, a significant mode shift away from active modes is not anticipated as a result of the Phases 3 and 4 upgrades. As a result, the immediate impact of the scheme to physical activity is considered to be neutral.	N/A			Neutral	N/A	
Journey quality		Overall, there is a slight beneficial impact to journey quality for all considered users. The increased capacity along the A40 will reduce driver's stress and frustration and will improve the reliability of public transport services. As a result, beneficial impacts for motorists and public transport users are expected. There are two additional signalised toucan crossings included in the scheme, hence there is also a beneficial impact to facilities for pedestrians and cyclists. Overall, the journey quality appraisal for WCTIS Phases 3 and 4 has been assessed as slight beneficial.	N/A			Slight beneficial	N/A	
Accidents		According to the modelling results, there is a significant speed increase in sections of the A40 eastbound. This is likely due to the increased capacity along the A40 eastbound reducing congestion, meaning vehicles can travel faster along the road. According to the literature, there is a stronger relationship between accidents and the increase of traffic speeds. There may be a potential increase in the severity of injuries if accidents occur at higher speeds. Therefore, the accident appraisal for the scheme has been assessed as slight adverse.	N/A			Slight adverse	N/A	Neutral. Since there is a slight beneficial accident impact for children and motorcyclists, a slight adverse impact for pedestrians and elderly people and neutral otherwise (cyclists, young male drivers, and most deprived residents), the overall SDI assessment on accidents is considered to be neutral.
Security		A high level qualitative assessment has been undertaken for each security indicator (Site perimeters, entrances, formal/informal surveillance, landscaping, Lighting and visibility and emergency call). Results indicate that there will be any significant impact to security as a result of the WCTIS Phases 3 and 4.	N/A			Neutral	N/A	
Access to services		It has been assumed that the frequency or routings of buses will not be altered as a result of WCTIS Phases 3 and 4. However, modelling results have shown positive improvements to average journey time and queue lengths on key routes and junctions, which may improve access to services to some extent. However, in the absence of robust data to accurately evaluate the effect of the scheme in reducing the key barriers impacting on accessibility, the impact has been estimated to be neutral, although this is considered a conservative estimate.	N/A			Neutral	N/A	
Affordability	The total impact to vehicle operating costs for home-based 'commuting and other' trips is approximately a £600,000 benefit, for the scheme assessment area. Reduced congestion caused by the increased capacity along the A40 eastbound will lead to reduced vehicle operating costs.	N/A			Slight beneficial	£600k	Moderate beneficial: There are no affordability disbenefits within income quintiles 1-3 and small disbenefits within income quintiles 4 and 5. The affordability benefits of the scheme heavily outweigh the disbenefits for each income quintile. The benefits are evenly distributed as the proportion of affordability benefits are within 5% of the proportion of the population in each income quintile	
Severance	In line with TAG Unit A4-2, speed changes of greater than 10% have been used as a proxy for analysing severance. The impact of severance on pedestrians also considered the location and type of pedestrian crossings proposed by the scheme across the network. It is likely that the effect of the WCTIS Phases 3 and 4 on severance will be slight, as increases in severance are broadly balanced by relief of severance. There are approximately 80 links within the model extent with increased traffic speed and 40 links with decreased traffic speed of greater than 10%. As a result, the overall impact of WCTIS Phases 3 and 4 is appraised as slight adverse.	N/A			Slight adverse	N/A	Neutral. Since there are approximately the same number of links with an increase and a decrease in traffic speed where there are high proportions of children, elderly and no car households, it is expected that the adverse and beneficial severance impacts will be broadly balanced (neutral impact). There is one link with increased traffic speed and three links with decreased traffic speed in areas where there are high proportions of DLA claimants. However, it is unlikely that pedestrians will cross the roundabout circulatory at Kingsfisher Drive/Blairston Way, where traffic	
Option and non-use values	Option values and non-use values are assessed if the scheme being appraised includes measures that will substantially change the availability of transport services. As phases 3 and 4 include no changes to any public transport routes or services provided in the area, no significant changes to transport services are anticipated. The impact is therefore assessed as neutral.	N/A			Neutral	N/A		
Public Accounts	Cost to Broad Transport Budget	As this is a roads scheme, the funding for the project (if approved) will come from the local LEP (Gfirst).	N/A			N/A	£8.5m	
	Indirect Tax Revenues	These improvements to road infrastructure in Gloucester lead to improved journey times, and as a result of reduced congestion will therefore lead to better fuel efficiency for local road users. As a result indirect tax revenues are modelled to fall.	N/A			N/A	-£0.5m	