

Environmental Scoping Assessment

	Name	Position	Date
Prepared by	██████████	Graduate Environmentalist	03/12/2014
Checked by	██████████	Principal Environmentalist	18/12/2014
Received by	██████████	Design Team	22/12/2014

Project No:	52200806	Scheme Title:	M11 Site B – Junction 6
--------------------	-----------------	----------------------	--------------------------------

Project description
<p>Grid references: 547836, 201297</p> <p>The site is split into four sections (Sections B1, B2, B3 and B4) based on location of observed geotechnical defects. All of these sections need remediation to ensure slope stability. It is thought that the major factor in slope instability is the pore water pressure regime and that soil slope failure is more shallow slip rather than global stability. Elevated water content within the Embankment Fill is likely to have been caused by carriageway surface water run-off infiltrating the embankment and causing localised saturation and softening of materials. Elevated water conditions are therefore likely to have caused localised soil failure within the upper section of the embankment slope. As such, if drainage is restored and/or enhanced then the moisture content of the embankment fill can be lowered. This could be achieved by undertaking the following:</p> <ul style="list-style-type: none"> • Prevention of carriageway run-off onto the embankment slope face and reduce water content in embankment fill by restoring and/or enhancing existing drainage assets (a CCTV drainage survey is required first), • Restore failed soil materials in the uppermost 2m of embankment to initial slope geometry with use of granular materials, and • Install erosion matting within upper failed section of embankment to prevent further surface movement of the embankment slope should drainage become dysfunctional again in the future. <p>Other associated works required as part of the scheme are as follows:</p> <ul style="list-style-type: none"> • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder

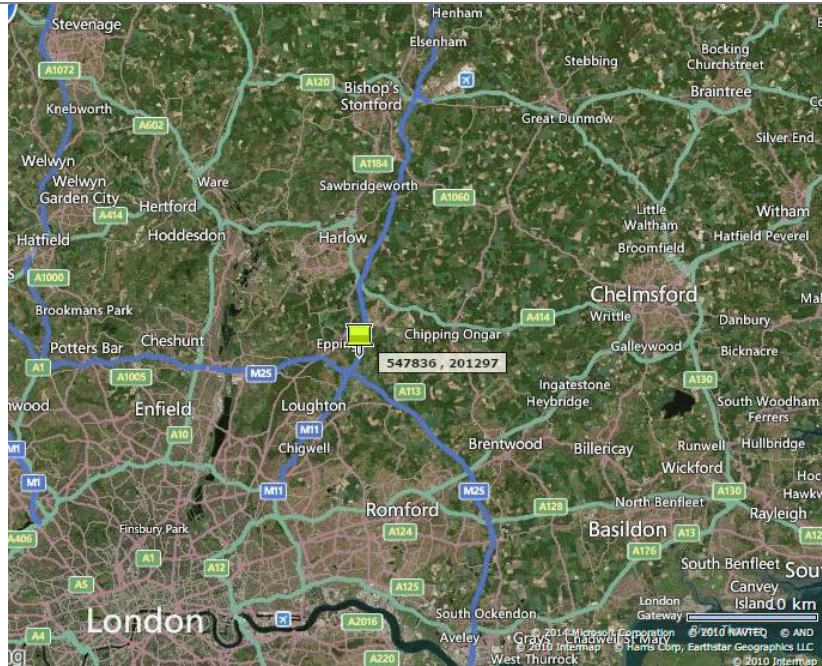


Figure 1: Scheme Location - Epping

This project requires Screening Opinion (EIA Regulations)		NO
This project requires a Record of Determination (Applicable to HA work only)		NO
This project requires environmental permissions, licenses or consents? (ENVT-EnvtAssess-PL-02)		NO
<i>(List applicable permissions, consents or licenses)</i>		
What statutory procedures are involved?		
<i>(List relevant procedures)</i>		

IDENTIFICATION OF POTENTIAL ENVIRONMENTAL EFFECTS		
AIR QUALITY		
Assessment methodology:	A desktop study using the Department for Environment, Food and Rural Affairs, Air Quality and Pollution Section database was carried out. DEFRA http://uk-air.defra.gov.uk/aqma/	
Key baseline conditions:	<ul style="list-style-type: none"> Epping Forest District Council currently has two Air Quality Management Areas, however these are greater than 300m from the scheme. There are no residential, agricultural, civil or commercial properties and no schools, hospitals or care homes within 300m of the scheme. The area surrounding the scheme comprises farmland. The scheme is likely to significantly increase local atmospheric particulate levels at nearby premises. 	
Key construction activities:	<ul style="list-style-type: none"> CCTV drainage survey Restoration of failed soil materials in the uppermost 2m of embankment with granular materials Install erosion matting within upper failed section of embankment Repair any damaged kerbs adjacent to the hard shoulder Removal and replacement of existing VRS along NB verge Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder 	
Temporary effects:	<ul style="list-style-type: none"> Emissions from plant and machinery are likely to cause deterioration in air quality within the local area. This is considered to last for the duration of the works. 	
Permanent effects:	<ul style="list-style-type: none"> No permanent effects 	
Mitigation / control measures:		
<ul style="list-style-type: none"> Best Practicable Means (BPM) should be employed during construction, for example, vehicle idling time should be minimised, and dust should be damped down as necessary. Site staff will be instructed to follow the relevant pollution prevention guidance documents (PPG 1 and 6). All plant and fuel-requiring equipment utilised during construction should be well maintained in order to minimise emissions. Regular monitoring (e.g. site walkover) must take place when dust generating activities are occurring. In the event that an unacceptable volume of dust is emanating from the site the operation must, where possible, be modified and rechecked to verify that the corrective action has been effective. Actions to be considered include: <ul style="list-style-type: none"> Minimize cutting Plant idling time, and grinding onsite. Reducing the operating hours. Reposition equipment. Change the method of working etc. 		
Further action/assessment required?		NO
<i>If yes, specify details</i>		

ARCHAEOLOGY AND CULTURAL HERITAGE
--

Assessment methodology:	A desktop study using Heritage Gateway database http://www.heritagegateway.org.uk/gateway/advanced_search.aspx and the Multi Agency Geographical Information for the Countryside (MAGIC)	
Key baseline conditions:	<ul style="list-style-type: none"> The proposed equipment is likely to cause high levels of vibration for excavation, resurfacing and drainage works. There are no Scheduled Monuments, listed buildings, Conservation areas, Historic Environmental Records, World Heritage Sites, Registered Parks and Gardens or Registered Battlefields recorded within 300m of the scheme extents. 	
Key construction activities:	<ul style="list-style-type: none"> CCTV drainage survey Restoration of failed soil materials in the uppermost 2m of embankment with granular materials Install erosion matting within upper failed section of embankment Repair any damaged kerbs adjacent to the hard shoulder Removal and replacement of existing VRS along NB verge Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder 	
Temporary effects:	<ul style="list-style-type: none"> None predicted 	
Permanent effects:	<ul style="list-style-type: none"> None predicted 	
Mitigation / control measures:		
Should there be any possible archaeological site or findings (e.g. pottery, stone artefacts, coins, flint) please contact the Environment Team immediately for further advice.		
Further action/assessment required?		NO
<i>If yes, specify details</i>		

LANDSCAPE		
Assessment methodology:	A desktop study using the following data sources: Multi Agency Geographical Information for the Countryside (MAGIC) database http://www.magic.gov.uk/MagicMap.aspx Google Maps	
Key baseline conditions:	<ul style="list-style-type: none"> The landscape at this location has the town of Epping located to the west and various small settlements scattered throughout the landscape. The land is predominately used for agriculture and has extensive mature woodland throughout. The road corridor is tree lined and views of the surrounding landscape are restricted by the raised vegetation along the embankment. The scheme is not within a conservation area or AONB. The scheme does not require permanent land take. The scheme requires the permanent removal of hedgerow, scrub and grass. There are trees within falling distance. There is an intention to re-plant at the site, specifics not known yet. 	
Key construction activities:	<ul style="list-style-type: none"> CCTV drainage survey Restoration of failed soil materials in the uppermost 2m of embankment with granular materials 	

	<ul style="list-style-type: none"> • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder
Temporary effects:	<ul style="list-style-type: none"> • Visual impact whilst the works take place • Possible damage to grass verge through storage of materials and parking of vehicles. • Depositing of materials used for construction works on the verge through carelessness when carrying out works. • Possible spreading of injurious and invasive weed species
Permanent effects:	<ul style="list-style-type: none"> • Possible damage to grass verge and surrounding vegetation through the storage of materials and parking of construction vehicles • Possible spreading of invasive and injurious weeds • Possible death to existing trees and woodland
Mitigation / control measures:	
<ul style="list-style-type: none"> • Use a suitable growing medium for re-planting, as granular fill may not be suitable. • A Hedgerow assessment may be required depending on the length of the current hedge and the species diversity. • Works must be undertaken in conjunction with BS5837:2012 – Trees in Relation to Construction. • Contractors undertaking environmental activities are to be qualified to NHSS18 landscape and Ecology • Limit damage to the surrounding environment, only clear vegetation where necessary and do not park vehicles or plant on the soft estate. • It is advised that any excavated soil is reinstated into its original position to avoid any cross contamination or spread of weeds. • We recommend re-seeding any areas where extensive vegetation removal has occurred: <p><u>Grass Specification</u></p> <ul style="list-style-type: none"> • Only good quality topsoil to BS3882 should be used in any backfill to a minimum finished depth of 100mm, consolidated and sown with grass seed and raked to incorporate grass seed into the seed bed. • All debris larger than 50mm should be removed from site and disposed of at an agreed tip. • The area should be left level and free from debris with any damage to existing vegetation being replaced by the contractor. • Grass seed should be sown in the months of April to September at the rate of 25g per m2 and should consist of species; 30% Creeping Red Fescue, 20% Chewings Red Fescue, 20% Hard Fescue, 10 % Crested Dogstail, 10 % Browntop Bent, 10% Smooth stalked Meadow Grass, or similar species of existing sward. • A pre-seed fertiliser should be used at time of grass seed sowing. • A site visit by a member of the landscape team should be arranged on completion of the works to ascertain if works have been completed to specification. 	
Further action/assessment required?	YES
<i>If yes, specify details</i>	
Site walkover required to establish hedgerow quality and whether an assessment is required.	

ECOLOGY AND NATURE CONSERVATION		
Assessment methodology:	A desktop study using the following data sources: Multi Agency Geographical Information for the Countryside (MAGIC) database http://www.magic.gov.uk/MagicMap.aspx	
Key baseline conditions:	<ul style="list-style-type: none"> • There are no SAC, SPA, Ramsar Sites or NR within 2km of the scheme. • There are two sections of the Epping Forest SSSI lying 1.1km north east of Site B. • The scheme requires the permanent removal of hedgerow, scrub and grass. • The works are planned to take place during the main bird nesting season. 	
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder 	
Temporary effects:	<ul style="list-style-type: none"> • Noise and vibration associated with the works may have a temporary negative effect on the surrounding local wildlife. • Disturbance of grass/vegetation and soils could have a negative impact on biodiversity. 	
Permanent effects:	<ul style="list-style-type: none"> • Loss of vegetation with a negative impact on biodiversity. 	
Mitigation / control measures:		
<ul style="list-style-type: none"> • The works which include vegetation clearance, are to be undertaken during the main bird nesting season (March – August Inclusive). The site therefore needs to be checked by an ecologist or a competent person for nesting birds before vegetation clearance takes place (contact environment.birmingham@amey.co.uk). Disturbance can include simple activities such as using a generator on site or vehicle activity. Buffer zones are recommended where possible to limit the amount of disturbance caused to any nesting birds within the vicinity of the works. • Vegetation clearance, if any, must be kept to a minimum. Allow vegetation to regenerate after works, where desirable, apply treatment to kill stumps where not required. • If contractors become aware of any protected species during the works, the works must stop and the Environment Team notified immediately. • If encountered, invasive plants should be handled in accordance with management guidance administered in relevant toolbox talks which should be delivered to all site workers prior to works. • Works must be undertaken in conjunction with BS5837:2005 – Trees in Relation to Construction. 		
Further action/assessment required?	YES	
<i>If yes, specify details</i>		
Nesting birds check before vegetation clearance		
This project requires Assessment of Implications on European Sites (AIES)?		NO

GEOLOGY, SOILS AND CONTAMINATED LAND	
Assessment methodology:	A desktop study was conducted utilising the British Geological Survey (BGS) Geology of Britain Interactive mapping tool: http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html
Key baseline conditions:	<ul style="list-style-type: none"> • Bedrock geology is indicated to be part of the London Clay Formation (Clay, Silt and Sand) which comprises sedimentary bedrock formed approximately 34 to 56 million years ago in the Palaeogene Period. • The scheme area is indicated to have no superficial deposits. • There are no geologically designated sites within the scheme extents. • The scheme involves excavation works and the site has been previously excavated. • Excavated materials will be retained on site – details to be confirmed.
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder
Temporary effects:	<ul style="list-style-type: none"> • Potential compaction of soil on grassland surrounding the sites from stored plant, machinery, vehicles and materials. • Disturbance to soil through works
Permanent effects:	<ul style="list-style-type: none"> • None predicted
Mitigation / control measures:	
<ul style="list-style-type: none"> • Excavated material should be reinstated to its original position if possible. • Stockpiles should be located away from the drainage system. 	
Further action/assessment required?	NO
<i>If yes, specify details</i>	

MATERIALS USE	
Assessment methodology:	Desktop study with reference to the information supplied within the Alert Form.
Key baseline conditions:	<ul style="list-style-type: none"> • Granular fill • VRS works – concrete and steel • Resurfacing – bitumen • The works are expected to exceed £500,000
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder

Temporary effects:	<ul style="list-style-type: none"> • None predicted
Permanent effects:	<ul style="list-style-type: none"> • Natural resource depletion including soils for rebuilding of ground conditions. • Carbon footprint of transporting materials to site.
Mitigation / control measures:	
<ul style="list-style-type: none"> • Use sustainably sourced materials where possible and appropriate. • It is Amey policy to reuse or recycle as much waste as practicable. 	
Further action/assessment required?	YES
<i>If yes, specify details</i>	
As the scheme exceeds £500,000 it is Amey best practice to produce a Materials and Resource Assessment.	

NOISE AND VIBRATION	
Assessment methodology:	Desktop study using Defra's First Priority Location maps http://archive.defra.gov.uk/environment/quality/noise/environment/actionplan/locations.htm
Key baseline conditions:	<ul style="list-style-type: none"> • There are no residential, agricultural, civil or commercial properties and no schools, hospitals or care homes within 300m of the scheme. The area surrounding the scheme comprises farmland. • The scheme is likely to significantly increase noise levels at nearby premises, during works only. • The scheme will significantly increase vibration levels. • The works will be taking place at night. • There are no First Priority Locations within the extent of the scheme.
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder
Temporary effects:	<ul style="list-style-type: none"> • There will be a temporary increase in noise levels in the area from the works, however noise emissions at the local scale will be intermittent, transient, temporary and short-lived.
Permanent effects:	<ul style="list-style-type: none"> • No permanent effects.
Mitigation / control measures:	
<ul style="list-style-type: none"> • Best practicable means of noise control, as described within BS 5228-1:2009 'Code of Practice for Noise and Vibration Control on Construction and Open Sites', should be implemented in order to minimise the risk of disturbance. The British Standard provides specific detail on suitable measures for noise control in respect to construction operations. • Operatives should receive training to effectively employ techniques to reduce noise. 	

<ul style="list-style-type: none"> • Unnecessary noise should be avoided when carrying out manual operations and when operating plant and equipment. • Regular monitoring (e.g. site walkover) should take place when noise and vibration activities are occurring. In the event that unacceptable noise or vibration is emanating from the site the operation must be modified and rechecked to verify that the corrective action has been effective. Actions to be considered include: <ul style="list-style-type: none"> ▪ Reduce operating hours. ▪ Reposition equipment. ▪ Change the method of working etc. 		
Further action/assessment required?		NO
<i>If yes, specify details</i>		

AFFECTS ON ALL TRAVELLERS		
Assessment methodology:	Desktop study with reference to the information supplied within the Alert Form.	
Key baseline conditions:	<ul style="list-style-type: none"> • The M11 at this location is a two lane motorway with national speed limit applying. • The Annual Average Daily Traffic flows (2000 – 2013) within the vicinity of the scheme is 67,200 signifying a high flow for a Trunk Road; • There are no accesses or junctions within the scheme extents. • There are no NMU facilities within each of the scheme extents. • The works will be to the NB carriageway of the M11. • Lane closures may affect local and through traffic. • The scheme is not regarded as an accident hot spot. • The works will be taking place at night. 	
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder 	
Temporary effects:	<ul style="list-style-type: none"> • Traffic management will result in temporary disruption to local and through traffic. The impact will be greater if the works are during the day. • Increased emissions in the area due to slow moving traffic. 	
Permanent effects:	<ul style="list-style-type: none"> • None predicted 	
Mitigation / control measures:		
<ul style="list-style-type: none"> • Warnings of road closures complete with signage should be given well in advance of works • If Traffic Management is required it should be planned to offer the best possible solution to avoid disruption. • Inform the emergency services of the works 		
Further action/assessment required?		NO

If yes, specify details

LAND USE		
Assessment methodology:	Desktop study	
Key baseline conditions:	<ul style="list-style-type: none"> The surrounding land use is arable with no residential properties within 300m. Works are to remediate the slope through stability measures. 	
Key construction activities:	<ul style="list-style-type: none"> CCTV drainage survey Restoration of failed soil materials in the uppermost 2m of embankment with granular materials Install erosion matting within upper failed section of embankment Repair any damaged kerbs adjacent to the hard shoulder Removal and replacement of existing VRS along NB verge Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder 	
Temporary effects:	<ul style="list-style-type: none"> No change in land use anticipated 	
Permanent effects:	<ul style="list-style-type: none"> No change in land use anticipated 	
Mitigation / control measures:		
None required		
Further action/assessment required?		NO
<i>If yes, specify details</i>		

EFFECTS ON THE COMMUNITY AND PRIVATE ASSETS	
Assessment methodology:	Desktop study
Key baseline conditions:	<ul style="list-style-type: none"> There are no residential, agricultural, civil or commercial properties and no schools, hospitals or care homes within 300m of the scheme. There are no NMU or community facilities within the scheme extents.

	<ul style="list-style-type: none"> • There is no community land within 300m of the scheme. • The planned work is not considered to have a high level of community interest. • Work will be conducted during the night • There will be no necessity to access private land during the works. • The scheme will not permanently adversely affect views from local properties. • Through/local traffic will be affected for a duration of 12 weeks.
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder
Temporary effects:	<ul style="list-style-type: none"> • The works will impact through and local traffic.
Permanent effects:	<ul style="list-style-type: none"> • None predicted
Mitigation / control measures:	
Provide advanced warning before the start of the works	
Further action/assessment required?	NO
<i>If yes, specify details</i>	

DRAINAGE AND THE WATER ENVIRONMENT	
Assessment methodology:	Desktop study using Environment Agency's Risk of Flooding from Rivers and Seas http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=e
Key baseline conditions:	<ul style="list-style-type: none"> • The proposed scheme is not located within an area that is potentially vulnerable to flooding. • Road drainage is via top entry road gullies adjacent to the carriageways. • There are no classified or unclassified surface water bodies sharing direct or indirect connectivity with the works area within 300m of the scheme.
Key construction activities:	<ul style="list-style-type: none"> • CCTV drainage survey • Restoration of failed soil materials in the uppermost 2m of embankment with granular materials • Install erosion matting within upper failed section of embankment • Repair any damaged kerbs adjacent to the hard shoulder • Removal and replacement of existing VRS along NB verge • Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder

Temporary effects:	<ul style="list-style-type: none"> Potential for spillage, leakage and/or seepage of fuels and oils associated with the plant escaping into the water environment.
Permanent effects:	<ul style="list-style-type: none"> None predicted
Mitigation / control measures:	
<ul style="list-style-type: none"> All gullies to be covered to prevent any material entering the gully pot. All liquid discharge should be collected and taken away to be treated before disposal at a licensed facility. Effluent from drainage cleaning to be disposed of off-site to ensure contamination does not occur. Best practice will be applied by referring to method statements and risk assessments for substances and materials used during construction. Spill kits must be available on site at all times and all subcontractors and personnel should be trained/briefed on Amey's Spillage Procedure. Comply with PPGs for working on or near water. 	
Further action/assessment required?	NO
<i>If yes, specify details</i>	

ENERGY AND LIGHTING	
Assessment methodology:	Desktop study
Key baseline conditions:	<ul style="list-style-type: none"> Works will take place during the night, so temporary task lighting will be required.
Key construction activities:	<ul style="list-style-type: none"> CCTV drainage survey Restoration of failed soil materials in the uppermost 2m of embankment with granular materials Install erosion matting within upper failed section of embankment Repair any damaged kerbs adjacent to the hard shoulder Removal and replacement of existing VRS along NB verge Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder
Temporary effects:	<ul style="list-style-type: none"> Temporary increase in energy consumption during the works.
Permanent effects:	<ul style="list-style-type: none"> None predicted
Mitigation / control measures:	
If appropriate, sustainable energy sources, e.g. LED should be considered.	
Further action/assessment required?	NO
<i>If yes, specify details</i>	

WASTE		
Assessment methodology:	Desktop study with reference to the information supplied within the Alert Form.	
Key baseline conditions:	<ul style="list-style-type: none"> The scheme will generate earth and planings waste. It is not anticipated to be hazardous. The scheme is expected to exceed £300,000. 	
Key construction activities:	<ul style="list-style-type: none"> CCTV drainage survey Restoration of failed soil materials in the uppermost 2m of embankment with granular materials Install erosion matting within upper failed section of embankment Repair any damaged kerbs adjacent to the hard shoulder Removal and replacement of existing VRS along NB verge Resurfacing of the main carriageway with Lanes 1 and 2 and the Hard Shoulder 	
Temporary effects:	<ul style="list-style-type: none"> If waste is generated and not contained and disposed of appropriately, it could lead to environmental harm. 	
Permanent effects:	<ul style="list-style-type: none"> As long as mitigation measures are followed no permanent effects are anticipated. 	
Mitigation / control measures:		
<ul style="list-style-type: none"> It is advised to follow Amey's Asbestos Procedure and use the Asbestos Checklist to assess any required asbestos management action. Effluent from drainage cleaning to be disposed of off – site to ensure contamination does not occur. All waste should be segregated appropriately and stored in a safe manner for duty of care compliance. Waste to be considered for reuse/recycling, suitable on and off site options should be considered, but must remain appropriate to the scheme value. All sub-contractors removing waste from site must possess a current Waste Carrier's Licence. Site's used for disposal / recycling of waste must be suitably licensed or exempt from this requirement. Waste transfer notes are required for all waste. Any hazardous waste should only be disposed of by a specialist waste contractor under a hazardous waste consignment note. 		
Further action / assessment required?		NO
Site Waste Management Plan recommended?	YES	
<i>If yes, specify details</i>		