

APPRAISAL SUMMARY TABLE (AST) – M1 Junction 11 & 12 Improvements (16 th November 2009) (PCF Stage3, Version 3)

M1 J11 & 12 Improvements		Description: Improvements to Junction 11 and 12 involving widened slip roads and signalised junction layout at Junction 11, and new slip road and junction overbridge arrangement at Junction 12	Problems J11 and 12 experience heavy congestion particularly at peak times, with queues extending back along the existing slip roads and along side road approaches at J12. Queues also cause stationary traffic on the M1 and there is sub-standard weaving distance on the M1 mainline between the Toddington Motorway Service Area northbound merge slip and the northbound diverge slip for Junction 12.	Present Value of Costs to Public Accounts £43.92M
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT	ASSESSMENT
ENVIRONMENT	Noise	For the Scheme design year 2029, the adoption of the Scheme results in a negligible decrease in the number of people annoyed by traffic noise in the study area when compared to the corresponding Do minimum scenario. Number of properties experiencing noise levels > 68 dB LAeq,18h: Do Minimum, 192; Do Something, 213. Challney High School, immediately to the north-east of J11 will experience a negligible decrease in noise levels as a result of the Scheme. Luton and Dunstable Hospital, to the west of J11, will generally experience a negligible decrease in noise levels as a result of the Scheme, except for the western facades fronting on to Lewsey Road, which will experience a negligible increase in noise levels. The only non-residential receptor in the vicinity of J12 is Poplars Nursery to the north-east on Harlington Road. These premises will experience a negligible decrease in noise levels as a result of the Scheme. (a negligible change in noise level is defined as less than 1 dB)	Total population in assessment = 13516 Do Minimum = 1878 people annoyed Do Something = 1872 people annoyed Change in population annoyed (year 15) = -5	736 properties experience an increase in noise level. 3011 properties experience no change in noise level. 1980 properties experience a decrease in noise level. (ranked as Neutral) NPV of noise proposal = +£0.226 m
	Local Air Quality	The new junction scheme road alignment is likely to change the route of traffic within the study area. The Scheme will cause a worsening in local air quality relative to baseline conditions at 3294 properties and an improvement of 2056 properties lying within 200m of the proposed Scheme. The area near junction 11 has been declared an Air Quality Management Area (AQMA) for NO ₂ by Luton BC, by 2014 there is only one relevant receptor that the limit value is still predicted to be exceeded at. The Scheme would result in an imperceptible improvement in the margin of exceedance of the annual mean Limit Value for nitrogen dioxide at the only exceeding property.	PM ₁₀ : 3294 properties "losers"; 0 properties negligible change; 2056 properties "winners". NO ₂ : 3294 properties "losers"; 0 properties negligible change; 2056 properties "winners"	PM ₁₀ : +95 NO ₂ : +274
	Greenhouse gases	The assessment is based on the TUBA output reported in the Economic Appraisal undertaken in September 2009 for the assessment year of 2014. The Scheme would result in a net increase of emissions due to the additional vehicle kilometres travelled.	Total change in carbon emissions for Scheme opening year = +433 T Total change in carbon emissions for whole appraisal period = +7922T	NPV: £0.079 m
	Landscape	At Junction 12 the existing motorway has had a significant local adverse effect on landscape character although the junction is set within a wider landscape of high quality. Impacts on the adjacent landscape would be largely indirect and mitigation woodland planting, associated with the realigned slip roads, would more fully integrate the junction into the landscape. Landscape not applicable to Junction 11.	N/A	Neutral
	Townscape	Junction 11 is located in a low quality urban townscape. At Junction 11 the Scheme could be fully integrated into the townscape and may deliver some townscape benefits with appropriate design derived from a more planned treatment of planting and hard surfacing. Townscape not applicable to Junction 12.	N/A	Slight Beneficial
	Cultural Heritage	The Junction 11 improvements would not impact on the cultural heritage resource resulting in a Neutral effect. At Junction 12 the construction of the north and southbound slip road embankments, new overbridge foundations and associated landscaping would have slight adverse impacts on three archaeological sites and several isolated finds scatters dating from the Neolithic to the post-medieval periods. Negligible impacts on settings of two Grade II Listed buildings. Direct physical impacts on two historic motorway structures of low value. No impact on historic landscape. There would also be a slight adverse impact caused by the construction of the new northbound access slip roads on one historic banked hedge boundary.	N/A	Slight Adverse
	Biodiversity	The Junction 11 improvements would not have any direct or indirect effects resulting in a Neutral effect. The Junction 12 improvements would result in indirect effects on the River Flit tributary and River Flit CWS and direct effects on Poplars Nursery CWS due to land take resulting in slight adverse effects and moderate adverse effects respectively. No direct adverse effects are anticipated for protected fauna within the Scheme. It is unlikely that the proposed woodland and tree planting will have matured by 15 years after opening so slight adverse effects are likely to remain.	N/A	Slight Adverse
	Water Environment	Additional road drainage due to increased pavement at J11 to be attenuated in oversized pipes or suitable attenuation method, hence no increase in discharge flows to surface watercourse. Routine road runoff from J11 would be directed through a treatment system before discharge to Leagrave Stream resulting in a neutral effect. The predominantly piped drainage followed by treatment reduces risk to watercourse, and affords a high degree of protection to underlying groundwater resources within the groundwater Source Protection Zone. Attenuation of road drainage at J12 in attenuation ponds would also provide some treatment and improvement of runoff quality. Impact on water quality at J12 is considered to be neutral. Extension of one existing culvert and construction of one new culvert at J12, with no adverse impacts to flood risk anticipated.	N/A	Neutral
	Physical Fitness	Signalised pedestrian crossings to be incorporated into J11 should improve facilities for non-motorised users and would not affect journey times. Existing NMU facilities on J12 overbridge currently un-useable; improvements would allow for dedicated footway on south side, thereby facilitating pedestrian route across bridge. FP34 would require diversion with increase in journey length of about 130m, however considered unlikely to affect level of usage, which is currently low.	N/A	Slight Beneficial
	Journey Ambience	At Junction 11 by Year 15 there would be a slight beneficial effect derived from improved townscape and enhanced traveller experience both on the M1 and the A505 Dunstable Road. Scheme operation would have a beneficial effect on driver stress due to improved traffic flow and improved capacity at Junction 11. At J12 there would be adverse impacts on travellers' views due to the loss of mature vegetation together with embankments and landform associated with the junction. Beneficial effect on driver stress due to improved traffic flow and extensive signage leading to reduced fear of potential accidents and improved capacity at Junction 12.	N/A	Large beneficial
SAFETY	Accidents	Accident assessment has been undertaken using the M1 Local Area Model and COBA. The number of personal injury accidents (PICs) saved relates to the whole road network within the Local Model Area. Values are for a 60-year appraisal period.	PICs saved 500 Casualties saved - Fatal: 21, Serious: 109, Slight: 676	PVB £33.0m
	Security	Security of road users would not be changed by the improvements		Neutral
ECONOMY	Public Accounts	Appraisal based upon a 60-year period. Capital investment outturn costs of £71.8 million (2006 Q2) were supplied by HA in October 2009. The 2006 Q2 construction prices and expenditure profile are discounted to a 2002 present value year in 2002 market prices (£ millions).	Central Govt PVC £43.92m, Local Govt PVC £0.0m	PVC £43.92m
	Transport, economic efficiency: business users and transport providers	The appraisal was derived using the M1 Local Area Model and the TUBA Program for a 60-year period. Values are 2002 market prices discounted to a 2002 present value year (£ millions).	Business Users PVB £62.7m, Transport Providers PVB £0.0m	PVB £62.7m
	Transport, economic efficiency: Consumers	The appraisal was derived using the M1 Local Area Model and the TUBA Program for a 60-year period. Values are 2002 market prices discounted to a 2002 present value year (£ millions).	Consumer Users PVB £53.2m	PVB £53.2m
	Reliability	Traffic control system can be configured to be more responsive to incidents. A monetised reliability benefit cannot be evaluated.		Neutral
	Wider Economic Impacts	An Economic Impact Assessment has been undertaken. No significant effects were identified on employment levels in the Luton and Dunstable Regeneration Area		Neutral
ACCESSIBILITY	Option Values	Junction improvements would affect car and bus modes only. Transport services would not be changed. Slight beneficial assessment for pedestrians and cyclists.	N/A	Neutral
	Severance	Route through J11 currently well used by pedestrians and cyclists. J11 improvements includes improvements by the provision of signalised pedestrian crossings. Route through J12 poorly used but an important community link. Provision of improved pedestrian facilities across new Toddington overbridge would reduce severance	N/A	Moderate Beneficial
	Access to the Transport System	Scheme is concerned with motorway junction improvements and is unlikely to affect access to the transport system	N/A	Neutral
INTEGRATION	Transport Interchange	Scheme is concerned with motorway junction improvements and is unlikely to affect passenger/freight interchange	N/A	Neutral
	Land Use Policy	Scheme would contribute to improvements in accessibility to various development areas. Scheme aims to minimise environmental impacts but would require some land take from Green Belt and from best and most versatile agricultural land.	N/A	Neutral
	Other Government Policies	The Scheme would improve the efficiency of the road network, thereby enabling journey times to decrease; reducing congestion improving safety; and facilitating business efficiencies. These improvements would contribute to economic growth and housing development in the vicinity of the M1 corridor. While the Scheme would improve accessibility to employment, retail and leisure facilities, dependency on the car would not be lessened.	N/A	Neutral