

Appraisal Summary Table							Contact:																																																										
Name of scheme:		A47 North Tuddenham to Easton; HE PCF stage-2, Scheme Option 2					Name																																																										
Description of scheme:		A strategic trunk road initiative, which will improve the existing A47 highway alignment, carriageway standard, junction arrangement and level of service. T					Organisation																																																										
							Role																																																										
Impacts		Summary of key impacts			Assessment																																																												
					Quantitative		Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp																																																								
Economy	Business users & transport providers	The scheme results in journey time benefits for all road users with a reduction in total time travelled across the network between the Do Minimum and Do Something in both 2021 and 2036 future year scenarios. The greatest journey time savings are for trips that have a journey time of between 2 to 5 minutes but there are still savings for trips greater than 5 mins.			Value of journey time changes(£)			Large Benefit	£69.6million																																																								
					Net journey time changes (£)																																																												
	0 to 2min		2 to 5min		> 5min																																																												
	£17,218,000		£68,598,000		£9,339,000																																																												
	Reliability impact on Business users	The scheme is expected to improve journey time reliability due to increased capacity and network resilience due to proposed A47 dualling increasing road space, better visibility and improved safety.			-		Slight Benefit		-																																																								
	Regeneration	The expected journey time benefits are likely to support regeneration along the A47, with associated reductions in unemployment levels.					Slight Benefit		-																																																								
	Wider Impacts	Not assessed					N/A		-																																																								
Environmental	Noise	There is an overall adverse impact to the noise environment as shown by the negative value of the NPV for change in noise.			Households experiencing increased daytime noise in forecast year: 341 Households experiencing reduced daytime noise in forecast year: 35 Households experiencing increased night time noise in forecast year: 28 Households experiencing reduced night time noise in forecast year: 14		N/A	-£527,673	Moderate adverse for vulnerable groups																																																								
	Air Quality	In the opening and assessment years, exceedances of the Air Quality Strategy objective values are not predicted at any sensitive human receptors. Overall across the whole study area, the scheme will lead to an imperceptible improvement in predicted NO ₂ concentrations and an imperceptible deterioration in PM ₁₀ concentrations in the opening year, and imperceptible deteriorations in NO ₂ and PM ₁₀ in the operating year. Specific to the assessed scenarios, the results show: Opening Year 2021: A net improvement in property weighted concentrations of NO ₂ and property weighted concentrations of PM ₁₀ between the Do-Something and Do-Minimum scenarios. There is an overall increase in NO _x emissions in both the areas exceeding the limit values and the areas not exceeding the limit values. Operational Year 2036: A net improvement in property weighted concentrations of NO ₂ and property weighted concentrations of PM ₁₀ between the Do-Something and Do-Minimum scenarios. There is an overall increase in NO _x emissions in the areas not exceeding the limit values. Overall the impact of the scheme is considered to be minor beneficial.			<table><tr><th rowspan="2">Scenario</th><th colspan="3">Properties</th><th rowspan="2">Score</th><th colspan="2">Change in Emissions (t)</th></tr><tr><th>Improvement</th><th>No Change</th><th>Deterioration</th><th>Not exceeding</th><th>Exceeding</th></tr><tr><td>NO₂ 2021</td><td>516</td><td>0</td><td>824</td><td>-31.43</td><td></td><td></td></tr><tr><td>PM₁₀ 2021</td><td>516</td><td>0</td><td>824</td><td>-27.84</td><td></td><td></td></tr><tr><td>NO₂ 2021</td><td></td><td></td><td></td><td></td><td>10.16</td><td>10.24</td></tr><tr><td>NO₂ 2036</td><td>32</td><td>0</td><td>1308</td><td>1871.66</td><td></td><td></td></tr><tr><td>PM₁₀ 2036</td><td>516</td><td>0</td><td>824</td><td>-6.41</td><td></td><td></td></tr><tr><td>NO₂ 2036</td><td></td><td></td><td></td><td></td><td>0.69</td><td>0.00</td></tr></table>		Scenario					Properties			Score	Change in Emissions (t)		Improvement	No Change	Deterioration	Not exceeding	Exceeding	NO ₂ 2021	516	0	824	-31.43			PM ₁₀ 2021	516	0	824	-27.84			NO ₂ 2021					10.16	10.24	NO ₂ 2036	32	0	1308	1871.66			PM ₁₀ 2036	516	0	824	-6.41			NO ₂ 2036					0.69	0.00	Present value of change in NO _x emissions: £-383,448 Present value of change in PM ₁₀ concentrations: £30,938 Total value of change in air quality: £-346,510 (Positive values indicate a net benefit)
	Scenario	Properties			Score	Change in Emissions (t)																																																											
Improvement		No Change	Deterioration	Not exceeding		Exceeding																																																											
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Greenhouse gases	Emissions of CO ₂ e are predicted to increase as a result of the scheme over Carbon Budget periods 3 and 4. The change in emissions for the opening year with the scheme in place is an increase of 12,015tCO ₂ e over the opening year without the scheme in place.			Change in non-traded carbon over 60y (CO2e)		188,474	-	Net Present value of CO ₂ e emissions of proposal: £-7,497,417 (Positive values indicate a net																																																									
				Change in traded carbon over 60y (CO2e)		0																																																											
	Landscape	Option 2 involves online widening with a short section of offline dualling to the south of Hockering and east of Honingham. The existing crossing of the River Tud at Honingham will be used. While widening will result in the removal of existing vegetation alongside the existing A47 the impacts will occur in a relatively localised geographical area and will not result in widespread impacts on landscape character.			N/A		Moderate Adverse		-																																																								
	Townscape	Option 2, as an on grade widening of the existing A47, will not result in significant changes to the townscape character of either Hockering or Honingham. There will be a small benefit to Hockering as a result of the mainline being moved further from the village which will result in a discernible decrease in te amount of traffic in close proximity to the village.At Honingham the loss of vegetation may be discernible which will have a small effect on views from the village in the direction of the A47.			N/A		Neutral		-																																																								
	Historic Environment	Option 2 will cut a site of Roman settlement, of medium value, as well as other archaeological features of local value. The effects upon the upstanding remains of the medieval settlement are unclear at this stage. It is also unclear whether the construction will require the demolition of the gate lodge adjacent to the existing A47. The link road will not impact upon the non designated Honingham Park, but it will sever the historical relationship of the parkland with the adjacent Grade II* St Andrew's Church; the park laid out with the church forming a key landscape feature. The effects of this will be less harmful than the proposals in either Option 1			N/A		Moderate Adverse		-																																																								
	Biodiversity	Being primarily online there is minimal effect on any of the CWS and less effect on habitat and protected species generally than the off line options. Where deciduous woodland is impacted it is immature woodland pockets which can replanted. The widening of the bridge over the River Tud does however have the potential to impact those species associated with the river (otter, water vole, bull head, white clawed crayfish) to a similar extent as the other options. Overall long-term impacts, with mitigation, are assumed to be Slight adverse based on current			N/A		Slight adverse		-																																																								
	Water Environment	Option 2 is considered to be the preferred option from a water environment perspective. This option runs predominantly online and will not require any new crossing of the River Tud. Adverse impacts on surface water quality and biodiversity are considered to be less adverse in comparison to the other options. Adverse impacts are still possible during the construction phase. The proposed bridge widening is located within Flood zones 2 and 3.			N/A		Slight adverse		-																																																								
Social	Commuting and Other users	The scheme results in journey time benefits for cars with a reduction in total time travelled across the network between the Do Minimum and Do Something in both 2021 and 2036 future year scenarios. The greatest journey time savings are for trips that have a journey time of between 2 to 5 minutes. Benefits are higher in 2036 than in 2021 but there are still savings for trips greater than 5 mins.			Value of journey time changes(£)			Large Benefit	£82.8million																																																								
					Net journey time changes (£)																																																												
	0 to 2min		2 to 5min		> 5min																																																												
	£37,276,000		£73,730,000		£10,646,000																																																												
	Reliability impact on Commuting and Other users	Large benefits impact due to new infrastructure and additional running lanes in each direction along with increased capacity of each lane accommodates positive impact for commuting. The stress levels below the WebTAG calculation threshold of 75% suggests that the scheme is an overall benefit			Without scheme stress: 115% With scheme stress: 56% AADT: 48,185		Moderate benefit		-																																																								
	Physical activity	Most NMU routes and crossings are not impacted by online dualling. NMU crossings required at Mattishall Lane			-		Neutral		-																																																								
	Journey quality	Reduction in driver frustration and fear of accidents. Neutral impact on other aspects of journey quality			-		Moderate benefit	-	-																																																								
	Accidents	The scheme results show a theoretical decrease in accidents with the new dual carriageway and roundabout junction designed to modern standards and indicate a reduction in overall accidents of all types.			Predicted accident savings: Fatal: 6.79 Serious: 57.86 Slight: 286.59		Moderate benefit	£16.1million	-																																																								
	Security	The security impacts have been assessed based upon various security indicators looking at site perimeters, surveillance, landscaping, lighting and visibility and emergency call facilities for road users and NMU's. The assessment shows that the the scheme's security measures do not change from DM and therefore a "neutral" score has been given.			-		Neutral		-																																																								
	Access to services	No impacts on user accessibility					Neutral		-																																																								
Affordability	Personal affordability is worsened as private user costs are increased, mostly due to an overall increase in non-fuel vehicle operating costs.					Moderate adverse		-																																																									
Severance	The scheme has not yet been designed to a level where pedestrian provision has been finalised. However, the severance of the scheme from the proposed alignment is broadly similar to the existing situation					Neutral		-																																																									
Option and non-use values	The scheme does not involve the loss or introduction of a new mode of transport. Option values are unaffected.					Neutral		-																																																									
Public Accounts	Cost to Broad Transport Budget	Construction costs will be met directly from central government's broad transport budget.						£89.8million	-																																																								
	Indirect Tax Revenues	There is a small benefit to wider public finances due to increased fuel use resulting in a net increase in tax revenues.						£21.4million	-																																																								