

Appraisal Summary Table

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Name of scheme:	A428 Black Cat to Caxton Gibbet Improvements Scheme
Description of scheme:	A new 10 mile dual carriageway from the west of A421/A1 black cat roundabout through the east of the A428/A1198 to Caxton Gibbet roundabout. A new three level grade junction separated at black cat roundabout, with the A11 on the lower level a new dual carriage way on the upper level, and a roundabout between the two, at approximately existing ground level. In addition to slip roads, a new free flowing link between the A421 Eastbound carriageway and A1 northbound carriageway will also be provided. A new grade separated all junctions movement will be constructed to the east of the existing Camridge road, to provide access to the new dual carriageway, and maintain access to the existing A428. At the caxton gibbet roundabout, a new grade separated all movements junction will be constructed, incorporating the existing roundabout on the southside of the new dual carriageway, and a new roundabout on the northside. The new dual carriageway will then tie-in the existing A428 dual carriageway to the east of the caxton gibbet junction.

Impacts	Summary of key impacts	Assessment					
		Quantitative	Qualitative	Monetary	Distributional		
		Value of journey time changes (£m)		£m (NPV)	7-pt scale/ vulnerable grp		
Economy	Business users & transport providers	[Redacted]	[Redacted]	[Redacted]	N/A		
	Reliability impact on Business users	[Redacted]	N/A	[Redacted]			
	Commuting and other users	[Redacted]	[Redacted]	[Redacted]			
	Wider Impacts	[Redacted]	[Redacted]	[Redacted]			
	Regeneration	Regeneration not assessed. Regeneration impacts have been integrated into the assessment of wider economic impacts. Refer to the Department for Transport (DfT) Updating Wider Economic Impacts Guidance, September 2016.	N/A	N/A	N/A		
Environmental	Noise	There are a total of 3,049 residential buildings in the DMRB quantitative noise prediction study area. In the 2041 forecast year 1,043 residences change 3dB band in daytime and 451 residences at night. A larger number of households are predicted to experience reduced noise levels than those predicted to experience an increase which gives a net benefit.	N/A	N/A	£3.2m	Beneficial residential impacts close to roads bypassed by the scheme are slightly greater than adverse impacts from increased traffic elsewhere. Identified amenities are mostly unaffected.	
	Air Quality	There are 5 Air Quality Management Areas (AQMA) within 200m of the DMRB Affected Road Network (ARN). At all receptors considered within these AQMAs, changes are negligible or small. As a result of the proposed scheme, no receptors are predicted to experience an increase of more than 0.4 µg/m <sup>3</sup> in NO <sub>2</sub> with concentrations of NO <sub>2</sub> above the objective value of 40 µg/m <sup>3</sup> .	Local Air Quality Assessment in the opening year: For PM2.5 air quality would be improved at 2,747 properties, stay the same at 5,204 properties, and worsen at 4,353 properties. For NO <sub>2</sub> air quality would be improved at 7,819 properties, stay the same at 711 properties and worsen at 3,774 properties. Net Total Assessment score for PM2.5: -671 Net Total Assessment score for NO <sub>2</sub> : -74 Change in regional emissions in the opening year: PM2.5: +5.6 tonnes NOx: +54.2 tonnes	N/A	-£0.1m (total) Of which: NO <sub>2</sub> : -£1.8m PM2.5: +£1.7m	Income Quintile 1 - The magnitude of air quality impacts are small, but in terms of distributional impacts only the second highest income group has beneficial impacts, representing mainly rural LSCAs. The four other income groups are forecast to have adverse impacts, reflecting their location where there are predicted increases in traffic.; Income Quintile 2 - ; Income Quintile 3 - ; Income Quintile 4 - ; Income Quintile 5 -	
	Greenhouse gases	Forecasts were carried out using DMRB v9 (Emissions Factors Toolkit (EFT) v11). With the Scheme there is a predicted opening year increase in emissions of 34,567 tonnes CO <sub>2</sub>	Change in non-traded carbon over 60y (CO <sub>2</sub> e)	2,028,513	N/A	-£156.1m	
	Landscape	An assessment of monetised landscape impacts was undertaken in accordance with the DfT's Value for Money (VM) Supplementary Guidance on Landscape (2021). Based on 'central values' (a 100 year appraisal period), the Scheme was forecast to have a negative impact (-£25.82m); however with mitigation (such as an increase in Agricultural (extensive) and Rural Forested Land, which have a much higher land value over Agricultural (intensive) land, this changes to a benefit of £52.25m.	N/A	Moderate Beneficial	£52.3m		
	Townscape	The townscape of most settlements in proximity to the Scheme will not be affected. Wyboston and Chawston will experience some adverse effects related to the widening of the existing A1, the introduction of noise fences, and the construction of a new link road which will divide part of the settlement and alter circulation patterns. In the case of Roxton and Tempsford, the increased size and scale of the Black Cat junction will indirectly impact the perceptual characteristics of the townscape, although this will be limited to areas with intervisibility. At Croxton the Scheme will be located approximately 700m further north than the existing A428, enhancing tranquility. At Ellisley the Scheme will also be further away to the north on the western side of the settlement, but slightly closer on the eastern side. As the village is nucleated, effects on the perceptual characteristics of townscape will be limited to the edges. There will be no perceptible changes to the townscape character of the other settlements in proximity to the Scheme.	N/A	Slight Adverse	N/A		
	Historic Environment	There will be impacts on a number of archaeological sites, but these can be mitigated. There will be impacts on the setting of some assets. While most are adverse, there are some beneficial effects to the setting of Croxton Park and assets within it. The Scheme may result in the demolition of the Grade II Brook Cottages. Within the Environmental Statement there is a commitment to the archaeological recording of the cottages, which would offset the impact slightly. More importantly, through the DCO the Scheme has secured the relocation of the cottages. If the building can be relocated, it will retain some of the historic significance. The overall assessment score is therefore moderate to large adverse, with the latter based on the worst-case impact on Brook Cottages.	N/A	Moderate to Large Adverse	N/A		
	Biodiversity	Based on an assessment and calculation undertaken using Natural England's Biodiversity Metric 2.0, positive scores (i.e. net gains in biodiversity) would be achieved within the area-based habitats (+16.48%) and river habitats (+9.06%) as a result of the Scheme (post-development values, with mitigation), compared to the baseline. For hedgerow habitats, a negative score (i.e. a net loss in biodiversity) would occur as a result of the Scheme (-31.06%), when comparing the baseline and post-development values. Overall, the impact is considered slight beneficial with mitigation.	N/A	Slight Beneficial	N/A		
	Water Environment	No significant effects on the water environment are predicted with application of identified mitigation measures. A moderate adverse impact is predicted for new culverts and realignments, but the importance of water bodies in hydromorphological terms is low, and the impact is insignificant with mitigation (such as culvert design, replacement riparian habitat, and compensatory enhancement of watercourses within the Order Limits). The River Great Ouse is of very high importance, but negligible impacts are predicted from highway runoff and spillage risk associated with the proposed viaduct. Sustainable measures have been proposed to treat highway runoff with ponds, swales and ditches. Improvements to the existing road drainage network have also been provided. The Flood Risk Assessments concluded there would be no significant increase in flood risk to the adjacent land uses or an increase in surface water runoff.	N/A	Neutral	N/A		
	Social	Reliability impact on Commuting and Other users	Journey time reliability has been highlighted as a key problem on the routes and this scheme would be likely to significantly improve the consistency of journey times, both on the A428/A421 corridor and along the A1.	N/A	N/A	£20.9m	
		Physical activity	The Scheme is likely to impact a number of routes for Walkers, Cyclists and Horse Riders (WCHR), but is expected to maintain or improve current access to Public Rights of Way (PRoW). More formal crossing points will be introduced to maintain PRoWs, for instance at Ellisley and Caxton Gibbet; but in some instances existing PRoWs will be curtailed or diverted, such as at Winttingham Park. At Black Cat, new WCHR links will help improve connections with existing routes. Traffic on most of the existing A428 is expected to significantly reduce making it more appealing to cyclists, but given the Scheme and the section of the A428 it affects are largely inter-urban routes, this is not expected to have a big effect.	N/A	Neutral	N/A	
Journey quality		(The Scheme is expected to have a moderate beneficial impact on traveller frustration through providing a better free flowing standard and a greatly reduced flow at existing junctions making turning more straightforward. The Scheme is likely to have a slight beneficial impact on route uncertainty by providing more consistent east-west and north-south travel routes. The Scheme is expected to have a slight beneficial impact on fear of potential accidents as the road standard for the A428 is significantly improved, although some travellers will have more potential conflict points.)	N/A	Moderate Beneficial	N/A		
Accidents		The scheme removes at-grade junctions and provides a higher standard off line dual two lane carriageway removing traffic from local roads leading to accident savings. These were assessed using standard CoBALT software.	The Scheme is forecast to save 689 accidents over the 60 year assessment period. This saving consists of 9 fatal, 137 serious and 917 slight casualties.	N/A	£28.6m	Income Quintile 1 - Most vulnerable group casualties occur away from the Scheme. This results in insignificant accident changes for these vulnerable groups due to the Scheme; Income Quintile 2 - ; Income Quintile 3 - ; Income Quintile 4 - ; Income Quintile 5 -	
Security		Changes in security measures are minor and relatively few users can be confidently identified.	N/A	Neutral	N/A	N/A	
Access to services		The scheme is unlikely to impact on availability and cost of public transport, which will have a neutral effect on the existing ability of non-car users to access services.	N/A	Neutral	N/A	N/A	
Affordability		Commuting and Other purpose uses will have higher vehicle operating costs, therefore impacting on affordability of travel.	N/A	N/A	Moderate Adverse	Income Quintile 1 - Children and Young People, Older People, Disabled and No Car, slight beneficial.; Income Quintile 2 - ; Income Quintile 3 - ; Income Quintile 4 - ; Income Quintile 5 -	
Severance		Numerous villages would benefit slightly from reductions in traffic as through traffic is transferred onto the new dual carriageway, reducing the hindrance to foot journeys, such as Toseland and Yelling and Potton, Wrestlingworth, Tadlow and Ellisley.	N/A	Slight Beneficial	N/A	Income Quintile 1 - Children and Young People, Older People, Disabled and No Car, slight beneficial.; Income Quintile 2 - ; Income Quintile 3 - ; Income Quintile 4 - ; Income Quintile 5 -	
Public Accounts	Option and non-use values	No changes to existing public transport services are associated with the Scheme.	N/A	Neutral	N/A		
	Cost to Broad Transport Budget	A Scheme cost, based on a Regional Delivery Partnership (RDP) procurement route, was developed by the National Highways Commercial Services Division (NHCS) for this scheme in March 2023. When discounted to 2010 market prices and excluding sunk costs, this gives a Scheme cost of £416.6m. The Operating and Maintenance costs were provided by NHCS in January 2022. This gave a real term O&M cost excluding inflation of £135.9 million for the 60 year period. This is equivalent to £27.8m in discounted 2010 market prices.	N/A	N/A	£444.4		
	Indirect Tax Revenues	Indirect Tax impacts were calculated in TUBA and result in an increase in revenue accrued to Government.	N/A	N/A	£44.7		