TRANSPORT

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On behalf of
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Report

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May 2024

NORTH HYKEHAM RELIEF ROAD
NHRR MATERIAL MANAGEMENT PLAN

TRANSPORT

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NHRR MATERIAL MANAGEMENT PLAN

Project name	**North Hykeham Relief Road**
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Recipient	**Balfour Beatty & Lincolnshire County Council**
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Checked by	**PF**
Approved by	**BW**
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Functional Breakdown	**Environmental-Geology and Soils**
Spatial Breakdown	**North Hykeham Relief Road**

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Revision	Date	Prepared by	Checked by	Approved by	Description
C02	16/05/2024	JM/SE	PF	BW	UPdate based on BB drawings
P04	26/09/24	SE	PF	BW	UPdate based on BB drawings
C01	12/07/24	AB	PF	BW	Updated following LCC comments
P03	12/07/24	AB	PF	BW	Updated following LCC comments
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P01	18/04/24	SE	PF	BW	First Issue

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APPENDICES

MATERIALS MANAGEMENT PLAN (MMP) FORM – OCTOBER 2014

This form should be completed once the lines of evidence have been marshalled in relation to suitability for use, certainty of use and quantity required.

The answers to the questions posed within this form, together with the supporting information will constitute the MMP and must be provided to the Qualified Person.

A Qualified Person may comment on draft versions of this MMP but will not complete the Declaration until all the relevant documents, demonstrating lines of evidence have been provided for each site. The person / organisation who will pay the Declaration fee should confirm that they have read and understand the Terms and Conditions relating to the payment of the Declaration fee to CL:AIRE. These can be found on the CL:AIRE website.

The person/organisation agreeing to pay the Declaration Fee: name, organisation and contact details including email address	Peter Fitch Ramboll UK Limited Floor 2, The Exchange St John Street Chester CH1 1DA +44 7939 117 288 peter.fitch@ramboll.co.uk

☒ **I confirm I have read and understood the Terms & Conditions**

Each question must be answered. If the question is not applicable, please state this and provide a brief explanation

1. Specify the scenario to which this MMP relates, as described in the Definition of Waste: Development Industry Code of Practice (DoW CoP) (1, 2, 3 or 4):

   ☒ 1. Reuse on the site of origin

   ☐ 2. Direct transfer of clean naturally occurring soil/mineral materials

   ☐ 3. Cluster project

   ☐ 4. Combination of any of the above

   In the case of a combination of reuse scenarios, please describe it below (e.g. (i) Reuse on Site of Origin and Direct Transfer of clean naturally occurring unpolluted soils, (ii) Reuse on the Site of Origin with Direct Transfer of clean naturally occurring soil to x number of development sites etc:

   Note: A declaration is required for reuse on the Site of Origin and for any two-site arrangement i.e. there is no facility for a combination Declaration

1.1 Reuse on Site of Origin and Direct Transfer of Clean Naturally Occurring Unpolluted Soils

2. Organisation and name of person preparing this MMP	Sarah Evans Senior Consultant Joshua Montague Consultant Ramboll UK Limited 80 George Street Edinburgh EH2 3BU +44 7971 948967 sarah.evans@ramboll.com

1.2 Document Control

Date issued	12/07/2024
Appendices	Appendix 1 – Mass Haul Diagram
Revision date	
Summary of Revision 1	
Summary of Revision 2	

Insert additional lines to the table above for any subsequent revisions

Notes: Revisions to the MMP do not trigger an additional Declaration by a Qualified Person, unless an additional site is added to the project.
Revisions to the MMP must be recorded and summarised in the Document Control box above.

1.3 Site Details

3. Site/project name(s)	North Hykeham Relief Road
Reuse/receiving site name	N/A
Donor site name (if Direct Transfer)	N/A

1.4 Landowners

4a. Name of Landowner(s) (full address and contact details) – where excavated materials are to be reused	**National Highways** National Highways, Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ **Lincolnshire County Council** County Offices, Newland, Lincoln, LN1 1YS The existing highways are owned by National Highways. All other land within the scheme is owned by Lincolnshire County Council following a compulsory purchase order (CPO).
4b. Name of landowner(s) (full address and contact details) – where excavated materials are arising from	**National Highways** National Highways, Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ **Lincolnshire County Council** County Offices, Newland, Lincoln, LN1 1YS The existing highways are owned by National Highways. All other land within the scheme is owned by Lincolnshire County Council following a compulsory purchase order (CPO).

1.5 Summary and Objectives

5a. Provide a brief description of the planned project and how excavated materials are to be reused	The North Hykeham Relief Road (NHRR) is the last major highway scheme in the Lincoln Integrated Transport Strategy (LITS). It is also the last element of a complete ring road around the greater Lincoln urban area comprising both Lincoln and North Hykeham. The proposed highway scheme comprises a 200 hectare site currently in use as mixed farmland. The scheme comprises the demolition of six (6) existing residential buildings, site clearance, and the construction of 8 km of 70 mph dual all-purpose two lane carriageway running to the south of the existing settlements of North and South Hykeham, in an east/west direction between the A46 Hykeham Roundabout and the A15 Sleaford Road Roundabout at the western end of the Lincoln Eastern Bypass. The scheme was submitted for planning permission on 14th November 2023 (application ref: PL/0087/23) and was approved on 13th May 2024.

	An Environmental Statement (ES) was submitted on 31st October 2023 in support of the Planning Application (ref: PL/0087/23), which is summarised in ES Volume 1: Non-Technical Summary (NTS). As part of the highway scheme, earthworks will be required along the extent of the site, including excavations beneath 400 kV cables, a crossing of the River Witham via a bridge with approach viaducts and embankments, and a road cutting through a limestone escarpment. The proposed scheme will comprise a cut and fill balance, with excavated soils being reused to form embankments and raise site levels where required. This will minimise the volume of material which will require removal from the site as waste. Construction will require the use of materials such as aggregates from primary, secondary and recycled sources, along with manufactured construction products such as road surfacing and pre-cast construction elements. However, some of the material will be generated on-site, for example excavated soils or recycling of concrete / demolition material for use as aggregate from existing structures. The scheme area has been divided into eighteen (18) zones, each described in Schematic of Material Movement. The majority of the zones will require cut and fill, with all areas (with the exception of Areas 13-14 and 17-18) requiring a larger volume of fill than cut. Based on these calculations, the majority of the material from the cut in each zone will be reused within the same zone. Materials won from the limestone escarpment (Areas 13-14) will be reused throughout the scheme. Competent limestone material will be transported to the material management area adjacent to Grantham Road in the east, where it will be processed into selective fill materials and capping materials before being transported across the scheme for reuse. Underlying mudstones will be reused as embankment fill across the site. Topsoil will be stripped where necessary and stockpiled adjacent to the areas where it will be reused. Topsoil materials will be stockpiled at designated storage areas along the proposed road scheme prior to reuse for landscaping and restoration. Further details on materials storage and movement can be found in Section 19. Chemical testing has shown that site-won excavated material can be reused across the road scheme. However, as identified in Remediation Strategy, there may be localised areas of soils containing asbestos, hydrocarbons and heavy metals, which would not be considered to be suitable for re-use in near surface soils. Where contamination is found with concentrations higher than those recorded during the site investigation, further assessment should be undertaken to determine if the material is suitable for re-use. Further details can be found in the Remediation Strategy.

1.6 General Plans and Schematics

6. Attach a location plan for the site(s) and a plan of the site(s) which identifies where different materials are to be excavated from, stockpile locations (if applicable), where materials are to be treated (if applicable) and	Plan Document Reference(s): NHRR-RAM-GEN-HYKE-DR-CH-00030 - Site location plan Material from the limestone cutting (Areas 13-14) and site-won concrete (from demolished buildings and existing highways) will require crushing and screening. This will be undertaken under an Environmental Permit.

where materials are to be reused.	

7. Attach a schematic of proposed materials movement. Where there is only one source area and one placement area briefly describe it. For all other projects a schematic is required.	Description & Schematic Document Reference: NHRR Earthworks Mass Haul Summary – Cut-Fill – Rev FBC-03 NHRR Earthworks Mass Haul Summary – Topsoil – Rev FBC-03 Materials imported to support the temporary construction works compounds and associated access road will be removed off-site on completion of the construction works.

1.7 Parties Involved and Consultation – if more than one party please provide additional details for them and identify the location that they will be working e.g. where a site is zoned

8a. Main earthworks contractor(s) (full address and contact details) – Where excavated materials are to be reused	**To be confirmed. Principal Contractor to be appointed by Balfour Beatty.** **Balfour Beatty** 1 Trinity Park, Bickenhill Lane, Solihull, B37 7ES 0800 121 4444
8b. Main earthworks contractor(s) (full address and contact details) - Where excavated materials are arising from	**To be confirmed. Principal Contractor to be appointed by Balfour Beatty.** **Balfour Beatty** 1 Trinity Park, Bickenhill Lane, Solihull, B37 7ES 0800 121 4444

9. Treatment contractor(s) (full address and contact details) – for treatment on site of origin, or at a Hub site within a fixed STF / Cluster Project	**To be confirmed. Principal Contractor to be appointed by Balfour Beatty.** **Balfour Beatty** 1 Trinity Park, Bickenhill Lane, Solihull, B37 7ES 0800 121 4444 Material from the limestone cutting and site-won concrete will require crushing and screening. A Deployment Notice will be sent to the Environment Agency 16 weeks prior to commencement. Ex-situ treatment of road tar contaminated asphalt for use in construction operations for hard paving structures will be undertaken for the road planings of the existing roads. The treatment will require an Environmental Permit under Environment Agency Regulatory Position Statement 075. Any material identified as unsuitable for use will be managed in accordance with the earthworks contractor's management plan (i.e. shall be removed off-site for disposal to a suitable facility).

10. Where wastes and materials are to be transported between sites, provide details of the transport contractor(s) (full address, contact details and waste carriers registration details (if applicable))	N/A – no transport of materials between sites is planned.

11. Provide Local Authority contact details (full address and named contacts) where excavated materials are to be reused	The exact location is to be confirmed. This initial draft of the MMP will be used to support consultation with the Local Authority and Environment Agency, whose details can be added here at a later date prior to Declaration of the MMP and prior to the commencement of earthworks on-site. The Local Authority is: **Lincolnshire County Council** County Offices, Newland, Lincoln, LN1 1YS Nominated contact: TBC

12a. For the site where materials are to be reused and for Hub Site locations provide Environment Agency contact details (full address and named contacts)	To be confirmed. This initial draft of the MMP will be used to support consultation with the Local Authority and Environment Agency, whose details can be added here at a later date prior to Declaration of the MMP and prior to the commencement of earthworks on-site.
For all Cluster Projects **12b. Attach any relevant documentation from the EA relating to the excavation and reuse of the materials to demonstrate no objection to the proposals (see 3.37 of DoW CoP)** **If the EA has not been consulted, please explain why (see Paragraph 3.39 of the DoW CoP).**	N/A

1.8 Lines of Evidence

There is no one single factor that can be used to decide that a substance or object is waste, or when it is, at what point it ceases to be waste; as complete a picture as possible has to be created.

The following sections require completion to ensure the correct decision is made.

If a requested item is not relevant it is important to clearly state why this is so (e.g. no planning permission required because permitted development status exists).

1.9 Suitable for Use Criteria

13. Please describe or provide copies of the required specification(s) for the materials to be reused on each site.	Document Reference(s): Series 600 (Earthworks) of the Specification for Highways. See also further information provided below in response to Question 14a.

Where contamination is suspected or known to be present **14a. Please provide copies of or relevant extracts from the risk assessment(s) that has been used to determine the specification for use on the site.**	Document Reference(s): See North Hykeham Relief Road: Contaminated Land Assessment Report. Dated 18th September 2024. Ref: HRR-RAM-EGT-HYKE-RP-LE-00003_Rev C02 The report states that no significant risks to human health were identified following completion of a ground investigation at the site, with a total of 199 soil samples assessed against commercial / industrial end-use Generic Assessment Criteria (GAC). The risk to future site users of the

This must relate to the place where materials are to be used. This must be in terms of (i) human health (ii) controlled waters and (iii) any other relevant receptors. If a risk assessment is not relevant for a particular receptor given the site setting please explain why below:	proposed development from contaminants within soil was considered to be low due to it comprising a highways scheme. Asbestos-containing material (ACM) within very shallow topsoil (chrysotile board fragment) was identified in an agricultural field between Station Road properties and the limestone escarpment (located within Area 14). However, no ACM or asbestos fibres were found in trial pits and rotary boreholes in the surrounding area. The sample was from TP128, and the ACM was found at a concentration of 0.052 % w/w, which is below the hazardous threshold of ≥0.1 % w/w. The report concludes this as an isolated occurrence and gross asbestos contamination is not expected to be present on site. The report does recommend that a watching brief would be appropriate during any excavation works in this area (surrounding TP128 – 497342.20, 364925.98) and identifies the ACM as a potential risk to construction workers during earthworks. Materials with suspected ACMs should not be re-used as topsoil; however, they may be re-used to build embankments where required provided that appropriate health and safety measures are implemented to protect construction workers from potential release of asbestos fibres. If further ACMs are identified, it may be necessary to appoint a specialist contractor to manage the hand picking of ACM material from the soil. Pavement cores were collected from Newark Road, Brant Road, Grantham Road, South Hykeham Road and Station Road. Within the cores, tar-bound layers were identified at thicknesses ranging from 62 – 201 mm. No chemical data was collected form the pavement cores; however, the typical composition of tar includes high concentrations of PAHs. It is proposed that the asphalt waste containing coal tar (AWCCT) is treated and re-used as bound sub-surface layers, as set out in the Environment Agency Regulatory Position Statement 075[1], and the ADEPT Guidance Note[2]. The Principal Contractor will need to demonstrate that the bound material is both geotechnically and environmentally suitable for use as a bound subsurface layer prior to re-use. It may be necessary to undertake detailed quantitative risk assessments for the proposed locations of re-use to determine appropriate environmental suitable for re-use criteria. It is recommended that, should the existing roads be stripped, any tar-bound layers should be segregated from the remainder of the road surfacing materials and chemical analysis completed to confirm the waste classification of the material. Potential impacts to controlled waters from heavy metals, total petroleum hydrocarbons (TPH) and polyaromatic hydrocarbons (PAH) were identified in soil leachate samples collected from locations across the site. Elevated TPH and PAH concentrations were attributed to the presence of tarmacadam within the sampled material. Groundwater samples showed widespread exceedances of both the surface water and groundwater criteria for ammoniacal nitrogen and sulphate. The elevated ammoniacal nitrogen concentrations were attributed to the agricultural land on and surrounding the site, whereas the sulphate concentrations were attributed to the presence of the mudstone bedrock (sulphate is naturally occurring in mudstones). Other minor and localised impacts were noted for chloride, metals, and PAH, but these were not considered to be significant given the site setting and intended future site use. One sample taken from BH205 (near the anaerobic biodigester plant) was analysed for Total Viable Count (TVC) of Escherichia coli (E. coli), faecal streptococci and total coliforms. Counts were recorded at a level considered 'low' risk. No specific visual or olfactory evidence of contamination was identified during the ground investigation, with the exception of 'a strong domestic

[1] Environment Agency (September 2014) Regulatory Position Statement 075

[2] ADEPT (August 2019) Managing Reclaimed Asphalt

	gas odour' noted in the sandy strata of RC218, located in an agricultural field south of South Hykeham Village. Utility companies confirmed there were no gas services in the area. Subsequent ground gas monitoring did not detect methane in the area, and as such, the report deemed there was no risk from ground gas relating to the olfactory observation. Ground gas assessment was conducted at a high-level (i.e. not site-wide) to inform the risk to construction and future maintenance workers. This information has not been included here with regards to the MMP. Made Ground was encountered in specific areas across the site. Made Ground was noted in the areas of existing roads (pavement and sub-base), in the area of the infilled quarry (Area 14), and at isolated exploratory holes across the scheme. Initial testing of the Made Ground has indicated that it is suitable for re-use. It is proposed that site won materials are suitable for re-use on site, with the exception of the pavement material on existing roads that the new highways will intercept, provided that the material is also geotechnically suitable for re-use. This assessment included topsoil, Made Ground and natural strata. Road planings from existing roads are proposed to be re-used as a bound sub-base material, as set out in the Environment Agency Regulatory Position Statement 075 and the ADEPT guidance. The Principal Contractor will need to demonstrate that the bound material is geotechnically and environmentally suitable for use as a bound subsurface layer prior to re-use. It may be necessary to undertake detailed quantitative risk assessments for the proposed locations of re-use to determine appropriate environmental suitable for re-use criteria. The Contaminated Land Assessment Report does not identify the need for any specific soil or groundwater remediation works at the site as no significant contamination has been identified. There will be a requirement to ensure that imported materials are suitable for use and that these do not introduce new or higher concentrations of soil contaminants to the site. Limiting values for soils contamination have been provided as Appendix 6/14 (Controlled Waters) and Appendix 6/15 (Human Health and the Environment) within the Series 600 Specification for Earthworks which, in addition to acceptability criteria, includes the chemical testing requirements and frequency of testing for imported materials during the earthworks. Contamination testing is not proposed for imported virgin quarried aggregates, or for recycled aggregates where evidence is available to demonstrate that the aggregates are no longer a waste (i.e. through compliance with a WRAP Quality Protocol).
14b. Please attach any relevant documentation from the LA relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 of the CoP)	No consultation with the local authority relating to the excavation has taken place at this stage. This draft version of the MMP will be used to initiate consultation and confirm no objection prior to final issue of the MMP and declaration by a Qualified Person.
14c. Please attach any relevant documentation from the EA relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 and Table 2 of the CoP)	No consultation with the Environment Agency relating to the excavation has taken place at this stage. This draft version of the MMP will be used to initiate consultation and confirm no objection prior to final issue of the MMP and declaration by a Qualified Person.
14d. Please attach any relevant documentation from any other regulators (if relevant) relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 of the CoP)	N/A

Where contamination is not suspected **15a. Please attach copies or relevant extracts from the Desk Top Study that demonstrates that there is no suspicion of contamination.**	N/A
15b. Please attach copies of or relevant extracts from the site investigation/testing reports that adequately characterise the clean materials to be used (if appropriate).	N/A
15c. Please attach copies of any other relevant information (if available) confirming that land contamination is not an issue.	N/A

Note: It is your responsibility to assess the nature of the material to be used and that it fits within the limitations of the scenario under which it is to be used

1.10 Certainty of Use

Various lines of evidence are required to demonstrate that the materials are certain to be used. This includes:

- The production of this MMP
- An appropriate planning permission (or conditions that link with the reuse of the said materials)
- An agreed Remediation Strategy(ies)
- An agreed Design Statement(s)
- Details of the contractual arrangements

Please identify in the following sections what lines of evidence relate to the site(s) **where the materials are to be used**.

16a. Planning Permission(s) relating to the site where materials are to be reused **Please provide a copy of the relevant planning permission**	The scheme was submitted for planning permission on 14th November 2023 (Application Ref PL/0087/23) and was approved on 13th May 2024.
16b. Explain how the reuse of the excavated materials fits within the planning permission(s) for each site.	This MMP has been written in order to comply with Planning Condition 3F: Condition 3: Prior to the commencement of development, a Construction Environmental Management Plan, incorporating a Construction Traffic Management Plan, shall be submitted to and approved in writing by the County Planning Authority. The Construction Environmental Management Plan shall be based on the Draft Construction Environmental Management Plan submitted on 21 March 2024 including, but not necessarily limited to, the following: F: Materials Management Plan, including the re-use of site won materials wherever possible;
16c. If planning permission is not required for any one site please explain why below e.g. permitted development, clean up of a	N/A

chemical spill, surrender of an Environmental Permit, re-contouring within the existing permission.	

Where contamination is suspected or is known to be present **17. Please provide a copy of any Remediation Strategy(ies) that have been agreed with relevant regulators.**	Document Reference(s): North Hykeham Relief Road: Contaminated Land Assessment Report. Dated 18th September 2024. Ref: HRR-RAM-EGT-HYKE-RP-LE-00003_Rev C02. North Hykeham Relief Road: Remediation Strategy. Dated 16th September 2024. Ref: HRR-RAM-EGT-HYKE-RP-LE-00006_Rev P03. The contaminated land assessment report highlights that there was no significant contamination present at the site; however, a 'Remediation Strategy' has been prepared to provide a high-level overview of how contamination should be managed on site, and what steps should be taken if unexpected contamination is encountered. The Remediation Strategy has not currently been agreed with the relevant regulators, and should updates to the document be required, the MMP will be updated to reflect these.

Where contamination is not suspected **18. Please provide a copy of any Design Statement(s) that have been agreed (e.g. with the planning authority or in the case of permitted developments the client).**	N/A

1.11 Quantity of Use

19. Please provide a breakdown of the excavated materials for each site and how much will be placed at each site or sub area of each site.

Where this is not specific to a single readily identifiable source refer to an annotated plan, schematic or attach a tabulated summary.

The cut and fill volumes are summarised below.

It is noted that the cut and fill volumes refer to the topsoil strip and total cut and fill for the scheme, which includes the volumes for topsoil and subsoil, respectively, but does not distinguish the amount of Made Ground material (including the infill material from the former quarry and the sub-base of the existing highways). These volumes are being calculated and the MMP will be updated when these become available.

Cut and Fill Volumes

Location	Topsoil					Subsoil				
	Topsoil strip (m^3)	Topsoil Placement (m^3)	Surplus (m^3)	Required (m^3)	Location of fill material	Cut (m^3)	Fill (m^3)	Surplus (m^3)	Required (m^3)	Location of fill material

Area 1	998	2,373	-	1,374	Area 2	7,741	11,829	-	9,197	Area 14
Area 2	25,346	6,246	19,100	-	-	11,254	30,636	-	18,951	Area 14
Area 3	3,156	2,897	260	-	-	1,022	2,008	-	938	Area 14
Area 4	53,377	16,491	36,886	-	-	18,929	232,911	-	215,193	Area 14
Area 5	2,139	545	1,594	-	-	229	15,854	-	15,779	Area 14
Area 6	4,140	1,939	2,201	-	-	372	20,144	-	21,904	Area 14
Area 7	0	0	-	-	-	0	0	-	-	-
Area 8	0	2,067	-	2,067	Area 9	1,329	57,381	-	56,575	Area 14
Area 9	11,790	7,110	4,680	-	-	1,256	36,147	-	35,193	Area 14
Area 10	39,741	4,551	35,190	-	-	51,241	140,466	-	86,267	Area 13, Area 14
Area 11	0	0	-	-	-	0	0	-	-	-
Area 12	6,531	1,616	4,915	-	-	871	22,140	-	21,446	Area 14
Area 13	3,365	0	3,365	-	-	23,741	240	25,096	-	-
Area 14	38,350	19,217	19,133	-	-	613,998	37,161	566,120	-	-
Area 15	5,852	3,279	2,573	-	-	395	28,931	-	28,818	Area 17
Area 16	3,393	4,046	-	653	Area 17	646	3,384	-	2,731	Area 17, Area 18
Area 17	12,206	5,971	6,236	-	-	24,091	20,632	4,859	-	-
Area 18	1545	0	1,545	-	-	1,338	13	1,415	-	-
Total	**211,929**	**78,348**	**137,678**	**4,094**	**-**	**758,453**	**659,877**	**597,490**	**512,992**	**-**

In addition to the above volumes, 19,218 m^3 of imported structural backfill will be used during the works. The largest area of cut will be in Area 14 – within the area of the limestone cutting. The excess material from this area will be used in several other areas. Additional material requirements include use in landscaping and noise bunds in the area of the former quarry (Area 14). Topsoil will be re-used for landscaping and restoration of temporary works areas and will be stripped and stockpiled locally.

The Made Ground volumes are included within the total volumes for each area presented in the table above. In total, there is 113,000 m^3 of Made Ground material to be excavated from across the scheme, which primarily includes road planings (2000 m^3) and material from the infilling of the historical quarry (110,000 m^3).

All surplus material is to be removed off-site by the contractor, although temporary stockpiling may be required. Further opportunities to explore recycling and re-use of this material off-site will be investigated in due course to try and minimise the volume of waste being disposed to landfill. If necessary, this MMP will be updated to reflect any such changes.

Volumes of excavated material are not expected for the temporary works. Temporary works include the construction of haul roads and construction compounds, and this is programmed to take place following the topsoil strip in those locations. Due to much of the temporary haul roads and construction compounds being built prior to the majority of the earthworks, no site-won material will be available for the construction of the temporary infrastructure. Approximately 50,000 m^3 of imported material will be required for the initial construction of the temporary infrastructure. If the imported material is to be derived from a recycled source, its recovery from waste will need to be covered under the Aggregate from Inert Waste Quality Protocol[3]. The exact method of piling has been confirmed as rotary bored piles and ground improvement CFA piles. The volume of material from the piling works is estimated at 50,345 m^3. This figure is additional to the cut material highlighted in the above table.

20a. How has consolidation/compaction being considered in the above mass balance calculations?	The mass balance calculations included in the Balfour Beatty Earthworks Strategy takes account of consolidation and compaction.
20b. How has loss due to treatment being considered in the above mass balance calculations (if applicable)?	Physical treatment (i.e. crushing and screening) will be undertaken where necessary, likely on material from the limestone cutting and large pieces of site-won concrete. It is unlikely that the physical treatment of material will significantly impact the mass balance calculations; however, work is being undertaken to determine the impact of the treatment on the cut and fill balances. The MMP will be updated when the update is provided.
20c. How has the addition of treatment materials being considered in the above mass balance calculations (if applicable)? **Note: An exact figure is not required but one that is reasonable in the circumstances and can be justified if challenged.**	Physical treatment (i.e. crushing and screening) will be undertaken where necessary, likely on material from the limestone cutting and large pieces of site-won concrete. It is unlikely that the physical treatment of material will significantly impact the mass balance calculations, and there will be no addition of material during the treatment process.

1.12 Contingency Arrangements

Explain what is to happen in the following situations and **identify the appropriate clauses** in the contract(s) (Such clauses must be provided to the Qualified Person, preferably as a summary document): or

21a. What is to happen to, and who is to pay for out of specification materials?	Referenced Document(s): Any out of specification material will be classified as unacceptable material. Every effort will be made to treat out of specification materials, so they do not have to be removed from site as waste. If necessary, the MMP will be updated to account for such treatment and re-use of treated materials. Please refer to Series 600 (Earthworks) of the Specification for Highways Works for requirements for dealing with class U1B and class U2 unacceptable material. The Principal Contractor will be responsible for any out of specification materials.

[3] Waste and Resource Action Programme and the Environment Agency (October 2013) Aggregates from Inert Waste

21b. What is to happen to, and who is to pay for any excess materials?	The Principal Contractor will be responsible to for any excess materials which will be tracked and recorded within the proposed Validation Report.
21c. What happens if the project programme slips in relation to excavated materials or materials under -going treatment?	Relevant parties will be notified of any significant changes in the programme and the MMP updated if necessary.
21d. Other identified risk scenarios for the project (relating to excavated materials)?	There is a potential risk from ACM in one area of the site located in an agricultural field between Station Road properties and the limestone escarpment. Materials with suspected ACMs should not be re-used as topsoil; however, they may be re-used to build embankments where required provided that appropriate health and safety measures are implemented to protect construction workers from potential release of asbestos fibres. If further ACMs are identified, it may be necessary to appoint a specialist contractor to manage the hand picking of ACM material from the soil. The pavement core results indicate that the pavement on the existing roads (Newark Road, Brant Road, Grantham Road, South Hykeham Road and Station Road) are unlikely to be suitable for re-use on the scheme. It is recommended that, should the existing roads be stripped, any tar-bound layers should be segregated from the remainder of the road surfacing materials and chemical analysis completed to confirm the waste classification of the material. Should unexpected contamination be encountered during the scheme, it may be necessary for the MMP to be updated.

1.13 The Tracking System

Where contamination is suspected or known to be present, state the procedures put in place to:

22a. For all sites please describe the tracking system to be employed to monitor materials movements.	Movement of materials will be recorded by the contractor undertaking the work . Site personnel will keep daily site records and material transfer notes.
Where contamination is suspected or known to be present, state the procedures put in place to: **22b. Prevent contaminants not suitable for the treatment process being accepted**	Appendix 6/14 and 6/15 of the Highways Specification have the suitability for re-use criteria to ensure the protection of human health and controlled waters. The Remediation Strategy has a procedure for unexpected contamination. If unexpected contamination is encountered, it may be necessary for a site specific remediation strategy to be prepared and implemented, subject to approval by the relevant regulators. Should this be required, the MMP will be updated.
Where contamination is suspected or known to be present, state the procedures put in place to: **22c. Prevent cross contamination of materials not in need of treatment, wastes awaiting treatment and treated materials**	Refer to the Remediation Strategy. All excavated soils to be segregated / stockpiled separately.

Where contamination is suspected or known to be present, state the procedures put in place to: **22d. Demonstrate that materials that do not require treatment and successfully treated materials reach their specific destination**	No specific procedures in place, due to limited amount of contamination present on site. The Principal Contractor will be responsible for ensuring materials reach their specified destination. Refer to the Remediation Strategy.
Where contamination is suspected or known to be present, state the procedures put in place to: **22e. Ensure that waste for off-site disposal or treatment is properly characterised and goes to the correct facility**	The Principal Contractor will be responsible for ensuring waste / unacceptable material is removed from site. Refer to the Remediation Strategy.

23. Please attach a copy of the tracking forms / control sheets that are to be used to monitor materials movements. **To include transfer of loads on site into stockpiles prior to treatment (if applicable), stockpiled after treatment (if applicable), stockpiled awaiting use (as appropriate) and final placement.**	Movement of materials will be recorded by the contractor undertaking the work. Site personnel will keep daily site records and material transfer notes.

For Hub Sites within Cluster Projects & where materials need treatment before reuse **24. Please attach a copy of the Environmental Permit covering the treatment process.** **Alternatively if the treatment is covered by a Mobile Plant Permit and associated Deployment Form, attach a copy of the EA agreement to the Deployment Form.**	N/A

1.14 Records

25. Where, and in what form, are records to be kept? **Note: Records e.g. transfer notes, delivery tickets, Desk-Top Study, Site Investigation, Risk Assessment(s), Verification Report(s) need to be kept for at least two years after the completion of the works and production of the Verification Report**	All records are to be held with the Principal Contractor. The records likely to be obtained include: • Material transfer notes; • Soil delivery tickets and accompanying chemical composition analysis (if required); • Site Investigation Reports; • Desk Top Study; and • Verification Report (see Section 26 below).

1.15 Verification Plan

26. Provide or explain the Verification Plan which sets out how you will record the placement of materials and prove that excavated materials have been reused in the correct location and in the correct quantities within the development works (see 3.4 of the DoW CoP).	Referenced Document(s): The Verification Plan is included in the Remediation Strategy. A Verification Report will be prepared on completion of the earthworks to record material re-use, any unexpected contamination, testing, off-site disposal and importation of materials. Records of the treatment process and volumes will also be maintained. The completed verification report will be submitted to CL:AIRE.

APPENDIX 1
MASS HAUL DIAGRAM