

Appraisal Summary Table

Date produced: 26.11.2024

Contact:

Name of scheme:		Shrewsbury North West Relief Road				Name				
Description of scheme:		The Shrewsbury North-West Relief Road (NWRR) would provide a new single carriageway road in the north-west quadrant of Shrewsbury. The NWRR would connect to existing roads with new roundabouts at Holyhead Road and on Berwick Road. The NWRR would cross both the River Severn and its flood plain and the Shrewsbury to Chester railway line on new bridges.				Organisation		SCC/WSP		
						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 Shrewsbury North-West Relief Road (NWRR) will provide a new single carriageway road in the north-west quadrant of Shrewsbury. This will provide a high quality, alternative route choice for business users and transport providers and will significantly improve journey times throughout the local road network as a result of congestion on the northern and western approaches to the town centre as a result of the relief road. The economic benefits to business users are highlighted by the highly positive TUBA results. Transport providers may also experience revenue benefits from increased patronage on routes into the town centre, because of improved journey reliability.			Value of journey time changes(£)		59,130,650		User benefits not assessed for business users as per TAG Unit A4-2, page 18, para 2.1.4.	
					Net journey time changes (£)					
					0 to 2min	2 to 5min	> 5min			
					20,637,190	15,257,448	23,236,013			
	Reliability impact on Business users	The reliability of journey times around Shrewsbury will be improved by adding to the route choice for all users. In particular, congestion will reduce on the northern and western approaches to the town centre, which will reduce journey times between the north and west of Shrewsbury. Business users reliability benefits have present a values of £6.47m.			Urban Road assessment of journey time reliability.		N/A		6,475,294	
	Regeneration	Not applicable to this scheme			Not quantified in this assessment		N/A			
	Wider Impacts	The scheme will lead to agglomeration benefits, labour supply and imperfect competition benefits for existing businesses and residents in and around Shrewsbury as a function of enhanced accessibility promoted by the scheme. These have been calculated using DfT's WITA approach. NWRR could have positive economic impacts for the town centre, South and West Sustainable Urban Extensions and major employment sites, as the traffic issues that have previously deterred businesses from being attracted to the town are overcome.			VfM Level 2 - WITA- £63,616,210 (in 2010 prices and values, disc and market prices)		N/A		63,616,210	
Environmental	Noise	It is anticipated that the relief road would generate a characteristic pattern of noise impacts: -Scheme introduces a new road to the north-west of Shrewsbury through some comparatively quiet rural areas. Consequently, significant adverse noise effects are predicted at dwelling receptors close to the Proposed Scheme carriageways. -Scheme will reduce noise levels on some existing roads, due to traffic moving to the Proposed Scheme. Consequently, significant beneficial noise effects occur at receptors close to those existing roads. -Scheme includes Low Noise Road Surfacing (LNRS) and environmental barriers at targeted locations. -There are no significant noise level effects at the assessed educational facilities and residential care homes for the elderly in the study area. Significant effects being considered to occur where absolute noise levels are above the lowest observed adverse effect level (LOAEL) and the receptor is predicted to experience a			Households experiencing increased daytime noise in forecast year: 1335 Households experiencing reduced daytime noise in forecast year: 426 Households experiencing increased night time noise in forecast year: 237 Households experiencing reduced night time noise in forecast year: 308		N/A		478,333	Significant adverse noise effects are predicted at dwelling receptors close to the Proposed Scheme. While the 2nd and 5th quintile receives large adverse impact from the increase in noise due to the scheme, 3rd and 4th quintile experience slight adverse impact. Quintile 0-20%: Moderate adverse Quintile 20-40%: Large adverse Quintile 40-60%: Slight adverse Quintile 60-80%: Slight adverse Quintile 80-100%: Large Adverse
	Air Quality	Overall, the construction of the NWRR presents a slight beneficial impact to air quality. This is due to a broad reduction in exposure to both NO2 and PM2.5 at sensitive human receptors. NO2- There was an overall reduction in terms of NO2 exposure in both assessed years. In 2027, 3011 properties experience a reduction in NO2 concentrations whilst 1015 properties experience a worsening. The impact of the scheme on NO2 concentrations decreases in future years as the vehicle fleet is updated (i.e. increased uptake of newer, cleaner vehicles and electric cars) and vehicle NO2 emission rates improve. By 2042 the number of properties experiencing both an improvement and worsening fall to 343 and 119 respectively. PM2.5- There was an overall reduction in terms of PM2.5 exposure in both assessed years. In 2027, 22 properties experience a reduction in PM2.5 concentrations whilst 2 properties experience a worsening. The impact of the scheme on PM2.5 concentrations is consistent in magnitude in future years as PM2.5 vehicle emission rates improve less rapidly (i.e. the introduction of electric/ cleaner vehicles reduce the generation of combustion particulates but are less effective in terms of brake and tyre wear particulate generation reductions) and are partially offset by minor increases in traffic flow. By 2042 the number of properties experiencing both an improvement and worsening changes to 20 and 9 respectively. The air quality savings for highways have been calculated to have a Net Present Value of £0.07m. Impacts from proposed walking and cycling infrastructure are quantified using the AMAT, which captures changes to local air quality from a reduction in car kilometres. The overall scheme impact is valued at £27			The NWRR contributes towards an additional 7.5 tonnes of NOx in the opening year, falling to 4.7 tonnes of NOx by the 2042. In 2027, 3011 properties experience a reduction in NO2 concentrations whilst 1015 properties experience a worsening. Falling to 343 and 119 respectively in 2042. In 2027, 22 properties experience a reduction in PM2.5 concentrations whilst 2 properties experience a worsening. Changing to 20 and 9 respectively in 2042.		N/A		72,515	With regard to NO2: Quintile 0-20%: In 2027 (opening year), Moderate Beneficial and in 2042 (future year) it is neutral Quintile 20-40%: In 2027, Slight Beneficial and in 2042 Moderate Adverse Quintile 40-60%: In 2027 and 2042 Large Beneficial Quintile 60-80%: In 2027 and 2042 Slight Beneficial Quintile 80-100%: In 2027, Slight Beneficial and in 2042 it is slight adverse PM2.5: Quintile 0-20%: Neutral in 2027 (opening year) and 2042 (future year) Quintile 20-40%: Neutral in 2027 and 2042 Quintile 40-60%: Large beneficial in 2027 and 2042 Quintile 60-80%: In 2027, Slight Adverse and in 2042 it is Large Adverse Quintile 80-100%: In 2027 and 2042 Neutral
	Greenhouse gases	The scheme has an estimated whole-life carbon impact of +94,457 tCO2e of which 91,251 tCO2e is non-traded and 3,206 is traded. This impact is made up of: - User emissions (B8/D) - an estimated increase of +53,236 tCO2e over 60 years as quantified using strategic model outputs and Defra's EFT tool, and also accounting for a slight reduction in vehicle kilometres due to modal shift (using outputs of the AMAT). This increase in user emissions is associated with additional vehicle kilometres travelled with the scheme, which outweigh potential savings from alleviation of congestion. - Capital carbon - an estimated impact of +33,317 tCO2e during the construction phase, inclusive of product (A1-A3) and construction process (A4-A5) impacts. - Operational carbon - an estimated impact of +5,066 tCO2e over 60 years, inclusive of repair (B3), replacement (B4), and operational energy use (B6) impacts. - Land use change (B1) - an estimated net impact of +2,838 tCO2e over the construction and operational phases (62 years).			Change in non-traded carbon over 60y (CO2e)		91,251		N/A	- 10,680,977
				Change in traded carbon over 60y (CO2e)		3,206				

Landscape	The landscape is typical of the wider area, demonstrating landscape features that are common throughout Shropshire and which within the medium to long term are relatively easily replaced. There would be some loss of existing landscape features and disruption to landscape pattern and land cover. Visually the Proposed Scheme corridor would be relatively well contained and localised due to the tree cover along field boundaries and rolling topography which limits long distance views. The crossing of the River Severn is likely to be a highly conspicuous element of the Proposed Scheme.		N/A	Moderate Adverse	N/A													
Townscape	Not applicable to this scheme		N/A	-	N/A													
Historic Environment	The Proposed Scheme may have potential physical impacts on non-designated buried heritage assets, such as Iron Age/ Romano-British structural/masonry remains, if present, as a consequence of construction of the Proposed Scheme. These assets will be preserved through record following the implementation of further mitigation measures detailed in the WSI produced by WSP in 2023. One designated heritage asset, Berwick Park Grade II Registered Park and Gardens (NHLE 1001706), is partially located within the Application Boundary; however, no development is proposed within the area.		N/A	Slight Adverse	N/A													
Biodiversity	A summary assessment score of moderate adverse has been assigned which has applied professional judgement and accounts for the cumulative affect of moderate adverse affects upon one feature, slight adverse affects upon 13 features, neutral affects upon six features and slight beneficial affects upon two features. -Scheme does not negatively effect, directly or indirectly, any Natura 2000 sites or SSSIs. The Proposed Scheme has a slight beneficial indirect impact on the Old River Bed SSSI site as it will divert traffic to other roads and thereby reducing associated vehicular emissions in proximity to the SSSI. No direct or indirect impact is expected on the Hencott Pool SSSI site. -Scheme will indirectly impact Alkmund Park Wood, Woodcote Coppice and Horton Lane Coppice Ancient		N/A	Moderate Adverse	N/A													
Water Environment	The most significant outcomes are mediated via the Permo Triassic Sandstone (a major aquifer) and relate to potential: -Construction related pollution of the major aquifer; -Operationally related pollution of the major aquifer from an extreme accident; and -Related pollution of groundwater sourced public water supply operations abstracted from the same major aquifer. All the above give rise to Significant outcomes (Moderate Adverse) though this assessment is influenced by the Low (or Very Low) Risk likelihood of such pollution event/s occurring. Further mitigation is afforded to the above issues giving rise to Significant outcomes via the ongoing formulation and planned discharge of Conditions as indicated and this aims to reduce respective outcomes to Low Significance. The Scheme has potential permanent impacts that may affect the hydromorphological quality of water features associated with works within or in close proximity to water features such: -Installation of culverts and bridges; -Increased pollution risk to surface water features; and Increased flood risk associated with impact to flow conveyance and floodplain conveyance/storage		N/A	Moderate Adverse	N/A													
Commuting and Other users	There are forecast to be very large benefits to commuters and other users of the highway network in Shrewsbury. Journey time savings across the town are expected to be high, as a result of alternative route choice to users provided by the relief road and reduced congestion on the northern and western approaches to the town centre. This also allows for journey time predictability improvements for bus services that incorporate the A528 and A458 corridors on their routes. The economic benefits to business users are highlighted by the highly positive TUBA results.	<table border="1"> <tr> <td colspan="2">Value of journey time changes(£)</td> <td>145,446,964</td> </tr> <tr> <td colspan="3">Net journey time changes (£)</td> </tr> <tr> <td>0 to 2min</td> <td>2 to 5min</td> <td>> 5min</td> </tr> <tr> <td>53,467,128</td> <td>38,146,939</td> <td>53,832,897</td> </tr> </table>	Value of journey time changes(£)		145,446,964	Net journey time changes (£)			0 to 2min	2 to 5min	> 5min	53,467,128	38,146,939	53,832,897		N/A	148,709,266	The DI is scored as Moderate Beneficial. The largest share of benefits are received by Quintile 5 (the least deprived) and Quintile 1 (the most deprived) at 33% and 26% respectively. The other three quintiles each receive a similar but lower share of user benefits at between 11% and 15%. Quintile 0-20%: Moderate Beneficial Quintile 20-40%: Moderate Beneficial Quintile 40-60%: Slight Beneficial Quintile 60-80%: Slight Beneficial Quintile 80-100%: Large Beneficial
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Reliability impact on Commuting and Other users	The most immediate impact of the network improvement will be the impact on road users and their day-to-day journeys. The journey time reliability benefits for commuting and others users is £9.87m (2010 PV, 2010 market prices).	Urban Road assessment of journey time reliability.		N/A	9,886,203													
Physical activity	Scheme will provide a shared 3m wide footway / cycleway along the length of its southern side, providing a new active travel link between north and west of the town that adds to the existing active travel network and addresses the severance of a number of local roads, footpaths and ProW. Active modes benefits have been quantified and monetised in line with TAG. Over the 40-year appraisal period for the scheme, the health benefits associated with the scheme are estimated to be approximately £0.16m (2010 PV)	Active Mode Appraisal Toolkit (AMAT) outputs		N/A	165,888													
Journey quality	Transport users will experience enhanced journey quality by travelling on dedicated wide footway/cycleway, with a faster, more reliable, less congested journey. AMAT has been used to provide a quantitative assessment of journey quality for active mode users. Over the 40-year appraisal period for the scheme, improvements to journey quality are estimated to be approximately £1.11m (2010 PV) for active mode users.	Active Mode Appraisal Toolkit (AMAT) outputs		N/A	1,110,532													

Social	Accidents	In order to assess the impacts of the transport scheme, a COBALT assessment has been undertaken for transport scheme without dependent development(S) and against the Do Minimum (P). The scheme is saving around 256 accidents and is expected to result in £4.70m of accident benefits. A reduced number of accidents on the highway network (particularly primary transport corridors) in and around Shrewsbury will result from the addition of a north west relief road, and therefore the redistribution of some strategic traffic to this new route (from the primary transport corridors). The COBALT results predict this saving in a monetary terms. Impacts from proposed walking and cycling infrastructure are quantified using the AMAT, which captures changes to accidents from a reduction in car kilometres. The overall scheme impact is valued at £611 (2010 PV) from the reduction in accidents.	256 accidents and 275 casualties will be saved by the transport scheme	N/A	4,705,455	Overall score for accident is assessed to be Moderate Beneficial. Pedestrians, Children under 16 years, cyclists, motorcyclists and pedestrians are assessed to have a score of slight Beneficial to moderate beneficial. Older people experience moderate benefits and Young male drivers resulted in a score of slight benefits. As the scheme adds a new shorter link between the west and north of Shrewsbury to the local road network, it will reduce vehicle flows, speeds and Heavy Duty Vehicle (HDV) use across various roads within the local road network, thus reducing accidents.
	Security	Not applicable to this scheme	N/A	-	N/A	Not assessed as it was screened out in the DI
	Access to services	The scheme will improve access to services in north and west Shrewsbury, especially to the Royal Shrewsbury Hospital, providing faster, more direct routes and reducing congestion in the town center. This will lead to	N/A	Slight beneficial	N/A	Not assessed as it was screened out in the DI
	Affordability	The NWRR will create a shorter, direct link between north and west Shrewsbury, reducing journey times and distances for through traffic. As traffic shifts to this new route, existing routes will see less congestion and fewer delays, resulting in quicker travel times for remaining users, including most of the town's public transport services, which will consequently provide benefits in affordability for users.	TUBA VOCs	Moderate Beneficial	N/A	All income quintiles, except Quintile 1 (the most deprived) receive personal affordability benefits from the scheme. Quintile 0-20%: Slight Adverse Quintile 20-40%: Large Beneficial Quintile 40-60%: Moderate Beneficial Quintile 60-80%: Slight Beneficial Quintile 80-100%: Large Beneficial
	Severance	As traffic shifts to the new route introduced by the scheme, congestion in the town center will decrease, reducing barriers for pedestrians. This will benefit high-foot-traffic areas like the University Centre Shrewsbury, Severn Theatre, and Frankwell Car Park, where narrow footpaths and limited visibility at junctions currently impact pedestrian safety. Additionally, the scheme introduces a new active travel link, offering pedestrians a direct route between north and west Shrewsbury for the first time, along with enhancements to existing public rights of way, thus helping in reducing the severance.	N/A	Moderate Beneficial	N/A	Four locations were selected to assess the impact of the scheme on the severance. While the scheme can have a neutral impact on the vulnerable groups for many locations, overall it is moderate beneficial for children and people with disability, whereas, it is large beneficial for older people and households with no access to cars.
	Option and non-use values	Not applicable to this scheme	N/A	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	The broad Transport Budget which captures the public sector cost of the scheme (Capital and OMR costs) has been estimated in line with TAG Guidance.	N/A	N/A	74,546,748	
	Indirect Tax Revenues	Increased indirect tax revenues as a result of greater fuel spends.	N/A	N/A	- 1,356,476	

Draft - Subject to Council Approval