Appraisal Summary Table DS6DM

Date produced:	17/12/2021

Name of scheme:	A46 Coventry Junctions Upgrade - Walsgrave
Description of scheme:	Road Investment Strategy 2 Statement - A46 Coventry Junctions – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk sections of the A45/A46 between the M6 and M40 to a consistent standard. Highways England Delivery Plan - Provide access along the A46 to further residential developments and key employment sites near Binley and Walsgrave. A phased delivery approach is being taken; Binley junction first followed later by Walsgrave junction.

Contact:	
Name	Steven Wood
Organisation	AECOM
Role	Consultant

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£m (NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Option 6 will save travellers an average of 1.8mins (SB)/0.8mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.4mins (SB)/1.3mins (NB). This contributes to total Travel Time Benefits for Business Users of £111.1million.	**Value of journey time changes (£m)** £105.596 **Net journey time changes (£m)** 0 to 2min: £67.4 / 2 to 5min: £36.3 / > 5min: £1.8	N/A	£117.3	N/A
	Reliability impact on Business users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£11.4	
	Regeneration	The area is not identified as in need of regeneration. The scheme would not impact on regeneration.	N/A	N/A	N/A	
	Wider Impacts	Two Wider Impacts were calculated. Increased Output reflects the additional benefits that a transport scheme can give to businesses under conditions of imperfect competition. For Option 6 this was calculated as £11.9million. Labour Supply Impacts reflects the additional benefits that a transport scheme can supply due to increased employment. For Option 6 this was calculated as £2.1million.	N/A	N/A	£13.9	
Environmental	Noise	Option 6 results in the greatest number of significant adverse effects of all the options under consideration, which are predicted to result from this option moving traffic closer to residential areas both to the southwest and northwest of the junction , as well as towards Hungerley Hall Farm. Option 6 would result in the potential for one property (Hungerley Hall Farm) to qualify for noise insulation works under the Noise Insulation Regulations. No residential properties are predicted to experience levels in excess of 80dB LAeq16hr. Noise mitigation options, in the form of noise barriers, may be feasible to reduce the noise impacts identified; however, these have not been included in the traffic noise predictions. Sleep Disturbance: -£0.41million; Amenity: -£0.77million; AMI: -£0.01million; Stroke: -£0.13million; Dementia: -£0.19million	Households increased daytime noise forecast year: 707 Households decreased daytime noise forecast year:84 Households increased night-time noise forecast year: 294 Households decreased night-time noise forecast year: 45	N/A	-£1.5	Income Quintile 1 - Moderate Adverse; Income Quintile 2 - Moderate Adverse; Income Quintile 3 - Moderate Beneficial; Income Quintile 4 - Large Adverse; Income Quintile 5 - Moderate Beneficial
	Air Quality	There are no predicted exceedances near the affected road network either with or without the scheme in the opening year. The scheme has a negative impact on regional NOx and PM2.5 emissions. NOx emissions: -£1.6million; PM2.5 emissions: -£2.4million	Emissions NOx:+431 tonnes PM2.5: +73 tonnes	N/A	-£3.9	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Greenhouse gases	There is predicted to be an increase in emissions due to an increase in vehicle kilometres.	Change in non-traded carbon over 60y (CO2e): 488,830 Change in traded carbon over 60y (CO2e): 5,278	N/A	-£21.4	
	Landscape	Option 6 has a significantly larger footprint than the three other options and this is reflected in increased scale and extent of effects on landscape character and visual amenity at all stages of the assessment. Compared to the other options there would be greater change in both landscape character and visual amenity within the study area at all stages as a result of the realigned A46, the B4082 access and the elevated dumbbell roundabouts junction. Effects of slight significance in year 1 would persist and remain slight at year 15 and beyond, unlike other options which achieve a neutral effect by year 15	No significant adverse effects to landscape character have been identified in relation to Option 6.	N/A	N/A	
	Townscape	Option 6 would result in local adverse effects to the immediate townscape as a result of the scale and extent of the highway elements, visible from the urban area and as a result of modification of buffer land to the urban edge. As option 6 will create a larger junction than other options the effects on townscape will be greater. However, as intervisibility is limited and the urban edge is already highway influenced there would be no significant effects to the wider townscape character of the eastern edge of Coventry.	No significant adverse effects to townscape character have been identified in relation to Option 6.	N/A	N/A	
	Historic Environment	Option 6 will result in adverse impacts to a group of three Grade II listed buildings at Hunglerley Hall Farm. It will impact the Grade II* Registered Park and Garden and Conservation Area at Coombe Abbey, through tree removal at the boundary however the impact is generally slight, and can be mitigated effectively with new planting. Option 6 also has the potential for the new 'dumbbell' junction to be visible from within the park which is an added potential impact. Further assessment would be required to determine the degree of impact resulting from such views, including assessment of the impact of night-time lighting. Option 6 also impacts upon the setting of the Grade II listed Walsgrave Hill Farm, but suitable mitigation options in the form of landscape planting may be available to mitigate the visual intrusion. This option could result in the removal of as yet unrecorded archaeological assets.	Significant Adverse Effects to the historic environment have been identified in relation to Option 6.	N/A	N/A	
	Biodiversity	Option 6 is predicted to have adverse effects on priority woodland habitat within Coombe Pool SSSI and have temporary, recoverable impacts on a root protection zone in the SSSI. Option 6 would have negligible impact on woodland from increased N deposition. Option 6 would have a moderate adverse effect on sites of Local and County value in the River Sowe by moving the A46 alignment very close to the river, with loss of habitat in a Local ecosite and risk of operational impact on wildlife (otter, barn owl, bats, badger) from severance and the increased risk of mortality. In addition Option 6 would remove a farm accommodation overbridge which is the only traffic-free crossing for wildlife for many kilometres of A46 around Coventry - the existing road is a barrier between Coombe Country Park and the River Sowe valley a key wildlife corridor. Option 6 would island a veteran tree, although it could be retained within the construction area, other mature trees would be lost. None of the options would achieve no net loss without significant additional landtake and offsite enhancement provision, after any bespoke compensation for impacts in the SSSI.	Option 6 has Adverse Effects that are significant for one or more receptors, including at least some Moderate Adverse effects. Option 6 has a moderate adverse effect for severance.	N/A	N/A	
	Water Environment	During operation of the chosen option mitigation will have been constructed to ensure routine road runoff discharges are attenuated and there will be no adverse effects on the flooding potential of the receiving watercourses. This will be with attenuation ponds and swales, both of which provide water quality benefits. It is assumed that all mitigation as required by the DMRB assessment process would be carried out - water quality, hydromorphology, and attenuation of flows using SuDS solutions. A hydraulic model has been developed which shows that appropriate flood mitigation would need to be incorporated for option 6. Mitigation required for option 6 is significant in terms of costs and would likely impact upon other environmental disciplines.	Neutral	N/A	N/A	
Social	Commuting and Other users	Option 6 will save travellers an average of 1.8mins (SB)/0.8mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.4mins (SB)/1.3mins (NB). This contributes to total Travel Time Benefits for Commuting and Other Users of £53.8million.	**Value of journey time changes (£m)** £39.668 **Net journey time changes (£m)** 0 to 2min: £15.9 / 2 to 5min: £18.2 / > 5min: £5.6	Analysis perfomed on HBW AM and PM trips only. The user benefits signficantly favour the more deprived quintiles.	£37.2	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Large Beneficial ; Income Quintile 3 - Large Beneficial ; Income Quintile 4 - Slight Beneficial;
	Reliability impact on Commuting and Other users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£12.8	
	Physical activity	No material impact.	N/A	Scheme is part of a strategic road network upgrade, with	N/A	
	Journey quality	There is predicted to be a slight improvement to traveller stress.	N/A	Traveller stress is expected to reduce due to improvements in	N/A	
	Accidents	The scheme improves safety at Walsgrave junction. It also generates induced long-distance traffic. Overall, across the 60-year appraisal period it is predicted that there will be an increase of 171 accidents across the road network. There are corresponding increases in Fatal Casualties (6), Serious Casualties (27), and Slight Casualties (225) over the same period.	N/A	Within the Area of Impact accident forecasts show limited change: 82% of links show an absolute change of <5%, 91% of links show an absolute change of <10%. 58% of links show an increase in forecast accidents, 42% a	-£8.3	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Slight Adverse; Income Quintile 4 - Slight Adverse; Income Quintile 5 - Slight Adverse
	Security	Not Assessed: The scheme does not involve changes to public transport or facilities, nor is it expected to have any significant impact on pedestrian security.	N/A	N/A	N/A	N/A
	Access to services	Not Assessed: The scheme does not involve changes to public transport or facilities.	N/A	N/A	N/A	N/A
	Affordability	Data not available	N/A	Analysis performed on HBW AM and PM trips only. The increases in costs are concentrated in the highest quintiles. All quintiles show cost increases.	N/A	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Moderate Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Large Adverse; Income Quintile 5 - Moderate Adverse
	Severance	Walsgrave: No impact.	N/A	Walsgrave: No pedestrian crossing facilities and none planned under the scheme.	N/A	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Option and non-use values	The scheme is unlikely to substantially change the availability of transport services in the study area.	N/A	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	Construction: £77.4million; Preparation: £12.2million; Supervision: £2.2million; Land and Compensation: £23.6million	N/A	N/A	£115.4	
	Indirect Tax Revenues	Operation: -£9.4million Quoted as Costs not as Benefits	N/A	N/A	-£9.4	

Appraisal Summary Table DS7DM

Date produced:	17/12/2021

Name of scheme:	A46 Coventry Junctions Upgrade - Walsgrave
Description of scheme:	Road Investment Strategy 2 Statement - A46 Coventry Junctions – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk sections of the A45/A46 between the M6 and M40 to a consistent standard. Highways England Delivery Plan - Provide access along the A46 to further residential developments and key employment sites near Binley and Walsgrave. A phased delivery approach is being taken; Binley junction first followed later by Walsgrave junction.

Contact:	
Name	Steven Wood
Organisation	AECOM
Role	Consultant

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£m (NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Option 7 will save travellers an average of 1.8mins (SB)/0.5mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.4mins (SB)/1.1mins (NB). This contributes to total Travel Time Benefits for Business Users of £89.2million.	**Value of journey time changes (£m)** £81.116 **Net journey time changes (£m)** 0 to 2min: £44.3 / 2 to 5min: £36.0 / > 5min: £0.9	N/A	£95.5	N/A
	Reliability impact on Business users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£11.4	
	Regeneration	The area is not identified as in need of regeneration. The scheme would not impact on regeneration.	N/A	N/A	N/A	
	Wider Impacts	Two Wider Impacts were calculated. Increased Output reflects the additional benefits that a transport scheme can give to businesses under conditions of imperfect competition. For Option 7 this was calculated as £9.7million. Labour Supply Impacts reflects the additional benefits that a transport scheme can supply due to increased employment. For Option 7 this was calculated as £1.9million.	N/A	N/A	£11.6	
Environmental	Noise	Option 7 is predcted to result in fewer significant adverse effects than Option 6, with these being focussed to the south west of the scheme due to the proposed freeflow link from the A46 northbound to the Clifford Bridge Road junction. Option 7 would result in the potential for two properties to qualify for noise insulation works under the Noise Insulation Regulations (Hungerley Hall Farmhouse and 3 Valencia Road). No residential properties are predicted to experience levels in excess of 80dB LAeq16hr. Noise mitigation options, in the form of noise barriers, may be feasible to reduce the noise impacts identified; however, these have not been included in the traffic noise predictions. Sleep Disturbance: -£0.10million; Amenity: -£0.14million; AMI: £0.01million; Stroke: -£0.03million; Dementia: -£0.04million	Households increased daytime noise forecast year: 245 Households decreased daytime noise forecast year:69 Households increased night-time noise forecast year: 115 Households decreased night-time noise forecast year: 25	N/A	-£0.3	Income Quintile 1 - Moderate Adverse; Income Quintile 2 - Moderate Adverse; Income Quintile 3 - Moderate Beneficial; Income Quintile 4 - Large Adverse; Income Quintile 5 - Slight Adverse
	Air Quality	There are no predicted exceedances near the affected road network either with or without the scheme in the opening year. The scheme has a negative impact on regional NOx and PM2.5 emissions. NOx emissions: -£1.5million; PM2.5 emissions: -£2.1million	Emissions NOx:+394 tonnes PM2.5: +66 tonnes	N/A	-£3.6	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Greenhouse gases	There is predicted to be an increase in emissions due to an increase in vehicle kilometres.	Change in non-traded carbon over 60y (CO2e): 454,096 Change in traded carbon over 60y (CO2e): 4,672	N/A	-£19.8	
	Landscape	Option 7 is, in landscape and visual terms, a minor change to the existing junction with minimal loss of vegetation and the greatest effects on landscape character and visual amenity derived from the temporary construction compound. On completion in year 1 effects would be slight and by year 15 any effects on landscape character and visual amenity would be similar to the baseline, hence neutral.	No significant adverse effects to landscape character have been identified in relation to Option 7	N/A	N/A	
	Townscape	As described for landscape, effects to the immediate townscape from Option 7 would be very localised and erosion of the urban edge buffer would be effectively neutral compared to a DM scheme. There would be no significant effects to the wider townscape character of the eastern edge of Coventry.	No significant adverse effects to townscape character have been identified in relation to Option 7.	N/A	N/A	
	Historic Environment	Option 7 is the least impactful to cultural heritage assets within and in the vicinity of the scheme. It will impact the Grade II* Registered Park and Garden and Conservation Area at Coombe Abbey, through tree removal at the boundary however the impact is generally slight, and can be mitigated effectively with new planting. All options could result in the removal of as yet unrecorded archaeological assets.	Slight	N/A	N/A	
	Biodiversity	Option 7 has the potential for adverse effects on priority woodland habitat within Coombe Pool SSSI and temporary, recoverable impacts on a root protection zone in the SSSI. Option 7 has the lowest landtake overall, but is second only to Option 8 for increased N deposition in the woodland. None of the options would achieve no net loss without significant additional landtake and offsite enhancement provision, after any bespoke compensation for impacts in the SSSI.	All options have Adverse Effects that are significant for one or more receptors, including at least some Moderate Adverse effects.	N/A	N/A	
	Water Environment	During operation of the chosen option mitigation will have been constructed to ensure routine road runoff discharges are attenuated and there will be no adverse effects on the flooding potential of the receiving watercourses. This will be with attenuation ponds and swales, both of which provide water quality benefits. It is assumed that all mitigation as required by the DMRB assessment process would be carried out - water quality, hydromorphology, and attenuation of flows using SuDS solutions. There is potential for enhancement should the existing priority outfalls be mitigated as part of the Scheme if required. A hydraulic model has been developed which shows that option 7 would result in negligible increase in fluvial flood risk on or off-site.	Neutral	N/A	N/A	
Social	Commuting and Other users	Option 7 will save travellers an average of 1.8mins (SB)/0.5mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.4mins (SB)/1.1mins (NB). This contributes to total Travel Time Benefits for Commuting and Other Users of £53.7million.	**Value of journey time changes (£m)** £11.813 **Net journey time changes (£m)** 0 to 2min: -£9.0 / 2 to 5min: £22.0 / > 5min: -£1.2	Analysis perfomed on HBW AM and PM trips only. The user benefits signficantly favour the more deprived quintiles.	£41.0	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Large Beneficial ; Income Quintile 3 - Moderate Beneficial; Income Quintile 4 - Slight Beneficial;
	Reliability impact on Commuting and Other users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£12.8	
	Physical activity	No material impact.	N/A	Scheme is part of a strategic road network upgrade, with	N/A	
	Journey quality	There is predicted to be a slight improvement to traveller stress.	N/A	Traveller stress is espected to reduce due to improvements in	N/A	
	Accidents	The scheme improves safety at Walsgrave junction. It also generates induced long-distance traffic. Overall, across the 60-year appraisal period it is predicted that there will be an increase of 112 accidents across the road network. There are corresponding increases in Fatal Casualties (5), Serious Casualties (16), and Slight Casualties (148) over the same period.	N/A	Within the Area of Impact accident forecasts show limited change: 79% of links show an absolute change of <5%, 88% of links show an absolute change of <10%. 55% of links show an increase in forecast accidents, 45% a	-£5.6	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Slight Adverse; Income Quintile 4 - Slight Adverse; Income Quintile 5 - Slight Adverse
	Security	Not Assessed: The scheme does not involve changes to public transport or facilities, nor is it expected to have any significant impact on pedestrian security.	N/A	N/A	N/A	N/A
	Access to services	Not Assessed: The scheme does not involve changes to public transport or facilities.	N/A	Slight negative impact as removal of southbound right-turn	N/A	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse;
	Affordability	Data not available	N/A	Analysis perfomed on HBW AM and PM trips only. The increases in costs are concentrated in the highest quintiles. The lowest quintile shows a cost decrease, the other quintiles show cost increases	N/A	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Moderate Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Large Adverse; Income Quintile 5 - Moderate Adverse
	Severance	Walsgrave: No impact.	N/A	Walsgrave: No pedestrian crossing facilities and none planned under the scheme.	N/A	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Option and non-use values	The scheme is unlikely to substantially change the availability of transport services in the study area.	N/A	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	Construction: £21.0million; Preparation: £6.4million; Supervision: £1.5million; Land and Compensation: £0.2million	N/A	N/A	£29.1	
	Indirect Tax Revenues	Operation: -£8.3million Quoted as Costs not as Benefits	N/A	N/A	-£8.3	

Appraisal Summary Table DS8DM

Date produced:	17/12/2021

Name of scheme:	A46 Coventry Junctions Upgrade - Walsgrave
Description of scheme:	Road Investment Strategy 2 Statement - A46 Coventry Junctions – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk sections of the A45/A46 between the M6 and M40 to a consistent standard. Highways England Delivery Plan - Provide access along the A46 to further residential developments and key employment sites near Binley and Walsgrave. A phased delivery approach is being taken; Binley junction first followed later by Walsgrave junction.

Contact:	
Name	Steven Wood
Organisation	AECOM
Role	Consultant

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£m (NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Option 8 will save travellers an average of 1.9mins (SB)/0.7mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.5mins (SB)/1.2mins (NB). This contributes to total Travel Time Benefits for Business Users of £101.0million.	**Value of journey time changes (£m)** £89.709 **Net journey time changes (£m)** 0 to 2min: £48.9 / 2 to 5min: £40.2 / > 5min: £0.6	N/A	£107.6	N/A
	Reliability impact on Business users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£11.4	
	Regeneration	The area is not identified as in need of regeneration. The scheme would not impact on regeneration.	N/A	N/A	N/A	
	Wider Impacts	Two Wider Impacts were calculated. Increased Output reflects the additional benefits that a transport scheme can give to businesses under conditions of imperfect competition. For Option 8 this was calculated as £10.8million. Labour Supply Impacts reflects the additional benefits that a transport scheme can supply due to increased employment. For Option 8 this was calculated as £2.1million.	N/A	N/A	£12.9	
Environmental	Noise	Option 8 is predicted to result in fewer significant adverse effects than Option 6, with these being focussed to the south west of the scheme due to the proposed freeflow link from the A46 northbound to the Clifford Bridge Road junction. Option 8 would result in the potential for four properties to qualify for noise insulation works under the Noise Insulation Regulations (the most of all the options), (Valencia Road, Sevilla Close and Florence Road). No residential properties are predicted to experience levels in excess of 80dB LAeq16hr. Noise mitigation options, in the form of noise barriers, may be feasible to reduce the noise impacts identified; however, these have not been included in the traffic noise predictions. Sleep Disturbance: -£0.23million; Amenity: -£0.40million; AMI: -£0.00million; Stroke: -£0.07million; Dementia: -£0.10million	Households increased daytime noise forecast year: 510 Households decreased daytime noise forecast year:55 Households increased night-time noise forecast year: 196 Households decreased night-time noise forecast year: 21	N/A	-£0.8	Income Quintile 1 - Moderate Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Moderate Adverse; Income Quintile 5 - Moderate Adverse
	Air Quality	There are no predicted exceedances near the affected road network either with or without the scheme in the opening year. The scheme has a negative impact on regional NOx and PM2.5 emissions. NOx emissions: -£1.6million; PM2.5 emissions: -£2.2million	Emissions NOx:+425 tonnes PM2.5: +70 tonnes	N/A	-£3.8	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Greenhouse gases	There is predicted to be an increase in emissions due to an increase in vehicle kilometres.	Change in non-traded carbon over 60y (CO2e): 490,777 Change in traded carbon over 60y (CO2e): 4,976	N/A	-£21.4	
	Landscape	Option 8 is a slightly more intrusive and extensive version of Option 7, still involving a relatively minor change to the existing junction with minimal loss of vegetation and the greatest effects on landscape character and visual amenity derived from the temporary construction compound. On completion in year 1 effects would be slight and by year 15 any effects on landscape character and visual amenity would be similar to the baseline, hence neutral.	No significant adverse effects to landscape character have been identified in relation to Option 8.	N/A	N/A	
	Townscape	As described for landscape, effects to the immediate townscape from Option 8 would be very localised and erosion of the urban edge buffer would be effectively neutral compared to a DM scheme. There would be no significant effects to the wider townscape character of the eastern edge of Coventry.	No significant adverse effects to townscape character have been identified in relation to Option 8.	N/A	N/A	
	Historic Environment	Option 8 will result in adverse impacts to a group of three Grade II listed buildings at Hunglerley Hall Farm, requiring the demolition of one of the listed buildings which is a large adverse impact. This would require listed building consent which may not be granted, resulting in risk to the project. It will impact the Grade II* Registered Park and Garden and Conservation Area at Coombe Abbey, through tree removal at the boundary however the impact is generally slight, and can be mitigated effectively with new planting. All options could result in the removal of as yet unrecorded archaeological assets.	Significant Adverse Effects to historic environment have been identified. Option 8 is the most impactful with a very large adverse effect that cannot be mitigated.	N/A	N/A	
	Biodiversity	Option 8 has the potential for adverse effects on priority woodland habitat within Coombe Pool SSSI. Option 8 would take woodland from within the SSSI boundary. It would also lead to a significant increase in N-deposition of up to 1.7kgN/ha/yr, which would need further investigation as to effect on vegetation. Effects of Option 8 on the SSSI would be moderate (significant) and require bespoke compensation. Option 8 would also have temporary, recoverable impacts on a root protection zone in the SSSI. None of the options would achieve no net loss without significant additional landtake and offsite enhancement provision, after any bespoke compensation for impacts in the SSSI.	Option 8 has Adverse Effects significant for one or more receptors, including at least some Moderate Adverse effects. Option 8 has most effect due to loss of woodland in Coomb Pool SSSI.	N/A	N/A	
	Water Environment	During operation of the chosen option mitigation will have been constructed to ensure routine road runoff discharges are attenuated and there will be no adverse effects on the flooding potential of the receiving watercourses. This will be with attenuation ponds and swales, both of which provide water quality benefits. It is assumed that all mitigation as required by the DMRB assessment process would be carried out - water quality, hydromorphology, and attenuation of flows using SuDS solutions. There is potential for enhancement should the existing priority outfalls be mitigated as part of the Scheme if required. A hydraulic model has been developed which shows that appropriate flood mitigation would need to be incorporated for option 8. Option 8 includes a deep cutting which may interact with groundwater, based on BGS boreholes.	Neutral	N/A	N/A	
Social	Commuting and Other users	Option 8 will save travellers an average of 1.9mins (SB)/0.7mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.5mins (SB)/1.2mins (NB). This contributes to total Travel Time Benefits for Commuting and Other Users of £56.2million.	**Value of journey time changes (£m)** £11.673 **Net journey time changes (£m)** 0 to 2min: -£11.1 / 2 to 5min: £22.0 / > 5min: £0.8	Analysis perfomed on HBW AM and PM trips only. The user benefits signficantly favour the more deprived quintiles.	£40.8	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Large Beneficial ; Income Quintile 3 - Moderate Beneficial; Income Quintile 4 - Slight Beneficial;
	Reliability impact on Commuting and Other users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£12.8	
	Physical activity	No material impact.	N/A	Scheme is part of a strategic road network upgrade, with	N/A	
	Journey quality	There is predicted to be a slight improvement to traveller stress.	N/A	Traveller stress is expected to reduce due to improvements in	N/A	
	Accidents	The scheme improves safety at Walsgrave junction. It also generates induced long-distance traffic. Overall, across the 60-year appraisal period it is predicted that there will be an increase of 118 accidents across the road network. There are corresponding increases in Fatal Casualties (5), Serious Casualties (17), and Slight Casualties (158) over the same period.	N/A	Within the Area of Impact accident forecasts show limited change: 77% of links show an absolute change of <5%, 90% of links show an absolute change of <10%. 55% of links show an increase in forecast accidents, 45% a	-£5.9	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Slight Adverse; Income Quintile 4 - Slight Adverse; Income Quintile 5 - Slight Adverse
	Security	Not Assessed: The scheme does not involve changes to public transport or facilities, nor is it expected to have any significant impact on pedestrian security.	N/A	N/A	N/A	N/A
	Access to services	Not Assessed: The scheme does not involve changes to public transport or facilities.	N/A	Slight negative impact as removal of southbound right-turn	N/A	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Slight Adverse;
	Affordability	Data not available	N/A	Analysis perfomed on HBW AM and PM trips only. The increases in costs are concentrated in the highest quintiles. The lowest quintile shows a cost decrease, the other quintiles show cost increases.	N/A	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Large Adverse; Income Quintile 5 - Slight Adverse
	Severance	Walsgrave: No impact.	N/A	Walsgrave: No pedestrian crossing facilities and none planned under the scheme.	N/A	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Option and non-use values	The scheme is unlikely to substantially change the availability of transport services in the study area.	N/A	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	Construction: £39.8million; Preparation: £9.7million; Supervision: £1.7million; Land and Compensation: £3.3million	N/A	N/A	£54.5	
	Indirect Tax Revenues	Operation: -£9.9million Quoted as Costs not as Benefits	N/A	N/A	-£9.9	

Appraisal Summary Table DS11DN

Date produced:	17/12/2021

Name of scheme:	A46 Coventry Junctions Upgrade - Walsgrave
Description of scheme:	Road Investment Strategy 2 Statement - A46 Coventry Junctions – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk sections of the A45/A46 between the M6 and M40 to a consistent standard. Highways England Delivery Plan - Provide access along the A46 to further residential developments and key employment sites near Binley and Walsgrave. A phased delivery approach is being taken; Binley junction first followed later by Walsgrave junction.

Contact:	
Name	Steven Wood
Organisation	AECOM
Role	Consultant

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£m (NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Option 11 will, in combination with the improvements at Binley, save travellers an average of 1.5mins (SB)/0.9mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.5mins (SB)/1.8mins (NB). This contributes to total Travel Time Benefits for Business Users of £144.1million.	**Value of journey time changes (£m)** £150.281 **Net journey time changes (£m)** 0 to 2min: £102.2 / 2 to 5min: £48.1 / > 5min: N/A	N/A	£149.2	N/A
	Reliability impact on Business users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£11.4	
	Regeneration	The area is not identified as in need of regeneration. The scheme would not impact on regeneration.	N/A	N/A	N/A	
	Wider Impacts	Two Wider Impacts were calculated. Increased Output reflects the additional benefits that a transport scheme can give to businesses under conditions of imperfect competition. For Option 11, combined with the Binley improvements, this was calculated as £15.2million. Labour Supply Impacts reflects the additional benefits that a transport scheme can supply due to increased employment. For Option 11, combined with the Binley improvements, this was calculated as £2.4million.	N/A	N/A	£17.5	
Environmental	Noise	Option 11 is predicted to result in the least number of significant adverse effects as a result of the operation of the scheme. Only one property - Hungerley Hall Farmhouse, predicted to experience a signifcant adverse operational noise effect due to this option resulting in both the A46 and B4082 moving closer to this property. Option 11 would result in the potential for one property (Hungerley Hall Farmhouse) to qualify for noise insulation works under the Noise Insulation Regulations. No residential properties are predicted to experience levels in excess of 80dB LAeq16hr. Noise mitigation options, in the form of noise barriers, may be feasible to reduce the noise impacts identified; however, these have not been included in the traffic noise predictions. Sleep Disturbance: -£0.07million; Amenity: £0.03million; AMI: £0.02million; Stroke: -£0.00million; Dementia: -£0.00million	Households increased daytime noise forecast year: 145 Households decreased daytime noise forecast year:117 Households increased night-time noise forecast year: 79 Households decreased night-time noise forecast year: 28	N/A	£0.0	Income Quintile 1 - Neutral; Income Quintile 2 - Large Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Moderate Adverse; Income Quintile 5 - Slight Adverse
	Air Quality	There are no predicted exceedances near the affected road network either with or without the scheme in the opening year. The scheme has a negative impact on regional NOx and PM2.5 emissions. NOx emissions: -£1.4million; PM2.5 emissions: -£2.7million	Emissions NOx:+386 tonnes PM2.5: +84 tonnes	N/A	-£4.1	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Greenhouse gases	There is predicted to be an increase in emissions due to an increase in vehicle kilometres.	Change in non-traded carbon over 60y (CO2e): 492,633 Change in traded carbon over 60y (CO2e): 5,496	N/A	-£21.7	
	Landscape	Option 11 is a less intrusive version of Option 6. It reduces the magnitude and significance of effects at all stages and has a lesser effect on landscape character than Option 6, albeit both are slight significance in year 1. Option 11 becomes neutral by year 15 as a result of greater landscape integration. Option 11 is worse than options 7 and 8. Under a DN option there are no adverse effects on landscape character.	No significant adverse effects to landscape character have been identified in relation to Option 11 or a DN option.	N/A	N/A	
	Townscape	As described for landscape, effects to the immediate townscape from Option 11 would be localised but include some erosion of the urban edge buffer . There would be no significant effects to the wider townscape character of the eastern edge of Coventry. Under a DN option there are no adverse effects on townscape character.	No significant adverse effects to townscape character have been identified in relation to Option 11 or a DN option.	N/A	N/A	
	Historic Environment	Option 11 will result in adverse impacts to a group of three Grade II listed buildings at Hunglerley Hall Farm. It will impact the Grade II* Registered Park and Garden and Conservation Area at Coombe Abbey, through tree removal at the boundary however the impact is generally slight, and can be mitigated effectively with new planting. Option 11 also has the potential for the new 'dumbbell' junction to be visible from within the park which is an added potential impact. Further assessment would be required to determine the degree of impact resulting from such views, including assessment of the impact of night-time lighting. Option 11 also impacts upon the setting of the Grade II listed Walsgrave Hill Farm, but suitable mitigation options in the form of landscape planting may be available to mitigate the visual intrusion. All options could result in the removal of as yet unrecorded archaeological assets.	Significant Adverse Effects to historic environment have been identified in relation to Option 11.	N/A	N/A	
	Biodiversity	Option 11 has the potential for adverse effects on priority woodland habitat within Coombe Pool SSSI and temporary, recoverable impacts on a root protection zone in the SSSI. Option 11 would have negligible impact on woodland from increased N deposition. In addition Option 11 would remove a farm accommodation overbridge which is the only traffic-free crossing for wildlife for many kilometres of A46 around Coventry - the existing road is a barrier between Coombe Country Park and the River Sowe valley a key wildlife corridor. Option 11 has the least impact of the four options, but the loss of an overbridge would increase severance for wildlife. None of the options would achieve no net loss without significant additional landtake and offsite enhancement provision, after any bespoke compensation for impacts in the SSSI.	Option 11 would have Adverse Effects that are significant for one or more receptors, including at least some Moderate Adverse effects.	N/A	N/A	
	Water Environment	During operation of the chosen option mitigation will have been constructed to ensure routine road runoff discharges are attenuated and there will be no adverse effects on the flooding potential of the receiving watercourses. This will be with attenuation ponds and swales, both of which provide water quality benefits. It is assumed that all mitigation as required by the DMRB assessment process would be carried out - water quality, hydromorphology, and attenuation of flows using SuDS solutions. A hydraulic model has been developed which shows that option 11 would result in negligible increase in fluvial flood risk on or off-site. Option 11 has a cutting which has a base of the cutting 2m higher than option 8 and is less likely to interact with groundwater, based on BGS boreholes.	Neutral	N/A	N/A	
Social	Commuting and Other users	Option 11 will, in combination with the improvements at Binley, save travellers an average of 1.5mins (SB)/0.9mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.5mins (SB)/1.8mins (NB). This contributes to total Travel Time Benefits for Commuting and Other Users of £65.2million.	**Value of journey time changes (£m)** £50.063 **Net journey time changes (£m)** 0 to 2min: £26.2 / 2 to 5min: £27.0 / > 5min: -£3.2	Analysis perfomed on HBW AM and PM trips only. The user benefits signficantly favour the more deprived quintiles.	£45.2	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Large Beneficial ; Income Quintile 3 - Large Beneficial ; Income Quintile 4 - Slight Beneficial;
	Reliability impact on Commuting and Other users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£12.8	
	Physical activity	No material impact.	N/A	Scheme is part of a strategic road network upgrade, with	N/A	
	Journey quality	There is predicted to be a slight improvement to traveller stress.	N/A	Traveller stress is espected to reduce due to improvements in	N/A	
	Accidents	The scheme improves safety at both Binley and Walsgrave junctions. It also generates induced long-distance traffic. Overall, across the 60-year appraisal period it is predicted that there will be an increase of 77 accidents across the road network. There are corresponding increases in Fatal Casualties (6), Serious Casualties (22), and Slight Casualties (95) over the same period.	N/A	Within the Area of Impact accident forecasts show limited change: 83% of links show an absolute change of <5%, 92% of links show an absolute change of <10%. 57% of links show an increase in forecast accidents, 43% a	-£6.1	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Slight Adverse; Income Quintile 4 - Slight Adverse; Income Quintile 5 - Slight Adverse
	Security	Not Assessed: The scheme does not involve changes to public transport or facilities, nor is it expected to have any significant impact on pedestrian security.	N/A	N/A	N/A	N/A
	Access to services	Not Assessed: The scheme does not involve changes to public transport or facilities.	N/A	N/A	N/A	N/A
	Affordability	Data not available	N/A	Analysis perfomed on HBW AM and PM trips only. The increases in costs are concentrated in the highest quintiles. The lowest quintile shows a cost decrease, the other quintiles show cost increases.	N/A	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Large Adverse; Income Quintile 5 - Large Adverse
	Severance	Binley: No impact. Walsgrave: No impact.	N/A	Binley: The proposed scheme retains the existing pedestrian crossing facilities. Although the removal of through traffic on the A46 due to the scheme will be of some benefit to pedestrians	N/A	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Option and non-use values	The scheme is unlikely to substantially change the availability of transport services in the study area.	N/A	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	Construction: £85.0million; Preparation: £15.0million; Supervision: £3.1million; Land and Compensation: £7.7million	N/A	N/A	£110.8	
	Indirect Tax Revenues	Operation: -£9.8million Quoted as Costs not as Benefits	N/A	N/A	-£9.8	

Appraisal Summary Table DS11DM

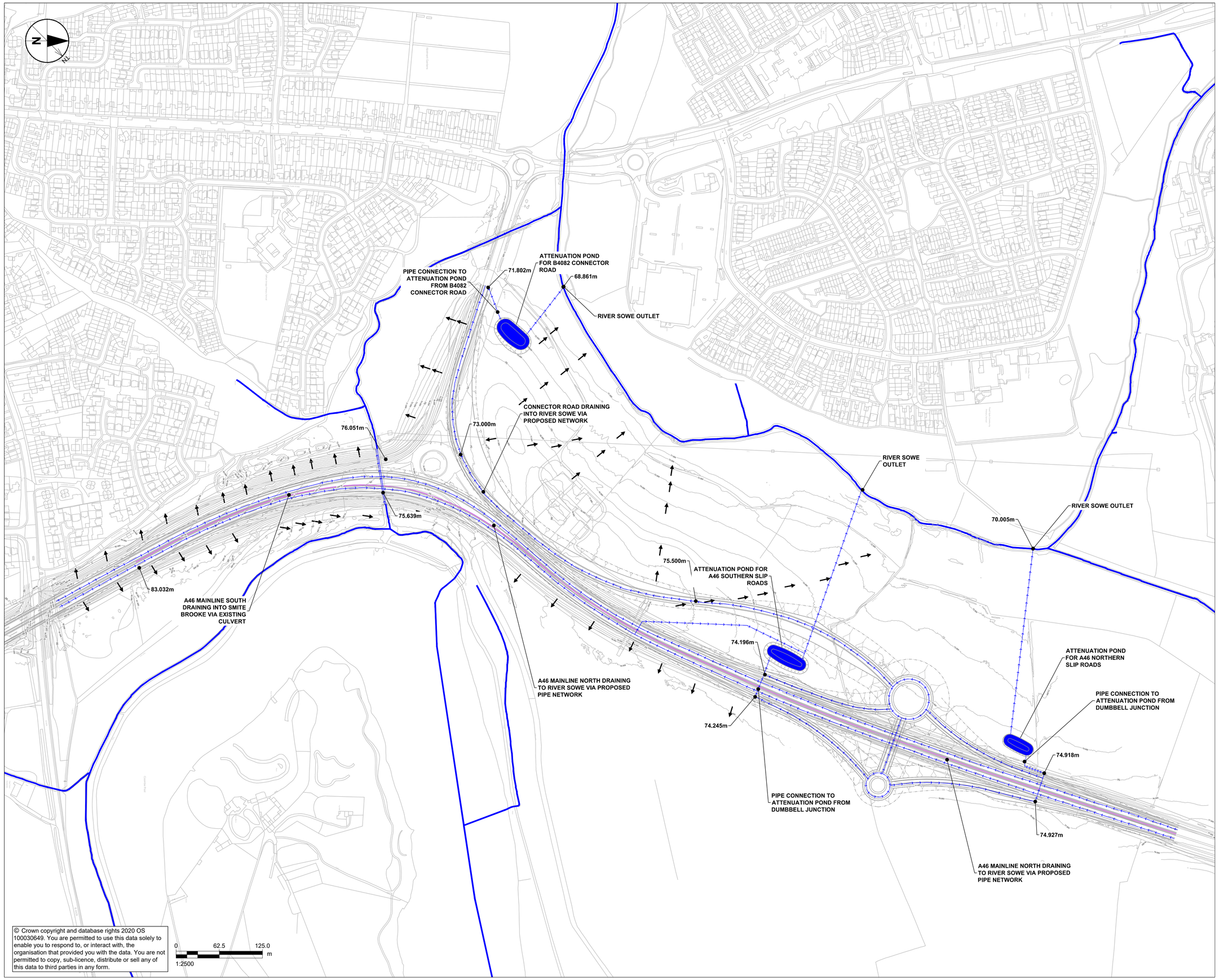
Date produced:	17/12/2021

Name of scheme:	A46 Coventry Junctions Upgrade - Walsgrave
Description of scheme:	Road Investment Strategy 2 Statement - A46 Coventry Junctions – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk sections of the A45/A46 between the M6 and M40 to a consistent standard. Highways England Delivery Plan - Provide access along the A46 to further residential developments and key employment sites near Binley and Walsgrave. A phased delivery approach is being taken; Binley junction first followed later by Walsgrave junction.

Contact:	
Name	Steven Wood
Organisation	AECOM
Role	Consultant

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
					£m (NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Option 11 will save travellers an average of 1.6mins (SB)/0.6mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.2mins (SB)/1.1mins (NB). This contributes to total Travel Time Benefits for Business Users of £109.6million.	**Value of journey time changes (£m)** £106.136 **Net journey time changes (£m)** 0 to 2min: £72.4 / 2 to 5min: £33.2 / > 5min: £0.6	N/A	£115.8	N/A
	Reliability impact on Business users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£11.4	
	Regeneration	The area is not identified as in need of regeneration. The scheme would not impact on regeneration.	N/A	N/A	N/A	
	Wider Impacts	Two Wider Impacts were calculated. Increased Output reflects the additional benefits that a transport scheme can give to businesses under conditions of imperfect competition. For Option 11 this was calculated as £11.7million. Labour Supply Impacts reflects the additional benefits that a transport scheme can supply due to increased employment. For Option 11 this was calculated as £2.1million.	N/A	N/A	£13.8	
Environmental	Noise	Option 11 is predicted to result in the least number of significant adverse effects as a result of the operation of the scheme. Only one property - Hungerley Hall Farmhouse, predicted to experience a signifcant adverse operational noise effect due to this option resulting in both the A46 and B4082 moving closer to this property. Option 11 would result in the potential for one property (Hungerley Hall Farmhouse) to qualify for noise insulation works under the Noise Insulation Regulations. No residential properties are predicted to experience levels in excess of 80dB LAeq16hr. Noise mitigation options, in the form of noise barriers, may be feasible to reduce the noise impacts identified; however, these have not been included in the traffic noise predictions. Sleep Disturbance: -£0.12million; Amenity: -£0.00million; AMI: £0.03million; Stroke: -£0.01million; Dementia: -£0.01million	Households increased daytime noise forecast year: 204 Households decreased daytime noise forecast year:119 Households increased night-time noise forecast year: 96 Households decreased night-time noise forecast year: 32	N/A	-£0.1	Income Quintile 1 - Neutral; Income Quintile 2 - Moderate Adverse; Income Quintile 3 - Moderate Beneficial; Income Quintile 4 - Large Adverse; Income Quintile 5 - Moderate Beneficial
	Air Quality	There are no predicted exceedances near the affected road network either with or without the scheme in the opening year. The scheme has a negative impact on regional NOx and PM2.5 emissions. NOx emissions: -£1.6million; PM2.5 emissions: -£2.3million	Emissions NOx:+429 tonnes PM2.5: +72 tonnes	N/A	-£3.9	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Greenhouse gases	There is predicted to be an increase in emissions due to an increase in vehicle kilometres.	Change in non-traded carbon over 60y (CO2e): 522,060 Change in traded carbon over 60y (CO2e): 5,136	N/A	-£22.9	
	Landscape	Option 11 is a less intrusive version of Option 6. It reduces the magnitude and significance of effects at all stages and has a lesser effect on landscape character than Option 6, albeit both are slight significance in year 1 but Option 11 becomes neutral by year 15 as a result of greater landscape integration.	No significant adverse effects to landscape character have been identified in relation to Option 11.	N/A	N/A	
	Townscape	As described for landscape, effects to the immediate townscape from Option 11 would be localised but include some erosion of the urban edge buffer as described for Option 6 but of lesser magnitude. There would be no significant effects to the wider townscape character of the eastern edge of Coventry.	No significant adverse effects to townscape character have been identified in relation to Option 11.	N/A	N/A	
	Historic Environment	Option 11 will result in adverse impacts to a group of three Grade II listed buildings at Hunglerley Hall Farm. It will impact the Grade II* Registered Park and Garden and Conservation Area at Coombe Abbey, through tree removal at the boundary however the impact is generally slight, and can be mitigated effectively with new planting. Option 11 also has the potential for the new 'dumbbell' junction to be visible from within the park which is an added potential impact. Further assessment would be required to determine the degree of impact resulting from such views, including assessment of the impact of night-time lighting. Option 11 also impacts upon the setting of the Grade II listed Walsgrave Hill Farm, but suitable mitigation options in the form of landscape planting may be available to mitigate the visual intrusion. All options could result in the removal of as yet unrecorded archaeological assets.	Significant Adverse Effects to historic environment have been identified in relation to Option 11.	N/A	N/A	
	Biodiversity	Option 11 has the potential for adverse effects on priority woodland habitat within Coombe Pool SSSI and temporary, recoverable impacts on a root protection zone in the SSSI. Option 11 would have negligible impact on woodland from increased N deposition. In addition Option 11 would remove a farm accommodation overbridge which is the only traffic-free crossing for wildlife for many kilometres of A46 around Coventry - the existing road is a barrier between Coombe Country Park and the River Sowe valley a key wildlife corridor. Option 11 has the least impact of the four options, but the loss of an overbridge would increase severance for wildlife. None of the options would achieve no net loss without significant additional landtake and offsite enhancement provision, after any bespoke compensation for impacts in the SSSI.	Option 11 would have Adverse Effects that are significant for one or more receptors, including at least some Moderate Adverse effects.	N/A	N/A	
	Water Environment	During operation of the chosen option mitigation will have been constructed to ensure routine road runoff discharges are attenuated and there will be no adverse effects on the flooding potential of the receiving watercourses. This will be with attenuation ponds and swales, both of which provide water quality benefits. It is assumed that all mitigation as required by the DMRB assessment process would be carried out - water quality, hydromorphology, and attenuation of flows using SuDS solutions. A hydraulic model has been developed which shows that option 11 would result in negligible increase in fluvial flood risk on or off-site. Option 11 has a cutting which has a base of the cutting 2m higher than option 8 and is less likely to interact with groundwater, based on BGS boreholes.	Neutral	N/A	N/A	
Social	Commuting and Other users	Option 11 will save travellers an average of 1.6mins (SB)/0.6mins (NB) between Toll Bar and the M6/M69 junction in the Opening Year. In the Design Year the average time saving is 2.2mins (SB)/1.1mins (NB). This contributes to total Travel Time Benefits for Commuting and Other Users of £53.2million.	**Value of journey time changes (£m)** £9.697 **Net journey time changes (£m)** 0 to 2min: -£11.3 / 2 to 5min: £21.7 / > 5min: -£0.8	Analysis perfomed on HBW AM and PM trips only. The user benefits signficantly favour the more deprived quintiles.	£38.3	Income Quintile 1 - Large Beneficial ; Income Quintile 2 - Large Beneficial ; Income Quintile 3 - Large Beneficial ; Income Quintile 4 - Slight Beneficial;
	Reliability impact on Commuting and Other users	The scheme will reduce the variability of journey times along the A46 between Toll Bar and the M6/M69 junction.	N/A	N/A	£12.8	
	Physical activity	No material impact.	N/A	Scheme is part of a strategic road network upgrade, with	N/A	
	Journey quality	There is predicted to be a slight improvement to traveller stress.	N/A	Traveller stress is espected to reduce due to improvements in	N/A	
	Accidents	The scheme improves safety at Walsgrave junction. It also generates induced long-distance traffic. Overall, across the 60-year appraisal period it is predicted that there will be an increase of 145 accidents across the road network. There are corresponding increases in Fatal Casualties (6), Serious Casualties (23), and Slight Casualties (191) over the same period.	N/A	Within the Area of Impact accident forecasts show limited change: 81% of links show an absolute change of <5%, 92% of links show an absolute change of <10%. 59% of links show an increase in forecast accidents, 41% a	-£7.4	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Slight Adverse; Income Quintile 4 - Slight Adverse; Income Quintile 5 - Slight Adverse
	Security	Not Assessed: The scheme does not involve changes to public transport or facilities, nor is it expected to have any significant impact on pedestrian security.	N/A	N/A	N/A	N/A
	Access to services	Not Assessed: The scheme does not involve changes to public transport or facilities.	N/A	N/A	N/A	N/A
	Affordability	Data not available	N/A	Analysis performed on HBW AM and PM trips only. The increases in costs are concentrated in the highest quintiles. All quintiles show cost increases.	N/A	Income Quintile 1 - Slight Adverse; Income Quintile 2 - Slight Adverse; Income Quintile 3 - Moderate Adverse; Income Quintile 4 - Large Adverse; Income Quintile 5 - Large Adverse
	Severance	Walsgrave: No impact.	N/A	Walsgrave: No pedestrian crossing facilities and none planned under the scheme.	N/A	Income Quintile 1 - Neutral; Income Quintile 2 - Neutral; Income Quintile 3 - Neutral; Income Quintile 4 - Neutral; Income Quintile 5 - Neutral
	Option and non-use values	The scheme is unlikely to substantially change the availability of transport services in the study area.	N/A	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	Construction: £43.1million; Preparation: £10.2million; Supervision: £1.6million; Land and Compensation: £5.5million	N/A	N/A	£60.3	
	Indirect Tax Revenues	Operation: -£8.3million Quoted as Costs not as Benefits	N/A	N/A	-£8.3	

APPENDIX J
ATTENUATION PONDS DRAWING



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1:2500

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

EXCEPTIONAL RISKS RELATING TO THE WORKS ASSOCIATED WITH THIS DRAWING ARE IDENTIFIED BELOW.

CONSTRUCTION

MAINTENANCE / OPERATION / DECOMMISSIONING / DEMOLITION

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS, CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE PROJECT HEALTH & SAFETY FILE FOR ANY IDENTIFIED POTENTIAL RISKS.
5. PIPE NETWORK DESIGN HAS NOT BEEN UNDERTAKEN AT THIS STAGE. CATCHMENT ANALYSIS HAS BEEN CARRIED OUT FOR ATTENUATION POND SIZING ONLY. EXISTING / PROPOSED PIPE NETWORK SHOWN IS INDICATIVE.
6. NO INVERT OR COVER LEVEL INFORMATION FOR THE EXISTING PIPE NETWORK HAS BEEN RECEIVED IN PCF STAGE 2. LOCATIONS WHERE THE NEW PIPE NETWORK WILL CROSS OR BE SITUATED IN CLOSE PROXIMITY WILL REQUIRE TO BE INVESTIGATED IN PCF STAGE 3.

KEY

- DIRECTION OF OVERLAND SURFACE FLOW
- FLOW DIRECTION
- WATERCOURSE

FIRST ISSUE	TO / TO	06/09/21	P01
DRAWING NOTES UPDATED	DI / CG	17/11/21	P02
REVISION DETAILS	By / Check	Date	Suffix

Purpose of issue

SUITABLE FOR INFORMATION

Client

Highways England
The Cube
199 Wharfside Street
Birmingham

B1 1RN

national highways

Project Title

A46 COVENTRY JUNCTIONS WALSGRAVE PCF STAGE 2

Drawing Title

WALSGRAVE PCF STAGE 2 OPTION 11 PROPOSED DRAINAGE

Designed	Drawn	Checked	Approved	Date
TO	DI	JN	CG	17/11/21

Internal Project No. 60638418	Suitability S2
Scale @ A1 1:2500	Discipline Civil - Drainage

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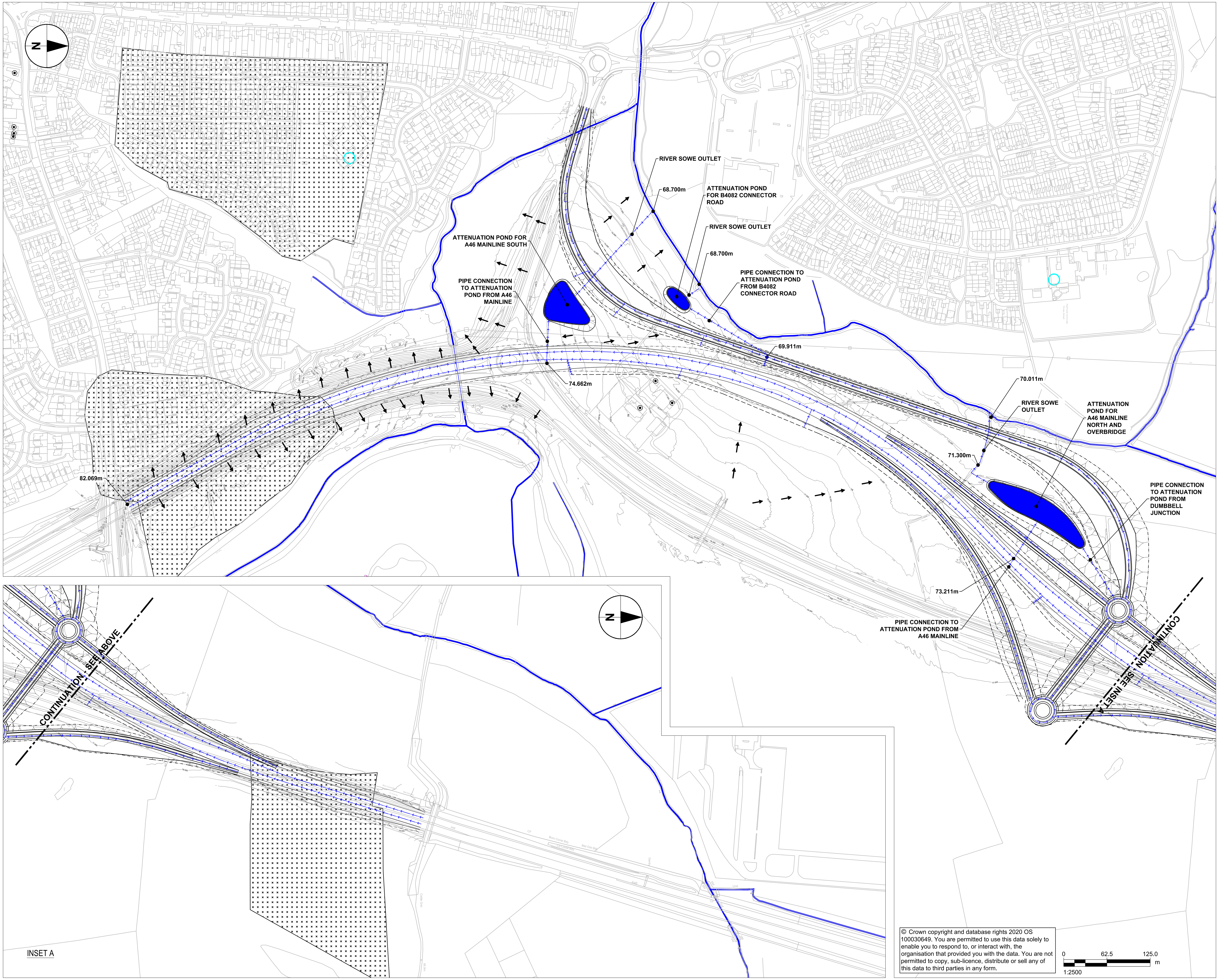
Basingstoke, Hampshire RG21 7PP

Drawing Number
Work Package ID | Originator | Volume
HE604820 -ACM -HDG -
WAL_SW_OP11_Z-DR -CD-0001
Location | Type | Role | Number

Rev P02

Plot Date: 17 November 2021 16:49:00
File Name: C:\Project\60638418\CAD\Z_CAD\02_UK-CLT\DAVID.ILUGBO@AECOM.COM\D0152075\HE604820-ACM-HDG-WAL_SW_OP11_Z-DR-CD-0001



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

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CONSTRUCTION

MAINTENANCE / OPERATION / DECOMMISSIONING / DEMOLITION

NOTES

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6. NO INVERT OR COVER LEVEL INFORMATION FOR THE EXISTING PIPE NETWORK HAS BEEN RECEIVED IN PCF STAGE 2. LOCATIONS WHERE THE NEW PIPE NETWORK WILL CROSS OR BE SITUATED IN CLOSE PROXIMITY WILL REQUIRE TO BE INVESTIGATED IN PCF STAGE 3.

KEY

PROPOSED EARTHWORKS CUT OFF DITCHES

DIRECTION OF OVERLAND SURFACE FLOW

FLOW DIRECTION

WATERCOURSE

	By	Check	Date	Suffix
FIRST ISSUE	DI	CG	17/11/21	P01
REVISION DETAILS	By	Check	Date	Suffix

Purpose of issue

SUITABLE FOR INFORMATION

Client

Highways England
The Cube
199 Wharfside Street
Birmingham
B1 1RN

national highways

Project Title

A46 COVENTRY JUNCTIONS WALSGRAVE PCF STAGE 2

Drawing Title

WALSGRAVE PCF STAGE 2 OPTION 6 PROPOSED DRAINAGE

Designed	Drawn	Checked	Approved	Date
TO	DI	JN	CG	17/11/21

Internal Project No. 60638418 | Suitability S2

Scale @ A1 1:2500 | Discipline Civil - Drainage

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Registered in England Registered number: 880328
Registered office: Midpoint, Alencon Link, Basingstoke, Hampshire RG21 7PP

Drawing Number
Work Package ID HE604820 - Originator ACM - Volume HDG -
Location WAL_SW_OP6_Z - Type DR - Role CD - Number 0001

Rev P01

Plot Date : 17 November 2021 15:35:26
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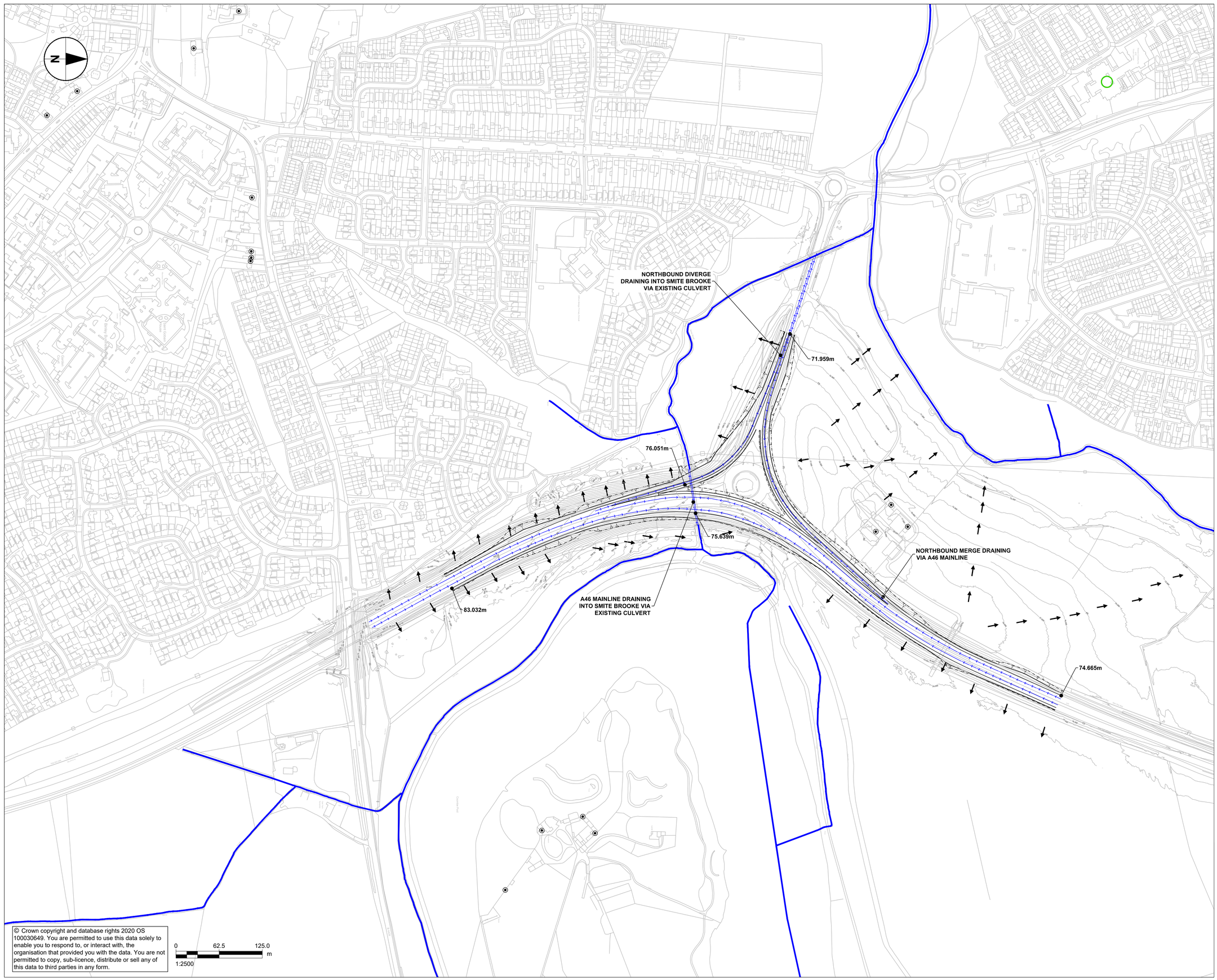

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KEY

- DIRECTION OF OVERLAND SURFACE FLOW
- FLOW DIRECTION
- WATERCOURSE

FIRST ISSUE	DI / CG		17/11/21	P01
REVISION DETAILS	By / Check		Date	Suffix

Purpose of issue

SUITABLE FOR INFORMATION

Client

Highways England
The Cube
199 Wharfside Street
Birmingham
B1 1RN

national highways

Project Title

A46 COVENTRY JUNCTIONS WALSGRAVE PCF STAGE 2

Drawing Title

WALSGRAVE PCF STAGE 2 OPTION 7 PROPOSED DRAINAGE

Designed	Drawn	Checked	Approved	Date
TO	DI	JN	CG	17/11/21

Internal Project No.	Suitability
60638418	S2
Scale @ A1	Discipline
1:2500	Civil - Drainage

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Drawing Number

Work Package ID	Originator	Volume	Location	Type	Role	Number	Rev
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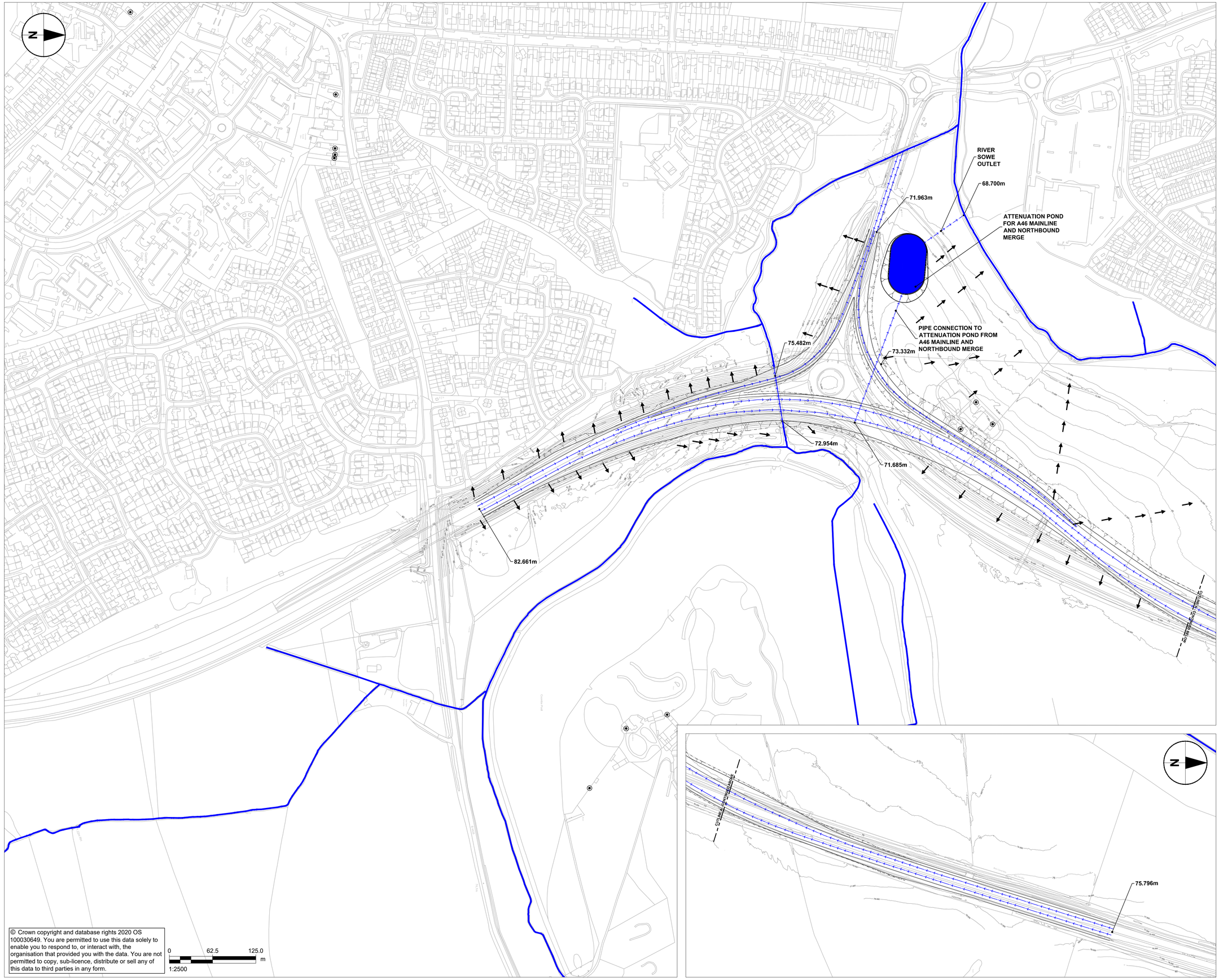

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national highways

Project Title

A46 COVENTRY JUNCTIONS WALSGRAVE PCF STAGE 2

Drawing Title

WALSGRAVE PCF STAGE 2 OPTION 8 PROPOSED DRAINAGE

Designed	Drawn	Checked	Approved	Date
TO	DI	JN	CG	17/11/21

Internal Project No.	Suitability
60638418	S2
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Work Package ID I Originator I Volume I Type I Role I Number
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Location

Rev P01

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APPENDIX K
NN NPS ACCORDANCE

NN NPS Accordance (by exception)

Conflicts with policy with no opportunity for mitigation	Conflicts with policy but can be mitigated	Complies with policy or confidence mitigation removes risk of non-compliance

Topic	Option 6	Option 7	Option 8	Option 11
Safety		Concerns on slip road config. & risk of A46 tailbacks. Significant departures	Concerns on slip road config. & risk of A46 tailbacks. Significant departures	
Internationally designated sites, SSSI and NNR	Alignment is further from SSSI than existing roads	Indirect impacts on SSSI due to proximity. Loss of screening vegetation unlikely to impact on qualifying feature	Some permanent landtake from SSSI. Loss of screening vegetation unlikely to impact on qualifying feature	Indirect impacts on SSSI due to proximity. Loss of screening vegetation unlikely to impact on qualifying feature
Irreplaceable habitats (ancient woodland & veteran trees)	Alignment largely through arable farmland. Some loss of trees around HHF. Risk of loss of veteran trees adjacent to River Sowe.	Limited vegetation loss adjacent to SSSI with limited footprint for mitigation measures. No ancient woodland and potential temporary effect on SSSI woodland.	No ancient woodland but mature tree loss adjacent to and in SSSI, with limited footprint for mitigation measures	Limited vegetation loss adjacent to SSSI with limited footprint for mitigation measures. No ancient woodland and potential temporary effect on SSSI woodland.
Protection of other habitats and species (Biodiversity)	Vegetation loss and severance of habitats affecting protected species	Vegetation loss along existing highway boundaries.	Vegetation loss along existing highway boundaries & within SSSI. Loss of main badger sett & bat roosts in trees & HHF	Vegetation loss along existing highway boundary. Direct impact on badgers likely requiring new main sett
Flood risk	Significant increase in flood risk. Costly mitigation measures with secondary environmental impacts.	Flood modelling shows no flood risk impact on or off site as a result of this option.	Risk of A46 flooding mitigated if bunding east of A46 maintained at 75.0m AOD	Site is not located in flood zone 2 or 3 and would not result in flood impact.

The historic environment	Change in Coombe Abbey Park & Garden(GII*) & HHF setting due to elevated jct. No direct impact.		Demolition of Grade II listed Hungerley Hall Farm	Closer B4082 impacts setting of Hungerley Hall Farmhouse
Land use: Green Belt	Scheme extents are within Green Belt, but unlikely to be classed as inappropriate development	Scheme extents are within Green Belt, but unlikely to be classed as inappropriate development	Scheme extents are within Green Belt, but unlikely to be classed as inappropriate development	Scheme extents are within Green Belt, but unlikely to be classed as inappropriate development
Land use: open space / sports and recreational buildings & land				
Noise and vibration	B4082 150m from houses west of R.Sowe. 11dB inc at rear of HHF. Many residential & 2 non-residential properties significantly affected. Disproportionate mitigation.	3dB inc @ HHF (A46 10mm closer) North end Morrisons estate closer to B4082. Mitigatable. Significant impacts on HHF difficult to mitigate.	North end of Morrisons estate closer to B4082 and A46. Mitigatable	Moderate(~3dB) increase at HHF. Risk of qualifying for noise insulation. Would need mitigation solution agreeing with Historic England & Local Authority
Water quality and resources	Minor changes to culverts crossing Smite Brook. Widening of R.Sowe for flood risk mitigation will need further mitigation.		Scheme requires works to Smite Brook and edge of Coombe Pool SSSI	

APPENDIX L
MOUCHEL PCF STAGE 1 OPTIONS ASSESSMENT

APPENDIX K – Mouchel PCF Stage 1 Options Development (2015-2016)

1.1. In November 2015, an options workshop was held to consider and review a number of junction layout options presented to meet the requirements of upgrading both the Binley and Walsgrave junctions as recommended in Option 4 of the 2014 Route Strategic Options Report. The various options developed and presented at the workshop were mindful of the increase in estimated costs for the junction improvements from the original budget of £52.5 million to the Stage 0 estimate of £118 million.

1.2. The layout options presented are briefly described below in Table 1. No traffic data was available at the time to verify the suitability or otherwise of the layouts developed. Details of the options can be found in the A46 Options Workshop report produced following the workshop (Report ref no 1068659-R-010, Version A, dated December 2015) .

Table 1 - Walsgrave junction options considered at A46 options workshop (19.11.15)

Layout	A46 Walsgrave junction
1	Replacement of the existing Walsgrave junction with a right-hand bend (viewed travelling north) and a fully grade separated junction (two bridge roundabout layout over the existing A46) located approximately 1km to the north of existing.
2	Replacement of existing Walsgrave roundabout with right hand bend(viewed travelling north), providing remote Left-In Left-Out Slips (LILO) northbound only, 1km to the north of existing.
3	As per Option 3 but LILO arrangement located at the existing Walsgrave junction.
4A	A46 at-grade junction with elevated slip roads and offline all movements roundabout junction located to the west of existing (layout A)
4B	A46 at-grade junction with elevated slip roads and offline all movements roundabout junction located to the west of existing (layout B)
5	Realigned A46 at-grade junction with elevated slip roads and offline all movements roundabout junction

1.3. Layouts of each option are provided in Attachment D1. The six options identified for Walsgrave junction during the workshop were then evaluated against the following metrics:

- Safety.
- Traffic Throughput.
- Impact on local network.
- Geotechnical Issues.
- Economic Growth.
- Cost.
- Stakeholder Impact.

Table 2 - Walsgrave Junction Options Matrix

	Option 1 - Atkins Design	Option 2 - At Grade A46 - A4082 Stopped Up - Northbound 'On' And 'Off' Slips [Page 1]	Option 3 - A46 At Grade With Northbound 'On' And 'Off' Slips	Option 4A - A46 At Grade - Elevated Southbound Slip Roads	Option 4B - A46 At Grade - Elevated Southbound Slip Roads	Option 5 - A46 At Grade - Elevated Southbound Slip Roads
Safety	Reduces traffic conflicts due to grade separation. Layout generally complies with DMRB standards. Departure from Standard required for 255m radius bend. Re-assignment of traffic on local road network may increase accidents	Reduces traffic conflicts due to removal of roundabout. Layout generally complies with DMRB standards. Departure from Standard required for 255m radius bend. Re-assignment of traffic on local road network may increase accidents	Reduces traffic conflicts due to removal of roundabout. Layout generally complies with DMRB standards. Departure from Standard required for 255m radius bend. Re-assignment of traffic on local road network may increase accidents	Reduces traffic conflicts on A46. Layout generally complies with DMRB standards. Departure from Standard required for 255m radius bend.	Reduces traffic conflicts on A46. Layout generally complies with DMRB standards. Departure from Standard required for 255m radius bend.	Reduces traffic conflicts on A46. Layout generally complies with DMRB standards.
Traffic Throughput	Grade separation provides free flow situation.	Grade separation provides free flow situation for A46	Grade separation provides free flow situation for A46	Grade separation provides free flow situation for A46	Grade separation provides free flow situation for A46	Grade separation provides free flow situation for A46
Impact on local network	Reassignment of traffic away from B4082 will increase journey distance for some users	Limits access to A46 Reassignment of traffic away from B4082. Will increase journey distance for some users	Limits access to A46. Reassignment of some traffic away from B4082 Will increase journey distance for some users	Maintain current level of service	Maintain current level of service	Maintain current level of service
Environment	Lower impact - May take land from an eco site. The link to the option has not been considered. Adjacent to and potential encroachment to SSSI but avoids Listed Buildings. Potential Environmental Statement.	Lower impact - May take land from an eco site. The link to the option has not been considered. Adjacent to and potential encroachment to SSSI but avoids Listed Buildings. Potential Environmental Statement.	Medium impact -Adjacent to and potential encroachment to SSSI. Slightly closer to the Listed buildings and potential realignment of the Smite Brook to accommodate slips. Greater land take from eco site. Moves carriageways closer to residential properties, potential impact from noise and air. Potential Environmental Statement	Medium impact -Adjacent to and potential encroachment to SSSI. Slightly closer to the Listed buildings and potential realignment of the Smite Brook to accommodate slips. Greater land take from eco site. Moves carriageways closer to residential properties, potential impact from noise and air. Elevated elements may have visual impacts. Potential Environmental Statement.	Medium impact -Adjacent to and potential encroachment to SSSI. Slightly closer to the Listed buildings and potential realignment of the Smite Brook to accommodate slips. Greater land take from eco site. Moves carriageways closer to residential properties, potential impact from noise and air. Elevated elements may have visual impacts. Potential Environmental Statement.	Higher impact - Adjacent to and potential encroachment to SSSI. Closer to the Listed buildings and within land with a higher potential for archaeology. Realignment of the Smite Brook to accommodate slips. Greater land take from eco site. Moves carriageways closer to residential properties, potential impact from noise and air. Elevated elements may have visual impacts. Environmental Statement.
Geotechnical	Landfill underlies southern section of the existing roundabout junction - excavation and replacement, significant cost in removing material. Borrow Pit underlies northern end of bridge junction - uncertain ground conditions - possible excavation and replacement. Alluvium deposits underlying proposed earthwork (right hand bend) - excavation and replacement (depending on thickness).	Landfill underlies southern section of the existing roundabout junction - excavation and replacement, significant cost in removing material. Borrow Pit underlies northern end of LILO slips - uncertain ground conditions - possible excavation and replacement. Alluvium deposits underlying proposed earthwork (right hand bend) - excavation and replacement (depending on thickness).	Landfill underlies southern section of the existing roundabout junction - excavation and replacement, significant cost in removing material. Borrow Pit underlies northern end of LILO slips - uncertain ground conditions - possible excavation and replacement. Alluvium deposits underlying proposed earthwork (right hand bend. NB off slip) - excavation and replacement (depending on thickness). Wide footprint- increased land take required.	Landfill underlies southern section of the existing roundabout junction - excavation and replacement, significant cost in removing material. Alluvium deposits underlying proposed earthwork (right hand bend. NB off slip, SB on slip) - excavation and replacement. Possible piling for on/off SB slip roads. Strengthened earthworks likely to be required between carriageway and slip roads. Wide footprint- increased land take required. Limited space between slip road and A46 for earthworks - likely to require reinforced earth or retaining structure.	Landfill underlies southern section of the existing roundabout junction - excavation and replacement, significant cost in removing material. Alluvium deposits underlying proposed earthwork (right hand bend. NB off slip, SB on slip) - excavation and replacement. Possible piling for on/off SB slip roads. Strengthened earthworks likely to be required between carriageway and slip roads. Wide footprint- increased land take required. Limited space between slip road and A46 for earthworks - likely to require reinforced earth or retaining structure.	Landfill underlies southern section of the existing roundabout junction - excavation and replacement, significant cost in removing material. Borrow Pit underlies northern end of realignment - uncertain ground conditions - possible excavation and replacement. Alluvium deposits & river terrace deposits underlying proposed earthwork (right hand bend) - excavation and replacement (depending on thickness). Strengthened earthworks likely to be required between carriageway and slip roads. Wide footprint - increased land take required- increased cost.
Economic Benefit	Positive opens up land for development and possible hospital expansion	Positive opens up land for development and possible hospital expansion	Neutral impact	Neutral impact	Neutral impact	Neutral impact
Cost	OME assumed as base line	Lower	Lower	Equivalent	Equivalent	Higher

1.4. The workshop identified three revised options outlined in Table 3; Options A, B and C. Option C (the conversion of the two existing at-grade junctions to grade separation) was considered as the most appropriate option to provide mitigation to the congestion experienced at the two junctions.

Table 3 - Revised A46 Binley + Walsgrave junction options

Layout	Workshop identified revised options
A	Option A – Grade Separation at A46 Binley Junction + Do nothing at Walsgrave junction
B	Option B – Grade Separation at A46 Binley Junction + Do minimum at Walsgrave junction (enhanced at-grade roundabout or signal solution)
C	Option C - Grade Separation at A46 Binley Junction + Do something at Walsgrave junction (Dumbell Layout - A46 Grade Separated North West of Roundabout)

Option A – Do Nothing at Walsgrave

1.5. Option A involved improvement of the A46 Binley Junction (grade separation) and no change to the existing Walsgrave junction. The option entailed grade separation of the existing junction by raising the A46 over the A428 Rugby Road and providing entry and exit slips roads to an at grade gyratory junction. The grade separation would mitigate the need for any signalisation on the gyratory. The proposed speed on the A46 main carriageway would remain at the national speed limit.

1.6. The proposals largely represent the expected layout of the route after the upgraded Binley junction is open to traffic. However, the Binley upgrade proposals were value engineered since this option was assessed, the upgrade proposals for the Binley junction propose to tie the four slip roads into the existing roundabout, and the signals on the roundabout will be retained.

1.7. This option addresses traffic congestion experienced at the Binley Junction through the removal of A46 through traffic, therefore reducing traffic conflicts.

Option B – Do Minimum at Walsgrave

1.8. Option B proposed grade separation of Binley junction (as per Option A), in addition to a “do-minimum” improvement at the existing Walsgrave junction comprising of an enhanced at-grade roundabout or at-grade signalised solution.

1.9. Re-assignment of traffic on the local network, due to the closure of the Walsgrave roundabout during the construction phase were the main dis-benefits with Option B.

Option C – Do Something at Walsgrave

1.10. Option C proposed the grade separation of Binley junction (as per Option A and B), and the re-location and grade separation of a Walsgrave junction. This option was the same as the stated preferred option within the 2014 Route Strategic Options Report.

1.11. It was anticipated that the replacement of the existing Walsgrave roundabout and stopping up of the B4082 would result in re-assignment of traffic on the local road network.

1.12. The main disbenefit associated with Option C was the proposed horizontal curvature resulting from the removal of the Walsgrave roundabout and realignment. It was not possible to accommodate a larger radius to facilitate a 120kph design speed (70mph national speed limit) without encroaching into the area of the Coombe Pool Site of

Special Scientific Interest (SSSI), and the adjacent vegetated embankment. In addition, the Grade II listed buildings at Hungerley Hall Farm presented a constraint to this option.

Other Options

1.13. All other options considered were discounted at the A46 Options Workshop in November 2015. At this point the developer Roxhill was promoting proposals to construct a new development on the agricultural land to the east of the A46 and to the north of Coombe Pool. An additional grade separated option was also proposed by Roxhill but it had similar constraints to other options previously considered such as the SSSI and the Grade II listed building.