



Environmental Scoping Assessment

	Name	Position	Date
Prepared by	CONFIDENTIAL	Graduate Environmentalist	21.07.15
Checked by	CONFIDENTIAL	Environmentalist	10.08.15
Received by	CONFIDENTIAL	Project Manager	11.08.15

Project No:	B54	Scheme Title:	Carterknowle
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Project description

Introduction:

As part of the Sheffield Streets Ahead (SSA) contract Amey has been tasked with highways works to renew and improve assets within the B54 Carterknowle zone. Works within the zone are proposed to include the following:

- Street lighting repairs, maintenance and the installation of new equipment
- Drainage repairs and maintenance
- Repairs to kerbs, edgings and channels
- Footway and carriageway repairs and maintenance (including re-surfacing)
- De-vegetation (including tree removals)

Project Location:

The B54 Carterknowle zone is located approximately 2.5km south west of Sheffield City Centre at National Grid Reference (NGR): SK334841. The zone encompasses the areas of Brincliffe and Carterknowle. Both Brincliffe and Carterknowle are mainly residential suburbs, hosting a few commercial properties. The landscape immediately surrounding the zone is urban in nature, featuring residential properties for 1.5km, before transforming into a more rural landscape approximately 1.5km west of the zone. Adjacent south of Brincliffe Edge Road is a small area of woodland forming part of the Brincliffe Edge Woods Local Wildlife Site (LWS). Please see Figures 1 and 2 for the location of the zone.

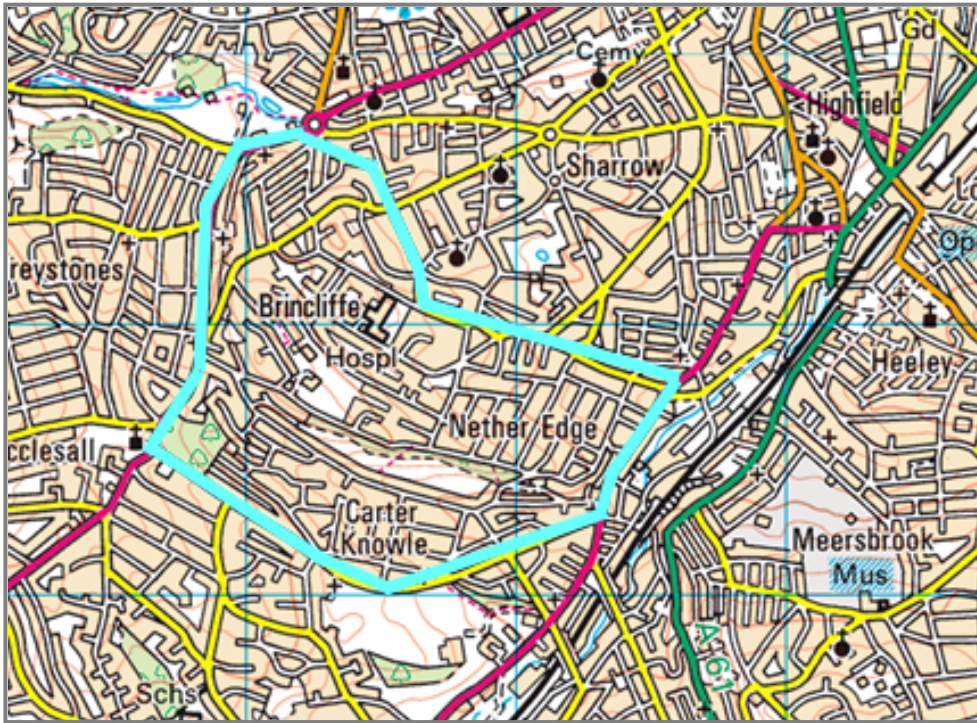


Figure 1. Location of the B54 Carterknowle zone.
Zone boundary: █

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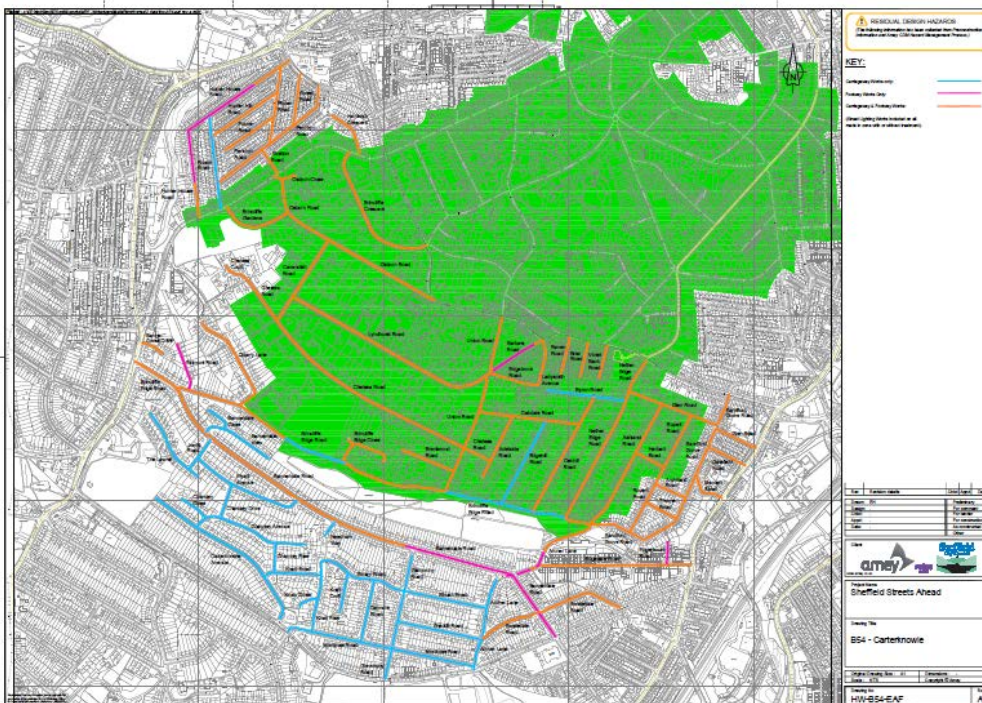


Figure 2. Roads involved in works within the B54 zone.
(Please see Appendix A for a full scale copy)

<p>Project Programme: Works within the B54 Carterknowle zone are proposed to commence on 07.03.16 for duration of 48 weeks. It is currently unknown whether night time works will be required.</p>		
<p>Traffic Management: Traffic management for the B54 Carterknowle zone is not currently planned. However, it is anticipated that road/lane closures will be required in some instances.</p>		
This project requires Screening Opinion (EIA Regulations)	YES	NO
This project requires a Record of Determination (Applicable to HA work only)	YES	NO
This project requires environmental permissions, licenses or consents? (ENVT-EnvtAssess-PL-02)	YES	NO
<ul style="list-style-type: none"> • <i>Sheffield City Council (SCC) Environmental Protection Service (eps.admin@sheffield.gov.uk) should be contacted regarding works taking place within the local AQMA. SCC Environmental Health Officer (airquality@sheffield.gov.uk) should be copied (cc'd) into the email to be informed of the works and this consultation. However, works within the B54 Carterknowle zone are not thought to be detrimental to the objectives of the AQMA. This consultation will not be undertaken by the environmental team.</i> • <i>SCC Conservation Officer and Planning Department must be contacted regarding works taking place within the Nether Edge Conservation Area. All materials and the scope/methods of works must be approved prior to works commencing. Please note that this will not be conducted by the environmental team.</i> • <i>An environmental site visit will be undertaken prior to works commencing, ensuring all environmental issues have been identified and mitigated for appropriately. This visit will include a ground inspection of all trees due to be felled, identifying any suitable bat roost potential. If potential bat roosts are identified, further survey works and mitigation measures will be recommended by the environmental team. Please note that bat survey works cannot commence until temperatures are consistently above 8°C. Works MUST NOT commence until the environmental team confirm it is safe to do so.</i> • <i>SCC should be contacted and working hours agreed. Any permits required with regard to noise must be obtained prior to works commencing. Section 61 – Noise and Air Quality may be required if works are taking place on a Sunday or bank holiday or outside of the hours of 7:30am to 6pm Monday to Friday or Saturday 8am to 1pm. Please note, this consultation and any necessary consent will not be carried out / obtained by the environmental team.</i> • <i>During the environmental site visit, acknowledgment of potential nocturnal species "hot spots" will be recorded and suggestions will be made to reduce the brightness of street lighting in these areas.</i> 		
<p>What statutory procedures are involved?</p>		
<p>A Site Waste Management Plan (SWP) is required as these works are predicted to cost in excess of £300,000.</p> <p>An Environmental Plan is required as works within the B54 Carterknowle zone are expected to cost in excess of £500,000.</p>		

IDENTIFICATION OF POTENTIAL ENVIRONMENTAL EFFECTS	
AIR QUALITY	
Assessment methodology:	An assessment of air quality was undertaken using data from the Department for Environment, Food and Rural Affairs (DEFRA) regarding the Sheffield Air Quality Management Area (AQMA). It was assessed how any decrease in air quality may impact on sensitive receptors located within 200m of the B54 one Mitigation measures have been formulated to help reduce any such effects.
Key baseline conditions:	<ul style="list-style-type: none"> • The B54 Carterknowle zone is located within the Sheffield Citywide Air quality Management Area (AQMA). The AQMA covers the city, hosting the major built up areas (which are now declared for annual 1- hour nitrogen dioxide objectives and the 24-hour PM10 subjective). Works within the B54 zone are not considered to be detrimental to the objectives of the AQMA due to the proposed works not being anticipated to significantly decrease air quality. • The following potential air quality sensitive receptors are located within 200m of the B54 zone: <ul style="list-style-type: none"> - Residencies - 8 educational buildings - 5 medical buildings - 4 care homes
Key construction activities:	<ul style="list-style-type: none"> • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) • De-vegetation (including tree removals)
Temporary effects:	<ul style="list-style-type: none"> • Dust levels may increase during the works period as a result of construction related activities. However, this is considered to be of little local significance due to the nature of the works. • Unpleasant odours and fumes may be produced as a result of construction activities such as re-surfacing. This effect is of a temporary nature and is not considered to be significant.
Permanent effects:	<ul style="list-style-type: none"> • Providing all mitigation measures are adhered to, no permanent effects are predicted.
Mitigation / control measures:	
<ul style="list-style-type: none"> • Best practicable means of working, according to the method statement should be applied to all materials used during construction. • The General Guide to the Prevention of Pollution (PPG1) should be adhered to. PPG1 includes, but is not limited to the following: <ul style="list-style-type: none"> - Dust suppression techniques should be applied if necessary: i.e. damp down using water, or if chemical additives or binders are being considered advice must be sought from the environmental regulator in advance. - If appropriate erect dust screens – especially when areas of work are located in close proximity to any of the sensitive receptors listed above. - Limit vehicle speeds on site - the slower the vehicles, the less dust generated. - Ensure all plant and vehicles are in good working order with an up-to-date maintenance log. - Ensure that engines are switched off when they are not in use - To avoid odours take account of wind conditions when arranging activities that are likely to emit aerosols, fumes, odours and smoke. • Works should be conducted according to an accredited environmental management system (ISO 	

14001).

Further action/assessment required?

YES

NO

Sheffield City Council (SCC) Environmental Protection Service (eps.admin@sheffield.gov.uk) should be contacted regarding works taking place within the local AQMA. SCC Environmental Health Officer (airquality@sheffield.gov.uk) should be copied (cc'd) into the email to be informed of the works and this consultation. However, works within the B54 Carterknowle zone are not thought to be detrimental to the objectives of the AQMA. This consultation will not be undertaken by the environmental team.

ARCHAEOLOGY AND CULTURAL HERITAGE

Assessment methodology:

An assessment of archaeology and cultural heritage was undertaken using data from the Multi Agency Geographic Information for the Countryside (MAGIC) and English Heritage. This data was then assessed in relation to the proposed works, determining how construction may impact on surrounding archaeological and cultural heritage features.

Key baseline conditions:

- MAGIC identified the following listed buildings/structures to be located within 300m of the B54 Carterknowle zone (*please note that those highlighted in bold are located directly adjacent to a road involved in the B54 works*):

Name of listed building/structure	Grade	Distance from the nearest road involved in the works (approx.)
The Edge	II	Located on Edgebrook Road
The Towers	II	Located on Brincliffe Crescent
Woodside House	II	Located on Brincliffe Edge Road
Abbeydale House	II	107m south east of Swaledale Road
Banner Cross Hall	II	Located adjacent west of Carterknowle Avenue
Church of St Andrew	II	130m north east of Brincliffe Crescent
Hunters Bar Toll Gate	II	56m north of Hunter House Road
Church Of St Augustine	II	221m north east of Hunter House Road
Abbeydale Picture House	II	174m north east of Sheldon Road
14 Ecclesall Road South	II	Located adjacent west of Carterknowle Avenue
Sewer Gas Destructor Lamp	II	78m east of Hunter House Road
Carter Knowle Junior School	II	106m south east of Swaledale Road
George Woofindin Almshouses	II	157m north east of Hunter House Road
Succah 2 Metres South West Of Synagogue	II	289m north east of Hunter House Road

	Pavilion and Lodge at East Entrance to Park	II	86m north west of Hunter House Road
	Nether Edge Hospital, Kingswood Building	II	Loacted on Union Road
	Union Hotel And Adjoining Boundary Wall	II	Located on Osborn Road
	Statue of Queen Victoria at South East End of Park	II	126m north west of Hunter House Road
	Boundary Wall and Railing at Carter Knowle Junior School	II	83m south of Swaledale Road
	Caretakers House at Carter Knowle Junior School	II	99m south of Swaledale Road
	Right Lodge At Entrance To Nether Edge Hospital	II	Located on Union Road
	Left Lodge At Entrance To Nether Edge Hospital	II	Located on Union Road
	Sewer Gas Lamp Opposite Junction With Union Road	II	Loacted on Brincliffe Edge Road
	Ice House 150 Metres South East of Banner Cross Hall	II	Located adjacent west of Carterknowle Avenue
	Terrace Wall To South And East Of Banner Cross Hall	II	Located adjacent west of Carterknowle Avenue
	Jubilee Monument and Railing in Centre of Endcliffe Park	II	214m north west of Hunter House Road
	Boundary Wall and Gates at George Woofindin Almshouses	II	197m north east of Hunter House Road
	Bridge and Lamp 12 Metres South West of George Woofindin Almshouses	II	121m north east of Hunter House Road
	Lodge To The Towers And Adjoining Boundary Wall And Gate Piers	II	Located on Brincliffe Crescent
	Rubble Boundary Wall To West And South Of Banner Cross Hall	II	Located adjacent west of Carterknowle Avenue
	Banner Cross Methodist Church And Attached Rooms And Schoolroom	II	62m south west of Brincliffe Edge Road
	Boundary Wall And Gate Piers To East And South Of Banner Cross Methodist Church	II	Located adjacent west of Brincliffe Edge Road
	<ul style="list-style-type: none"> • The Porter Valley Parks Registered Park and Garden is located approximately 75m north west of Hunter House Road. • North of Bannerdale Road, west of Sandford Grove Road and east of Penrhyn Road are located within the Nether Edge Conservation Area. • There are no Scheduled Ancient Monuments (SAMs) or Registered Battlefields located within 300m of the B54 Carterknowle zone. 		
Key construction activities:	<ul style="list-style-type: none"> • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) 		

	<ul style="list-style-type: none"> De-vegetation (including tree removals) 		
Temporary effects:	<ul style="list-style-type: none"> High vibration works taking place within close proximity to listed buildings/structures should be aware that works of this nature can cause damage to these features. The Nether Edge Conservation Area will experience minor aesthetic changes as a result of the presence of plant, machinery and vehicles within the Conservation Area during the works period. 		
Permanent effects:	<ul style="list-style-type: none"> There is the potential for works to result in negative aesthetic alterations to the Nether Edge Conservation Area if all mitigation measures are not adhered to. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> Where high vibration works are to occur the owners of all listed buildings/structures located on a road involved in the works (those highlighted in bold above) should be contacted and the state of the feature pre-construction noted. These features should then be monitored both during and post construction. All on site workers should be made aware of the location of the listed buildings/structures located directly on roads involved in the works and the Nether Edge Conservation area. The cultural heritage value of these features should be highlighted. Works here must be undertaken in a sensitive manner, ensuring damage does not result to these features All works within the Nether Edge Conservation Area must have their scope and materials approved by SCC Conservation Officer and planning department prior to works commencing. All on site staff must be aware of the location of these Conservation Areas. 			
Further action/assessment required?	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO		
<p><i>SCC Conservation Officer and Planning Department must be contacted regarding works taking place within the Nether Edge Conservation Area. All materials and the scope/methods of works must be approved prior to works commencing. Please note that this will not be conducted by the environmental team.</i></p>			

LANDSCAPE	
Assessment methodology:	The landscape surrounding the B54 Carterknowle zone was assessed using data from Natural England and google maps. This information was then used to build a picture of the landscape surrounding the zone, and how this may be affected by the proposed maintenance works.
Key baseline conditions:	<ul style="list-style-type: none"> The B54 Carterknowle zone is located approximately 2.5km south west of Sheffield City Centre. The zone encompasses the areas of Brincliffe and Carterknowle. Both Brincliffe and Carterknowle are mainly residential suburbs, hosting a few commercial properties. The landscape immediately surrounding the zone reflects the urban nature, featuring residential properties for 1.5km, before meeting a much more rural landscape approximately 1.5km west of the zone. A large open space is located adjacent south of the zone. Adjacent south of Brincliffe Edge Road is a small area of woodland and adjacent north is Chelsea Park. The B54 zone is not located within an Area of Outstanding Natural Beauty (AONB) or a National Park.
Key construction activities:	<ul style="list-style-type: none"> Street lighting repairs, maintenance and the installation of new equipment Drainage repairs and maintenance Repairs to kerbs, edgings and channels Footway and carriageway repairs and maintenance (including re-surfacing) De-vegetation (including tree removals)

Temporary effects:	<ul style="list-style-type: none"> Works have the potential to result in temporary aesthetic alterations as a result of the presence of plant, machinery and vehicles during the works period. 		
Permanent effects:	<ul style="list-style-type: none"> Works in the B54 Carterknowle zone will slightly alter the aesthetics of the surrounding environment, such as new kerbing, re-surfacing and the installation of new street lighting equipment. However, these improvement alterations are thought to have positive aesthetic changes within the zone. Tree removals may cause minor aesthetic changes due to mature trees being replaced with younger trees. However the trees which are re-planted will be better suited to the location (with regards to size etc.) and/or will be in better health/condition than existing trees. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> The duration that plant, machinery and vehicles are located on site should be limited to the shortest possible duration. These features should not be stored on soft estate; hard standing should be used to prevent soil compaction. Nothing should be stored within the root protection zone of trees; this can prove detrimental to their future health. Every tree which is removed should be replaced, ensuring no net loss. Re-planting can occur at new locations if deemed necessary. The arboriculturist team should advise on the most appropriate species and location for re-planting. 			
Further action/assessment required?	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">YES</td> <td style="text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		

ECOLOGY AND NATURE CONSERVATION																							
Assessment methodology:	An assessment of Ecology and Nature Conservation was conducted using data from Sheffield Biological Records Centre (SBRC 2014) and MAGIC. This data was interpreted, understanding how the surrounding fauna and flora may be affected by the proposed works. Mitigation measures have been suggested to help reduce any such damage.																						
Key baseline conditions:	<ul style="list-style-type: none"> The following ecologically designated sites are located within 2km of the B54 Carterknowle zone (<i>please note that Local Wildlife Sites (LWS) and Biodiversity Action Plan (BAP) Target Sites are only considered where they lie directly adjacent to a road involved in the B54 works</i>): <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">Name of ecologically designated site</th> <th style="text-align: center;">Type of designation</th> <th style="text-align: center;">Distance from the nearest road involved in the works (approx.)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Gleadless Valley</td> <td style="text-align: center;">Local Nature Reserve (LNR)</td> <td style="text-align: center;">1.8km south west of Edgedale Road</td> </tr> <tr> <td style="text-align: center;">Sunnybank</td> <td style="text-align: center;">Local Nature Reserve (LNR)</td> <td style="text-align: center;">1.3km north east of Brincliffe Crescent</td> </tr> <tr> <td style="text-align: center;">Porter Valley Woodlands</td> <td style="text-align: center;">Local Nature Reserve (LNR)</td> <td style="text-align: center;">0.2km north west of Hunter House Road</td> </tr> <tr> <td style="text-align: center;">Ecclesall Woods</td> <td style="text-align: center;">Local Nature Reserve (LNR)</td> <td style="text-align: center;">1.1km south west of Carterknowle Avenue</td> </tr> <tr> <td style="text-align: center;">Sheffield General Cemetery</td> <td style="text-align: center;">Local Nature Reserve (LNR)</td> <td style="text-align: center;">0.8km north east of Brincliffe Crescent</td> </tr> <tr> <td style="text-align: center;">Sharrow School Green Roof</td> <td style="text-align: center;">Local Nature Reserve (LNR)</td> <td style="text-align: center;">1km north east of Nether Edge Road</td> </tr> </tbody> </table>		Name of ecologically designated site	Type of designation	Distance from the nearest road involved in the works (approx.)	Gleadless Valley	Local Nature Reserve (LNR)	1.8km south west of Edgedale Road	Sunnybank	Local Nature Reserve (LNR)	1.3km north east of Brincliffe Crescent	Porter Valley Woodlands	Local Nature Reserve (LNR)	0.2km north west of Hunter House Road	Ecclesall Woods	Local Nature Reserve (LNR)	1.1km south west of Carterknowle Avenue	Sheffield General Cemetery	Local Nature Reserve (LNR)	0.8km north east of Brincliffe Crescent	Sharrow School Green Roof	Local Nature Reserve (LNR)	1km north east of Nether Edge Road
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	Brincliffe Edge Road	Local Wildlife Site (LWS)	Adjacent south of Brincliffe Edge Road																								
	<ul style="list-style-type: none"> • There are no National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar sites located within 2km of the B54 zone. • There are no Wetlands, Grasslands, Heathlands or Woodlands BAP Target sites located adjacent to a road involved in the works. • There are records of the following species located within 2km of the B54 Carterknowle zone (SBRC, 2014 and SSA, 2014): 																										
	<table border="1"> <thead> <tr> <th data-bbox="411 680 751 712">Species</th> <th data-bbox="751 680 1090 712">Location (approx.)</th> </tr> </thead> <tbody> <tr> <td data-bbox="411 712 751 969" rowspan="3">Newt <i>(Pleurodelinae)</i></td> <td data-bbox="751 712 1090 808">Palmate Newt <i>(Lissotriton helveticus)</i></td> <td data-bbox="1090 712 1439 808">0.2km north west of Hunter House Lane, Rustlings Road</td> </tr> <tr> <td data-bbox="751 808 1090 875">Smooth Newt <i>(Lissotriton vulgaris)</i></td> <td data-bbox="1090 808 1439 875">1.2km south west, Millhouses Park</td> </tr> <tr> <td data-bbox="751 875 1090 969">Great Crested Newt <i>(Triturus cristatus)</i></td> <td data-bbox="1090 875 1439 969">1.2km north east of Osborne Road, Nether Edge</td> </tr> <tr> <td data-bbox="411 969 751 1037">Crayfish <i>(Astacoidea)</i></td> <td data-bbox="751 969 1090 1037">White Clawed Crayfish <i>(Austropotamobius pallipes)</i></td> <td data-bbox="1090 969 1439 1037">0.2km south east of Marden Road, River Sheaf</td> </tr> <tr> <td data-bbox="411 1037 751 1104">Water Vole <i>(Arvicola amphibious)</i></td> <td data-bbox="751 1037 1090 1104">N/A</td> <td data-bbox="1090 1037 1439 1104">1.2km south west, Millhouses Park</td> </tr> <tr> <td data-bbox="411 1104 751 1424" rowspan="4">Bats <i>(Chiroptera)</i></td> <td data-bbox="751 1104 1090 1171">Myotis (unidentified)</td> <td data-bbox="1090 1104 1439 1171"></td> </tr> <tr> <td data-bbox="751 1171 1090 1238">Pipistrelle <i>(Pipistrellus pipistrellus)</i></td> <td data-bbox="1090 1171 1439 1238">0.5km east of Glen Road, Meersbrook Park</td> </tr> <tr> <td data-bbox="751 1238 1090 1305">Daubenton's <i>(Myotis daubentonii)</i></td> <td data-bbox="1090 1238 1439 1305">1.1km west of Hunter House Road, Porter Valley</td> </tr> <tr> <td data-bbox="751 1305 1090 1424">Noctule <i>(Nyctalus noctula)</i></td> <td data-bbox="1090 1305 1439 1424">0.8km north east of Brincliffe Crescent, Sheffield General Cemetery</td> </tr> </tbody> </table>			Species	Location (approx.)	Newt <i>(Pleurodelinae)</i>	Palmate Newt <i>(Lissotriton helveticus)</i>	0.2km north west of Hunter House Lane, Rustlings Road	Smooth Newt <i>(Lissotriton vulgaris)</i>	1.2km south west, Millhouses Park	Great Crested Newt <i>(Triturus cristatus)</i>	1.2km north east of Osborne Road, Nether Edge	Crayfish <i>(Astacoidea)</i>	White Clawed Crayfish <i>(Austropotamobius pallipes)</i>	0.2km south east of Marden Road, River Sheaf	Water Vole <i>(Arvicola amphibious)</i>	N/A	1.2km south west, Millhouses Park	Bats <i>(Chiroptera)</i>	Myotis (unidentified)		Pipistrelle <i>(Pipistrellus pipistrellus)</i>	0.5km east of Glen Road, Meersbrook Park	Daubenton's <i>(Myotis daubentonii)</i>	1.1km west of Hunter House Road, Porter Valley	Noctule <i>(Nyctalus noctula)</i>	0.8km north east of Brincliffe Crescent, Sheffield General Cemetery
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Temporary effects:	<ul style="list-style-type: none"> • Temporary disruptions in the form of noise, vibrations and disturbances to vegetation may result for ecologically designated sites located within 2km of the B54 zone. Particular care must be taken when working adjacent to the Brincliffe Edge Road LWS. • Habitats may experience short-lived disruptions during the works period. 																										
Permanent effects:	<ul style="list-style-type: none"> • There is the potential for a loss of biodiversity as a result of the works if all mitigation measures are not adhered to. 																										
Mitigation / control measures:																											

<ul style="list-style-type: none"> All vegetation clearance should be undertaken outside of the bird nesting season, which generally runs between March and August (inclusive). Where this is not possible, all vegetation should be thoroughly inspected for nesting birds immediately prior to removals commencing. If nesting birds are identified, works must cease immediately and a member of the environmental team contacted for further advice. Every tree which is removed should be replaced; ensuring no net loss. Re-planting can occur at new locations if deemed necessary. The arboriculturist team should advise of the most appropriate species and location for re-planting. Tree Preservation Orders (TPOs) should be checked prior to any felling commencing. This cannot be currently conducted as the precise location of individual trees is unknown. This will not be conducted by the environmental team. If any invasive/injurious plants are identified during the works period, construction should attempt to not come into contact with these. Where contact cannot be avoided, all invasive/injurious plants should be handled, stored and disposed of as controlled/hazardous waste (depending on the treatment method) in accordance with relevant legislation. If any protected species are identified during the works period, construction should cease immediately and a member of the environmental team contacted for further advice. Toolbox talks should be given to on site staff, informing them of the precautions to be taken should any invasive/injurious plants and/or protected species be identified during the works period. The environmental site notes will detail specific details of toolbox talks. All materials and waste should be stored on hard-standing to prevent soil compaction and any unnecessary disturbances to flora. The grass verges surrounding LWS must be treated as buffer zones to the sites; nothing must be stored within these areas. 		
Further action/assessment required?	YES	NO
<p><i>An environmental site visit will be undertaken prior to works commencing, ensuring all environmental issues have been identified and mitigated for appropriately. This visit will include a ground inspection of all trees due to be felled, identifying any suitable bat roost potential. If potential bat roosts are identified, further survey works and mitigation measures will be recommended by the environmental team. Please note that bat survey works cannot commence until temperatures are consistently above 8°C. Works MUST NOT commence until the environmental team confirm it is safe to do so.</i></p>		
This project requires Assessment of Implications on European Sites (AIES)?	YES	NO

GEOLOGY, SOILS AND CONTAMINATED LAND	
Assessment methodology:	Geology and soils were assessed using the Geology of Britain viewer and information provided by the lead designer regarding any proposed excavation works. These two coupled were then used to identify whether geology and soils may be affected by the proposed works within the B54 Carterknowle zone.
Key baseline conditions:	<ul style="list-style-type: none"> The Geology of Britain Viewer identified the geology underlying the B54 Carterknowle zone as: <ul style="list-style-type: none"> Pennine Lower Coal Measures Formation – Mudstone, Siltstone, Sandstone, Coal, Ironstone and Ferricrete. Sedimentary bedrock formed approximately 312-313 million years ago during the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas. Minor excavations are proposed to occur as part of the works within the B54 zone. Where street lighting columns are located on grass verge these will require excavating in order to install the new equipment. All excavations will be taking place on previously excavated highways land.

Key construction activities:	<ul style="list-style-type: none"> • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) • De-vegetation (including tree removals) 		
Temporary effects:	<ul style="list-style-type: none"> • De-vegetation may result in a minor disturbance to top soils. • Grass verges and cable trenches which require excavating in order to install new equipment will suffer disturbances. • All excavations are occurring on previously excavated highways land and are therefore not considered significant. • Re-surfacing works may include the planing of carriageways and footways which have the potential to produce tar bound waste. Should tar be identified, this should be handled, stored and disposed of as hazardous waste. 		
Permanent effects:	<ul style="list-style-type: none"> • Where re-surfacing works produce tar bound materials these must be handled, stored and disposed of as hazardous waste in accordance with relevant legislation. Where tar is identified these materials will not be available for re-use 		
Mitigation / control measures:			
<ul style="list-style-type: none"> • All plant, machinery and vehicles should be stored on hard standing to avoid soil compaction. • Where excavations are required to facilitate street lighting works these should be kept as small as possible, reducing damages to geology and soils. • All carriageways and footways to be excavated should be core tested for tar prior to works commencing. Where tar bound materials are identified these must be handled, stored and disposed of as hazardous waste in accordance with relevant legislation (Hazardous Waste Act 2005). 			
Further action/assessment required?	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO		

MATERIALS USE	
Assessment methodology:	Materials used and waste resulting from construction were assessed using information from the Environmental Alert Form (EAF) provided to the environmental team by the lead designer. All waste was then considered in terms of potential impacts on the environment. Mitigation measures aim to reduce the amount of waste resulting in landfill and the associated environmental impacts/costs.
Key baseline conditions:	<ul style="list-style-type: none"> • Waste produced as a result of construction may include the following: <ul style="list-style-type: none"> - Green waste – resulting from de-vegetation. If any invasive/injurious plants are identified these must be handled, stored and disposed of in accordance with relevant legislation. - Concrete/hard core - Planings – all materials must be core tested for tar prior to works commencing. - Electrical Waste - Any electrical street lighting waste produced must be stored and disposed of separately as Waste Electrical and Electronic Equipment (WEEE) waste in accordance with relevant legislation.
Key construction activities:	<ul style="list-style-type: none"> • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) • De-vegetation (including tree removals)
Temporary effects:	<ul style="list-style-type: none"> • Use of oil • Use of fuel • Use of carbon intensive materials

	<ul style="list-style-type: none"> • Use of materials which are not locally sourced • Emissions to land/sea/air resulting from the transportation of workers, materials and waste to and from site. 		
Permanent effects:	<ul style="list-style-type: none"> • Depletion of natural resources. • Production of waste which may be required to go to landfill. • Where tar bound materials are identified these will require disposing of in accordance with relevant legislation. • Potential for the production of invasive/injurious plant waste which will require disposing of as controlled/hazardous waste (depending on the treatment method) in accordance with relevant legislation. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> • Materials should be sourced locally where possible, reducing the associated transportation costs. • The whole life cost of materials and recycled alternatives should be considered at the design stage where they are available. Foamix should be considered as an alternative to bituminous materials. • Where possible, materials already located on site should be re-used. For example, where materials have been excavated during street lighting works, this material should be re-used to back fill the excavation area surrounding the new street lighting column. Be aware that this cannot occur if the materials are tar bound. • Waste should not be stored on site. Where this is not possible, all waste should be separated and stored away from areas which discharge directly to the water environment and must be stored on hard standing. • All sub-contractors removing waste from site must possess a current waste carriers license. • All waste disposal sites must be appropriately licensed. • Waste management should be in accordance with Amey policy – PLC-ENVT-WASTE-PR-01. • All planings should be tested determining whether the materials contained are hazardous or not. If tar bound materials are identified, these must be handled, stored and disposed of as hazardous waste in accordance with relevant legislation. • All WEEE must be stored and disposed of separately in accordance with relevant legislation. Where possible WEEE should be recycled and re-used in accordance with relevant legislation. (Please refer to WEEE Regulations 2013: government guidance notes). 			
Further action/assessment required?	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO		

NOISE AND VIBRATION	
Assessment methodology:	Noise and vibrations were assessed in terms of the effects of any increase from baseline noise levels on sensitive receptors located within 300m of the B54 zone. It was assessed what effect any increase in noise and/or vibrations would have on these features. Mitigation measures have been suggested which will reduce any such effects.
Key baseline conditions:	<ul style="list-style-type: none"> • The following noise and vibration sensitive receptors are located within 300m of the B54 Carterknowle zone: <ul style="list-style-type: none"> - Residencies - 10 educational buildings - 5 medical buildings - 5 care homes - 10 places of worship • Baseline noise levels within the zone will be largely influenced by the type and volume of traffic using the roads within the zone.

Key construction activities:	<ul style="list-style-type: none"> • Site set-up • Arrival/departure of workers, materials and waste • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) • De-vegetation (including tree removals) 		
Temporary effects:	<ul style="list-style-type: none"> • Noise and vibrations are likely to increase above baseline levels during the works period only. • Site set-up, the arrival/departure of workers, materials and waste and general construction activities may increase congestion and consequently noise levels. 		
Permanent effects:	<ul style="list-style-type: none"> • The re-surfacing of carriageways has the potential to result in a decrease in baseline noise levels within the B54 zone. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> • Noise and vibrations should be kept as low as feasibly possible; reducing the effect of exacerbated noise levels on sensitive receptors located in close proximity. Where appropriate acoustic sound barriers should be used to shield nearby sensitive receptors from increased noise levels. • Where high vibration works are occurring in close proximity to listed buildings/structures (see Chapter 2) the owners of these features should be contacted and the state pre-construction noted. These features should then be monitored both during and post construction. • Works within the B54 Carterknowle zone must be carried out in accordance with BS5228: Noise and Vibration Control on construction and open sites. • All local residents and businesses should be made aware of the works prior to them commencing. This should include a start date and likely duration. 			
Further action/assessment required?	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">YES</td> <td style="text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
<p><i>SCC should be contacted and working hours agreed. Any permits required with regard to noise must be obtained prior to works commencing. Section 61 – Noise and Air Quality may be required if works are taking place on a Sunday or bank holiday or outside of the hours of 7:30am to 6pm Monday to Friday or Saturday 8am to 1pm. Please note, this consultation and any necessary consent will not be carried out / obtained by the environmental team.</i></p>			

EFFECTS ON ALL TRAVELLERS	
Assessment methodology:	The potential effects of the proposed works within the B54 Carterknowle zone on travellers were assessed using google maps. It was identified what roads within the zone could be used for, and how works may affect road users during and post construction. Mitigation measures were adopted, keeping disruptions for the road user to a minimum.
Key baseline conditions:	<ul style="list-style-type: none"> • Works within the B54 Carterknowle zone are only occurring on residential roads, no A or B roads. Roads within the zone provide access to and from suburbs areas and also to the A625 Ecclesall Road and the A621 Abbeydale Road which provide access to the city centre. • Multiple sensitive receptors and commercial properties are accessed via the roads within the zone. The roads within the zone also provide through route access to neighbouring suburbs (e.g. Millhouses). • Disruptions to the following features may be experienced during the works period: <ul style="list-style-type: none"> - Bus stops/shelters - Local traffic - Through traffic

Key construction activities:	<ul style="list-style-type: none"> • Site set-up • Arrival/departure of workers, materials and waste • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) • De-vegetation (including tree removals) 		
Temporary effects:	<ul style="list-style-type: none"> • Buses, local and through traffic may experience disruptions as a result of construction activities during the works period. • The arrival/departure of workers, materials and waste may increase congestions, adding to journey times. • Traffic management and/or lane closures have the potential to increase journey times. 		
Permanent effects:	<ul style="list-style-type: none"> • Works within the B54 Carterknowle zone (installation of new street lighting equipment, use of new kerbing, drainage repairs and improvements and re-surfacing works) will lead to a safer, more aesthetically pleasing road network which is considered a positive effect for road users within the B54 zone. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> • All local residents and businesses should be made aware of the works prior to them commencing. This should include a start date and likely duration. Details of any road/lane closures should be provided during this consultation. • Should roads require closure during the works period, this should be highlighted in advance and the provision of alternative routes provided. Where on-street parking is to be restricted this should be highlighted in advance, allowing alternative parking arrangements to be made. • Works surrounding features which experience high volumes of traffic at certain times of the day (for example schools) should avoid taking place at these peak times. This will help avoid construction related congestion. Consultation with these features prior to works commencing is key. • Working hours should be agreed with SCC in advance and strictly adhered to. • All traffic management should be in accordance with the Department for Trade and Industry (DTI) – Chapter 8, Traffic Signs and Safety Manual for Road Works and Temporary Structures. 			
Further action/assessment required?	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO		

EFFECTS ON THE COMMUNITY AND PRIVATE ASSETS	
Assessment methodology:	Effects on the community were determined by analysing the location of sensitive receptors, community facilities and the alignment of roads. These were then interpreted, anticipating potential effects on the community and private assets. Mitigation measures have been formulated to minimise potential disruptions.
Key baseline conditions:	<ul style="list-style-type: none"> • Works within the B54 Carterknowle zone are only occurring on residential roads, no A or B roads. Therefore, it is likely that sensitive receptors and private assets will experience some level of disruption as a result of the B54 works. • Roads within the zone provide access to residencies, commercial properties and other sensitive receptors, between suburbs and towards Sheffield City Centre. • Nether Edge Hospital is located on Osbourn Road, within the B54 works. • It is likely that the following community features and private assets may experience disruptions during the works period: <ul style="list-style-type: none"> - Residencies - 10 educational buildings - 5 medical buildings - 5 care homes

	<ul style="list-style-type: none"> - 10 places of worship - Public call boxes - Bus stops/shelters - Post boxes - Public rights of way <ul style="list-style-type: none"> • On-street parking is present on some of the roads involved in the works within the B54 zone. 		
Key construction activities:	<ul style="list-style-type: none"> • Site set-up • Arrival/departure of workers, materials and waste • Street lighting repairs, maintenance and the installation of new equipment • Drainage repairs and maintenance • Repairs to kerbs, edgings and channels • Footway and carriageway repairs and maintenance (including re-surfacing) • De-vegetation (including tree removals) 		
Temporary effects:	<ul style="list-style-type: none"> • Access to the community features/private assets listed above may be restricted during the works period. • The arrival/departure of workers, materials and waste may increase congestions, adding to journey times. 		
Permanent effects:	<ul style="list-style-type: none"> • Works within the B54 Carterknowle zone will result in positive structural and aesthetic improvements; a positive for the local community. • New street lighting equipment and re-surfaced footways will increase safety for pedestrians within the B54 zone. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> • Access to residential properties should be maintained at all times throughout the works period. • Should roads require closure during the works period, this should be highlighted in advance and the provision of alternative routes provided. Where on-street parking is to be restricted this should be highlighted in advance, allowing alternative parking arrangements to be made. • A safe pedestrian passageway should be maintained at all times throughout the works period. • Consultation should be held with schools and places of worship; ensuring the best working times are established around these features. • All traffic management should be in accordance with the Department for Trade and Industry (DTI) – Chapter 8, Traffic Signs and Safety Manual for Road Works and Temporary Structures. 			
Further action/assessment required?	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">YES</td> <td style="width: 50%;">NO</td> </tr> </table>	YES	NO
YES	NO		

DRAINAGE AND THE WATER ENVIRONMENT	
Assessment methodology:	Drainage and the water environment were assessed using data from the Environment Agency. The data was assessed to understand the baseline fluvial conditions and how the B54 Carterknowle zone area may be affected by flooding. Mitigation measures have been suggested to help reduce the impacts of works on the water environment and local drainage systems.
Key baseline conditions:	<ul style="list-style-type: none"> • The River Sheaf watercourse is located approximately 60m south west of Glen Road and the Porter Brook watercourse is located approximately 100m north of Hunter House Road. • The south eastern extents of Marden Road, Gatefield Road and Glen Road are classified by the EA as at a medium risk of flooding from rivers. • The entire B54 zone is not classified by the EA as at risk of flooding from reservoirs. • The B54 Carterknowle zone is not located within a Ground Water Source

	<p>Protection Zone (SPZ) or on an aquifer of Superficial Deposits Designation.</p> <ul style="list-style-type: none"> The entire B54 zone is located on a Secondary A aquifer of Bedrock Deposits Designation and on a minor aquifer of high vulnerability. 		
Key construction activities:	<ul style="list-style-type: none"> Street lighting repairs, maintenance and the installation of new equipment Drainage repairs and maintenance Repairs to kerbs, edgings and channels Footway and carriageway repairs and maintenance (including re-surfacing) De-vegetation (including tree removals) 		
Temporary effects:	<ul style="list-style-type: none"> There is the potential for accidental spills or leaks of materials to enter nearby water bodies and drainage systems; resulting in pollution. Materials such as epoxy resin have the potential to cause vast pollution should they enter drainage systems/water bodies. 		
Permanent effects:	<ul style="list-style-type: none"> Providing all mitigation measures are adhered to, no permanent effects are predicted in relation to the water environment. 		
Mitigation / control measures:			
<ul style="list-style-type: none"> Best practicable means of working, according to the method statement should be applied to all materials used during construction. The General Guide to the Prevention of Pollution (PPG1) should be adhered to. Waste/materials should not be stored on site. Where this is not possible, all waste should be separated and stored away from areas which discharge directly to the water environment. Wash waters must be caught and not allowed to enter the Sheffield and Tinsley Canal watercourse. If fuel and/or oil are to be stored on site this should be in accordance with the Control of Pollution (Oil Storage) England Regulations 2001. Dealing with spills (PPG22) should be adhered to. The contractor undertaking the works should have an emergency response plan in the event of an environment incident. Spill kits should be available on site and personnel trained in their use. All environmental incidents should be reported the Environment Agency's Emergency Hotline on 0800 807 060. All open drainage features should be covered during re-surfacing works; preventing potentially polluting substances entering drainage systems and consequently water bodies. This will also help reduce the risk of materials entering surface drains and causing blockages. 			
Further action/assessment required?	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">YES</td> <td style="width: 50%;">NO</td> </tr> </table>	YES	NO
YES	NO		

ENERGY AND LIGHTING	
Assessment methodology:	Energy and lighting were assessed in terms of the installation of new street lighting equipment. It was assessed how changes in street lighting may affect B54 Carterknowle zone. Mitigation measures have been formulated to reduce any anticipated negative impacts.
Key baseline conditions:	<ul style="list-style-type: none"> All roads within the B54 Carterknowle zone will be subject to the installation of new street lighting columns. Existing street lighting is in the form of Low Pressure Sodium (SOX) and High Pressure Sodium (SON) lighting. Existing street lights will be replaced with white light source (Colour Rendering Ra >60) LED lighting.
Key construction activities:	<ul style="list-style-type: none"> Removal of existing sodium street lighting equipment Installation of new street lighting equipment. Excavations associated with the removal of existing columns, installation of new columns and cable trenching (some of these excavations may be occurring within grass verge areas).

Temporary effects:	<ul style="list-style-type: none"> • Footways may be obstructed during the installation of the new equipment. • Where existing columns are located in grass verges these will require excavating in order to remove the old street lights and fit the new street lighting equipment. Excavations taking place within soft estate are likely to disturb flora. 	
Permanent effects:	<ul style="list-style-type: none"> • Lower carbon emissions resulting from reduced energy consumption. • The installation of the new LED lighting will result in a significant energy saving. • Less light pollution due to a more direct light source with the LED lights. • New LED lighting has the potential to cause habitat corridor barriers for nocturnal (light sensitive) species. However please note that new LED lighting is only being installed where street lighting already exists. • A change in lighting may impact nocturnal animal activity/feeding behaviour. 	
Mitigation / control measures:		
<ul style="list-style-type: none"> • Known "hotspot" areas for nocturnal species which are light sensitive could use a lower brightness, avoiding disruptions for nocturnal animals. The new LED lighting equipment being installed has the capability of being dimmed in specific areas/on specific streets. • All excavations are occurring on previously excavated highways land, and are therefore not considered significant. • If any burrows are identified within close proximity to proposed excavated areas, works should stop immediately and the environmental team contacted to undertake further inspections. 		
Further action/assessment required?	<p style="text-align: center;">YES</p>	<p style="text-align: center;">NO</p>
<p><i>During the environmental site visit, acknowledgment of potential nocturnal species "hot spots" will be recorded and suggestions will be made to reduce the brightness of street lighting in these areas.</i></p>		